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सूचना

मिति २०७१/३/१९ मा बसेको यस बैंकको संचालक समितिको बैठक संख्या १७/२०७१ को निर्णयानुसार नेपालमा आधुनिक भुक्तानी प्रणालीको विकासका लागि भुक्तानी तथा फर्छ्यौट प्रणाली सम्बन्धी "Nepal Payment System Development Strategy" जारी गरी कार्यान्वयनमा ल्याईएको व्यहोरा सम्बन्धित सबैको जानकारीको लागि यो सूचना प्रकाशित गरिएको छ ।

भवदीय,

(भाष्करमणि ज्ञवाली)
कार्यकारी निर्देशक

NEPAL PAYMENTS SYSTEM DEVELOPMENT STRATEGY



NEPAL RASTRA BANK

**BANKS & FINANCIAL INSTITUTIONS REGULATION
DEPARTMENT**

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ACRONYMS AND ABBREVIATIONS

ABBS	Any Branch Banking System
ACH	Automated Clearing House
ASYCUDA	Automated System for Customs Data
ATM	Automated Teller Machine
ATS	Automated Trading System
BB	Branchless Banking
BIS	Bank for International Settlements
BOK	Bank of Kathmandu
CBS	Core Banking System
CDSC	Central Depository Services and Clearing Limited
CPSS	Committee on Payment and Settlement Systems
CSD	Central Securities Depository
DDC	District Development Committee
DTO	District Treasury Office
DvP	Delivery versus Payment
e-Money	Electronic Money
FMIS	Financial Management Information System
FX	Foreign Exchange
G2P	Government to People (payments)
GDP	Gross Domestic Product
GON	Government of Nepal
IFC	International Finance Corporation
IRD	Inland Revenue Department
IOSCO	International Organization of Securities Commissions
ISP	Internet Service Provider
IT	Information Technology
KYC	Know Your Customer
MICR	Magnetic Ink Character Recognition

MIS	Management Information System
MNO	Mobile Network Operator
MTO	Money Transfer Operator
NBA	Nepal Bankers' Association
NCH	Nepal Clearing House
NEPSE	Nepal Stock Exchange
NFC	Near Field Communications
NPC	National Payments Council
NPS	National Payments System
NRB	Nepal Rastra Bank
NTA	Nepal Telecommunications Authority
OMOC	Open Market Operations Committee
OTC	Over the Counter
PFMI	(CPSS-IOSCO) Principles for Financial Market Infrastructures
POS	Point of Sale
PSDG	Payment Systems Development Group (of the World Bank)
PvP	Payment versus Payment
RAS	Revenue Accounting System
RBB	Rastriya Banijya Bank
Repo	Repurchase Agreement
RTGS	Real Time Gross Settlement
SAARC	South Asian Association for Regional Co-operation
SCT	Smart Choice Technologies
SDA	Static Data Authentication
SEBON	Securities and Exchange Board of Nepal
SEDF	SouthAsia Enterprise Development Facility
SLF	Standing Liquidity Facility
SRO	Self-Regulatory Organisation
SSS	Securities Settlement System
STP	Straight Through Processing

SWIFT	Society for World-wide International Financial Telecommunication
TSA	Treasury Single Account
UNCTAD	United Nations Conference on Trade And Development
VDC	Village Development Committee
VPN	Virtual Private Network

1. INTRODUCTION

This document articulates the strategy for the development of the National Payments System (NPS) in Nepal. It proposes the NRB's strategic approach to NPS development, and outlines the envisaged future state of the Nepal NPS.

Throughout this document, internationally accepted principles and practices are highlighted and elaborated from the perspective of specific circumstances in Nepal.

2. OVERVIEW

1. In recognition that payment systems are an integral part of every country's financial system and are vital for its soundness, and for monetary policy implementation and capital market development, the NRB is committed to the safety and efficiency of Nepal's National Payments System (NPS).

It is widely accepted that a NPS consists of a defined group of institutions and a set of instruments and procedures, used to facilitate the circulation of money within the country and internationally.

The main elements of a modern national payments system include¹:

- *payment instruments used to initiate and direct the transfer of funds between the accounts of payers and payees at financial institutions;*
- *payment infrastructures for transacting and clearing payment instruments, processing and communicating payment information, and transferring the funds between the paying and receiving institutions;*
- *electronic book-entry securities system(s) to register and record changes in ownership of both private and government securities;*
- *financial institutions that provide payment accounts, instruments and services to consumers, and businesses and organisations that operate payment transaction, clearing and settlement service networks for those financial institutions;*
- *non-financial institutions that provide payment and access to payment-related services and offer various products to satisfy market needs;*

¹ Bank for International Settlements, Committee on Payment and Settlements Systems *General guidance for national payment system development*, 2006.

