Help develop sound and efficient payment, remittance, and securities settlement systems, to:
1. Strengthen Financial Stability
2. Support Access to Finance

Vision and Strategy
Legal Framework
Large-Value Systems
Retail and Government Payments
Remittances
Securities Settlement
Oversight and Cooperation
In the retail payment area, the PSDG supports:

• Creation of comprehensive retail payment system strategies
• Implementation of an efficient clearing and settlement infrastructure for ALL retail payments
• Efforts to improve the efficiency of the market for international remittances, through the implementation of the WB-BIS General Principles for International Remittances Services
• Reforms of the legal and regulatory framework
• Inclusion of the public sector in the retail space to enhance the efficiency of government payments
• Creation of an effective payment system oversight function and an inclusive cooperative framework
Agenda

- Overview of various G2P payment mechanisms
- Retail Payment Systems Value Chain
  - Importance of Retail Payment Systems
  - Overview of various electronic retail payment instruments
  - Traditional payment instruments Vs Innovative payment instruments
  - The role of payment networks
  - Clearing and settlement mechanisms
  - The importance of data security and consumer protection
  - Legal and regulatory framework for retail payments
- Designing an effective payment system for G2P payments.
  - The challenges
  - Key considerations
G2P Payments – Traditional Approaches

**Cash Transfers and Social Benefits**
- One time or recurring
- May be conditional
- Recipients unbanked or financially underserved
- Cash/paper based payments costly, inefficient and susceptible to fraud

- Card based products
- EFT Credit Transfers

**Government Pensions and Payroll**
- Recurring
- Recipients may have existing bank accounts
- Cash/paper based payments costly, inefficient and susceptible to fraud

- Payroll and pension cards
- EFT Credit Transfers
- Central treasury account

**Emergency Relief Assistance**
- One time
- Recipients unbanked or lack of access to bank acct
- Cash/paper based payments costly, inefficient and susceptible to fraud

- Single use prepaid cards
- Mobile/wireless ATMs to supplement card usage
### Overview of Electronic Payment Instruments

<table>
<thead>
<tr>
<th>Payment Instruments</th>
<th>Payment Needs Satisfied</th>
<th>Required Industry Infrastructure</th>
<th>Required Institutional capabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Credit and debit cards</strong></td>
<td>Real-time payments, Face to face, online and remote purchase transactions; recurring bill payments</td>
<td>ATM and EFT POS networks. Credit bureaus. Rules and standards for interoperability, dispute resolution and consumer protection</td>
<td>Debit cards: Centralized account management. Access to ATM and POS networks. Credit cards: Real-time transaction authorization and monitoring systems Access to EFTPOS networks. Credit appraisal and credit risk management</td>
</tr>
<tr>
<td><strong>EFT Based products – credit and debit transfers, wire transfers</strong></td>
<td>Deferred payments, Person to person including cross border remittances, limited purchase transaction, bill payments</td>
<td>Interbank clearing and settlement network including rules and standards</td>
<td>Centralized account management. Electronic channels: Telephone, Internet, Mobile and others</td>
</tr>
<tr>
<td><strong>Prepaid/Stored value cards</strong></td>
<td>Real-time payments, Face to face, online and remote purchase transactions; recurring bill payments; receive salaries and government entitlements (G2P), limited P2P including cross border remittances</td>
<td>ATM and EFT POS networks. Rules and standards for interoperability, dispute resolution and consumer protection</td>
<td>Access to ATM and POS networks. Real-time transaction authorization and monitoring systems</td>
</tr>
<tr>
<td><strong>Mobile payments and e-commerce (virtual wallets)</strong></td>
<td>Real-time payments, Person to person including cross border remittances, utility bill payment, micro-payments and purchase transaction capability</td>
<td>Enabling legal framework. Merchant / Agent network Linkages with existing inter-bank and payment card networks.</td>
<td>Interface mobile payment infrastructure with banking accounts (savings or credit) or create a prepaid product. Ability to service far-flung merchant/agent network</td>
</tr>
</tbody>
</table>
Banks, mobile banks and ATM: retail banking

Banks, either private or public, can be used to deliver safety net benefits

- Distribute cash to beneficiaries against a list of individuals or families
- Cash checks and vouchers distributed to the beneficiaries
Banks, mobile banks and ATM: retail banking

- Maintain funds in the accounts in the name of beneficiaries in which cash can be deposited by welfare agencies or projects
  - Difference between individual and group accounts (cost)
Mobile or traveling banks

- Bank employees travel with the cash to areas where there are no branches, thus achieving a greater coverage.
- Lower transportation costs to the beneficiaries who would otherwise have to travel to the nearest branch.
Distribution at Mobile Bank of the stipend in Bangladesh

- Officially, if the bank is more than 5 KM away from the school, bank sets up a mobile camp to deliver stipend at an announced date.

