

# Developing the National Payments System

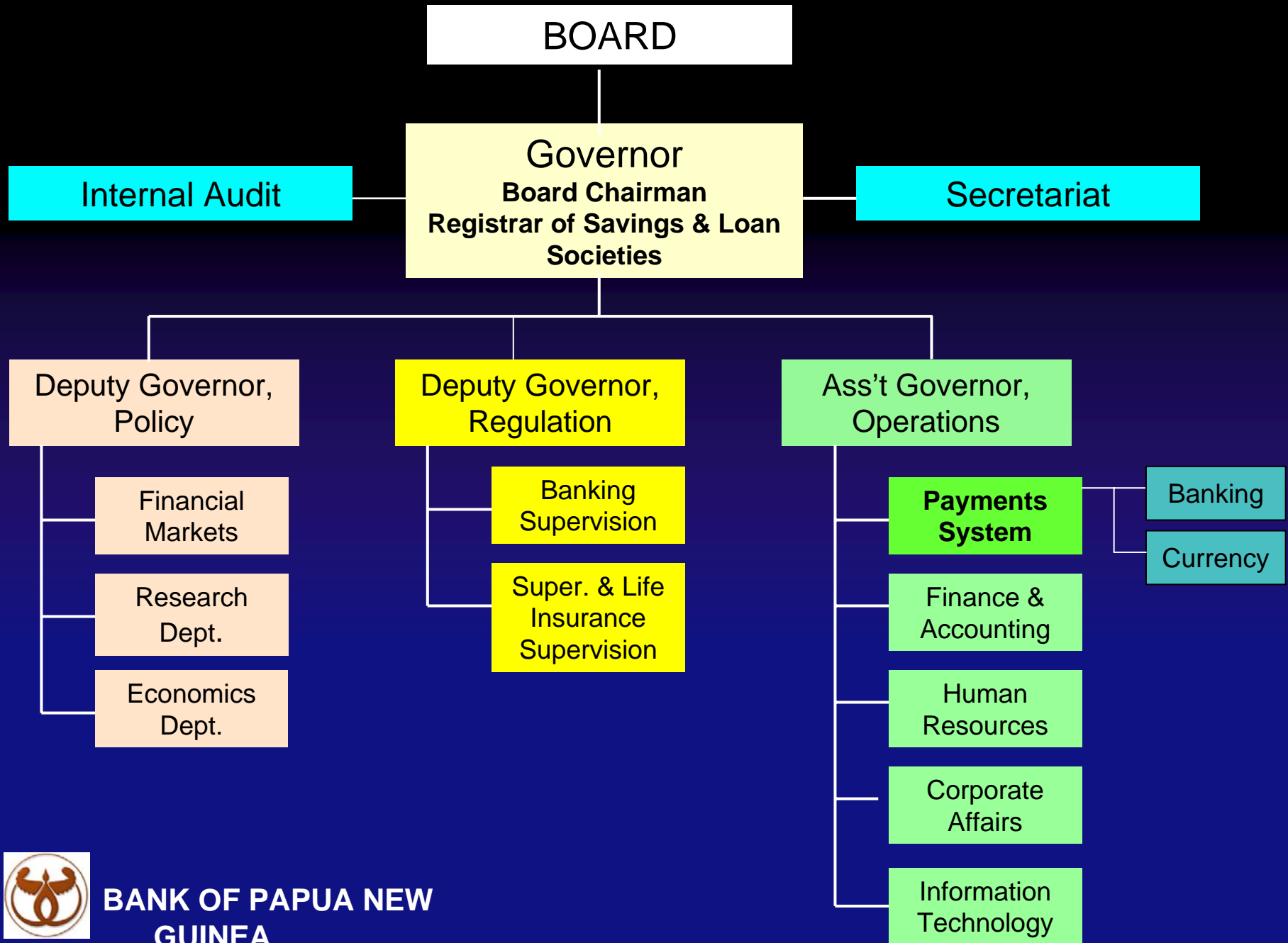
**BCPNG Business Breakfast**

**4 December 2009**



**BANK OF PAPUA NEW  
GUINEA**

# ORGANISATION STRUCTURE

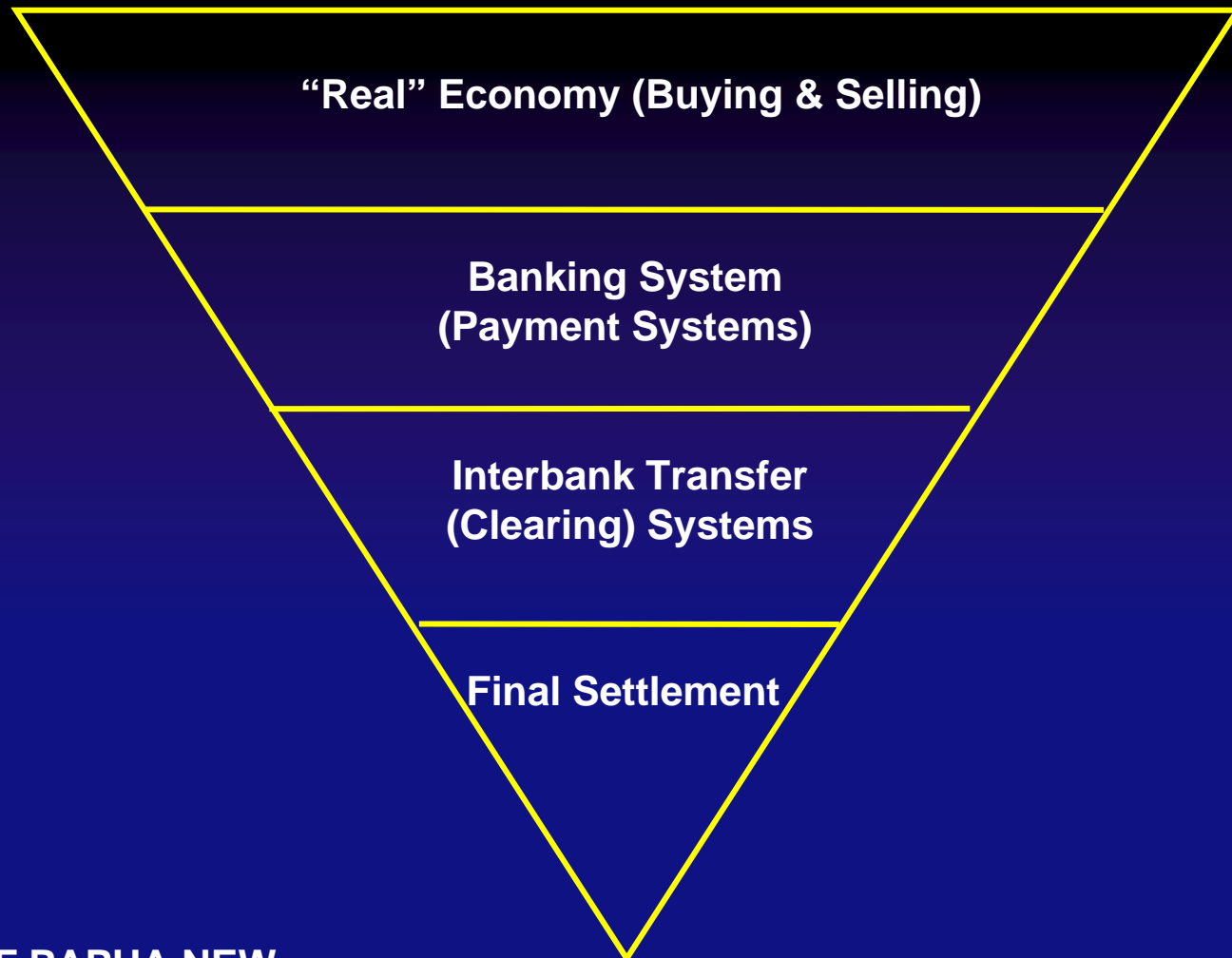


# What is the National Payments System?

- The National Payments System (NPS) of a country encompasses everything to do with the movement of money from payer to payee.
- It covers all phases of payment from initial offer of a payment instrument to final settlement.
- It is the essential lubrication mechanism for the engine of the economy.



# The NPS is the infrastructure for moving money safely, efficiently and swiftly



# Requirements

- Speed of payment
- Certainty of payment
- Reliability
- Safety and soundness
- Minimum risk
- Convenience
- Low cost
- Equality of access and competition
- Conformity with international standards



# Components of a National Payments System

- Payment Instruments
- Systems
- Legal and regulatory arrangements



# Payment Instruments

- Cash
- Paper
  - Cheques
  - Warrants
- Electronic
  - EFTPOS
  - Electronic credits
  - Direct debits
  - Mobile payments



# Systems

## Payments

- Real Time Gross Settlement (RTGS)
- Low Value Clearing (LVCS)
- Card clearing

## Central Bank

- General Ledger
- Cash management

## Securities

- Central Securities Depository (CSD)
- Primary Market (auction)
- Secondary Market (trading)

