



Seminar on Mobile Banking

The work of the CPMI in the field of mobile payments*

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* Views expressed are those of the authors and not necessarily those of the BIS or CPMI

The Bank for International Settlements (BIS)

- World's **oldest international financial institution** (founded 1930)
- Owned entirely by central banks (60 members)
- BIS headquarters in **Basel**, representative office for Asia in Hong Kong and for the Americas in Mexico City

The BIS pursues its mission by:

- *promoting discussion and facilitating collaboration* among central banks and with other authorities responsible for promoting financial stability
- *conducting research* on policy issues confronting central banks and financial supervisory authorities and providing statistics
- *hosting committees and secretariats of regulatory bodies*
- acting as "*bank for central banks*"



The Committee on Payments and Market Infrastructures

- ⇒ The CPMI is a global **standard setting body** in the field of payments, clearing and settlement arrangements and related activities

- ⇒ It also serves as a forum for central banks to **monitor and analyse developments** in large value and retail payment, clearing, settlement and related arrangements, schemes and instruments, both within and across jurisdictions

- Establishment in 1990 as Committee on Payments and Settlement Systems (until August 2014)
- Hosted by the Bank for International Settlements in Basel
- 25 member central banks



Selected CPMI activities in the field of retail payments

- **Descriptions and statistics** – Red Books (not only retail)
- **Guidelines, principles, best practices**
 - General Principles for international remittance services (2007)
- **Reports**
 - Retail payment systems in selected countries: a comparative study (1999)
 - Clearing and settlement arrangements for retail payments in selected countries (2000)
 - Policy issues for central banks in retail payments (2003)
 - Innovations in retail payments (2012)
 - Non-banks in retail payments (2014)
- CPMI-World Bank **Forum on retail payments**
- CPMI-World Bank work on **Payments aspects of financial inclusion**



Introduction

- The **payment environment is changing dramatically** (disappearance of physical presence of the payer in a bank branch, filling in and signing paper)
 - **User expectations and demand have shifted:** payments to be made at any time, day or night, on week-ends, from home or abroad, at low costs with high security
 - **New technologies and services** soar (pay with a card, a computer, a tablet or a mobile) with **new providers** entering the market (mobile network operators, e-money issuers, aggregators...)
- ⇒ However, irrespective of the technological layers, **payments are still a set of debits and credits** of the accounts of customers in the books of a trusted institution



General developments in the field of retail

- **Complexity on the supply side:**
 - *Increasing number of (non-bank) providers*
 - Both front-end and back-end
 - Both cooperating and competing with banks
 - *Innovations, mainly in the customer interface*
 - Diversity of access channels and devices
 - *Closed-loop schemes vs. traditional open networks*
 - *Completely new alternatives* (eg decentralised virtual currency schemes)
 - *Growing concerns* on security and operational risk



General developments in the field of retail

- **The demand side is becoming very "demanding":**
 - Increasing expectation to be *able pay anywhere, anytime...*
 - ... almost *instantly...*
 - ... and *securely...*
 - ... but *cheaply* or even for free!
 - Increasing *commoditisation of payments*
 - *Financial inclusion* a priority in many countries



Innovations in Retail Payments

- CPMI Report on **Innovations in Retail Payments** (May 2012):
 - Stocktaking exercise and analysis, based on a comprehensive survey in which some 122 innovations were reported by 30 central banks (including some non-CPMI central banks)
- Trends:
 - *Dynamic market*, but few innovations have significant impact (so far), regional differences are likely to persist
 - Most innovations are domestic (*role of standardisation?*)
 - *Speed* is gaining importance in retail payments processing
 - *Financial inclusion* is one of the driving forces for
 - *Role of non-banks* is significantly increasing
 - *Security issues* become ever more critical



Innovations in retail payments

Classification of innovations:

- **Process oriented:** improvements or changes in the way retail payments are processed (back-office perspective)
 - Payment initiation (50%) (eg new access channels or devices)
 - Overall payment process (33%) (eg EBPP solutions)
 - Payment reception (around 10%) (eg reconciliation solutions)
 - Totally new scheme (25%) (eg e-money or virtual currency schemes)
- **Product-oriented:** improvements or changes in the way the product is perceived by the customer
 - Innovations in the use of card payments (25%)
 - Internet payments (20%)
 - *Mobile payments* (25%)
 - EBPP (10%)
 - Improvements in infrastructure/security (25%)

Innovations

What are the **drivers** for or **barriers** to innovation?

- *Availability of new technology* (eg *mobile phones*)
- *User behavior* (eg demand for real-time processing)
- *Cooperation* among stakeholders to lower deployment costs
- *Outsourcing*
- *Standardization* (if standards are open and up-to-date)
- *Pricing* (if competitive and sustainable)
- *Complexity* of market (competition, network effects, regulatory influence, two-sided market...)
- *Security issues* (if innovations are (in real terms or just perceived as) or are not sufficiently secure)
- *Regulation* (either a driver or a barrier; either proactive – eg financial inclusion motivated - or reactive)

Role of non-bank services providers in retail payments

⇒ CPMI Report on **Non-banks in retail payments** (September 2014):

- Based on a fact finding exercise in CPMI jurisdictions
- **Functional definition:** "*any entity involved in the provision of retail payment services whose main business is not related to taking deposits from the public and using these deposits to make loans*"
- **Classification:**
 - *Front-end providers* (interface between customer and bank / traditional clearing and settlement process)
 - *Back-end providers* (eg IT service providers, entities that provide back-office operations in cooperation with banks)
 - *Operators of retail infrastructures* (eg card networks, ACH operators)
 - *End-to-end providers* (combination of previous categories)

