

# M-Banking and M-Payments in Asia Pacific

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John Ure  
Director TRPC Pte Ltd (Singapore)  
Associate Professor and Director  
Telecommunications Research Project  
University of Hong Kong

<http://www.trpc.biz>



# Introduction: Mobile Phones, MNOs and Banks

- 50% of the world's population has a mobile phone and they carry them everywhere = anyone, anywhere, any time
  - 2002 = mobile phones > fixed phones
  - 2008 = half the world's population have mobile phones
- Wireless and mobile technologies developing at a rapid pace = cheaper, smaller, more functions
- Telecom regulations more liberal = mobile section very competitive
  - Technology neutral opens the door to cellular, WiFi, WiMax, etc
- Spectrum management more flexible = more frequencies, more wireless networks, more capacity
- MNOs and banks exploring ways to work together
  - Initially a lot of mutual suspicion, e.g. Korea
- ***Players in the eco-system(s) need to see advantages***, including policy makers, MNOs, banks, merchants, vendors and customers

# Stakeholder models and incentives

- Policy-makers: ‘capture’ the informal economy, encourage remittances, micro-credits, efficient cashless commerce, etc
    - Who drives policy? Central Bank? Ministry Finance or Telecoms?
  - MNOs: cost-cutting (e.g. OTA reloads), grow the distribution network, customer retention, sms traffic, leverage other services, m-commerce revenue share (depending upon the model), etc.
  - MNOs: ‘Access model’ and ‘Hybrid model’
    - **Access model:** revenues from SMS transport layer; OTA reloads; dealing with merchants/content providers
    - **Hybrid model:** revenues from transactions management (maybe third party platform); banking (float liquidity, security, laundering, financial regulations, etc)
    - **Setup costs?** \$5m to start with capacity of 5 million transactions per month – Smart and Globe (Philippines) low additional capex for handling 50-100 million
    - **APRUs** higher for target groups for Smart and Globe cf other mobile users
- [See *infoDev* (2006) *Micro-Payments Systems and Their Application to Mobile Networks*]

# Stakeholder models and incentives

- Banks: extra cash float (e.g Bank d'Oro received \$10 million from 2.5 million Smart card users), new customers, transactions commissions, ultimately new services/applications
  - But mostly micropayments (NB. OTA top-ups and airtime transfers between accounts the key drivers in Philippines)
  - In Philippines 1 million out of 2.5 million adopted a Debit Card facility
- Card Issuers: stepping stone to M-Wallet and more m-commerce
  - Debit cards = minimal risk of fraud
- Third Party Payment Platforms: opportunity to outsource transactions management = (i) MNOs pay nothing but enjoy a revenue share or commission; (ii) TPPP attract/market to content providers?
- Merchants: less cash, more customers, but in the case of NFC card readers are required – interoperability not yet!

# Technology Issues

- Many different mobile devices/standards: will m-banking applications work?
  - OS for cellphones 2.5G, 3G, 3.5G, 3.75G
  - OS for smartphones such as iPhone, Nokia-Symbian, Windows CE, Android for Gphone, Linux, etc
  - OS for PDAs such as Blackberry, Palm, Treo, iPaq, etc
  - OS for 'Netbook' computers: Acer One, Asus eePC, HP's Jornada, etc
  - SMS text-based interface or Java applets downloads, etc? – ***and what extra charges do MNOs add on in these cases?***
  - Some banks prefer downloadable applications to compensate for a wide variety of devices (also produce better presentation of graphics and functionality) than services called up over the phone's browser.
  - ***But do MNOs have the required software licences to offer downloading? This may restrict the number of networks involved.***

# Commercial Issues

- M-banking as channel extension = another service deliver channel (B2C)
  - Mobile handset as mobile ATM
- M-banking as consumer item = customer choice (C2C)
  - Competition in the future among retail banks, although may not be very profitable
  - Customers will use to transfer funds to each other
- M-banking as business tool = corporate market (B2B)
  - Use of mobile devices across the supply chain to cut costs and add to efficiency, e.g., book airline tickets, pay invoices, etc
- M-banking as market for growing the card business = m-wallet
  - Credit and debit card accounts via mobile phone, e.g. SmartMoney/MasterCard/5 Philippines banks
  - Universal SIM + NFC phones = need for card readers

# Commercial Issues

- M-banking as market extension = compete for new customers
  - Over 40% Indonesians subscribe (mostly prepaid) to a mobile network and the market grows fast – up from 30% in 2007
- M-banking as social commitment = banking and credit to the unbanked
  - Experiments with micro-credits, e.g. G-Cash in Philippines (Globe + Rural Bankers Association of the Philippines under the USAID-funded programme Microenterprise Access to Banking Services = RBAP-MABS).
  - Use of text-based authorizations for funds transfers using corresponding bank agents in villages quite successful in Indian farming communities; South Africa and Kenya are other good examples; China has huge potential, etc. = ‘bottom of the pyramid’ approach
  - KYC issues can be a hurdle to early adoption

