



BANK OF PAPUA NEW GUINEA

**Vision and Strategy for the future PNG
National Payments System**

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Prepared by:

BSA Consulting Limited

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1. Introduction

This *Vision and Strategy for the future PNG National Payments System* has been prepared for the Bank of Papua New Guinea (BPNG) by BSA Consulting Limited (BSA)¹.

1.1 Purpose of this Document

Based on needs and intentions articulated in the *2005-2008 Strategic Plan*, BPNG has decided to undertake a programme of review and reform of the National Payments System (NPS) of Papua New Guinea. This document contains the third and fourth deliverables under a contract between BPNG and BSA for the review of the NPS.

As described in the Terms of Reference for the NPS review project,

“the payments system in PNG, like most countries, has evolved over the years through a mixture of cooperation and self-interest by participants. The PNG financial sector has grown significantly and whilst the current payments system operates reasonably effectively Bank of Papua New Guinea has recognised that it is now time to address a cohesive approach on overall system design to reduce costs, improve efficiency, maintain safety and stability.”

This *Vision and Strategy* contains BSA’s recommendations for the future direction of the NPS. It is based on the findings of the two previously-completed project deliverables (*Analysis of the Present PNG National Payments System* and *Analysis of the Existing Legal and Regulatory Environment of the National Payments System of PNG*), as well as extensive consultation both within BPNG and with a wide range of NPS stakeholders.

1.2 Underlying Factors

The need for a cohesive programme of NPS reform is supported by consideration of a number of factors which have been confirmed during the initial consultation phase of the project:

1. The PNG economy is growing rapidly, supported by increasing inflows of revenue, both from natural resource-based activities such as hydrocarbon extraction and mining, and from production of agricultural products such as coffee, copra, vanilla, tea and palm oil;
2. A very large proportion of the economy is cash-based, which not only is inefficient, expensive and inconvenient for many forms of payment but also provides incentives and opportunities for crime;

¹ The Vision of the future NPS is based on a proven model developed by the Payment Systems Development Group of the World Bank, which has kindly given its permission for the model to be applied to the Papua New Guinea National Payments System.

3. With the exception of debit card transactions in the larger centres, the only interbank payment instruments are paper-based – there is a general lack of convenient and efficient electronic interbank payment instruments²;
4. While the majority of the population has hitherto been outside the formal financial system (particularly in rural areas), many hitherto ‘unbanked’ areas of society are now entering it via institutions such as Savings and Loans Societies and microfinance companies;
5. The increasing levels of participation in the formal financial system should tend to reduce the reliance on cash, which will mean that more financial resources will become available for investment in productive enterprises which in turn will foster further development of the PNG economy;
6. It is therefore important to ensure the introduction of a range of convenient, fast, economic, safe and reliable electronic payment instruments to support the foregoing trends;
7. Given the current favourable economic climate, there is a strong possibility that a variety of new players will wish to enter the banking and financial markets and offer payment services, which will need to be able to interoperate smoothly and efficiently with those offered by existing institutions;
8. Volumes of payments can be expected to increase significantly as economic activity continues to grow.

1.3 Document Structure

This document is structured as follows:

Section 2 provides a summary of the Vision and Strategy.

Section 3 summarises the current state of the NPS, in particular a number of factors which have been identified in the *Analysis of the Present PNG National Payments System* as areas of risk and inefficiency, posing obstacles to development of the NPS.

Section 4 contains the Vision for the future NPS. This is structured under a number of headings corresponding to the major elements of a modern National Payments System.

Section 5 contains the Strategy for realising the Vision. It identifies and describes a number of concrete projects to address the shortcomings identified in section 3, which BPNG is recommended either to undertake directly or to promote through its relationships with the financial sector.

² The EFTPOS and ATM networks are in any case not truly interbank, as they operate on the basis of bilateral interconnections between the banks concerned.

1.4 Abbreviations and Definitions

ACH	Automated Clearing House. An electronic facility for clearing interbank payments such as truncated cheques, direct credits and direct debits.
ATS	Automated Transfer System. The planned future system for integrated electronic clearing and settlement of interbank payments.
ATM	Automated Teller Machine.
BIS	Bank for International Settlements.
BPNG	The Bank of Papua New Guinea.
CPSS	Committee on Payment and Settlement Systems. A committee of BIS.
CSD	Central Securities Depository. A system which maintains information relating to securities holdings and holders.
DvP	Delivery versus Payment. A mechanism for ensuring that both legs of a securities transaction happen at the same time. In PNG this will be achieved through close coupling of the RTGS and CSD systems.
EFTPOS	Electronic Funds Transfer at Point of Sale.
FATF	Financial Action Task Force. The international co-ordinating body for combating money laundering and terrorist financing.
GPNG	Government of Papua New Guinea.
ICT	Information and Communications Technology. This term is increasingly being used in place of IT, to recognise the convergence of computing and communications technologies, as epitomised by the explosive growth in usage of the Internet.
IFMS	Integrated Financial Management System. A system which is under development by the Department of Finance to manage all GPNG financial activities.
IOSCO	International Organisation of Securities Commissions.
MICR	Magnetic Ink Character Recognition. A technology for encoding of information (such as bank account number) on cheques to make them machine-readable.
NBFI	Non-Bank Financial Institution. The most significant of these in the PNG context are the Microbanks and the Savings and Loans Societies.
NCD	National Capital District (of PNG).

NPC	National Payments Council.
NPS	National Payments System. See 4.1 for a complete definition.
NPSA	National Payments System Act. A planned Act which will contain all necessary legal provisions for the operation of the future NPS.
PNG	Papua New Guinea.
POMSoX	Port Moresby Stock Exchange.
PvP	Payment versus Payment. A mechanism for ensuring that both legs of a money market transaction happen at the same time.
RTGS	Real time Gross Settlement. The process of settling high value and high urgency interbank payments with finality and irrevocability in real time, without any preliminary batch clearing or netting.
S & L Society	Savings and Loans Society.
SIPS	Systemically Important Payment System. A system which is able to generate and transmit disturbances of a systemic nature to the financial sector.
STP	Straight Through Processing. The ability for a transaction to pass from one computer system to another without manual intervention. Often used to refer the ability to handle a payment completely electronically from originator (payer) to beneficiary through the interlinking of banks' core banking systems with centralised clearing and settlement systems.

2. Summary

2.1 Vision

The Vision of the National Payments System of PNG is based on the model developed by the World Bank's Payment Systems Development Group, in which the NPS is supported by nine Pillars, as follows:

- Pillar 1 A sound and robust **legal environment** which supports settlement finality and the efficiency of payment arrangements;
- Pillar 2 Systems to process **large value and time-critical payments** which are safe and efficient, and comply fully with the CPSS *Core Principles for Systemically Important Payment Systems*;
- Pillar 3 **Retail payment systems** which are safe, efficient, convenient and interoperable, support the provision of a wide range of payment instruments and services, and are accessible by the widest possible proportion of the population;
- Pillar 4 **Government collections and disbursements** which are fully and efficiently integrated with the NPS and support its smooth functioning;
- Pillar 5 **Securities clearance, settlement and depository systems** which are safe, efficient, compliant with international standards (particularly the CPSS/IOSCO *Recommendations for Securities Settlement systems*), and support capital market development;
- Pillar 6 Inter-bank **money markets** which are fully developed and closely integrated with settlement systems;
- Pillar 7 **International remittances** and other cross-border payments which are distributed rapidly and conveniently, and are cost-efficient for end users at both ends;
- Pillar 8 An **oversight and supervisory framework** which is clearly defined, and within which BPNG exercises its oversight authority in co-operation with other regulators as applicable;
- Pillar 9 Effective, structured and fruitful **co-operation** between all participants in the NPS.