Role of non-bank service providers in retail payments

- Implications of non-banks for **efficiency:** *potential for increased competition and lowering of costs through cooperation, economies of scale and scope ...*
... but might also lead to *concentration*
- **Risks** *do not seem to differ materially* between banks and non-banks in relation to retail payment activities, but:
 - potential increased *complexity* in the payment chain
 - concentration and outsourcing can impact *operational risk*
 - fraud and other risks related to *consumer protection issues*
- **Potential differences in regulation** may lead to different risk mitigation measures

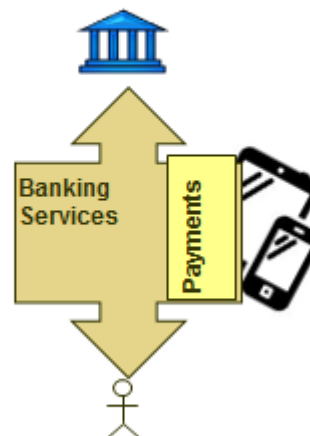
Regulatory framework

- Service providers are very diverse, this **diversity** is reflected in the *range of authorities* that potentially or actually deal with them:
 - central banks, prudential supervisors, consumer protection authorities, competition authorities, telecom regulators and/or specialised bodies (e.g. for AML) within ministries of economy or finance
- **Regulatory approaches vary** *within jurisdictions* (different non-banks are regulated differently) and *across jurisdictions* (where the same non-bank might be subject to different regulations)
 - *banking license, special license, registration, central bank oversight, indirectly through outsourcing agreements or no specific regulation or oversight at all*

Mobile payments

Potential definitions:

- **Mobile banking:** *provision of banking- and financial services with the help of mobile telecommunication devices.*
- **Mobile payments:** *payment transactions with the help of mobile telecommunication devices.*
- But:
 - what does it mean "with the help of"?
 - is it necessary that a bank provides the banking/payment services?



Mobile payments

- ... **with the help of a mobile device?**
 - Any use of a mobile phone?
 - Is the mobile a *distinct instrument* (like a credit transfer or a card), is it just the *communication device* (for different instruments), or is it the *communication channel* that matters (mobile network, internet, ...)?
- ... **who provides the account/payment services?**
 - Does it entail some sort of a *payment account* with an mobile operator or with a bank?
 - Does it entail *e-money* stored on a device ?
 - What if I have a bitcoin mobile wallet in my phone and make a transfer of some bitcoins to other user from the phone (obviously through the *internet*). Would this be a mobile payment?

Mobile payments

- The CPMI has taken a **functional definition of mobile payments**:
"payments initiated and transmitted by access devices that are connected to the mobile communication network using voice technology, text messaging (via either SMS or USSD technology) or NFC"
- Three main **categories**:
 - *Mobile payments using traditional bank accounts* - the mobile network is used to communicate with the bank
 - *Mobile payments using the mobile phone bill collection process* - payers pay the invoiced mobile payment amount as part of their mobile phone bill
 - *Mobile payments using prepaid accounts* (sometimes called "mobile money")

Mobile payments

- **Mobile payments:**

rather than on how the communication is established (mobile device or mobile communication framework), the focus should be on (i) who do we communicate with (bank, non-bank such as a telecom provider) and (ii) where are the funds (bank account, account in a non-bank, prepaid account in a server or in the device...)

- **Risks** may not materially differ between banks and non-banks in relation to retail payment activities, but **differences in regulation** could translate in differences in risk mitigation measures (cf *Non-banks in retail payments* report)
- **New developments could disrupt** the landscape and foster disintermediation (affecting both incumbents and new non-bank providers)... e.g. the case of *virtual currency schemes*

Payments Aspects of Financial Inclusion

- In November 2013, CPMI and World Bank launched a **Joint task force on payments aspects of financial inclusion** (PAFI)
- Members are 14 CPMI central banks and a number of international institutions (AfDB, CEMLA, EBRD, IADB and IMF)
- **Issues** covered entail:
 - *legal and regulatory aspects*
 - The balance between *payment systems policy objectives* like stability and safety, and accessibility and inclusiveness
 - *supply and demand perspectives* (e.g. access to and usage of financial services, design and governance of the payments infrastructure, customer awareness and education)
 - the role of public sector (eg government payments)
- A **publication** is envisaged for 2015

Outlook for the retail payments area

- Reaction of the incumbents (such as banks and traditional ACHs) on innovations ("**second round**" effects), eg new services / products
 - Eg initiatives to improve processing speed ("instant/faster payments")
- Impact of disruptive innovations such as **virtual currencies** (especially decentralised virtual currency schemes such as Bitcoin)
 - Potential for money laundering and criminal activities, security concerns (theft, cyber attacks) and inherent instability and value fluctuations
 - But potential developments based on the embedded payment mechanism
- Promotion of **cyber resilience** (cf 2014 CPMI report on cyber security):
 - Cyber-attacks pose challenges for all payment service providers
 - Regulatory action and other mitigation efforts conducted solely at the national level may not suffice
- Global **standardisation** (by standard-setters and industry bodies)
- Initiatives to enhance (**cross-border**) **interoperability**

Issues for central banks and other relevant authorities

Varying from country to country, but common issues and challenges persist:

- Importance to **monitor and assess new developments** (collection of relevant data, building expertise)
- **Involvement of all relevant stakeholders** (infrastructures, service providers, users), involving incumbents and new market entrants
- Formulating and **communicating in a transparent way** the objectives, views and analysis of the authorities
- Ensure a **level playing field** for all providers (similar conditions to apply to providers with a similar risk profile)
- **Oversight and supervisory frameworks** may have to be reviewed
- Need to foster (global) **standardisation and interoperability**
- **Cooperation between all relevant authorities** (at a national and international level) will have to be enhanced