- *market arrangements such as conventions, regulations and contracts for producing, pricing, delivering and acquiring the various payment instruments and services;*

- *laws, standards, rules and procedures set by legislators, courts and regulators that define and govern the mechanics of the payment transfer process and the conduct of payment service markets.”*

2. The NRB is adopting a strategic approach for the reform of the payments system in Nepal, with the objective of achieving a safe and efficient national payments system that effectively contributes to the country’s financial stability and economic growth. The project is well supported in the Nepal financial community, where there is a general strong desire for the development of a coherent, efficient, safe, convenient and integrated NPS, in recognition of the potential to stimulate growth in the economy and to promote regional integration. The financial community also recognizes that the NRB is best positioned to take the lead in NPS development because of its mandate “*to develop a secure, healthy and efficient system of payment*” in Nepal².

3. This document is structured as follows:

- Following this Section 2 (Overview), Section 3 (Defining the Payments System Strategy) sets out the NRB’s strategic approach to NPS development.
- Section 4 (Pillars of the National Payments System Vision) outlines the planned future state of the Nepal NPS in terms of nine Pillars which together fully cover all elements of the NPS. For each of the nine Pillars, Section 4 briefly describes the principles on which the Pillar is based, and outlines the desired future state of the Nepal NPS in the context of that particular Pillar.
- Section 5 (Implementation Plan for the NPS Development) describes how the NRB intends to implement this Payments System Strategy.

4. Executing the strategy will require the implementation of a number of individual development projects. These are described in terms of the nine Pillars in the Implementation Plan (Section 5). The nine Pillars are as follows:

5. **Pillar I: Legal Framework. Payment systems in Nepal work in a sound and robust legal environment.** The NRB will ensure that the NPS is fully supported by a robust and sound legal framework, and to this end it has initiated a programme to develop a consistent and well articulated legal framework to address both legal obstacles and regulatory stances. In the immediate term the NRB will introduce by-laws to provide the necessary legal underpinning for the planned NPS developments,

² Nepal Rastra Bank Act, 2058 (2002), art. 4 (c).

including the clearing and settlement of Government securities in book-entry form. Once these legal measures are adopted, a general NRB regulation, containing the major body of rules on oversight (as well as secondary measures, such as guidelines on cards, mobile payments and other instruments as applicable), will be put in place. . In the longer term the NRB intends to adopt a comprehensive National Payment Systems Law.

6. Pillar II: Settlement mechanisms for Large-Value and Time-Critical Payments in Nepal are safe and efficient and comply fully with the *Principles for Financial Market Infrastructures*³. Systems to process large-value and time-critical payments are the most significant component of the NPS. They are defined as systemically important payment systems (SIPS) because they serve the major interbank financial markets in the country and also because they are able to generate and transmit disturbances of a systemic nature to the financial sector.

7. At present, there is no automated interbank settlement system in Nepal and all bank-to-bank payments are currently made by SWIFT to the Clearing Division in the Banking Office at the NRB, where they are printed out and manually entered into the NRB's accounting system via postings to settlement accounts in the general ledger. If the SWIFT service is not available, then paper transfer instructions are hand-delivered to the NRB, which imposes an additional workload on the NRB management and staff.

8. High-value customer payments are made by cheque; any cheque for more than NPR100 million is entered into a special daily manual clearing session at the NRB (outside the automated cheque clearing system). These current arrangements present significant elements of systemic, credit, liquidity and operational risk.

9. It is important to put in place an appropriate system for clearing and settling large-value and time-critical payments. The NRB therefore intends to acquire and implement a modern Real Time Gross Settlement (RTGS) system. The RTGS system will enable straight-through-processing (STP) of inter-bank funds transfers in a safe and efficient manner in real-time. The RTGS system will also provide settlement services for all other payment systems in Nepal including Nepal Clearing House and SmartChoice Technologies (see Pillar III). Appropriate interfaces will be implemented to achieve this.

10. The RTGS system will also be tightly integrated with all existing and future securities settlement systems to achieve Delivery versus Payment (DvP), and with interbank Foreign Exchange (FX) market trading systems to achieve Payment versus Payment (PvP). The NRB has already started a project for upgrading of its internal

³ This document, published by the Bank for International Settlements (BIS) and International Organization of Securities Commissions (IOSCO) in April 2012, replaced the previous *Core Principles for Systemically Important Payment Systems*.

systems. The NRB's internal General Ledger (GL) system has recently been upgraded and, once fully implemented, will be able to support the necessary tight integration with the RTGS system for ensuring the integrity of settlement accounts.