Each of the developments planned by BPNG for the NPS is in line with one or more of these Pillars.

Section 4 below specifies the Vision in detail.

2.2 Strategy

A Strategy has been developed for realising the Vision, in the form of an action plan for a portfolio of projects to be executed in the first two years of the NPS development (from the last quarter of 2008 to the last quarter of 2010). At the present time the Strategy does not look out beyond the end of 2010, as it will be important to focus on successful execution of the near-term activities before attempting to plan any further developments in any detail.

The Strategy will be subject to regular (six-monthly) review by the National Payments council under the guidance of BPNG. These reviews will provide the opportunity to check that developments are proceeding according to expectations, institute corrective action if necessary, and plan the introduction of new strategic activities as appropriate.

The Strategy is detailed in Section 5 below. In summary it comprises the following individual initiatives.

Legal Framework

A review of the existing legal environment of the NPS has been carried out, on the basis of which a draft National Payments System Act has been prepared. BPNG will finalise the Act and submit it to the legislature for enactment.

Timeframe: by the end of 2009.

Regulations will be developed and introduced as necessary to expand on the provisions of the Act for individual payment systems.

Timeframe: none in particular (to suit the timeframes for individual systems).

Automated Transfer System

BPNG will specify, procure and implement an Automated Transfer System (ATS) with two main elements:

1. A **Real-Time Gross Settlement (RTGS)** function for large value and time critical payments; and
2. An **Automated Clearing House (ACH)** function, which will provide clearing and netting facilities for a range of low value (retail) electronic instruments including direct debits and direct credits.

These elements will be tightly-integrated within a single system (the ATS) so as to ensure seamless clearing and settlement of all domestic interbank obligations on a same-day basis with finality and irrevocability of both payment and settlement.

The ATS will also be closely coupled with the Central Securities Depository for BPNG and GPNG Securities (see below) for two purposes:

1. Supporting the process of intraday liquidity management for the ATS through the provision of collateralised credit by BPNG to participants; and
2. Enabling Delivery versus Payment (DvP) for transactions in BPNG and GPNG securities.

Timeframe: by the second quarter of 2010.

Cheque Automation

A facility for the automated clearing and settlement of cheque transactions will be introduced in the same timeframe as the ATS. It may consist of a separate Automated Clearing House (ACH) or be an integral part of the ATS; the decision on this will be made as part of the procurement process for the ATS.

Timeframe: by the second quarter of 2010.

Interbank Card Switch and Clearing House

BPNG will initiate a project for the establishment of a common, nation-wide electronic network and switch which will: (i) interconnect all ATM and EFTPOS circuits, and (ii) include a common clearing and netting capability for all ATM and EFTPOS transactions, with automated forwarding of net interbank positions to the ATS for settlement.

BPNG, in consultation with stakeholders through the National Payments Council, will work to define suitable ownership and governance arrangements for the Card Switch to ensure universality of coverage, equal access for all qualifying participants and provision of convenient, cost-effective electronic instruments to the widest possible customer base.

Timeframe: by the end of 2010.

New Payment Systems

Through the National Payments Council, BPNG will work with market players and stakeholders to encourage the introduction of new, innovative and low-cost electronic payment instruments such as mobile telephone-based services which have been highly successful in similar countries such as the Philippines and Kenya.

BPNG in particular will encourage non-bank financial institutions such as Savings and Loans Societies and Microfinance Institutions to co-operate in bringing such systems to the market.

Timeframe: by the end of 2010.

Telecommunication Infrastructure

The current national telecommunications infrastructure is the single biggest obstacle to the development of a modern National Payments System based on widespread use of electronic payment instruments.

The solution lies in part with the Government of PNG: first, the *ICT Strategy* is acting as a brake on competition and the introduction of new telecommunications services, and, second, the Government might be induced to make investment funding available to speed up the deployment of modern telecommunications services throughout the country.

In consultation with the National Payments Council, BPNG will develop a case for GPNG to address both of these issues and will vigorously pursue opportunities to

press this case with the relevant government departments, regulators and political figures.

Timeframe: by the second quarter of 2009.

Government Payments

BPNG will work with the Department of Finance (through formal working parties) to ensure that:

1. The planned Payments System projects (in particular the ATS and CSD) are developed taking into account the specific requirements of the Government for management of revenue receipts, disbursements and securities; and
2. GPNG's systems and procedures are developed and/or updated to take maximum advantage of the new payment systems as they are introduced.

Timeframe: by the end of 2009.

Central Securities Depository

A Central Securities Depository (CSD) will be procured and implemented to act as a depository for all securities issued by GPNG and BPNG. The CSD will hold authoritative records of all holdings of securities and carry out all necessary calculations relating to interest due, maturities, roll-overs, tax due and so on.

It will be closely coupled with the ATS in order to assure Delivery versus Payment (DvP) for the sale and purchase of securities, and to support intraday liquidity management in the ATS through the provision of collateral for central bank credit to participants.

Timeframe: by the second quarter of 2010.

Payment Systems Department in BPNG

A Payment Systems Department will be established in BPNG to manage the execution of the NPS Strategy and also to oversee the NPS on an ongoing basis. It will have two main functional areas:

1. Payment system operations, which will be responsible for operation of the ATS, CSD and cheque clearing systems.
2. Policy and oversight, which will exercise oversight over the whole NPS.

In addition it will carry out a policy, consultative and research function with the objective of fostering innovation and development across the NPS on an ongoing basis.

Timeframe: by the end of 2008.

National Payments Council

BPNG will initiate the formation of a National Payments Council (NPC), under the chairmanship of BPNG, whose objectives will be:

1. To support the achievement of sound and efficient payment and securities clearance and settlement systems in PNG through active participation in discussions on future developments;
2. To serve as a forum for co-operation; and
3. To participate in the development of an effective communications strategy for the future NPS.

Membership of the NPC will be drawn from a wide cross-section of NPS participants and stakeholders. The NPC will form working parties which will get involved at a detailed level in the various concrete projects involved in execution of the Strategy.

Timeframe: by the end of 2008.

3. Current State of the NPS

This section briefly summarises the findings of the *Analysis of the present PNG National Payments System*, in particular the areas of concern which need to be addressed in the Vision and Strategy for the future NPS.

3.1 Institutional Structure

The PNG National Payments System can be considered under two groupings: the 'formal' banking sector and the non-bank financial sector. Both of these sectors are licensed by, and are subject to the supervision of, BPNG.