# Commercial issues

- M-banking for remittances – globally through official channels around \$250 billion (World Bank)
  - Indonesia \$5.7 billion in 2006? (IMF)
  - Unofficially maybe anything up to double this through informal channels

For example:

Malaysia-Indonesia 2002 = \$0.4 billion through formal channels

Malaysia-Indonesia 2006 = \$0.26 billion through formal channels

Implication 1 = switch to informal channels

Implication 2 = opportunity for MNO-bank alliances to offer cheap, convenient and secure money transfers

[Source: World Bank (2008) *The Malaysia-Indonesia Remittance Corridor*, Working Paper No.149, see <http://go.worldbank.org/SGUUZYEEC1>]

# Regulatory and Security Issues

- Regulatory (M-banking/M-payments) – see below
  - Pro-active: Philippines, Taiwan, increasingly China, India and Malaysia
  - Cautionary: Indonesia, Thailand, Vietnam
  - Resistance: Myanmar
- Security (bank security)
  - Smart (Philippines) designed back-end system with the banks who control the entire transactions process
  - Customer security = SIM + ID + MNO power to disable SIM
- Security (crime/terrorism)
  - Anti-Money Laundering/Counter Financing Terrorism AML/CFT banking regulations apply + KYC

# Regulation and Standards

# Regulation and standards

- Why do regulations matter?
  - Regulations circumscribe:
    - *what* type of m-payment services MNOs can offer,
    - *how* they can offer them, and
    - *who* they can best partner with (e.g., shield themselves under an existing bank licence)
  - Regulations influence
    - the *cost* and
    - the *investment viability* of offering m-payment services
- Why do standards matter?
  - Standards govern the *interoperability* of m-payment systems and therefore their *market acceptability*
  - Standards significantly reduce both service provider and merchant *equipment costs*
  - Note: Credit card EMV-compliance is now required across the EU, but technical specifications for POS terminals will be available 2009

# Common Elements in Approach Across Asia

- Risk and security aspects are mostly covered by banking laws, licenses and regulations
- Deposit-taking licenses and/or monetary authority approvals are required for non-banking financial companies, including stored-value cards
  - ‘Proportionality’ is used as a discretionary measure on the level of the ‘float’ that attracts regulation

# Japan and Korea

## Japan

- Regulated by Ministry of Economy, Trade & Industry, not MoF
  - Finance companies provide consumer credit following traditional restrictions on banks and revolving credit
  - DoCoMo's 'iD' mobile card platform moved into this space, renting IC space for banks and merchants to download cards
  - E-commerce regulations and the Prepaid Card Law require 50% of the float to be deposited at Bank of Japan and reporting of unused deposits every 6 months

## Korea

- E-Financial Transactions Act (2007) and E-Commerce Consumer Protection Act (2006) govern e-commerce payments
  - EFTA requires accounting separations, minimum security standards, book-keeping for up to 5 years, and performance reports to the Financial Supervisory Commission (FSC)
  - MNOs offering m-payments are obliged to provide status reports to the Ministry of Information & Communications

# Indonesia and The Philippines

- Remittance services offered by MNOs actively encouraged by the monetary authorities in the Philippines – international remittances play a major role in inflow of foreign currency from overseas workers
- Bank Indonesia more cautious; banks only required to notify BI of m-banking and full banking regulations apply; no specific m-payments regulations, but MNOs need BI approval to offer the service.

# Key Findings

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- *Multiple* m-payment ecosystems are emerging
  - Traditional focus has been on bringing *all* players together;
  - Broad uptake of mobiles + advances in technology resulted in multiple ecosystems:

- Carrier-centric,
- Bank-centric,
- Vendor-centric,
- Platform-centric.



# Key Findings

- Different m-payment types → different business models
  - ‘Mobile payments’ encompasses different platforms and solutions; different industries adopting different m-payment solutions;
  - 5 business models becoming apparent: B2C, B2B, C2C, P2P, and remittance.
- Distinct patterns of m-payment adoption across Asia
  - The leaders: Japan & Korea
  - The mobile tigers: Hong Kong, Singapore, Taiwan
  - The giants: China, India, the Philippines, Indonesia
  - Mid-markets: Thailand and Malaysia

# Key Findings

- Success requires focusing on two-sided markets
  - Focus traditionally on building supply, be this equipment (e.g., POS terminals) or standards (bank-carrier-payment consortia)
  - As a result, demand has not been developed and has remained disaggregated;
  - New (and successful) strategies for building demand include handset and merchant subsidies (DoCoMo), aggregating content (Danal), targeting the underserved (Smart).