- Beneficiaries line up in front of the bank, UP and SMC officials (as in top left) and receives benefit quarterly.

- Informally, beneficiaries prefer mobile bank to branch office.
Automated Teller Machines (ATMs)

- Offer all the advantages of direct payment + opportunities for discretion and rent seeking are minimized.
- Accountability, automaticity, and the potential for low operation costs, as well as the added feature of increased coverage and mobility.

- Suitability determined by a combination of the state of infrastructure (especially electricity) in the targeted area, security considerations and costs (10,000 to 40,000 USD + 6,000 a year).
In developing countries, expanding the coverage for retail payment instruments is key. Business correspondents and agents can play an important role in promoting access to non-cash payment services by

- Improving the means through which non-cash retail payment instruments can be channeled to the traditionally un-served populations
- Promoting technological and institutional innovation to reduce the cost of access and improve the availability of payment instruments
- Ensuring a reliable customer interface that promotes faster adoption of non-cash payment instruments
The Caixa has created an impressive network of **banking correspondents** present in all of the country's 5,500 municipalities.

By 2007, Caixa expects to operate 20,000 to 23,000 banking correspondents made of:

- Lottery agencies, petrol stations, supermarkets, etc., and reach customers in virtually every district of the country
- Include: 16,281 self service cash tellers, over 32,000 points were benefits may be withdrawn
- Maximum distance between a customer and a correspondent will be two to three kilometers
Summing up for the banks

- Good things about banks
  - Safety and Reliability
  - Broader financial inclusion

- A few challenges
  - Reach
  - Price?
Post offices

- In several countries Post Offices offer financial services similar to those of small banks and are used as payment sites for goods and services apart from postage.
- Post offices are a good alternative to banks.
  - They offer a wide geographical coverage with an already established network of delivery routes and systems.
- May be not as efficient.
Retail stores

- This is the case of the food stamp program in US and the Public Distribution System (PDS) in India
- When cards are used, stores can authorize or record the transactions using Points of Sales Terminals (POS)
They cost between US$ 300 to $700 each, depending of the model, characteristics and so on.
Other payment sites

- Public agencies can also be used as a place where benefits are distributed.
  - Must be experienced in making cash payments and handling the accounting associated with payments
- Other pay points
  - Armored trucks
  - Lottery shops
  - Schools and NGOs
  - Ad hoc – using POS Cell phones, etc
Instruments – Cash

- The direct distribution of cash (common in lower income countries)
  - E.g. cash for work projects or emergency intervention.
- The only thing needed is a list of beneficiaries or a muster roll.
  - People line up, present some form of identification, a passbook or a checkbook to record the transactions, then they sign some papers and get the cash.
- Payments can take place in a variety of places including banks, public offices, or project worksites.
Checks and Vouchers

- Checks and vouchers can be exchanged for cash or they can be exchanged for goods at designated business establishments.
- They require a good system of banks and/or post offices in which to redeem the cash or local stores in which to redeem the food.
- The lack of an efficient redemption chain for vouchers can undermine the success of the distribution system.
Checks and Vouchers

- Almost as good as cash.
  - Banknotes are special forms of checks
- Same problem too: Security
- Other issues:
  - More expensive – have to print them
  - Possible fraud
  - Stigma
  - Charge for encashment
  - Parallel market
    - US food stamp – market price changed at time of the month
Direct (electronic) transfer of Cash

- Transfer the cash directly into the bank account of the individual beneficiaries
- Beneficiaries can keep the money or take it out.
- Good:
  - They eliminate intermediaries, fast, secure
- Issues
  - Cost may be high – Have to negotiate the fees. May use not individual, but group accounts.
  - Bancarization levels.
Debit Cards

- Magnetic strip which contains information about the beneficiary’s account.
- They can be used to withdraw cash from ATMs or to process a purchase from a POS connected to the phone lines.
- Each time the card is used, the amount is deducted from the card holder’s bank account.
- System may not provide adequate geographic coverage.
**Prepaid solutions**