11. Pillar III: Retail Payment Systems in Nepal are efficient, sound and interoperable and support a wide range of payment instrument and services. The Nepal Clearing House (NCH), which is partly-owned by the NRB, currently operates a cheque truncation and clearing service in the Kathmandu Valley. NCH plans to extend electronic cheque truncation to the whole country in the near future. Not all cheques are currently MICR-encoded⁴, but are expected to be within six months. Cheques are read and truncated at branch level in presenting banks, and transmitted directly to NCH on a continuous basis as they are presented at bank branches. Banks then download the electronic cheque records from NCH to their own core banking systems for processing.

12. Final settlement of NCH cheque clearing operations is carried out at present by NCH transmitting a daily electronic net settlement instruction to the NRB, where it is uploaded into the General Ledger and manually applied to the banks' settlement accounts. Settlement risk arising from cheque clearing is currently managed by manually removing from the clearing process cheques of the bank which cannot settle, i.e. a partial unwinding operation is carried out. When the RTGS system is in place, settlement of all cheque clearing operations will be effected through an automated link between NCH and the RTGS system.

13. At present there is no automated interbank payment system for electronic retail payment instruments. A number of commercial banks in Nepal have invested in automation of their internal systems, and as a result a significant proportion of their customers' intra-bank payments have moved from cheque to electronic means of payments. In future NCH plans to extend its interbank clearing operations to include both Direct Credits and Direct Debits.

14. Interbank card-based switching and clearing services (ATM and EFTPOS) are currently provided by several organisations. The largest of these is SmartChoice Technologies (SCT) which has 84 members and currently operates around 1,500 ATMs and 2,500 POS terminals, with some 1.7 million cards issued. Chip cards are not yet in use as issuers have been waiting for the NRB to specify the standard to be adopted. The NRB has now mandated the use of chip-and-PIN cards, which will probably use the Static Data Authentication (SDA) standard. A commercial bank acts as the settlement bank for SCT. This poses a significant settlement risk which will be

⁴ MICR is the acronym for Magnetic Ink Character Recognition. The MICR line is typically printed in a clear area at the bottom of a cheque using a special magnetic ink. The printed characters are machine-readable and hence enable automation of cheque processing, especially the preparation of electronic clearing files.

mitigated by connecting SCT's systems to the RTGS system which will be then used for final settlement of interbank obligations stemming from all debit card transactions.

15. Pillar IV: Government Transactions. Government collection and disbursement are fully and efficiently integrated with the National Payments system in Nepal. The Government is among the largest user of payment systems in most countries, and this is also true in the case of Nepal. The NRB provides payment services for the Government of Nepal (GON) in Kathmandu and at its seven regional offices: in other locations Rastriya Banijya Bank (RBB) - a Government owned bank, carries out most government transactions.

16. The Ministry of Finance operates a comprehensive Financial Management Information System (FMIS) which generates cheques for payment of Government creditors through District Treasury Offices (DTOs). With this system DTOs receive payment orders from the local offices of government departments and in return provide cheques back to the government offices. The Ministry is in process of implementing a Treasury Single Account (TSA) at the NRB, to replace thousands of government bank accounts throughout the country at both NRB branches and commercial banks.

17. Welfare payments are made under five different social protection programmes covering approximately one million citizens and are currently distributed in cash. The Ministry of Federal Affairs and Local Government has launched a pilot project to make payments via electronic transfers using commercial banks' networks. The NRB will work with the Ministry to develop this scheme with the objective of carrying out as many payments as possible by electronic means.

18. There are also two United Nations programmes involved in distribution of funds, one targetted at impoverished people in remote areas and the other for students. The former programme involves distribution of cash in 39 Village Development Committee (VDC) areas, while under the latter programme the funds are credited directly to students' bank accounts.

19. Currently, income tax is collected through bank cheques ("good for payment" cheques). The Inland Revenue Department (IRD) has implemented an online Revenue Accounting System (RAS), which enables taxpayers to submit tax returns electronically, and would like to see a fully automated system for collecting payments to complement this. The NRB intends to implement suitable systems for receiving electronic payment orders and passing them to either the RTGS system (when it is implemented) or NCH (when it has implemented electronic direct credits).

20. Currently Customs import duties are paid at branches of one commercial bank which are situated in Customs offices. The NRB will work together with the Customs Department and the importer community to develop a facility whereby duties can be

paid in real time through the RTGS system, thus speeding up the whole cycle of importation and revenue collection.