## Government

- Treasury Systems

## Markets

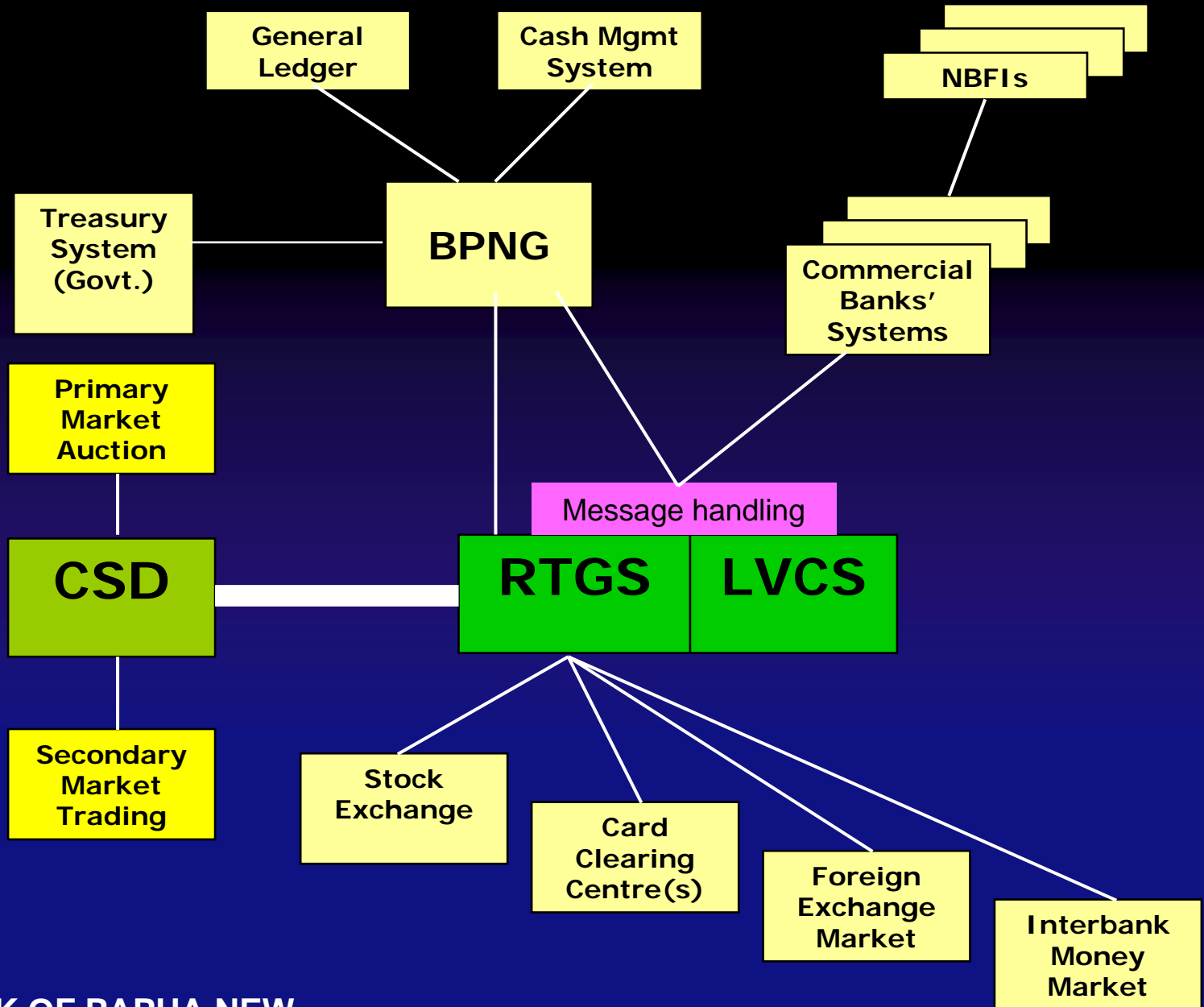
- Interbank money market
- Forex market
- Stock Exchange

## Financial Institutions

- Core banking systems
- Customers' accounting systems







# Real Time Gross Settlement (RTGS)

- At the heart of a modern NPS
- Used for high-value, high-priority interbank payments
- Operated by the central bank
- Primary objective is to eliminate systemic risk by ensuring that each payment is settled at the central bank:
  - In Real Time (as soon as it is sent)
  - Gross (one by one, no batching or netting)
  - With finality (once settled, the payment is irrevocable)



# What Sorts of Payments?

- All payments in the RTGS system are bank-to-bank:
  - Settlement of securities purchases
  - Payments of interest and maturity on Government /BPNG securities
  - Settlement of interbank obligations (loans and repayments)
  - Large or urgent payments by banks on behalf of customers
  - Settlement of netted low-value clearing operations, e.g. cards (see later slides)
  - Settlement of trading operations in equities and securities



# Low Value Clearing Systems (LVCS)

- The great majority of payments are low-value, high-volume. e.g:
  - (cheques & warrants)
  - Credit orders
  - Salary and pension payments
  - ATM, EFTPOS and credit card transactions
  - Collection of Government revenue
  - Payment of utility bills (phone, gas, water, electricity, etc.)
  - Regular customer payments (loan repayments, insurance premiums, etc.)
- It is inefficient and costly to handle these on a real time, gross basis (each payment by itself poses no systemic risk)
- Low value payments usually go through a bulk clearing process, often in an Automated Clearing House (ACH), with net positions settled in RTGS