- “Pay Before”
- Usually accessed through Card or Mobile Phone.
- Value resides at host
- No prior banking relationship
- Usage at ATM, POS and internet
- Re-loadable
- Open Loop Vs Proprietary
- Variants:
  - Chip variant: To address infrastructure constraints
    - Value stored on Card (Chip Card), Authentication using PIN/Biometric,
    - Re-Load and Cash-out at “agents”
  - Virtual: Accessed through mobile phone
Prepaid cards - Process

1. Production
   - Re-ordering
2. Distribution
   - Inventory check, MIS
3. Issuance/Load
   - Account set-up & settlement, MIS
4. Customer Service
   - Customer
5. Usage
   - Authorization & Settlement
   - Prepaid host
**Smart Cards**

- Contain an electronic chip which can hold and sometimes also process a large amount of information.
- Can be used in terminals, ATM, POS and can be uses for record keeping.
- Since the information needed is embedded in the card, a bank account is not required.
- No need for the POS to connect to the bank to complete the transaction.
- Transaction can be recorded on the bank and the card at a later stage.
- Transaction costs are lower than those of the prepaid debit cards - Cost of the individual cards is high (Usd$1-5)
Cell phones

- Phone can be used to access a prepaid account or have an embedded chip for storing account information.
- Regulatory aspects need to be considered.
- Cell phones are used to deliver payments to the beneficiaries of the mobilization project in Congo
  - The beneficiary goes to one of the cash points.
Cash Points

- Small booths with a person sitting inside with a cellphone and a cash box, known here as "human teller machines."
  - The beneficiaries provide the government ID to the person at the cash point.
  - The person in the booth entered his ID number into the cell phone and sent a text message to the central financial database operated by Celtel.
  - Ten seconds later the response came back with the information about his entitlement that promptly handed over to him.
Retail payment systems
Widespread benefits of increased adoption of Electronic payments

✓ Government agencies want greater efficiencies, cost savings and financial inclusion
  ▪ Average processing costs for cheques* or vouchers can be high compared to an electronic payment transaction. Costs vary between electronic payment methods and are lowest for bulk ACH transactions
  ▪ Cheque, voucher and cash based payments tend to have a much higher incidence of fraud and “leakage” compared to e-payments that facilitate greater control over disbursements
  ▪ Greater service to citizens by providing access to finance to the previously un-banked and under-banked
  ▪ Achieve higher compliance standards in government procurement and tax contributions

✓ Central Banks want greater safety, efficiency and consumer protection in the payment system

✓ Citizens want better governance, convenience and access to mainstream financial products
  ▪ Safety, convenience, and control over funds compared to paper based payment instruments
  ▪ Promotes greater access amongst previously unbanked or financially underserved populations
  ▪ Prestige associated with using and owning certain payment instruments used by the banked populations – the social aspect
  ▪ Certain card based products (e.g. prepaid) seen as an effective tool to build credit history for the unbanked

*Globally processing costs for cheques can vary between $0.50 to $5.00
• Non-Cash* Retail Payment Transactions Per Capita

(Simple average for each region, 2006)

On average, an adult in Africa makes a non-cash transaction only about 2 times per year compared to an adult in EU countries who makes 175 transactions per year.


*Non-cash transactions include: checks, payment cards (debit and credit), EFT (debit and credit transfers)

Regions

- East Asia and Pacific
- Europe and Central Asia
- Latin America and Caribbean
- Middle East and North Africa
- South Asia
- Sub-Saharan Africa
- European Union 15
- EU Newer Members
- Other Developed Countries

Number of transactions 2006

Growth Rate 2006 vs. 2004

0% 20% 40% 60% 80% 100% 120% 140% 160% 180% 200%

0 50 100 150 200

9.6 22.4 11.6 4.9 4.7 2.1 175.1 55.6 215.1
**Volumes and cost savings for remittances & payment systems**

- **2006 Emerging Market GDP = $11,527 BN**


- **Cost per $100 sent**
  - **Remittances:**
    - Least efficient system: $75
    - Total potential reduction in costs: $90
  - **Domestic Payments:**
    - Most efficient system: $5

**Notes:** "Total potential reduction in costs" is indicative of the broad range of potential cost reduction. Actual cost savings realized is contingent ultimately on the efficiency of the system. For remittances, costs are of sending remittances to remitter’s home country. For domestic payments, costs are sending payments within a country.
Persons, businesses, governments use retail payment instruments to satisfy payment needs.

