Mobile Money
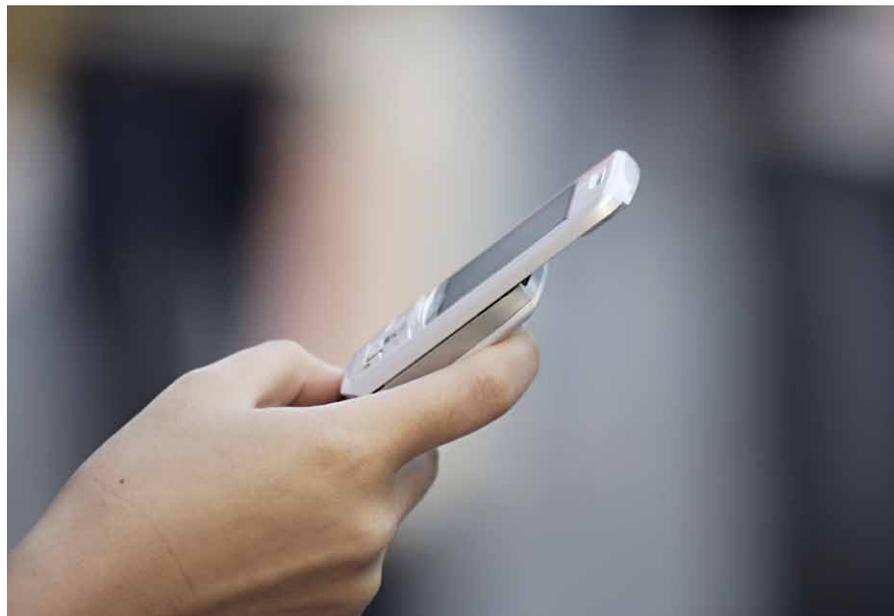for the Unbanked

Snapshot:

Implementing mobile money interoperability in Indonesia

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INDONESIA

Introduction

ON MAY 15, 2013, INDONESIA'S THREE MAJOR MOBILE OPERATORS—TELKOMSEL, INDOSAT AND XL—WENT LIVE WITH A GROUND-BREAKING INITIATIVE THAT ENABLED THEIR MOBILE MONEY CUSTOMERS TO SEND AND RECEIVE MONEY ACROSS EACH OTHER'S NETWORKS. THIS WAS A MILESTONE IN THE MOBILE MONEY INDUSTRY. FOR THE FIRST TIME, MOBILE MONEY PLATFORMS RUN BY MOBILE OPERATORS COULD TALK TO EACH OTHER—ACCOUNT TO ACCOUNT, OR "WALLET-TO-WALLET"—IN REAL TIME.

In most countries with mobile money deployments, money sent to a customer on a different mobile network generates a voucher that can only be cashed out at an agent in the sender's network. Sending money "off-net" results in a cash-out, missing the opportunity to trigger additional electronic transactions. Until recently, mobile money customers in Indonesia were in the same boat.

However, the three main operators in Indonesia announced a new development in May 2013 to change this. Today, a mobile money customer can use the money in their e-wallet not only to pay a bill, buy airtime or transfer money to another customer in their network, but also to send money directly to an account, or m-wallet, in a mobile money scheme of another network.

In this case study, MMU provides a snapshot of the implementation of mobile money interoperability in Indonesia--specifically, how it came to be that three independent mobile operators worked together to make real-time transfers across their mobile money deployments a reality.

THE INDONESIAN CONTEXT

Indonesia's 245 million inhabitants – the fourth largest population in the world – are dispersed over 17,000 islands. In the last decade, Indonesia has undergone significant economic and demographic shifts. More than 60% of Indonesia's population is work-ing age[1] and a large proportion is entering the middle class, which has grown 50-fold in the last decade and is projected to double again by 2020.[2] Consumer spending is driv-ing domestic growth, with consumption cur-rently accounting for more than half of the country's GDP. Money is also being injected into the economy from abroad; 6.5 million migrant workers sent US$7.2 billion home in 2012 and direct foreign investment has been over US$20 billion for the last couple of years.[3]
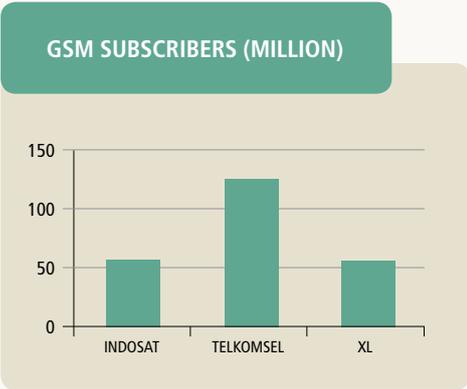
Indonesia's mobile and rapidly urbanising population is driving demand to move money around the country and to handle payments with greater efficiency. Money transfers for payments and remittances are pervasive, with 83% of persons above the age of 15 reporting sending or receiving a remittance or payment transaction in the previous month. The ma-jority of these transactions happen in cash, which indicates a great opportunity for mobile-enabled financial transactions.[4]