21. Pillar V: Securities Depository, Clearing and Settlement. Securities Depository, Clearing and Settlement are safe and efficient, fully comply with international standards, and support the development of capital markets. The NRB acts as fiscal agent for the GON for the issue and custody of government securities, which currently comprise Treasury Bills and three types of Bonds. The NRB conducts the auctions for these instruments; the auction process is currently entirely manual and all securities are issued on paper certificates. The NRB will move to establish an automated Central Securities Depository (CSD) system to provide the necessary functionality to support the GON and its domestic debt operations. Options for implementing the CSD are for the NRB either to procure and install its own system or to use the CSD system which is being implemented by Central Depository Services and Clearing Limited (CDSC), a subsidiary company of the Nepal Stock Exchange (NEPSE).

22. The CSD will include an integrated auction system for primary market operations, with a trading platform for secondary market trading, and will also be linked with the RTGS system (see Pillar II) for the purposes of: (i) implementing DvP for the settlement of all securities transactions and (ii) supporting (collateralising) the NRB's intraday liquidity facilities in the RTGS system.

23. In order to reduce legal uncertainty, the NRB will initiate work to strengthen the legal and regulatory environment in Nepal for domestic debt instruments, including legal provisions for dematerialisation of securities, and will develop a rigorous regulatory and oversight framework for the securities depository and settlement systems. This will be done via consultation and co-ordination with other stakeholders.

24. Pillar VI: Money Markets. Interbank money markets are fully developed and closely integrated with settlement systems. At present, there is no developed centralised interbank money market in Nepal. An OTC market is active, but is based on bilateral limits rather than collateralised lending. In the medium term, the NRB will seek to establish a modern interbank money market in Nepal, which will serve as an important element for liquidity management, to facilitate the timely settlement of transactions in the RTGS system and support NRB monetary policy operations. In both short and medium terms, the NRB will adopt the necessary measures to strengthen the interbank money market. Such measures would include the development of the interbank repo market and collateralised interbank lending operations.

25. Pillar VII: International Remittances. International remittances and other cross-border payments are distributed rapidly and conveniently in Nepal, and are cost efficient from the perspective of end users. Nepal is among the top five

countries in the world in terms of the flow of inward remittances as a proportion of GDP. Most banks provide remittance services which, in the case of the larger banks, are based on correspondent relationships with financial institutions in the source countries. In addition money transfer operators (MTOs), both international operators and domestic providers, are extensively used.

26. Providers of remittance services are regulated by the NRB. However, payment system risks are inadequately regulated and overseen. The proposed by-laws and subsequently a NPS Law and implementing regulations will better articulate NRB's role in the oversight of remittance service providers (RSPs). In addition, the NRB will undertake a stock-taking exercise vis-à-vis the CPSS/World Bank General Principles for International Remittance Services, and will identify specific actions to be taken with regard to already existing and planned payment systems in Nepal with the goal of promoting the most efficient use possible of the envisaged payment infrastructure for facilitating remittance services. The NRB will ensure that the regulatory perspective covers payment system issues, in particular efficiency, transparency, risk management and consumer protection in addition to "traditional" issues of balance of payments and money laundering. The NRB, in co-ordination with other authorities, will decide whether new regulations are necessary/will draft and issue regulations under the new law to foster a safe and efficient provision of services in this area and to protect customers.

27. Pillar VIII: Oversight. The oversight and supervisory framework for payments and securities settlement systems is clearly defined, and the NRB exercises its oversight authority effectively in co-operation with other regulators and supervisors. The NRB intends to exercise effectively the function of payments system oversight in Nepal in accordance with the powers assigned to the NRB in the Central Bank of Nepal Act and in the future National Payment Systems Act. To this end it will establish an oversight unit whose functions will be to: (i) ensure that an adequate degree of participant co-operation exists; (ii) verify that individual payment systems satisfy user needs as well as risk and efficiency requirements; (iii) define and implement appropriate actions should participants not comply with published rules and regulations; and (iv) collect and distribute relevant statistical information. The NRB will develop, implement and communicate to the private sector a set of appropriate oversight objectives, policies, and tools. The NRB oversight powers and responsibilities will be clearly articulated in the planned amendments to the legal and regulatory framework on payments. A training programme will be put in place to ensure that the staff in the oversight unit is knowledgeable and able to perform efficiently the payments oversight. Development and automation of NRB's data reporting platforms and data storage systems will allow efficient management of the oversight function.

28. Pillar IX: Co-operation. Effective, structured and fruitful co-operation is in place within the NPS. Effective co-operation among market participants, between

regulators and market participants and among regulators is essential for the development of a sound and efficient payments system. In particular, the cross-cutting element that characterises the transfer of money and the systemic nature of the underlying operating procedures make the payments system an ecosystem whose smooth functioning require effective co-operation between all stakeholders. The NRB will form a National Payments Council (NPC), which will play the role of a permanent body for a high-level co-operation and consultation in the area of payment and settlement systems and services under the leadership of the NRB. The Terms of Reference of the NPC will ensure clear tasks and responsibilities, appropriate level of representation, and expanded membership to include all relevant stakeholders. This body is intended to include representation at chief executive officer level of the commercial banks and other major stakeholders with an interest in payments and securities clearing and settlement systems improvements, and it will be an extremely useful forum to secure constructive discussion among them.