Retail Payments Instruments Supplied by Financial and Non Financial Institutions

Transaction processing and authorization

Transaction netting (Clearinghouse)

Settlement between counterparties and payment confirmation

ACCESS

MESSAGING

CLEARING

SETTLEMENT
Role of Payment Networks

- Payment networks help in achieving the critical success factors for adoption of a payment mechanism
  - Meet the needs of both payer and payee effectively and efficiently
  - Wide usage avenues for payer
  - Wide users for payment mechanism offered by payee

- De-linking of payment service from payment infrastructure
  - Fosters competition in provision of payment service
  - Lowers cost, due to efficiencies arising from scale and competition
  - Easier to integrate new payment mechanisms

- Challenges impacting development of payment networks
  - Need for consensus amongst participants, resistance from incumbents
  - Finding the right business model

- Role of Government
  - Address market failures
  - Ensure equitable access to payment networks
# The Process for Clearing and Settlement in Retail Payments

<table>
<thead>
<tr>
<th>Process</th>
<th>Description</th>
</tr>
</thead>
</table>
| **Transaction Authorization Process** | • Ensure creation, validation and transmission of payment instruction  
• Authentication in real time (ACH credit transfers or payment cards) or deferred (cheques or direct debits) |
| **Clearing Process**          | • The exchange of payment instruments (cheques) or information between payer’s and payee’s FIs  
• Calculations of claims for settlement or netting of transactions |
| **Settlement Process**        | • Settling the claims through payment from payer’s institution to payee’s institution  
• Logging and communication of settlement to concerned parties (Payment confirmation) |
Clearing and Settlement Mechanisms in Retail Payments

- Clearing and settlement process for retail payments using the standard four corner model – relevant for cheque clearing systems (both electronic and paper), ACH networks, ATM/payment card networks.
- The flow of funds and information is different for each payment instrument, solid lines represent flow of information and dashed line represents flow of funds.
The Process for Mobile Payments Using Agent Based Network

Bank (holds funds)

1-1 relationship between e-money and real money

Mobile Network Operator (MNO) or Payment Service Provider (PSP) – Issuer of e-money and manages the agent network

Agent

- Buy e-money credit (cash-in)

Person

P2P transfer using the mobile phone interface provided by MNO

Agent

- Obtain funds (cash-out)

Person
Growth in Retail Payments has Resulted in Tradeoffs between Innovation and Risks to Consumers

Risks to Consumers
- Emergence of new payment instruments – new risks
- Hidden fees & charges has meant higher payments by consumers
- Weaknesses in consumer protection and financial literacy

Technological and Product Innovation
- Better competition and more choice for consumers
- Improved efficiencies in payments
- Extension to new demographic segments
Consumer Exposure to Risks

Consumer Exposure to Risks

Security Risks: Inadequate data protections can expose consumers to security breaches and theft of personal data.

Lack of Transparency: Lack of transparency in information can expose consumers to hidden fees and charges, deceptive marketing, and abusive lending practices.
Impact of Lack of Consumer Protection and Financial Literacy

**Barriers to consumer adoption product and services and deepening in market for retail payments**

- Consumers making misguided choices for products and services due to lack of knowledge
- Frequent changes to terms and conditions as a result of market conditions
- Competition in financial services is necessary but not a sufficient condition in tackling consumer protection alone

Consumers making misguided choices for products and services due to lack of knowledge.
### Issues to Consider for an Enabling Legal Framework (I)

<table>
<thead>
<tr>
<th>Objective</th>
<th>Critical factors</th>
<th>Enabling actions</th>
<th>Issues to consider for an enabling legal framework</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promote financial inclusion by increasing the usage of non-cash payment instruments</td>
<td>Choice</td>
<td>Broaden choice of providers and payment instruments (PI)</td>
<td>Conditions for the provision of payment services – level playing field between providers</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Fair conditions of access to payment systems</td>
</tr>
<tr>
<td></td>
<td>Convenience</td>
<td>Maximize points of access</td>
<td>Conditions for the use of agents and outsourcing of activities that ensure safety and broad reach</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Enhance consumer-friendliness of PI</td>
<td>Conditions for the provision of innovative payment services</td>
</tr>
</tbody>
</table>
# Issues to Consider for an Enabling Legal Framework (II)