Mobile operators recognised this opportunity and launched mobile money services. Tel-komsel was first, launching TCash in 2007; Indosat followed in 2008 with Dompetku. When XL launched XL Tunai in 2012, the three operators had been joined by a small number of third parties and banks also moving into the mobile money space.

GSM SUBSCRIBERS (MILLION)

PAYMENTS DATA FROM SELECTED COUNTRIES	CASHLESS RETAIL PAYMENTS TRANSACTIONS PER CAPITA	PAYMENTS CARDS PER 1,000 INHABITANTS
NORWAY	380.3	3,583
CHILE	26.4	734
SOUTH AFRICA	21.8	N/A
INDONESIA	**7.8**	**247**
INDIA	4.7	173
MOZAMBIQUE	0.3	61

SOURCE: PAYMENTS SYSTEMS WORLDWIDE, THE WORLD BANK 2010

NEW REGULATION ENABLES MOBILE MONEY DISTRIBUTION

When mobile money was launched in Indonesia, a regulatory hurdle stood in the way of consumer uptake. Until recently, an agent could not perform a cash-out unless the outlet had a remittance license issued directly by Bank Indonesia. To withdraw cash from their mobile money wallet, customers had to go to an outlet managed directly by their mobile operator, but each operator has only 25 on average *nationwide*. This severely limited the service options for unbanked customers in remote areas and closed the door to anyone interested in building a capillary distribution network for financial services.

Bank Indonesia, Indonesia's central bank, wanted to create an enabling environment for mobile banking that would advance financial inclusion. In 2007, only 42% of adults in In-

1 JANA Mobile, "The Growing Indone-sian Middle Class", http://www.jana.com/blog/the-growing-indonesian-middle-class/

2 "Indonesia's Middle Class: Another BRIC in the Wall", July, 2011 http://www.economist.com/node/18989153

3 Indonesia FDI Hits Record, but Growth Pace Slows, July, 2013, Wall street Journal

4 South Asians Heavily Reliant on Informal Money Transfers, Gallup 2013 http://www.gallup.com/poll/161627/south-asians-heavily-reliant-informal-money-transfers.aspx

donesia had a bank account, meaning that 80 million adults in the country did not. Mobile penetration is high, however, with operators counting over 280 million connections.

The Regulation on Funds Transfer issued in March 2013, followed by branchless banking pilot guidelines in May 2013, opened the way for smoother distribution of mobile money. Bank Indonesia appears keener than in the past to allow service providers to build networks of agents who can perform cash-in and cash-out for their customers, as well as open mobile money accounts on their behalf. Since the regulation came in place, several thousand mobile money agents have signed up to mobile money schemes.

OPERATORS SEE AN OPPORTUNITY TO INTERCONNECT

By 2012, each of the three operators had established payments systems on their own, but in a geographically dispersed country like Indonesia, isolated payments schemes are unlikely to have enough reach to drive significant usage. With a new and more enabling regulation… to communicate with each other. Connecting their platforms would allow them to capitalise on the potential of the payments market, strengthen the value proposition for their customers, and become more competitive overall in the payments market.

The first step was to find an appropriate platform to discuss collaboration on the GSM business with their main competitors. In December 2012, the CEOs of XL and Indosat entered into discussions about how to capitalise on the opportunity for mobile money in Indonesia and possible industry collaboration in this area. Telkomsel was invited to join the discussions shortly after as all three operators realised that the benefits would be greater if all were part of the collaboration.

Approach to implementation

HOW OPERATORS COLLABORATED, FROM THE VERY TOP TO ORGANISATIONAL TEAMS

As mentioned above, the operators began holding regular discussions in December 2012 and launched an interoperable solution just six months later, in May 2013. How did they accomplish this in such a short time frame?