29. NRB Organisation: NRB established a ‘Payment and Settlement Desk’ within the Banks and Financial Institutions Regulations Department to formulate and implement the strategies and policies. The desk initiated the process of formulation of the NPS policy strategies and roadmaps. After discussion with the different stakeholders, the policy documents were finalized and approved by the Board of the Directors of NRB. For the implementation of the roadmaps and strategies, NRB is in process of establishing one separate division/department.

30. The diagram below shows a possible architecture for the Nepal NPS with linkages between systems. Note that this shows the CSD for GON securities as being installed at, and operated by, the NRB. As discussed above, an alternative option is to use the CSD being implemented by CDSC.

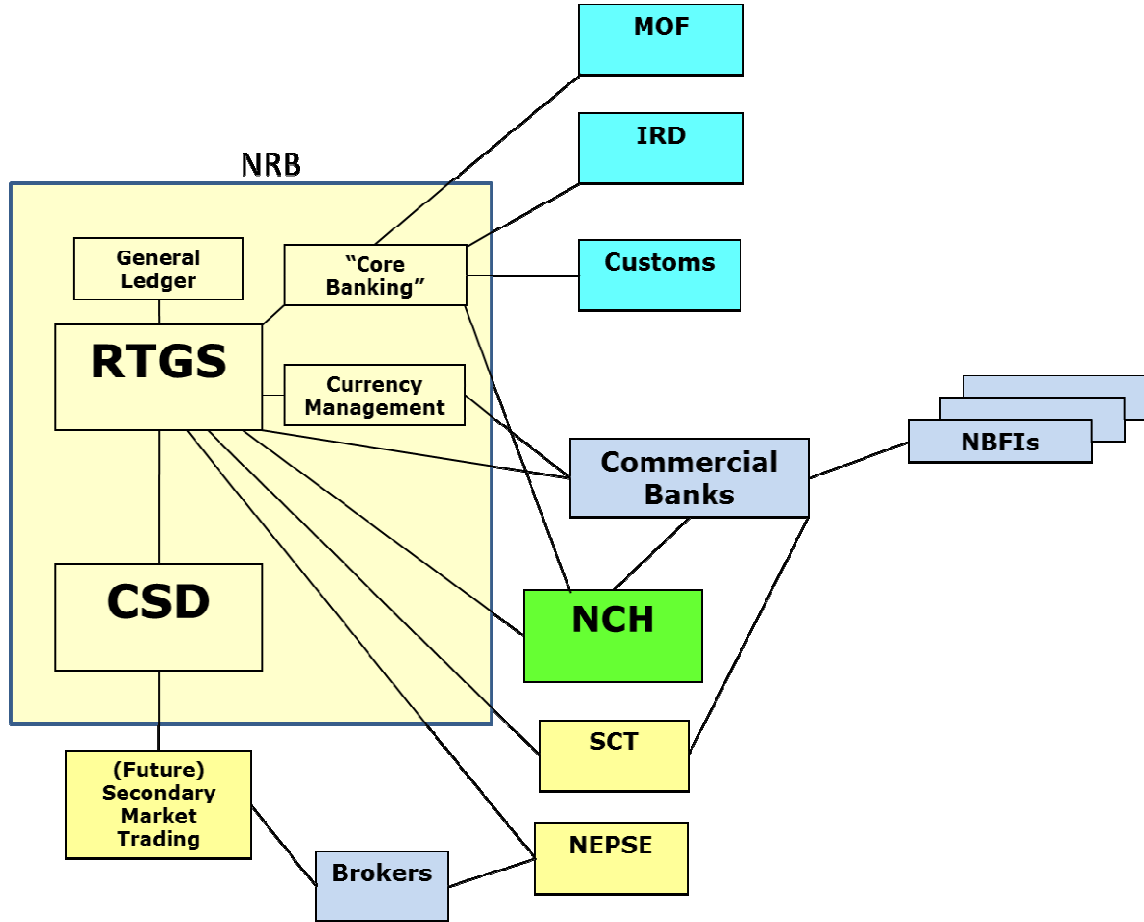


Figure 1. Indicative NPS Architecture for Nepal

3. DEFINING THE PAYMENTS SYSTEM STRATEGY

This section describes the model proposed by the NRB for the development of a National Payments System (NPS) which reflects both the needs of Nepal and the responsibilities assigned to different stakeholders.

