PAYMENT SYSTEM OVERSIGHT

Presentation to the SEACEN Advanced Course on Payment and Settlement System
Bangkok, Nov 27\textsuperscript{th} 2006

Dyah N.K. Makhijani
1. WHAT, WHY and WHO?
   - Definitions
   - Why Payment System (PS) Oversight?
   - What to oversee?
   - Who(m) to oversee?

2. HOW
   CPSS – Central Bank Oversight of Payment and Settlement Systems-May 2005:
   - General Principles for oversight

3. POINTS TO PONDER
1. WHAT, WHY and WHO

Definitions

• Oversight of payment and settlement systems is a central bank function whereby the objectives of safety and efficiency are promoted by monitoring existing and planned systems, assessing them against these objectives and, where necessary, inducing change.

• A central bank task, principally intended to promote the smooth functioning of payment systems and to protect the financial system from possible “domino effects” which may occur when one or more participants in the payment system incur credit or liquidity problems. Payment systems oversight aims at a given system (e.g., a funds transfer system) rather than individual participants.

CPSS – Central bank oversight of payment and settlement system – May 2005

Take from CPSS- A Glossary of terms used in payments and settlement systems (March-2003)
Why PS Oversight?

- Money as a means of exchange
- Maintenance of the stability of the financial system
- Implementation of monetary policy
Definition of Payment System:
A set of instruments, banking procedures and typically, interbank funds transfer systems that ensure the circulation of money.

Definition of Settlement Systems:
A system used to facilitate the settlement of transfer of funds or financial instruments.

Glossary of term used in payment and settlement systems, BIS—March 2003.
1. Payment System:
   - SIPS
   - LVTS
   - Retail Payment Systems that meet certain criteria
   - Non-SIPS retail systems
2. Securities settlement systems and central counterparty
3. Payment instruments
4. Correspondent banks and custodians
5. Third party service providers
Payment Instruments

1. Indonesia (Art.15 of Bank Indonesia Act 2004) mentions the authority of Bank Indonesia to regulate payment instruments.


3. Malaysia (Part III of PS Act 2003) explicitly mentions about the designation and operation of payment instruments, for example that “BNM may prohibit any person from issuing or using any payment instrument.”


Central bank and Payment system Acts of the respective countries.
Sample of Code of Practice for Multi-purpose Stored-Value Card (MPSVC) Operation

- Code of Practice for Multi-purpose Stored-Value Card Operation (Code) is issued by Octopus Cards Limited (OCL) and endorsed by Hong Kong Monetary Authority (HKMA)

1. Objective
   - Promote safety and efficiency
   - Setting out guiding principles
   - Foster general public’s confidence

2. Safety
   - Legal basis of the system
   - Rules & Procedures: to have a clear understanding of each of the financial and no-financial risk the participant might incur

Source: Issued by OCL and endorsed by HKMA
“What” to Oversee – Scope (cont’d)

- **Security, Operational Reliability & Business Continuity**
  
  => to ensure a high degree of security and operational reliability of the system

- **General**
  
  => a. should have sound and prudent management, administrative, accounting and control procedures
  
  b. specify the responsibility of merchants for maintaining security and operational reliability

Source: Issued by OCL and endorsed by HKMA
Security

=> a. should adopt appropriate & commercially reasonable technical security measures and procedural safeguards to detect & protect the system against fraud and avoid counterfeit

b. should be carried out by an independent party on the performance and tamper resistance of the cards, payment and value loading devices, centralized monitoring system and fraud detection mechanism
“What” to Oversee – Scope (cont’d)

- Comprehensive rigorous and well-documented operational and technical procedures to ensure operational reliability

- Business Continuity
  => should have in place an effective, well-documented and regularly-tested business contingency plan to ensure that the system can continue to function in the event of unforeseen interruption

- Governance Arrangements
  => a. system operator should be appropriate segregation of duties so as to reduce the likelihood of mismanagement and fraud
  b. system operator should have clearly defined and properly documented organizational arrangements
  c. must not undertake business activities that are not closely related to multi-purpose stored value card operation.

Source: Issued by OCL and endorsed by HKMA
“What” to Oversee – Scope (cont’d)

- **Data Integrity and Retrieval**
  => a. should be responsible for the security, integrity and accuracy
  b. should be establish clear audit trail of all transactions
  c. should ensure the appropriate degree of confidentiality of all cardholder and transaction information

- **Financial Requirement**
  => a. Card issuer should manage the float on prepayments from cardholders prudently
  b. System operators should ensure that they have sufficient cash flow to handle daily operations

- Card issuer of MPSVC are subject to the licensing requirements under the Banking Ordinance and hence the **Prudential Supervision** by the HKMA

Source: Issued by OCL and endorsed by HKMA
3. Efficiency
   - Operational Efficiency
     => should seek to economise on total processing cost
   - Participation Criteria
     => should have objective and publicly disclosed criteria for participation, which permit fair and reasonable access

4. Oversight Requirement
   - Data Collection
     => System operators should submit to HKMA (regular and in ad hoc basis), statistic such as the number of cards issued and in circulation, the total volume and value of transactions, the number of terminal facilities, system performance and relevant financial information.