The fact that the conversations between the three operators began at the CEO level was important to ensuring full commitment to industry collaboration within each organisation. It also helped to reach agreement more efficiently on which areas and customer use cases were interesting for collaboration and which were not. Industry collaboration and interoperability in the mobile money market can affect many different use cases, each with their own technical, operational, and commercial complexities.

The first priority agreed by the CEOs was to make sure money could be sent directly to accounts of the different schemes instead of a redeemable voucher within the originating scheme. It was decided that connecting to banks and ATM networks was outside the scope of the collaborative effort and it was instead up to each operator to pursue on its own. Decisions like this defined clear areas for collaboration, but equally important ensured that healthy competition was maintained in other areas. A single, tripartite agreement was set up and signed by each operator that outlined the principles and content of the collaborative effort. This ensured that the commercial and operational principles would be the same for all participating organisations.

The heads of departments for mobile money at each operator were then tasked to deliver and implement the project. Weekly meetings with the heads of mobile money were set up, and soon more meetings between their teams and relevant departments within each organisation were also occurring frequently.

A major reason why the operators were able to develop and launch a solution so quickly was that for each area affected by mobile money interoperability, such as legal, customer care and IT, they set up teams with members from each of these departments from across

the three organisations to discuss the challenges and determine and implement the appropriate solution.

SOME NECESSARY CONSIDERATIONS FOR ACHIEVING AN EFFECTIVE SOLUTION

Some of the interconnection challenges that the teams had to overcome were as follows:

THE TECHNICAL TEAMS FROM TELKOMSEL, XL AND INDOSAT DURING A MEETING IN JUNE 2013 AT TELKOMSEL'S HQ IN JAKARTA

1. **How to route transactions between schemes.** One of the first problems that needed a solution was how best to securely and efficiently route transactions across the three schemes. Should agreements be signed with a central party or directly between the three participants? Despite the fact that two of the operators had sister companies that either owned or operated payment switches connecting ATM networks and financial institutions, it was agreed that the operators would connect bilaterally so that no participant or third party would have more influence over the solution than any other. It was further decided that the inter-scheme transactions would be reconciled daily and the funds settled bilaterally between each scheme on a regular basis as needed, with the custodian banks performing net settlement through the real-time settlement service provided by Bank Indonesia.

2. **Enabling communication across platforms.** In order to allow transactions across the platforms, the technical teams had to find a common language that all their platforms could interpret. The technical teams from the three operators together evaluated the options available and decided on a solution that would enable communication over secure direct connections using a commonly defined protocol. Each technical team was then responsible to enable their platform to interpret this common protocol and perform the required functions in response.

3. **Managing AML/CFT.** To maintain the integrity of each mobile money deployment, each mobile money operator maintains responsibility for conducting their own Know-Your-Customer (KYC) and Anti-Money Laundering (AML) checks and procedures for all transactions on their platform. The fraud and risk teams came together to assess the newly introduced use cases and analysed what measures would need to be put in place to mitigate any new exposure to risk. Each operator is responsible to their own customer and because its first use case is direct credit, or transfer, the company with the sender is responsible for service delivery and to initiate any investigation on behalf of the customer in case anything goes wrong with the transaction.

4. **Financial processes.** The finance teams and revenue assurance teams reviewed reconciliation and settlement procedures, and were responsible for setting up compliant and reliable processes to oversee the new transaction types.

The operators have continued to meet weekly since December 2012 and during this time have agreed to a common Standard Operating Procedure (SOP) for handling issues such as customer care and fraud.

HOW IT WORKS

Despite the fact that all three deployments operated different mobile money platforms, the technical development to enable the platforms to talk to each other took only four months. Both Telkomsel and XL developed their platforms in-house, while Indosat bought their core platform from a mobile money vendor (Utiba). The technical teams from the three operators jointly defined the functionality of the inter-scheme collaboration and how information could be exchanged between them. They decided to describe the agreed functions using WSDL and communicate using a secure protocol, SOAP over HTTPS.

1. Each operator creates an account on the other platforms, just like accounts are created for partner banks, utility providers, or other companies. Due to high levels of trust between the operators in Indonesia, the accounts are not pre-funded, which is the case for other external companies.

2. The platforms communicate with each other through a secure and encrypted connection using a defined SOAP protocol with commonly defined functions.