31. The NRB is adopting a strategic approach for the reform of the payments system of Nepal. The experience of other countries has shown that the lack of a co-ordinated approach to payments system issues affects not only the success of individual projects but also the overall financial infrastructure and, in the final analysis, the national economy. If a National Payments System (NPS) strategy is not defined and agreed as a matter of urgency, the future of the payments system in Nepal will be the uncertain result of separate efforts by stakeholders trying to improve their systems without a view of the overall national interest.

32. A national payments system architecture should consider as an important element the safety and stability of the financial system. A consensus on a strategic and collaborative approach is crucial in that this enables a holistic view of all aspects of the nation's payments system needs in order to satisfy them in an orderly and cost-effective manner. A collaborative approach, with the active participation of all stakeholders, is essential because of the complexity of the required changes which will involve inputs relating to service providers, users, technologies, legal and regulatory matters, and contributions from several professional disciplines. A well-structured collaborative approach will create synergy, stimulate learning and provide a basis for optimising benefits through co-operation and consensus building. Finally, a strategic approach will be able to address all the critical issues present in the current payments arrangements.

33. The NRB is taking the leading role in formulating and implementing the strategy for payments system modernisation. The NRB will act in the interests of the system as a whole, because it has the legal mandate to act in the common interest, aiming at increasing participants' confidence in it as a neutral agent. As a neutral agent, the NRB is less likely to trigger competitive concerns that could slow progress and is more able to support the creation of a comprehensive vision for the future national payments system.

34. The scope and difficulty of developing and carrying out a strategy for payment systems modernisation successfully should not be underestimated. This will be a new process, and the projects that will be designed and carried out under the umbrella of the overall strategy will present new challenges to all parties involved. The major risks are: (i) the systems developed could not be used; (ii) the resulting system changes will not satisfy the needs of all users, particularly in the context of the NRB's and the GON's drive for Financial Inclusion; and (iii) the systems will not be cost efficient and affordable. A collaborative and co-operative approach is the only way in

which these risks can be minimised. In order to have an efficient co-operative approach appropriate human resources, in number and expertise, must be made available by the different stakeholders.

3.1 The Role of a National Payments System (NPS)

35. It is widely accepted that a NPS consists of a defined group of institutions and a set of instruments and procedures, used to facilitate the circulation of money within the country and internationally. Any country's economy can be viewed as a series of layers in an inverted pyramid, as depicted in the diagram below, in which each layer is supported by the layers beneath it. The broadest 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. It is supported by the country's banking system - the next level of the pyramid - which provides payment services to all sectors of the economy.⁵ The third level consists of a limited number of interbank value transfer systems through which payment and other financial transactions are processed. 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.

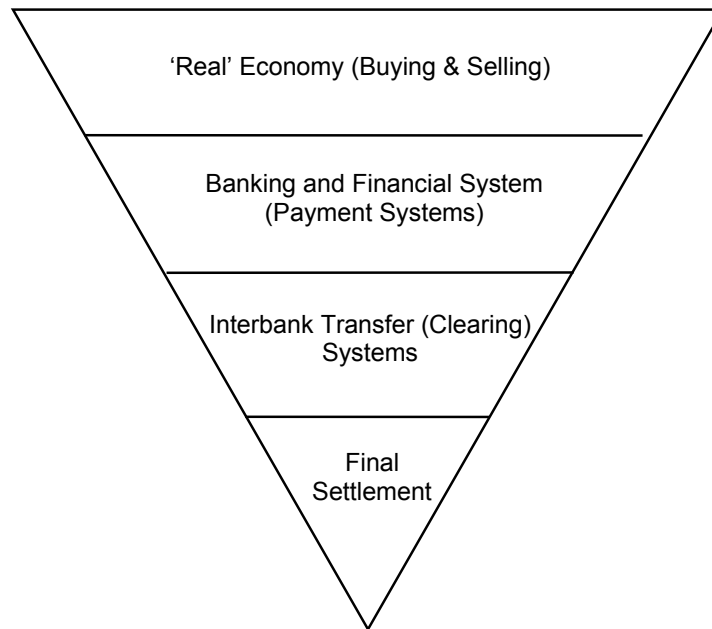


Figure 2: Layers of the National Payments System

⁵ Comprising the individual, retail, industrial and commercial, financial, government, and international sectors.

36. The NPS is therefore a core component of the broader financial system and is the infrastructure that provides the economy with the channels or circuits for processing the payments resulting from the many different types of economic transactions that take place on a daily basis. It can be seen as the ‘lubrication system’ for the engine of the economy.