3.1.1 'Formal' Banking Sector

This sector covers the licensed commercial banks, of which there are four. The penetration of the banks into the population is very low; the total number of accounts held at these institutions equates to approximately seven percent of the total population. Nevertheless, this probably also equates to a very high percentage of the 'formal' economy (comprising larger organisations and their employees).

The geographical penetration of the banks is also very shallow and is confined to the major population centres, with a total of approximately 110 outlets (branches and agencies) across all four banks.

The banks offer a wide range of modern services and products, comparable to those available in other economies in the region, with one major difference, namely that there are no interbank electronic payment instruments.

3.1.2 Non-Bank Financial Sector

This sector comprises two groups of institutions of particular relevance to the NPS, namely (i) microfinance companies and (ii) Savings and Loans (S&L) Societies. In addition the sector includes nine finance companies, fourteen superannuation funds and eight life insurance companies.

Both the microfinance companies and the S&L Societies are experiencing strong growth, particularly in geographical areas outside the main urban centres. Their total customer base probably already exceeds that of the commercial banks. In addition they operate a larger number of 'points of presence' in more locations than the banks. The deposit base of these institutions is also growing rapidly, indicating that they are succeeding in mopping up cash in appreciable volumes from their customers/members.

3.1.3 Multi-Tier System

The financial sector of PNG therefore effectively operates on a 'multi-tier' basis:

1. The top tier is served primarily by the banks, but also microfinance companies and S&L Societies, in the NCD and other main population centres. It has access to a good variety of payment services and instruments, but comprises a very small

percentage of the total population, covering mainly larger organisations and their employees.

2. The middle tier is served by the non-bank financial institutions, primarily microfinance and Savings and Loans organisations. Its geographical coverage lies mainly outside the main centres, and is more extensive than that of the top tier. In addition the number of people and companies served by this tier is larger than the top tier's, and is also growing rapidly.
3. The bottom tier covers probably the great majority of the population, who do not have access to any financial services and rely, where they use any payment instruments at all, entirely on cash.

One of the objectives of the future NPS is to move customers and services up this 'hierarchy'.

3.2 Areas of Concern

The *Analysis of the Present NPS* identified a number of areas of concern which are currently holding back the development of the National Payments System. These include:

3.2.1 Interbank Payments

With the exception of debit card transactions (but see 3.2.2 below) the only payment instruments available for interbank payments are paper (cheques and warrants). There are no facilities for direct credits, direct debits or any other forms of electronic payments, other than intrabank (i.e. between accounts held at the same bank). In addition the existing cheque/warrant clearing facilities operate on a deferred net settlement basis with no form of security in case of inability of a bank to settle.

The results of the present reliance on paper instruments are:

1. Inefficiency and cost. Paper is expensive and cumbersome to move around and process.
2. Delays in processing. Cheques take up to four days to clear (nine outside Port Moresby).
3. High costs to bank customers.

This gives rise to settlement risk, systemic risk, fraud risk, physical risk and credit risk.

3.2.2 Lack of Institution-Independent Electronic Switch

Each bank operates its own ATM and EFTPOS networks. While customers of each bank may use their cards in other banks' machines, this is achieved through bilateral arrangements (individual telecommunications connections) between pairs of banks rather than a more efficient (and competition-friendly) single central switching and processing facility. The results of this are:

1. Inefficiency and cost. Each bank has to invest in its own infrastructure, and the existing bilateral arrangements for processing and clearing are also

less than optimal in terms of efficiency and speed of execution. It is also a cost on merchants, many of whom feel they need to install EFTPOS terminals from multiple banks.

2. Barriers to entry for other providers. Any other organisation wishing to offer debit card-based services will have to build its own network, establish contracts with merchants and other outlets, and conclude bilateral agreements with all the banks.
3. High costs to bank customers.

This gives rise to settlement risk, operational risk and competition risk.

3.2.3 Poor Telecommunications Infrastructure

The telecommunications infrastructure of PNG is underdeveloped in terms of both coverage and reliability. In addition the Government's National ICT Policy is causing considerable uncertainty as to future development directions. The results are:

1. High costs to financial service providers. The unreliability of much of the existing network, where it does exist, compels institutions to spend large sums on backup and alternative means of communication.
2. High costs to bank customers.
3. It is difficult or impossible to provide electronic payment services in large areas of the country. This particularly affects the non-bank financial institutions, which mainly operate outside the NCD.

This gives rise to operational risk in particular.

3.2.4 Underdeveloped Non-Bank Financial Institutions (NBFIs)

The NBFIs (microfinance companies and Savings and Loans Societies), while they are mobilising increasing volumes of finance, and effectively taking a large amount of cash out of the system (thereby making more finance available for investment), are still at a relatively early stage of development. They are not participants, even indirectly, in existing interbank clearing and settlement processes.

Many of them would like to develop further in terms of the products and services they offer. This may need some form of technical assistance. In addition the regionally-focussed NBFIs in particular are being held back by the lack of reliable telecommunications infrastructure in many areas. The results are:

1. Mobilisation of financial resources for economic growth is inhibited.
2. The range of products and services offered by the NBFIs is limited.

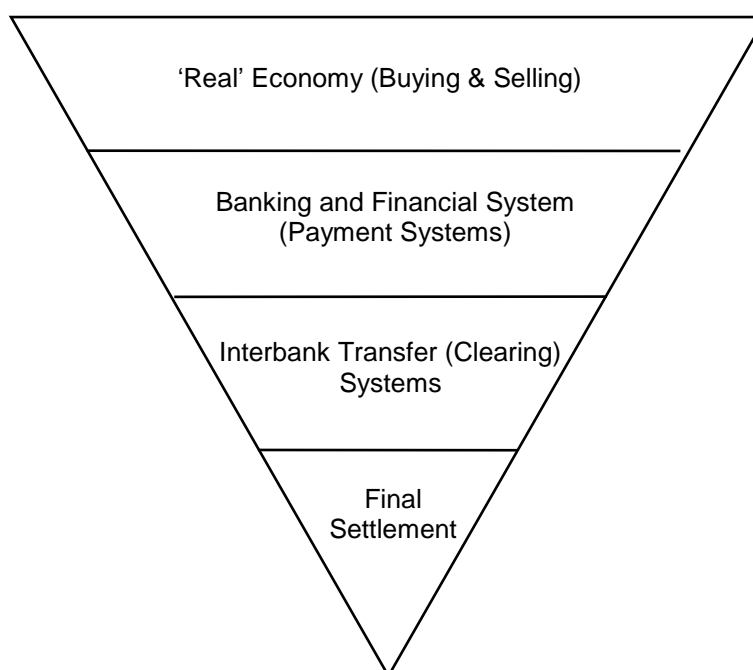
This gives rise to settlement risk, credit risk, competition risk and physical risk.

4. Vision of the Future NPS

4.1 Definition of the National Payments System

As depicted in the diagram below, the financial system can be viewed as a series of layers in an inverted pyramid, in which each layer is supported by the layers beneath it:

1. The broadest (top) layer of the pyramid represents the real economy and the financial markets, i.e. the buying and selling of goods and services throughout the nation;
2. It is supported by the country's banking and financial system - the next level of the pyramid - which provides payment services to all sectors of the formal economy;
3. The third level consists of a limited number of interbank value transfer systems through which payment and other financial transactions are processed;
4. The final settlement of funds transfers takes place across the accounts which approved institutions hold with the central bank, whose pivotal role is vital to the functioning of the economy as a whole.