3. After the schemes have communicated and established the existence of a recipient account, and sufficient funds at the originating account, the transaction between the two mobile money deployments consists of two main actions. The first is a transfer from the sender's account to the receiving operator's account on the originating platform. This is mirrored on the receiving operator's platform, where the originating operator's account credits the recipient's individual account.
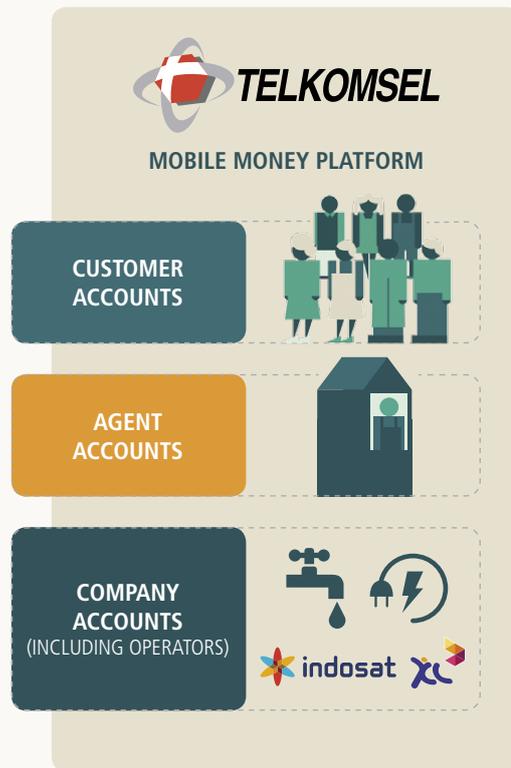
4. All inter-scheme transactions are later reconciled (daily) and settled regularly between the custodian partner banks through the real-time settlement service provided by Bank Indonesia.

5. Cash-in and cash-out are handled by agents of the mobile money schemes of which the customer is a member' or 'to which the customer belongs.

How a Telkomsel TCash customer sends money to a person using Indosat Dompetku
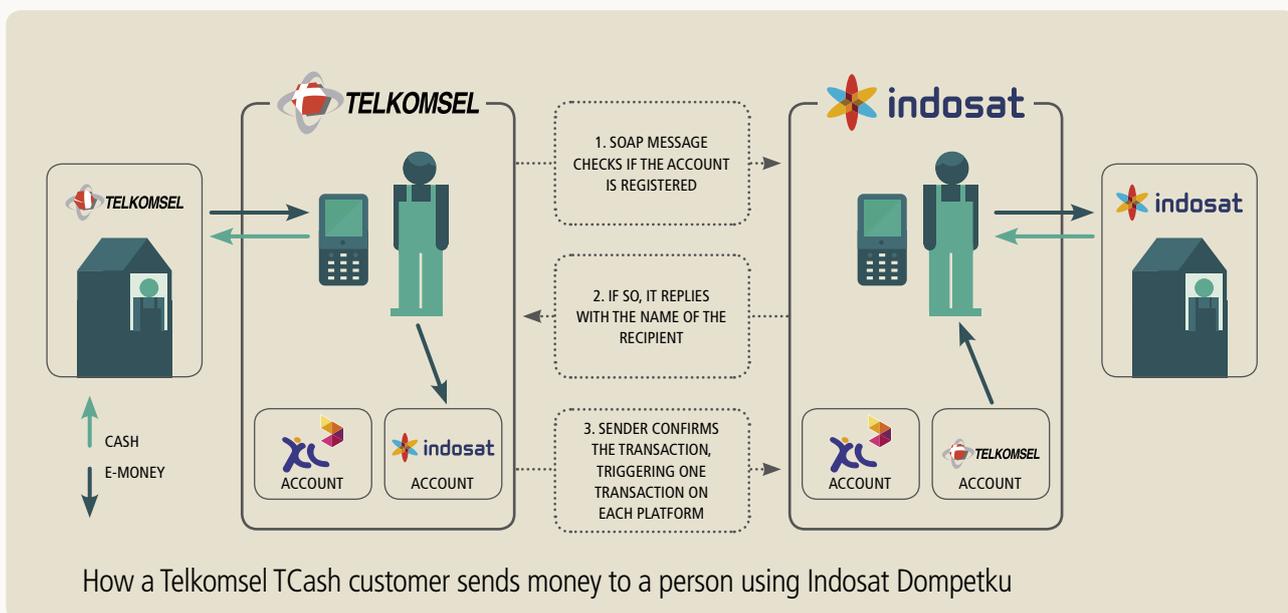
This solution was chosen for its simplicity, affordability, and flexibility. Defining the features of inter-scheme communication from scratch allowed the operators to add certain functionality, such as displaying the name of the recipient when sending money to another scheme in order to reduce the likelihood of sending money to the wrong person – a feature that would not have been available using existing payments switches or an automated clearing house (ACH). Circumventing a commercial payments processor enabled them to not introduce any additional costs from a third party. However, there are many ways to implement and enable direct transfers between mobile money schemes and it is yet to be seen whether or to what extent the Indonesian implementation will set a precedent in the industry or not.[5] The operators presented their solution to Bank Indonesia, which has been supportive of their efforts and achievements to date.