Source: Issued by OCL and endorsed by HKMA
- **Compliance**
  1. System operators are expected to perform a **self assessment of compliance** and submit their report to the HKMA annually.
  2. System operators may also be required to conduct **third party assessment on specific risk areas** suggested by the HKMA where appropriate.
  3. The internal auditors of the card issuers, merchant acquirers and system operators should check their **compliance with the Code** in their on-going audits.

Source: Issued by OCL and endorsed by HKMA
## PAYMENT SYSTEM OVERSIGHT

### WHO(M) TO OVERSEE(1)

<table>
<thead>
<tr>
<th>System</th>
<th>Transaction Type</th>
<th>Operator</th>
<th>Member</th>
</tr>
</thead>
</table>
| Bank Indonesia Real Time Gross Settlement System (BI-RTGS) | • Large Value interbank electronic credit transfer  
• Seamless linkage with BI Scripless Securities Settlement System (BI-SSSS) | Bank Indonesia                  | • All Banks including Sharia Units of conventional banks (143 members)  
• One ATM switch (private clearing house for interbank ATM transaction)  
• Potential new member central custodian for private securities |
| Bank Indonesia Clearing System              | • Debit transfer (cheques, drafts, and other debit instruments)  
• Retail credit transfer                    | Bank Indonesia                  | All Banks including Sharia Units of conventional Banks (143 members with 4500 offices)  
Multilateral netting scheme                  |
| Central Depository and Book Entry Settlement System (C-BEST) | Funds leg of securities settlement                                                | PT. Kustodian Sentral Efek Indonesia (KSEI)  
– Private Securities Depository Company     | All members of Jakarta Stock Exchange, funds settlement through 4 settlement banks  
Gross settlement for securities, net settlement for funds |
## PAYMENT SYSTEM OVERSIGHT

### WHO(M) TO OVERSEE (2)

<table>
<thead>
<tr>
<th>System</th>
<th>Transaction Type</th>
<th>Operator</th>
<th>Member</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shared ATM Network? Domestic</td>
<td>Electronic fund Transfer (retail)</td>
<td>PT. Artajasa Pembayaran Elektronis (ATM Bersama)</td>
<td>66 member banks, bilateral net settlement of interbank bilateral positions done through BIRTGS system</td>
</tr>
<tr>
<td></td>
<td>LINK</td>
<td>4 state banks, bilateral linkages, gross positions settled through BIRTGS system</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PT. Rintis Sejahtera (PRIMA)</td>
<td>18 Banks, gross positions settled through members account at bank BCA (private bank)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PT. Daya Network Lestari (ALTO)</td>
<td>15 banks, gross positions settled through members account at 1 member bank</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cakra</td>
<td>3 banks, gross positions settled through members account at 1 member bank</td>
<td></td>
</tr>
</tbody>
</table>
## Payment System Oversight