The above diagram also indicates how risk is concentrated as financial transactions make their way down the pyramid. At the level of the 'real' economy, risk is diffused among many transactions, and exists only at the individual transaction level. Greater concentrations of risk exist at lower levels in the pyramid, and at the final settlement

level there exists in any country a potentially high degree of systemic risk, under which any failed transaction can generate disturbances of a systemic nature to the entire financial sector.

The National Payments System covers the whole of the above pyramid. It encompasses all factors involved with the movement of money, and includes defined instruments, infrastructures, institutions, market arrangements, laws, standards and procedures that are used to effect or manage the transfer of value (money) between parties (payers and payees) in an economy. In the words of the BIS, “*it includes a country’s entire matrix of institutional and infrastructure arrangements and processes for initiating and transferring monetary claims.*”³

An efficient and smoothly operating NPS is a necessary precondition for business development and economic growth. Accordingly, safety, integrity, efficiency and reliability of both domestic and international payments are prerequisites for the safety and stability of financial institutions and the financial markets within which they operate.

4.2 Objectives, Requirements, Characteristics and Principles

4.2.1 Objectives

The objectives of the PNG National Payments System are:

1. To provide safe, reliable and efficient mechanisms for the exchange of money between transacting parties;
2. To ensure finality and irrevocability of both payment and settlement;
3. To enable the management, reduction and containment of systemic and other risks; and
4. To provide assured and easy access to a broad range of modern payment types and services (both domestic and international) to progressively broader segments of the population, and ultimately the whole population.

4.2.2 Requirements

The requirements of a modern National Payments System are:

1. Improved speed of payment;
2. Certainty of payment;
3. Increased reliability;
4. Safety and soundness;
5. Confidentiality;
6. Convenience;

³ Bank for International Settlements, Committee on Payment and Settlements Systems: *General Guidance for National Payment System Development*. See <http://www.bis.org/publ/cpss70.pdf?noframes=1>

7. Lower cost structure;
8. Universality.

4.2.3 Characteristics

Bearing the above requirements in mind, the following characteristics will inform the Vision for the future PNG National Payments System:

1. Development of PNG away from a cash-oriented society towards widespread use of non-cash electronic payment instruments;
2. A sound legal foundation;
3. Compliance with internationally-accepted principles and standards;
4. Maintenance of the highest level of safety and stability of the financial system while encouraging innovation and competition;
5. Cost-efficiency;
6. Healthy competition amongst customer payment-service providers;
7. Thorough understanding and appropriate management of risks related to payment systems by all stakeholders;
8. Effective oversight of the NPS by the central bank;
9. Settlement of all inter-bank exchanges on a same-day basis;
10. Support of electronic trading in both the securities and foreign exchange markets, including electronic Delivery versus Payment (DvP) and Payment versus Payment (PvP);
11. Optimum use of available liquidity;
12. A high level of co-operation and collaboration between all participants in the NPS;
13. Accessibility of the NPS to all qualifying payment service providers through the establishment of an interoperable infrastructure; and
14. A high level of public awareness of NPS developments and available instruments and services.

4.2.4 Principles

Finally, the development of the National Payments System of PNG will be based on the following principles:

1. The provision of NPS services is not the exclusive domain of banks;
2. The evolution of the NPS infrastructure is a co-operative responsibility;
3. Participants are liable for the risks that they introduce into the NPS;
4. A balance is maintained between risk reduction and cost;

5. Any central bank response to a problem in the NPS will be in the interest of the system, not individual participants; and
6. The central bank will exercise an adequate level of oversight over the NPS to ensure its safety and soundness.

4.3 Pillars of the NPS

The Vision of the future NPS of Papua New Guinea is based on a proven model developed by the Payment Systems Development Group of the World Bank, which has kindly given its permission for the model to be applied to the Papua New Guinea National Payments System. The model considers the NPS in a holistic manner on the basis of the following Pillars:

- Pillar 1 A sound and robust **legal environment** which supports settlement finality and the efficiency of payment arrangements;
- Pillar 2 Systems to process **large value and time-critical payments** which are safe and efficient, and comply fully with the CPSS *Core Principles for Systemically Important Payment Systems*;
- Pillar 3 **Retail payment systems** which are safe, efficient, convenient and interoperable, support the provision of a wide range of payment instruments and services, and are accessible by the widest possible proportion of the population;
- Pillar 4 **Government collections and disbursements** which are fully and efficiently integrated with the NPS and support its smooth functioning;
- Pillar 5 **Securities clearance, settlement and depository systems** which are safe, efficient, compliant with international standards (particularly the CPSS/IOSCO *Recommendations for Securities Settlement systems*), and support capital market development;
- Pillar 6 Inter-bank **money markets** which are fully developed and closely integrated with settlement systems;
- Pillar 7 **International remittances** and other cross-border payments which are distributed rapidly and conveniently, and are cost-efficient for end users at both ends;
- Pillar 8 An **oversight and supervisory framework** which is clearly defined, and within which BPNG exercises its oversight authority in co-operation with other regulators as applicable;
- Pillar 9 Effective, structured and fruitful **co-operation** between all participants in the NPS.

These components are further elaborated in the rest of this section.

4.4 Pillar 1: Legal and Regulatory Environment

A sound and appropriate legal framework is an essential basis for a sound and efficient payments system. The legal environment must include the following:

- 1) Laws and regulations of **broad applicability** that address issues such as finality, insolvency and contractual relations between parties. BPNG will conduct a review of existing laws with a view to ensuring that they cover all such necessary elements of relevance to the future NPS environment.
- 2) Laws and regulations that have **specific applicability** to payment systems (such as legislation on electronic signatures, validation of netting and settlement finality). BPNG will strongly support and encourage, as fundamental to ensuring stability and efficiency, the development of legislation on:
 - a. Clearing and settlement of payment and securities orders, including rules on collateral;
 - b. Electronic transfers, to permit full recognition of modern methods of payment and to support interoperability of systems; and
 - c. National Payments System oversight, covering all elements including both large value and retail payment systems.

This will be achieved through the development and enactment of a National Payments System Act covering all payment system-specific considerations.

- 3) The rules, standards and procedures agreed to by the participants of each individual payment system. BPNG will work with stakeholders throughout the evolution of the new NPS programme to ensure that:
 - a. All necessary rules and procedures are developed in a timely manner;
 - b. All stakeholders are consulted and have the opportunity to contribute to their development; and
 - c. The rules and procedures do not unfairly either advantage or disadvantage any player or group of players.

4.5 Pillar 2: Large-Value and Time-Critical Payments

Systems to process these payments are the most significant component of the National Payments System, although the actual numbers of such payments may be relatively low. They are defined as systemically important payment systems (SIPS), because they are able to generate and transmit disturbances of a systemic nature to the financial sector.