# Automated Transfer System (ATS)

- The modern approach to clearing and settlement
- One electronic system which combines RTGS and ACH functions for both:
  - Low-volume/High-value payments and
  - High-volume/Low value payments



# Central Securities Depository

- Holds information about all Government and BPNG securities:
  - Details of each issue (date of issue, maturity, interest, etc.)
  - Details of holders (identity, amounts held, etc.)
- Updated each time:
  - an issue is completed
  - A trade is settled on the secondary market
  - An issue reaches maturity
- Calculates and pays interest, maturity payments



# Coupling of ATS and CSD

Best modern practice is to have the ATS and CSD systems very closely coupled. Why?

Two main reasons:

1. Delivery versus Payment (DvP)
2. Intraday liquidity management in the ATS



# Payments System Development in PNG



**BANK OF PAPUA NEW  
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# Role of the Bank of PNG

## 1. Responsibility

- “.... to promote an efficient national and international payments system”  
*(Central Banking Act 2000)*

## 2. Goal

- “.... improve payment, clearing and settlement systems to:
- promote efficiency
  - reduce risk and
  - encourage electronic payments”  
*(2005-2008 Strategic Plan)*



# 2008 Review

- Extensive consultation
- Deliverables:
  - Analysis of present NPS
  - Vision and Strategy for future NPS
  - Legal recommendations
  - Action Plan



# Risks in the Present NPS (1)

- **Systemic Risk** (that one participant's failure might threaten the whole system)
  - could potentially happen in present situation
- **Settlement Risk** (that settlement will not take place as expected), e.g.:
  - NBFIs are not participants in risk-reducing operations such as the Clearing House
  - No DvP for trades in securities (or equities)
- **Credit Risk** (that a party will not be able to settle an obligation), e.g.:
  - banks lend to each other without collateral
  - clearing operations outside NCD are not all settled on accounts at BPNG



# Risks in the Present NPS (2)

- **Operational Risk** (that systems, procedures or people may fail, resulting in loss or unavailability), e.g.:
  - underdeveloped technological infrastructure
- **Competition Risk** (that lack of competition may stifle innovation and increase costs), e.g.:
  - no interbank card network
  - small number of banks
- **Fraud Risk**, e.g.:
  - cheque and warrant fraud
- **Physical Risk** (of violent crime), e.g.:
  - general reliance on cash



# 2009 → Actions

1. Structure for co-operation (National Payments Council)
2. Supporting legislation & regulations
3. Automated Transfer System
4. Central Securities Depository
5. Institution-independent card switch
6. Electronic payment systems for the unbanked



# National Payments Council

- Purpose
  - Oversee the development of the NPS
  - Commitment and cooperation from all stakeholders
- Role
  - Facilitate co-operation among stakeholders
  - Advise BPNG on:
    - design & development principles & options
    - Preparing strategic documents, e.g. rules, procedures & agreements
    - Priority and scheduling of individual projects
- Membership
  - Represents all stakeholders in the NPS
- Meetings
  - Chaired by BPNG Governor (or representative)
  - Advisory, not decision-making



# Legal and Regulatory

- Payments System Act
  - Submitted to Parliament first half 2010
- Regulations
  - Mobile Payments (needed immediately to cover existing services)
- Other agreements
- Oversight of the NPS will be exercised by BPNG



# ATS and CSD

- ATS will handle:
  - High value payments (RTGS functionality)
  - Low value/high volume payments (ACH functionality)
- CSD:
  - Electronic record of securities
  - Electronic auction functionality
- Both systems tightly-coupled





# Impact on Stakeholders

- **Government**
  - Significant cost savings
  - Increased operational efficiency
  - Reduction in risk: fraud and theft
- **Business**
  - New payment services
  - Lower costs
  - Potential for direct connection to payment services
  - Reduction in risk: fraud and theft
- **Citizens**
  - Access to new services
  - Lower costs
  - Much safer



# National Electronic Card Switch

- Multiple EFTPOS networks
  - Wasteful on resources
  - No level playing field
- Opportunity to implement a nation wide card platform
  - Wider access for banks
  - Not competing on physical network
  - Opens opportunities for other participants (Savings & Loans, Microfinance, Others)
- Decision for the National Payments Council



# Payment Systems for the Unbanked

- ATS (and card switch) will provide a sound platform for introduction of more innovative systems
- For example, mobile phone-based systems
  - M-banking
  - M-payments
- Could be offered widely through NBFIs
- Decision for the market, not BPNG