### WHO(M) to Oversee (3)

<table>
<thead>
<tr>
<th>System</th>
<th>Transaction Type</th>
<th>Operator</th>
<th>Member</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrabank ATM Network</td>
<td>Intrabank electronic funds transfer using ATM as front end delivery channel</td>
<td>68 banks</td>
<td>-</td>
</tr>
<tr>
<td>Shared ATM Network – International</td>
<td></td>
<td>Mastercard International (Cirrus)</td>
<td>9 banks as Cirrus members, settlement through member account at 1 member bank</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Visa International (Plus)</td>
<td>10 banks as Plus members, settlement through member account at 1 member bank</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Others (Star, Etc.)</td>
<td>Data not available as yet</td>
</tr>
<tr>
<td>Debit Card - Domestic</td>
<td>Electronic fund transfer at <em>Point of Sales</em></td>
<td>BCA (Debit BCA)</td>
<td>11 banks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kartuku</td>
<td>2 banks as Kartuku members, settlement through member account at 1 member bank</td>
</tr>
<tr>
<td>Debit Card - International</td>
<td></td>
<td>Visa International (Electron)</td>
<td>10 banks as Visa Electron members, settlement through member account at 1 member Bank</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mastercard International (Maestro)</td>
<td>9 banks as Maestro members, settlement through member account at 1 member bank</td>
</tr>
<tr>
<td>System</td>
<td>Transaction Type</td>
<td>Operator</td>
<td>Member</td>
</tr>
<tr>
<td>--------------------------</td>
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<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Credit Card</td>
<td>Credit card</td>
<td>Visa International</td>
<td>16 Visa member banks, settlement through member account at 1 member bank</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MasterCard International</td>
<td>15 MCI member banks, settlement through member account at 1 member bank</td>
</tr>
<tr>
<td></td>
<td></td>
<td>JCB</td>
<td>2 JCB member banks, settlement through member account at 1 member bank</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diners Club</td>
<td>1 member (Diners)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>American Express Bank</td>
<td>1 bank (Amex)</td>
</tr>
<tr>
<td>USD Direct Settlemen</td>
<td>Interbank domestic ‘retail’ funds transfer in USD (not PVP)</td>
<td>BCA (Bank Central Asia)</td>
<td>5 banks, settlement through member accounts in BCA</td>
</tr>
<tr>
<td>Domestic Remittances</td>
<td>Domestic remittances (retail)</td>
<td>PT. Pos Indonesia – State postal company (postal draft)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Private postal companies</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Special Remittance companies</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Money Changers</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Shops, travel bureaus, and some other non remittance specific businesses</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Others (undetected)</td>
<td></td>
</tr>
<tr>
<td>System</td>
<td>Transaction Type</td>
<td>Operator</td>
<td>Member</td>
</tr>
<tr>
<td>--------------------------------</td>
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<td>-----------------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Cross Border Remittances</td>
<td>Cross border remittances</td>
<td>Banks via offshore offices or correspondent banks</td>
<td></td>
</tr>
<tr>
<td>Remittance – International network</td>
<td>Cross border remittances</td>
<td>Western Union</td>
<td>6 banks and PT Pos Indonesia</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MoneyGram</td>
<td>Several banks and many non remittance - specific businesses (data not completed as yet)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Others (undetected)</td>
<td></td>
</tr>
</tbody>
</table>
## WHO(M) TO OVERSEE (6)

<table>
<thead>
<tr>
<th>System</th>
<th>Transaction Type</th>
<th>Operator</th>
<th>Member</th>
</tr>
</thead>
</table>
| Multi Purpose Stored Value Cards            | Micro/Retail/Small Payments replacing cash                                       | Under development:  
1. Banks  
2. Mobile Phone Operators  
3. Other Non-Bank-Non Financial Institutions | -      |
| Bill Payments (Host to Host linkage between banks and billers) | Bill Payments for billers such as telecom/mobile phone operators, public utilities, Cable TV, ISP, insurance, etc. | Banks through their credit card products, e.g. Citibank One Bill       | -      |
Central Bank Oversight of Payment and Settlement Systems (BIS, May 2005)

A. General Principle For Oversight

B. Principles for International Cooperative Oversight
A. **Transparency**
Central banks should set out publicly their oversight policies, including the policy requirements or standards for systems and the criteria for determining which systems these apply to.

B. **International Standards**
Central banks should adopt where relevant, internationally recognized standards for payment and settlement systems.

C. **Effective Powers and Capacity**
Central banks should have the powers and capacity to carry out their oversight responsibilities effectively.
D. **Consistency**
Oversight standards should be applied consistently to comparable payment and settlement systems, including to systems operated by the central bank.

E. **Cooperation with Other Authorities**
Central banks, in promoting the safety and efficiency of payment and settlement systems, should cooperate with other relevant central banks and authorities.
A. Transparency ✔
B. International Standards ✔
C. Effective Powers and Capacity ?
D. Consistency ?
E. Cooperation with Other Authorities ?
C. Effective Powers and Capacity

- Is the power of the central bank strong and backed adequately by necessary law?
  - If not so, how does central bank find a way to exert oversight?
- Does the central bank have qualified personnel to oversee MPSVC?
  - If not so, how does central bank draw these expertise from other sources outside central bank?
D. Consistency

• How can central bank ensure its oversight consistency for MPSVC issued and operated by telco and the same instrument issued and operated by commercial banks?
E. Cooperation with Other Authorities

• Cooperation with telecommunication authority?
• What area?
• How to impose payment system regulation?
• How can central bank impose sanction?
B. Principles For International Cooperative Oversight

1. **NOTIFICATION**
   Each central bank that has identified the actual or proposed operation of a cross-border or multicurrency payment or settlement system should inform other central banks that may have an interest in the prudent design and managerial of the system.