In PNG, all systemically important payment systems will comply with the CPSS *Core Principles for Systemically Important Payments System*⁴. BPNG will issue a risk control policy

⁴ Bank for International Settlements, Committee on Payment and Settlements Systems: *Core Principles for Systemically Important Payment Systems*. See <http://www.bis.org/publ/cpss43.htm>

statement, after having discussed it with stakeholders. All systems and their participants will be required to adhere to this document, and stakeholders will be required to commit to apply the agreed policies.

BPNG will implement a modern Real Time Gross Settlement (RTGS) facility for large-value and time-critical payments within the BPNG operated payments system, which is intended to represent the backbone of the PNG National Payments System. The RTGS facility will form the basis of the Automated Transfer System (ATS) which will be introduced by BPNG to handle the clearing and settlement of all electronic interbank payments in PNG, and which is described more fully in the Strategy for the future NPS (see Section 5).

4.6 Pillar 3: Retail Payment Systems

A wide range of efficient retail payment instruments is essential for serving customers' needs in a market economy. Having only a restricted range of instruments available has an adverse impact on economic development and growth.

World-wide there is a pronounced trend towards:

- 1) Growth in use of payment cards;
- 2) Increased use of direct funds transfers, including both direct debit and direct credit transfers, for remote payments;
- 3) Changes in the market arrangements for providing and pricing retail payment instruments and services delivered to end-users; and
- 4) Increasing attention given by both authorities and market participants to the efficiency and efficacy of production and distribution of payment instruments (including cash).

In PNG all retail circuits will be characterised by a high degree of interoperability (particularly card-based systems such as EFTPOS) and high efficiency in their clearing cycles. All retail systems will be overseen by BPNG (see Pillar 8) with regard to their safety and efficiency, and with appropriate oversight mechanisms depending on the level of risk they introduce to the financial system.

As the second key element of the Automated Transfer System (ATS) to be introduced (see above, 4.5), BPNG will develop an Automated Clearing House (ACH) facility to handle electronic interbank payment instruments such as Direct Credits and Direct Debits. The ACH facility will be integrated with the Real Time Gross Settlement facility and will be designed efficiently to accelerate the move towards electronic instruments and reduce the systemic importance of cash and cheques. The ACH facility will also process cheque items in an automated and standardised fashion, with settlement of net obligations arising from cheque clearing being effected through the Real Time Gross Settlement facility.

Other financial or non-financial entities may also operate retail systems (in particular for payment cards) or provide retail payment services (such as mobile phone-based systems). In this regard BPNG will:

1. Play a catalyst role for the implementation of an inter-institutional electronic card switch and clearing house, to be owned and operated by market participants;
2. Actively encourage the introduction of innovative, convenient and cost-effective new payment instruments (such as mobile phone payments), with an especial focus on the currently unbanked sectors of the population; and
3. Continue to promote to GPNG the full liberalisation of the telecommunications market and the introduction of modern, advanced, reliable and high-speed telecommunications services across the entire country, which are vital to support a modern NPS.

BPNG's role(s) in retail systems may include settlement agent, operator, participant, overseer and catalyst for change. Where possible, retail payment systems will be provided by market players rather than BPNG directly, with the overall objective of ensuring that the PNG economy is provided with a broad range of safe and efficient payment services. BPNG may, however, from time to time seek to fill an identified market need by initiating the development of systems, wherever possible in collaboration with market players, with a view to subsequent divestment to market players once the systems are established. BPNG's role in retail systems will be developed taking into account the findings and recommendations of the BIS (CPSS) consultative report *Policy Issues for Central Banks in Retail Payments*⁵.

BPNG will take steps to see that pricing policies for retail circuits are formulated in a way that takes into account the principle that costs should be borne proportionately to the benefits derived, and consistently with efficiency enhancement objectives. BPNG will review cost recovery and pricing policies to make them consistent with the NPS general policy objectives, and intends that obtained benefits will be passed to the final users.

BPNG is concerned to ensure that effective fraud prevention and detection measures are in place for all retail systems, and that fraud occurrences in all payment flows are acceptably low. An important objective will be to establish appropriate customer protection mechanisms for all retail systems.

4.7 Pillar 4: Government Transactions

The current arrangements for government transactions (payments and receipts) will be evaluated with a view to ensuring that full advantage is taken of electronic systems to be introduced under the National Payments System reform programme, and taking into account the fact that government payments and receipts form a significant percentage of all transactions in the current NPS.

At present, with the exception of salary payments (which are paid by bulk cheques), the Government of PNG makes the majority of its payments by individual cheques or

⁵ Bank for International Settlements, Committee on Payment and Settlements Systems, *Policy Issues for Central Banks in Retail Payments*. See <http://www.bis.org/publ/cpss52.pdf>

paper Payment Advice orders. Likewise the majority of revenue receipts are by cheque with some cash receipts for Customs duties.

BPNG will work with the Department of Finance with the objective of achieving a smooth and early transition from the present paper instruments to the use of electronic payments for the largest possible proportion of collections and disbursements, using instruments and systems described under Pillars 2 and 3. This is to ensure that the benefits of NPS reform will be accrued by all sectors of the economy through an increased efficiency in the payments flow, leading to a need to maintain lower idle resources in bank accounts.

This process will also support the Department of Finance's current project to replace existing financial processing systems with an Integrated Financial Management System (IFMS). BPNG will take steps to ensure a close level of consultation and synchronisation between the NPS reform programme and the IFMS project.

4.8 Pillar 5: Securities Depository, Clearance and Settlement

Securities markets are of high importance for any country's financial sector. Public sector securities in particular are used extensively to carry out monetary policy through open market operations, and securities settlement systems are essential for the timely delivery of collateral for payments and other purposes. Sound and efficient procedures for the settlement of securities transactions are therefore an essential element for the development of financial markets. Securities Settlement Systems in PNG will comply with the CPSS-IOSCO *Core Principles for Securities Settlement Systems*⁶.

From a legal perspective the reliable and predictable operation of a Securities Settlement System (SSS) depends on: (i) the laws, rules, and procedures that support the holding, transfer, pledging, and lending of securities and related payments; and (ii) how these laws, rules, and procedures work in practice, that is, whether system operators, participants, and their customers can enforce their rights. An appropriate legal and regulatory environment for securities will therefore be developed under Pillar 1.

GPNG and BPNG securities are already held by BPNG in book entry (dematerialised) form, which eliminates or reduces certain classes of risk. A major settlement risk, however, remains in the form of counterparty risk (credit/principal risk). The Delivery versus Payment (DvP) concept seeks to eliminate principal risk from securities transactions by ensuring that sellers give up their securities when, and only when, they receive full payment, and vice versa. The three essential elements in a DvP transaction are therefore: (a) good and irrevocable delivery of securities; (b) final and irrevocable funds; and (c) simultaneous exchange.

This will be achieved in PNG through the introduction of a Central Securities Depository (CSD) system, closely integrated with the RTGS facility of the Automated

⁶ Bank for International Settlements, Committee on Payment and Settlements Systems, *Recommendations for Securities Settlement Systems*. See <http://www.bis.org/publ/cpss46.pdf>

Transfer System (ATS) referenced under Pillar 2. This close integration will have two major beneficial effects:

1. It will enable central bank assets to be used for settlement of securities transactions, which is the most effective way to eliminate risk. Instruments used to settle the cash leg of securities transactions between CSD members will therefore carry little or no credit or liquidity risk; and
2. It will support liquidity management in the RTGS facility by enabling the automatic collateralisation of BPNG intraday credit advanced to RTGS participants.