37. A well functioning NPS requires a delicate balance between market-driven competition, co-operation and public good considerations. In a mature environment, banks and other payment service providers should compete for payments business and customers while achieving the benefits and efficiencies that stem from the sharing of non-competitive infrastructures. In the national interest, it is imperative that economies of scale are achieved and that the national payment service infrastructure allows as many participants as possible to offer their services to the public.

3.2 Scope and Components of a NPS

38. Taking account of the previous points, it is clear that a comprehensive NPS comprises not just the funds transfer mechanisms (payment processing organisations, communications networks, and computer systems). It is broader in concept than the infrastructure for a particular payment system. A NPS includes a country’s entire matrix of institutional and infrastructure arrangements and processes for initiating and transferring monetary claims in the form of commercial bank and central bank liabilities. The main elements of a NPS include the following:

- Institutions providing financial intermediation;
- Businesses and organisations that operate payment transaction, clearing and settlement service networks;
- A legal and statutory framework;
- Rules, regulations and agreements;
- Appropriate payment instruments;
- Processing systems and procedures;
- A cost-effective technological infrastructure;
- Clearing and settlement mechanisms that adequately balance risk and efficiency requirements;
- An appropriate oversight framework.

3.3 Conceptual Framework for NPS Development

39. Typically, payment services have evolved over time in an incremental manner driven by the need either to resolve problems or to take advantage of specifically identified improvement opportunities. To avoid a continuation of this ad-hoc

operational approach to payments system development, the NRB has taken a strategic approach driven by businesses' and users' needs to identify and implement a phased series of agreed changes - based on stakeholder consensus – to ensure that a well-described medium-term vision of the NPS is realised. A smooth and trouble-free implementation of the NPS can best be achieved through development of a vision that characterises the sought-after arrangements in terms of goals, objectives, primary features, critical success factors, fundamental principles, and strategies.

3.4 Goals and Objectives

40. The primary goal of the NPS in Nepal, as in all countries, is to enable the circulation of money.⁶ This goal emphasises the fact that the NPS is an enabler of economic activity. It provides the circuits for effecting payments, domestically and internationally. The main broad objectives pursued by the NRB are:

- To provide effective mechanisms for the exchange of money between transacting parties;
- To enable the management, reduction and containment of systemic and other payments system-related risks; and
- To promote systems that effectively contribute to the country's financial stability, economic growth and financial inclusion.

3.5 Primary Features

41. The primary features of the future Nepal NPS require detailed discussion and agreement with all stakeholders as they will include a full range of policy, operational and technical attributes that will characterise the future. The list of required design features includes at least the following:

- Settlement of domestic interbank obligations is effected with finality on a same day basis;
- Participants compete on an equal footing in the provision of interbank clearing and settlement services;
- There is healthy competition amongst payment service providers, which promotes cost-effectiveness, quality of services and innovation;
- The NPS is easily accessible;
- The NPS is cost efficient;

⁶ Money is used here in its broadest sense and includes all forms of payment, such as cash, cheques, cards, electronic payments, etc.

- Appropriate sub-systems are provided for retail, wholesale, foreign exchange, capital market, and money market transactions;
- The public is aware of NPS features;
- The NPS supports electronic delivery versus payment (DvP) for securities transactions and payment versus payment (PvP) for foreign exchange transactions;
- The NPS is internationally compatible;
- Payment settlement time-lags resulting from trading transactions are in line with international practice;
- The NPS makes optimum use of the available liquidity;
- The NPS actively supports the NRB's and GON's drive for financial inclusion;
- The international community has an appreciation of the effectiveness of the NPS.

3.6 Critical Success Factors

42. The success of the NPS will be measured against achievement of a comprehensive range of factors such as those illustrated below:

- Adequate risk control measures;
- Irrevocability of settled transactions;
- Synchronisation of delivery and payment;
- Facilitation of monetary policy execution;
- Sufficient liquidity;
- Confidentiality and security;
- Sound legal foundation;
- Adherence to national rules, regulations and procedures;
- Effective fraud-prevention and detection measures in place;
- A suitable variety of payment instruments and access channels;
- Pricing policies consistent with the overall objectives;
- Service to all the people of Nepal.

3.7 Fundamental Principles

43. A vital issue in NPS development and implementation relates to reaching consensus on a comprehensive range of fundamental principles. The NRB follows internationally accepted standards in the area of payment and settlement systems, in particular the *Principles for Financial Market Infrastructures* published in 2012 by

the Bank for International Settlements (BIS) and the International Organization of Securities Commissions (IOSCO)⁷.