<table>
<thead>
<tr>
<th>Objective</th>
<th>Critical factors</th>
<th>Enabling actions</th>
<th>Issues to consider for an enabling legal framework</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promote financial inclusion by increasing the usage of non-cash payment instruments</td>
<td>Transparency</td>
<td>Ensure transparency of: costs, conditions for the use of PI, services provided</td>
<td>Rules ensuring full transparency of costs, level of service and of conditions for the use of PI</td>
</tr>
<tr>
<td></td>
<td>Consumer protection</td>
<td>Rules governing the relationship between PSPs and users</td>
<td>Rules addressing one-off transactions or regular transactions in the framework of a contract</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Out of court redress mechanisms</td>
<td>Facilitating out-of-court redress</td>
</tr>
</tbody>
</table>
## Issues to Consider for an Enabling Legal Framework (III)

<table>
<thead>
<tr>
<th>Objective</th>
<th>Critical factors</th>
<th>Enabling actions</th>
<th>Issues to consider for an enabling legal framework</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost-efficiency</td>
<td>Promote healthy competition between payment service providers</td>
<td>Conditions for level playing field, interoperability, fair access</td>
<td>Consider right balance between cooperation and competition</td>
</tr>
<tr>
<td>Safety and trust</td>
<td>Adequate oversight of payment systems and supervision of PSPs</td>
<td>Consider adequate legal framework for oversight of payment systems</td>
<td>Consider adequate legal framework for the supervision of PSPs</td>
</tr>
<tr>
<td></td>
<td>Promote inter-operability</td>
<td></td>
<td>Develop incentives for the development of safe payment instruments to minimize fraud</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Consider right balance in safeguards against AML/CFT and development of innovative PI</td>
</tr>
</tbody>
</table>

Promote financial inclusion by increasing the usage of non-cash payment instruments
Adoption of Electronic Payment Instruments for G2P Payments Benefit the Entire Value Chain

National public policy goals
- Safety and cost efficiency in payments
- Financial inclusion
- Consumer protection

Government agencies want
- Lower processing costs for G2P payments*
- Reduced incidence of fraud and leakages
- Improved access to finance for financially underserved populations

G2P recipients want
- Safety, cost efficiency, and control over funds
- Convenient access and reliability of payment method
- Prestige associated with using electronic payments

*Globally processing costs for cheques can vary between $0.50 to $5.00
### Key Factors Influencing the Adoption of Electronic Payment Instruments for G2P Payments

<table>
<thead>
<tr>
<th>Factor</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>The level of development of the retail payment infrastructure</td>
<td>including ATM, POS, EFT and mobile payment networks will determine the choice of payment instruments and service delivery models used for G2P payments</td>
</tr>
<tr>
<td>The level of integration of various business processes within the G2P payments value chain</td>
<td>eligibility determination, communication of payment instructions between agencies and payment providers, reconciliation and reporting – will determine the efficiency the overall delivery process</td>
</tr>
<tr>
<td>The proportion of population that has limited or no access to electronic payments</td>
<td>and their level of knowledge of such products will influence the speed of adoption</td>
</tr>
<tr>
<td>The quality of legal and regulatory framework for retail payments</td>
<td>will determine the type of payment arrangement used for G2P purposes</td>
</tr>
</tbody>
</table>
Challenges with adoption of Electronic Payments for G2P payments

Choice of payment instrument must balance tradeoffs between safety and efficiency, inclusion and consumer protection.

- Difficult business case for FIs to extend traditional bank accounts to unbanked.
- Large unbanked population but most e-payment options available are linked to bank accounts.
- Quality of legal and regulatory framework for electronic payments.
- Level of integration of various business processes within the G2P payments value chain.
- Infrastructure required to support conventional e-payment products is underdeveloped or unavailable.
Benefits Distribution

This illustrates the distribution of benefits through either a more traditional service delivery method or more innovative systems or a combination...
Conclusions: Key considerations in designing G2P payments system

• Pay attention to entire process:
  • Enrolment, verification, entitlement validation, payment, usage of payment instrument.

• Where possible leverage existing payment systems.

• Enable co-existence of multiple payment mechanisms.

• Consider end-beneficiaries interests.

Proposed approach for a current project