The CSD will hold information on all holdings and ownership of GPNG and BPNG securities and will be updated whenever any of these change, for example sale or repurchase agreements (repos) executed over any securities. It will also carry out all necessary calculations of interest due, maturity payments, etc., and will apply these to the securities in question.

The CSD will include an integrated electronic Primary Market system which will automate the process of issuing GPNG and BPNG securities (the auction process). The results of auctions will be automatically transferred to the CSD.

In the longer term BPNG will consider the introduction of an electronic Secondary Market (trading) system for GPNG and BPNG securities. BPNG will consult with the PNG Securities Commission and the Port Moresby Stock Exchange (POMSoX) to ensure optimum compatibility and interworking with the systems operated by POMSoX.

4.9 Pillar 6: Money Markets

An efficient mechanism for trading and settlement of money market transactions supports improvement of liquidity management and thus increased safety and stability of the financial system. In addition it generally helps securities settlement through lower interest rates which benefit brokers/dealers in the credit lines they negotiate with their banks. Another important function of money markets is to facilitate the smooth and effective functioning of monetary policy, as they are generally used by the central bank to give clear signals to banks that then extend to the rest of the financial sector. If the operational procedures or the organisational and regulatory arrangements do not provide for an efficient money market system, this can impede the central bank in clearly signalling the type of monetary policy it is following.

The introduction of the RTGS facility under Pillar 2, closely coupled with the CSD under Pillar 5, will provide support for the development of the PNG interbank money market. In the longer term BPNG will look to encourage the development of specific money market systems in both local and foreign currencies, which will be linked with the RTGS facility for the settlement of the Kina leg of all transactions.

4.10 Pillar 7: International Remittances

International remittances constitute a significant element in the PNG NPS, in both outwards and inwards directions. From a policy-making perspective, these retail cross-border payments share many of the features of domestic retail payments, and users of international remittances (just like any other retail payment services customers) expect to be provided with a set of convenient, cheap, reliable and predictable instruments to cover their most important payment needs, i.e. face-to-face payments, one-off and recurring remote payments and cash withdrawals.

However, at the present time remittances are expensive relative to the often low incomes of migrant workers and to the relatively small amounts sent (typically no more than a few hundred Kina or less at a time). Also, it may not be easy for migrants to access remittance services if they do not speak the local language very well or do not have the necessary documentation, while the underdeveloped financial infrastructure in both PNG and some overseas countries may make it difficult for recipients to collect the remittances. In some cases, the services are unreliable, particularly concerning the time taken for the funds to be transferred. Finally, some markets are uncompetitive or have regulatory barriers to the provision of remittance services.

The World Bank and CPSS issued their *General Principles for International Remittance Services*⁷ in January 2007. These principles, together with the Special Recommendations of the Financial Action Task Force (FATF), are now used to guide the actions of authorities, multilaterals, and service providers world-wide.

BPNG will work with the market to ensure that international remittance services in Papua New Guinea comply with the CPSS-WB *General Principles*. In particular, BPNG will cover this area as part of its payments system oversight function. A major goal will be to promote the most efficient use possible of the envisaged PNG payments infrastructure, including that of both banking and non-banking institutions.

BPNG will ensure that the regulatory perspective on international remittances covers payment system issues, in particular efficiency, transparency and risk management in addition to 'traditional' issues of balance of payments and money laundering. Eventually, in co-ordination with other involved authorities, it will decide whether new regulations are necessary to foster a safe and efficient provision of services in this area and protect customers.

4.11 Pillar 8: Oversight

BPNG has the responsibility under the Central Bank Act to "promote an efficient national and international payments system", and intends to play the leading role in development of the future NPS. Market forces alone are unlikely to achieve the objectives of efficiency and reliability of the payment system since participants and

⁷ Bank for International Settlements, Committee on Payment and Settlements Systems, and World Bank: *General Principles for International Remittance Services*. See <http://www.bis.org/publ/cpss76.htm>

operators may not have adequate incentives to minimise the risk of their own failure, or the failure or costs they impose on other participants. For this reason BPNG is leading the development of the PNG NPS as an essential element of its overall mandate to ensure stability of the financial system and to maintain confidence in the domestic currency.

A key role that BPNG intends to exercise in this context is that of Payments System oversight. To this end the oversight function will be explicitly granted to BPNG in the National Payments System Act, and the Act will provide BPNG with the legal authority to ensure the development and operation of payment mechanisms that effectively contribute to the integrity, efficiency and safety of all financial markets and the operation of monetary policy (see Pillar 1).

BPNG will publicly disclose its objectives and policies relating to all significant payment system matters, together with its implementation strategies. With regard to objectives, BPNG will aim to achieve efficiency and reliability for all payment systems irrespective of their nature. BPNG will oversee all clearing and settlement arrangements in PNG, particularly retail systems, which are of especial importance in supporting economic growth, fostering public confidence and bringing the currently-unbanked sectors of the population into the formal economy. BPNG will also promote competition in the payment services market and the protection of consumer interests in co-ordination with other relevant authorities.

The oversight function will be one of the key responsibilities of the Payment Systems Department which BPNG will establish as part of the implementation strategy for the Vision of the future NPS (see Strategy, section 5 below). The oversight unit of the Payment Systems Department will exercise its responsibilities as applicable with collaborate with other supervisory and regulatory bodies such as the PNG Securities Commission.

4.10 Pillar 9: Co-operation

Effective co-operation among all participants and stakeholders is essential for the development of a sound and efficient payments system. The usefulness, and thus the use made, of any payment instrument depends on its reliability and availability, which in turn requires a high degree of interoperability of the systems that support it. The supply of services can therefore be affected by co-ordination failures brought about by perceived conflicts of interests as well as participants' unwillingness to co-operate. This can lead to sub-optimal solutions in terms of the overall objectives of the NPS. In addition, the envisaged introduction of new types of non-bank intermediaries and payment instruments in PNG will further strengthen the need for a comprehensive level of co-operation in the payment system.

BPNG is therefore concerned to ensure the widest degree of fruitful co-operation among all major stakeholders in the NPS, including not only the direct participants (banks and other financial institutions) but also other involved groups such as GPNG (Department of Finance), the telecommunications and ICT industries and major

payment systems users. To this end a National Payments Council (NPC) will be formed under the leadership of BPNG. The objectives of the NPC will be:

1. To support the achievement of sound and efficient payment and securities clearance and settlement systems in PNG through active participation in discussions on future developments;
2. To serve as a forum for co-operation; and
3. To participate in the development of an effective communications strategy for the future NPS.

The NPC will establish subcommittees as necessary to carry out detailed work on specific elements of NPS developments.

5. Strategy for Realising the Vision

5.1 Introduction

This section describes the programme of activities that BPNG will undertake or initiate in order to realise the Vision for the future PNG National Payments System which was elaborated in the previous section.