2. **PRIMARY RESPONSIBILITY**
   Cross-border and multicurrency payment and settlement systems should be subject to oversight by a central bank which accepts primary responsibility for such oversight, and there should be a presumption that the central bank where the system is located will have this primary responsibility.
B. Principles For International Cooperative Oversight

3. ASSESSMENT OF THE SYSTEM AS A WHOLE

In its oversight of a system, the authority with primary responsibility should periodically assess the design and operation of the system as a whole. In doing so it should consult with other relevant authorities.
B. Principles For International Cooperative Oversight

4. SETTLEMENT ARRANGEMENT

The determination of the adequacy of a system’s settlement and failure-to-settle procedures in a currency should be the joint responsibility of the central bank of issue and the authority with primary responsibility for oversight of the system.
B. Principles For International Cooperative Oversight

5. UNSOUND SYSTEMS

In the absence of confidence in the soundness of the design or management of any cross-boarder or multicurrency payment or settlement system, a central bank should, if necessary, discourage use of the system or the provision of services to the system, for example by identifying these activities as unsafe and unsound practices.
B. Principles For International Cooperative Oversight

Case In Point:
Who Oversees VISA and Mastercard International?
THANK YOU

PAYMENT SYSTEM OVERSIGHT
Code of Practice for Multi-Purpose Stored Value Card Operation

• Objectives
  – The code is intended to promote safety and efficiency of multi-purpose stored value card operation
  – by setting out the guiding principles for multi-purpose stored value card issuers, system operators and merchant acquirer to follow in their daily operations
  – To foster general public’s confidence in the multi-purpose stored value card operation
PAYMENT SYSTEM OVERSIGHT

Code of Practice for Multi-Purpose Stored Value Card Operation

SAFETY:

- **Legal basis of the system**
  - **Rules & procedures** governing the contractual relationships between participants of the system should be valid and enforceable, including for cross-border transactions.

- **Rules & Procedures**
  - There should be rules & procedures that enable participants to have a clear understanding of each of the financial and non-financial risks they might incur through participation in the system.

- **Security, Operational Reliability & Business Continuity**
  - Reasonable step should be made by the system operators to ensure a high degree of security and operational reliability of the system.

- **General**
  - System operators should have sound and prudent management, administrative, accounting and control procedures managing the financial and non-financial risk to which it may be exposed.
  - Merchant agreements should specify the responsibility of merchants for maintaining security and operational reliability of the system.
Code of Practice for Multi-Purpose Stored Value Card Operation (ctd)

- **Security**
  - System operator should adopt appropriate & commercially reasonable technical security measures and procedural safeguards to detect & protect the system against fraud and avoid counterfeit.
  - Periodic security audit should be carried out by an independent party on the performance and tamper resistance of the cards, payment and value loading devices, centralized monitoring system and fraud detection mechanism.

- **Operational Reliability**
  - There should be comprehensive rigorous and well-documented operational and technical procedures to ensure operational reliability.

- **Business Continuity**
  - System operators should have in place an effective, well-documented and regularly-tested business contingency plan to ensure that the system can continue to function in the event of unforeseen interruption.
• Governance Arrangements
  – System operators should have clearly defined and properly documented organizational arrangements. There also should be appropriate segregation of duties so as to reduce the likelihood of mismanagement and fraud.
  – System operators must not undertake business activities that are not closely related to multi-purpose stored value card operation.

• Data Integrity and Retrieval
  – System operators should be responsible for the security, integrity and accuracy of all data and records pertaining to the issue and operation of the card scheme, and the related systems.
  – System operators should establish clear audit trail of all transactions as well as adequate provisions for recovery in the event of loss.
  – System operators, card issuer and merchant acquirers should ensure the appropriate degree of confidentiality of all cardholder and transaction information.
Code of Practice for Multi-Purpose Stored Value Card Operation (ctd)

- **Financial Requirement**
  - Card issuer *should manage the float on prepayments from cardholders prudently*. Such liabilities should be backed at all times by sufficient, liquid, and low risk assets.
  - System operators should ensure that they have *sufficient cash flow* to handle daily operations.

- **Prudential Supervision**
  - Card issuer of multi-purpose stored value cards are subject to the *licensing requirements* under the Banking Ordinance and hence the prudential supervision by the HKMA.

**EFFICIENCY**

- **Operational Efficiency**
  - System operators should seek to *economise* on total processing cost.

- **Participation Criteria**
  - The system should have objective and publicly *disclosed criteria* for participation, which permit fair and reasonable access.
OVERSIGHT REQUIREMENTS

- **Data Collection**
  - System operators should submit to HKMA (regular and in ad hoc basis), *statistic* such as the number of cards issued and in circulation, the total volume and value of transactions, the number of terminal facilities, system performance and relevant financial information.

- **Compliance**
  - System operators are expected to perform a *[self assessment of compliance](#)* and submit their report to the HKMA annually.
  - System operators may also be required to conduct *[third party assessment on specific risk areas](#)* suggested by the HKMA where appropriate.
  - The internal auditors of the card issuers, merchant acquirers and system operators should check their *[compliance with the Code](#)* in their on-going audits.