THE COMMERCIAL MODEL

Sending money across networks costs customers IDR 2,000, less than USD 0.20. This fee is shared between the originating and receiving schemes. Transferring money within a mobile money scheme is, however, free of charge. A general question for the industry as transactions between mobile money schemes begin to become more popular, is whether to keep the commercial model from the telecommunications business side, where cross-net communication is penalised, or if new models should be investigated specifically for mobile money. The pricing model from the GSM business has resulted in extensive multi-SIM use, and it is unclear whether using that model would be optimal for mobile money. As cash-ins are currently a cost for each mobile money deployment, there should be an opportunity to find a commercial model that encourages, rather than discourages, transactions across schemes to increase total transaction volumes.

Considerations going forward

Enabling direct transfers between mobile money deployments is just the beginning of a much greater collaboration between Indonesia's mobile operators. So far, the industry has agreed to work jointly on the following areas:

- **Financial education programs.** Customer awareness of mobile money has been identified as a major hurdle for the industry. The operators will work together to raise awareness of the benefits of electronic transactions.

- **Airtime sales.** The operators will enable any mobile money account to purchase airtime from any operator. This is currently under development by the operators' technical teams.

- **Merchant payments.** The operators have agreed to define, develop, and implement a common solution for merchant payments to make sure customers of each scheme can pay at any merchant location that accepts mobile payments.

- **Refine operational procedures.** As the services grow in popularity, it will be necessary to continue refining agreements and processes around issues like dispute resolution.

- **New members.** The operators are open to other mobile money deployments joining the collaboration as they establish themselves in the market.

What operators in Indonesia have shown is that industry collaboration and interoperability is possible and can be technically implemented in a safe and timely manner without jeopardising the business model for mobile money. Still, several challenges lie ahead for the mobile money industry in Indonesia if it is to achieve its full potential.

The first is to identify and address the key customer value proposition that will make the services popular in the country.

Second, as popularity and transaction volumes grow, any operational procedures to handle issues introduced by inter-scheme transactions, for example, dispute issues, will need to be worked out and implemented effectively by the operators to avoid friction in the partnership and ensure customer satisfaction.

Third, the regulatory environment is still being formed. Success for financial inclusion in general and mobile money in particular will require banks and non-banks to operate on a level playing field in the payments space, with a risk-based approach to regulation and guidelines for account opening, KYC, and transaction limits. Currently, the three operators have different regulatory licenses for mobile money. Indosat, for example, only operates in certain districts of the country as they are part of a branchless banking pilot managed by Bank Indonesia. A closer dialogue with the regulator is required to ensure a positive outcome.

Conclusion

Even though it is too early to measure the effect of the implementation, the operators are anticipating rapid uptake. There have been bold predictions that 52 million mobile money users will conduct transaction volumes of US$42 bn and generate service revenues of almost $2bn by 2017.[6] Predictions like this are always uncertain, but what is clear is that the market conditions in Indonesia offer strong potential for mobile financial services.

Interoperability was achieved in Indonesia thanks to CEO commitment, strong technical teams collaborating across operators, and mobile money managers designing robust SOPs to address customer service and risk management.

Enabling payments regulation and interoperability is an exciting beginning for Indonesia's mobile money industry, but it is only the first step in capturing the full opportunity. Competent technical execution now needs to be followed up with equally competent commercial investments and operations to achieve customer uptake in the market. The industry is counting on continued regulatory backing from Bank Indonesia to provide a competitive payments landscape for both banks and non-banks. Indeed, Indonesia is a mobile money market to watch closely in the coming year.

6 Linklaters, "Mobile money – Indonesia", http://www.tmtgenerationnext.com/case-study/mobile-money-indonesia

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