5.1.1 Pillars

In the first phase of implementation the strategy will address the most important elements of the proposed NPS reform, covering the following pillars (showing the individual activities/projects under each pillar):

Pillar 1 (Legal and Regulatory Framework)

- Introduction of National Payments System Act
- Development of regulations as required

Pillar 2 (Large-value and Time-critical Payments)

- RTGS element of the Automated Transfer System

Pillar 3 (Retail Payments)

- ACH element of the Automated Transfer System
- Cheque automation
- Interbank card switch and clearing house
- New payment instruments
- Telecommunications infrastructure

Pillar 4 (Government Payments)

- Co-ordination with Department of Finance

Pillar 5 (Securities Depository, Clearance and Settlement)

- Central Securities depository

Pillar 8 (Oversight)

- BPNG Payment Systems Department

Pillar 9 (Co-operation)

- Establishment of National Payments Council

The above programme elements are described under 5.2 to 5.11 below.

5.1.2 Time-Frame

All of the activities described in this section are envisaged for execution in the **immediate or medium term** (during the two year period from the last quarter of 2008 to the last quarter of 2010), subject to budgetary allocations. A detailed timetable for execution of these activities is provided in a companion document *Action Plan for Execution of the NPS Reform Strategy*.

5.1.3 Review

This strategy will be subject to a regular (six-monthly) formal review by the National Payments Council, at which:

1. The head of BPNG's Payment Systems Department will report on NPS developments in general;
2. Progress will be assessed for each committed project; and
3. New projects will be considered for inclusion in the strategy.

5.2 Legal Framework (Pillar 1)

A review of the existing legislative environment has already been carried out under the contract between BPNG and BSA for the review of the NPS (see *Analysis of the Existing Legal and Regulatory Environment of the National Payments System of PNG*).

In addition a further deliverable from the BSA contract (*Recommendations for Revision of Legislation and Regulations of the National Payments System of PNG*) contains concrete recommendations for the development of the legal and regulatory environment necessary to support the proposed NPS developments. This report includes suggested text for a National Payments System Act (NPSA).

5.2.1 Legislation

BPNG will carry out consultations on the NPSA both with NPS stakeholders and with legal experts with a view to finalising it and submitting it for consideration by Parliament and enactment before the end of 2009.

5.2.2 Regulations

Regulations covering individual payment systems and arrangements will be developed and instituted as required once the content of the NPSA has been agreed. These will be developed in an open and consultative manner, to ensure maximum transparency and sufficient notice to enable NPS participants to prepare for their introduction.

Regulations will be introduced as and when necessary to cover the requirements of NPS developments as they are implemented. In addition operating rules and procedures, contractual arrangements and membership agreements will be required, in particular to support the introduction of new systems such as the Automated Transfer System (see next section). These will be developed in consultation with the

participants in these systems and with the active involvement of the National Payments Council.

All regulations, rules and other arrangements will be widely publicised to ensure that all stakeholders (including customers of payment systems) are aware of them.

5.3 Automated Transfer System (Pillars 2 and 3)

BPNG will procure and implement an Automated Transfer System (ATS), which will constitute the backbone of the PNG National Payments System and will replace the existing settlement arrangements. The ATS will provide integrated facilities for clearing and settlement of all interbank electronic payments, irrespective of their value or level of urgency.

5.3.1 Overview

The ATS will comprise two main capabilities, namely:

3. A **Real-Time Gross Settlement (RTGS)** function for large value and time critical payments; and
4. An **Automated Clearing House (ACH)** function, which will provide clearing and netting facilities for a range of low value (retail) electronic instruments including direct debits and direct credits.

These capabilities will be tightly-integrated within a single system so as to ensure seamless clearing and settlement of domestic interbank obligations on a same-day basis with finality and irrevocability of both payment and settlement.

The ATS will also be closely coupled with the Central Securities Depository for BPNG and GPNG Securities (see below, 5.4) for two purposes:

3. Supporting the process of intraday liquidity management for the ATS through the provision of collateralised credit by BPNG to participants; and
4. Enabling Delivery versus Payment (DvP) for transactions in BPNG and GPNG securities.

5.3.2 Characteristics

Specific characteristics of the ATS will include:

1. The ATS will have clear rules and procedures, which will specify all the tools for managing legal, financial and operational risks.
2. The design of the ATS will include the provision of management tools to handle liquidity risks. These will include:
 - i. Provision of optimisation mechanisms;
 - ii. Agreeing efficient operating hours with system participants;
 - iii. Establishing sound and efficient interconnections among the systems;

- iv. Establishing and agreeing routines for channelling government payments into the ATS early in the operating day;
 - v. Provision of BPNG collateralised intraday liquidity to participants through integration with the CSD described in 5.4 below.
 3. The design of the system will include:
 - i. The provision of a robust and efficient communications network between BPNG and all system participants;
 - ii. Enforcement of strict security measures for both physical and electronic access to the system;
 - iii. Implementation of contingency plans and disaster recovery mechanisms (including secondary sites); and
 - iv. Implementation of measures for business continuity and resilience across the NPS.
 4. The pricing policy for the ATS will be established by BPNG in consultation with stakeholder groups, consistent with its general policy objectives including the public good role of BPNG, with the intention that the obtained benefits will be passed to the final users. The pricing policy will be regularly reviewed to take account of changing circumstances.
 5. Access criteria (including exit and exclusion) will be clearly defined on a non-discriminatory basis. Tiered arrangements will be introduced to allow the reduction of manual procedures through indirect participation. The direct participants will be decided by BPNG in consultation with the National Payments Council.
 6. An effective Users' Group (of system participants to discuss system development issues) will be introduced. BPNG will publish the operating rules of the system and any other relevant documentation.
 7. The system will be integrated with a range of other payment systems to ensure maximum safety and efficiency. These linkages will include:
 - i. Straight Through Processing (STP) with participants' Core Banking and other systems as appropriate;
 - ii. Final settlement of all external retail payment clearing systems, to which appropriate interfaces will be implemented;
 - iii. Interfaces with selected trading platforms for both the securities market and the interbank money market as they are developed, to support efficient liquidity management for financial institutions.

5.4 Central Securities Depository (Pillar 5)

BPNG will procure and implement a Central Securities Depository (CSD) system which will be based on packaged application software and will act as a depository for

all securities issued by GPNG and BPNG. The primary purpose of the CSD will be to allow the maintenance of accurate records of transactions in the capital markets. Its objectives will be to:

1. Provide an online centralised electronic Registry for all GPNG and BPNG securities, which will meet the needs of all issues, issuers, holders, managers and other interested parties by holding records of all securities and their owners in book entry (dematerialised) form;
2. Support electronic clearing and settlement of securities transactions according to the principles of Delivery versus Payment (DvP), on a Straight-Through Processing basis, through a close integration with the RTGS element of the ATS;
3. Support intraday liquidity management and other monetary policy operations of BPNG and facilitate the electronic processing of repurchase agreements (repos);
4. Carry out all necessary calculations of interest due, maturities, roll-over, tax payments and so on;
5. Support portfolio management by instrument and maturity profile, and provide online enquiry facilities to all legitimate enquirers;
6. Enhance the implementation of monetary policy.