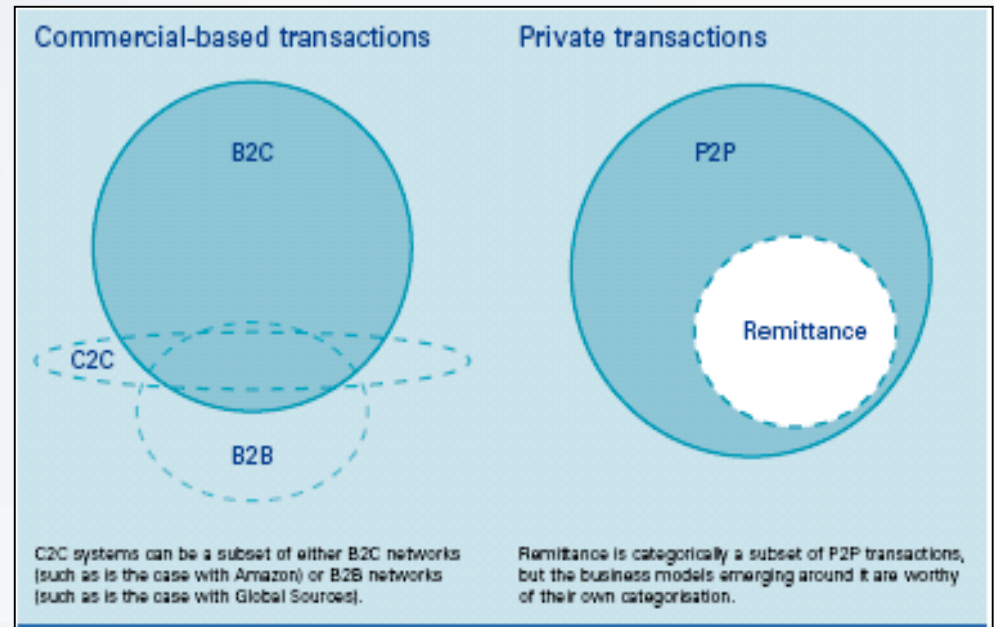
# Business Models

# Types of m-payments

	m-wallet	m-bank	Touch-and-pay	Top-up	Remit	Content	Payment Gateway	Auctions
Telecom	●		●	●	●	●	●	
Banking	●	●	●		●		●	
Retail	●		●		●	●	●	●
Transportation	●		●		●		●	
Media	●			●	●	●	●	
Verticals	●		●			●	●	●

# M-payment Business Models

- B2C: enables payment for the direct acquisition of goods or services
- B2B: facilitates business processes and procurement
- C2C: Transactions directly between end-customers but across a third-party platform
- P2P: Private transactions between two individuals (e.g., transferring credits or mobile minutes)
- Remittance: A subset of P2P. (One-way P2P.)



# M-payment Adoption Across Asia

	m-wallet	m-bank	Touch-and-pay	Top-up	Remit	Content	Payment Gateway	Auctions
Japan	●	●	●	●	○	●	○	○
Korea	●	●	●	●	○	●	●	○
Hong Kong	○	○	○	○	○	○		○
Singapore	○	○	○	○	○	○		○
Taiwan	○	○	○	○		○		○
China	○	○		○	○	○	○	○
India	○	○		○	○	○	○	
Philippines	○	○		●	●	○	○	
Indonesia		○		○	○	○		
Thailand	○	○	○	○	○	○		
Malaysia	○	○		○	○	○	○	

# Risks and Challenges

# Risks and Challenges

- Interoperability and security are central to successful business models for m-payments
  - EMV offers interoperability and security – within the EU compliance to EMV is mandatory and banks have used this to shift responsibility (risk) to the merchant
- New technologies are opening up new levels of market acceptance and new business opportunities
  - 3G and beyond: bandwidth/transmission speeds are advancing rapidly to support rich-media content and applications
  - Near Field Communications (NFC) offers contactless cards embedded in the handset – Visa and MasterCard have numerous trials ongoing and commercial launches planned for 2007/2008

# Risks and Challenges

- M-payments can be quite secure
  - Macro-transactions can be authenticated with SMS and PIN
  - Lost or stolen mobile handsets quickly reported and MNO can block usage
  - Mobile handsets more secure than Internet café PCs for m-payments for games (one of the future drivers of m-payments?)
- Identity theft rather than commercial loss through m-payments is the greater risk

# Conclusions

- New drivers of m-payments are technology-enabled (EMV, 3G, NFC, etc) but closely related to more general broadband developments,
  - e.g., shift to services, social networking, targeted advertising and to take-up by the Y-Gen (e.g. P2P, multiplayer online games) and by the enterprise sector (e.g. logistics, m-banking)
- There is no single m-payment model; multiple m-payment ecosystems emerging
  - Success requires building 2-sided markets... nurturing both demand and supply
- Adoption likely to be high where m-payment addresses an immediate need or bridges an existing gap
  - Such as serving the ‘unbanked’ in developing markets, particularly where mobile access and usage already high.

## **Contact details**

**Peter Lovelock and John Ure**

**TRPC Pte Ltd (Singapore)**

**peter@trpc.biz**

**johnure@trpc.biz**

**<http://www.trpc.biz>**