For the purpose of achieving items 2 and 3 above (DvP for securities settlements and supporting intraday liquidity management), the CSD will be closely coupled with the Automated Transfer System (see above, 5.3.1).

The CSD will also contain a primary trading (auction) module. This will provide full automation of the auction process for all GPNG and BPNG securities, including functionality for receiving bids electronically and securely from authorised bidders, executing the auctions according to BPNG's rules, and creating holding records for all securities according to the results of the auction.

5.5 Cheque Automation (Pillar 3)

BPNG will promote the introduction of automated clearing and settlement of cheque transactions. This will require at least the following:

1. Standardisation of cheque formats among all cheque issuers, including common MICR encoding standards and implementation of standard account numbering.
2. Installation of cheque immobilisation and truncation facilities in cheque receiving institutions.
3. Implementation of an Automated Clearing House (ACH) system for cheques. This system may be stand-alone or alternatively may form a component of the ATS (see 5.3). If stand-alone it may be owned and operated by either BPNG or the cheque-clearing institutions.

5.6 Interbank Card Switch and Clearing House (Pillar 3)

BPNG will institute a project to encourage the establishment of a common national electronic switching and payment clearing facility to replace the existing bilateral connections and agreements between the banks for ATM and EFTPOS transactions.

This facility will interconnect all existing and future electronic networks which service ATM and EFTPOS installations in PNG, thus ensuring that any card issued by any bank (or other approved financial institution) can be used in any device connected to the network. The facility will include a system for clearing and netting all transactions at agreed regular times, and for forwarding the interbank net positions to the RTGS element of the ATS for settlement.

BPNG will work with industry players and stakeholders through the National Payments Council (see below, 5.11) to develop the most appropriate ownership and governance arrangements for this facility, and to establish suitable transition arrangements from the present card networks. These will be based on the principles of:

1. Co-operation and collaboration between NPS participants;
2. Fair and equal access to the NPS for all qualifying payment service providers;
3. Cost-efficiency;
4. Fair allocation of costs; and
5. Access by the widest proportion of the population to modern payment services.

5.7 New Payment Instruments (Pillar 3)

BPNG will work with the National Payments Council to encourage the introduction to PNG of new, innovative and low-cost electronic payment instruments, particularly bearing in mind the needs of the currently-unbanked segments of the population. In the immediate term these may particularly include mobile telephone-based systems: BPNG will institute a project to evaluate the potential for mobile payment systems, taking into account experience of such systems in similar countries such as the Philippines, Indonesia, Kenya and South Africa.

Non-bank financial institutions such as Savings and Loans Societies and Microbanks will be encouraged to develop innovative, low-cost payment services, and BPNG will work through the NPC to support these developments. Where possible BPNG will encourage and support co-operation and collaboration between institutions in such developments, to avoid needless competition, inefficiency and risk.

5.8 Telecommunications Infrastructure (Pillar 3)

It is generally recognised across the PNG banking and financial sector that the underdeveloped state of the telecommunications infrastructure is probably the biggest single obstacle to the development of a modern National Payments System. Quite simply, where there is no reliable telecommunications service of sufficient capacity there can be no electronic payments service.

BPNG will work with the National Payments Council to develop the case for rapid development of the national telecommunications infrastructure, and to present this case as widely as possible in the government arena, to the responsible ministries and also at the political level. In particular BPNG will leverage its statutory position as the institution responsible for the efficiency of the national payments system and the promotion of macro-economic stability and economic growth in PNG to persuade those in government with responsibility for telecommunications to:

1. Remove the present restrictions on operation of telecommunications services as embodied in the GPNG's *ICT Policy*; and
2. Provide an appropriate level of investment funding in telecommunications infrastructure.

5.9 Government Payments (Pillar 4)

BPNG will work with the relevant areas of the Department of Finance to ensure that:

1. The development of new payment systems, in particular the Automated Transfer System and the Central Securities Depository, is carried out taking into account the specific requirements of the GPNG; and
2. GPNG's systems and procedures are developed and/or updated to take maximum advantage of the new systems as they are introduced.

To this end BPNG will establish two working parties with the Department of Finance covering (i) securities (CSD) and (ii) payments and receipts (ATS).

5.10 Payment Systems Department in BPNG (Pillar 8)

The successful execution of this strategy for implementing the NPS Vision is critical to BPNG in achieving its goal to "improve payment, clearing and settlement systems to promote efficiency, reduce risk and encourage electronic payments⁸". In order to bring the necessary resources and focus to bear on the NPS reform programme, therefore, BPNG will establish a separate Payment Systems unit within its organisation. This unit will have two main functional areas:

⁸ BPNG 2005 – 2008 *Strategic Plan*, p.16

1. **Payment systems operations.** In the first instance this element of the Payment Systems unit will be responsible for the operation of the ATS and CSD systems, covering all clearing and settlement activities. This will be an operational role, and the staff involved will be responsible for day to day operation of the systems and liaison as necessary with all players, including system participants (direct and indirect) and other areas of BPNG including the Financial Markets, Banking, Finance and Accounting and Information Technology departments.
2. **Policy and oversight.** This element will be responsible for developing and implementing suitable oversight policies and procedures. It will operate at all times in an open and collaborative manner, with the objective of facilitating the smooth operation of all elements of the NPS for the collective benefit of all. A particular concern will be to ensure fair and equal access for all participants and customers. This element will also contain a research capability whose function will be to forecast future trends and requirements in the payments system, both domestically and internationally, and prepare analyses and recommendations as necessary for BPNG management and the National Payments Council.

BPNG will take appropriate measures to ensure the necessary degree of operational separation between its roles as overseer, operator and participant in the NPS.

5.11 National Payments Council (Pillar 9)

BPNG will at an early stage initiate the establishment of a National Payments Council (NPC) whose objectives will be, as stated under Pillar 9 (see above, 4.10):

1. To support the achievement of sound and efficient payment and securities clearance and settlement systems in PNG through active participation in discussions on future developments;
2. To serve as a forum for co-operation; and
3. To participate in the development of an effective communications strategy for the future NPS.

The membership of the NPC will be established by BPNG in consultation with a wide cross-section of stakeholders including:

1. Banks;
2. Other financial institutions (Savings and Loans Societies, microfinance institutions, finance companies);
3. POMSIX, the Securities Commission, brokers and dealers;
4. Department of Finance and Internal Revenue Commission;
5. PostPNG;
6. The telecommunications industry and Pangtel;
7. Utility providers (PNG Power, PNG Water Board, Eda Ranu);

8. The ICT industry;
9. Industry bodies (e.g. Chamber of Commerce & Industry, Chamber of Mines & Petroleum, Manufacturers' Council, Rural Industry Council, Trade Union Congress).

BPNG will chair the NPC and provide the secretariat.

As soon as possible after its formation the NPC will establish working parties to participate in the development of key initiatives in the implementation of the NPS Vision, in particular:

1. Legal and regulatory development;
2. Clearing and settlement systems (ATS);
3. Securities settlement system (CSD);
4. New retail payment circuits and systems (card switch); and
5. Government relations and lobbying.