44. In addition, as the NPS covers all payment systems, the range of agreed fundamental principles should also cover all sub-systems. Such fundamental principles include the following:

- The provision of NPS services is not the exclusive domain of banks;
- The evolution of the NPS infrastructure is a co-operative responsibility;
- Participants are liable for the risks that they introduce into the NPS;
- A balance is maintained between risk reduction and cost;
- The central bank response to a problem in the NPS will be in the interest of the system, not individual participants;
- Adequate oversight is necessary to ensure the safety and soundness of the NPS.

3.8 Strategies

45. Finally, the NRB has developed a series of strategies to align the current payment arrangements with the envisaged NPS. These strategies taken together will represent an agreed set of initiatives that will be co-operatively implemented by all stakeholders. This change programme will be executed under the leadership of the central bank and will include a number of clusters of activity aimed at, for example, risk reduction, using efficient payment instruments, strengthening the legal and regulatory framework, payment practices, interface between trading systems and the NPS, and management of the NPS. Such strategies include:

- Clarifying the roles and responsibilities of all participants in the NPS;
- Introduction of measures to automate interbank large value payments and settlement of bulk clearing processes, and reduce the use of cash and cheques;
- Reduction of settlement and operational risk in clearing and settlement processes;
- Revision of the statutory powers of the NRB regarding payment systems;
- Introduction of a regulatory framework for reducing the legal risk in the clearing and securities settlement services, and for oversight of payment services providers, and electronic payment instruments;
- Creation of participation agreements for utilising common investments in infrastructure;

⁷ Available on the BIS website www.bis.org

- Increasing interoperability across the existing and any new payment platforms/schemes;
- Development of interbank money market and securities markets, together with the necessary clearing and settlement infrastructure;
- Creation of a National Payments Council to discuss and resolve relevant issues in the payments field;
- Establishment of NPS standards; and
- Co-operation with financial authorities in the SAARC region.

4. PILLARS OF THE NATIONAL PAYMENTS SYSTEM

46. The implementation plan for the National Payments System Development Strategy in Nepal is based on a deliberate approach which addresses all of the strategic issues related to the nine Pillars over a period of approximately five years. In this way the NRB and all stakeholders can exercise the necessary level of co-ordination to ensure success of the NPS development programme.

The major elements of the payments system reform programme are as follows, as elaborated in the rest of this Section:

- (i) All new systems will operate under a sound legal framework, rules and regulations, and will be overseen by the NRB;
- (ii) The NRB will procure and implement a Real-Time Gross Settlement system. This will be integrated with a Central Securities Depository system for securities settlement – see (v) below – to provide the infrastructure for settling large value/high priority interbank transfers, net positions from retail/bulk payment clearing operations, securities transactions, interbank market operations, monetary policy operations, and emerging capital market development. This will significantly reduce the systemic risk inherent in the current Nepalese environment. In addition, taken together with envisaged developments in: (a) the interbank clearing system operated by NCH; and (b) the debit card switching and clearing systems operated by SCT and others, the RTGS system will reduce substantially the use of cash and cheques. It will also underpin developments in fostering financial inclusion, such as the introduction of innovative payment instruments and the move by the GON to pay benefits through electronic channels.
- (iii) The NRB will work to encourage the current providers of automated clearing systems, together with any new entrants which may wish to enter the payments market, to continue to develop, enhance and, as applicable, integrate their services with a view to supporting a continuing reduction in the use of cash and cheques and enhancing efficiency.
- (iv) The NRB will work with the relevant elements of the GON (the Ministries of Finance and Federal Affairs and Local Government, the Inland Revenue Department (IRD) and the Customs Department) to promote the use of electronic payment instruments and systems for the GON's payments and revenue collections.
- (v) The NRB will ensure that all securities issued by the GON are issued through, and managed by, an electronic Central Securities Depository (CSD). The CSD will include an integrated primary trading (auction) module and an application (tightly linked with the RTGS system) for the settlement of securities

transactions, following the principle of Delivery versus Payment (DvP). The NRB may procure and implement its own CSD, or alternatively may seek to use the CSD currently being implemented by CDSC. In addition, the NRB will work with NEPSE and the Securities and Exchange Board of Nepal (SEBON) to ensure the integration of the secondary market in GON securities with the present capital markets.

- (vi) The NRB will initiate work to develop an interbank money market in Nepal and will work with market players to evaluate the requirement for a centralised money market information and trading system, integrated with the RTGS system. If appropriate the NRB will initiate the procurement of a suitable system.
- (vii) The NRB will work with all relevant players to improve the efficiency, cost-effectiveness and convenience of international remittance services, particularly bearing in mind the substantial contribution made by international remittances to the Nepali economy.
- (viii) The NRB will develop an action plan to introduce a payments oversight function and will introduce this function in parallel with the preceding systems developments.
- (ix) In consultation with key market players, the NRB will establish a National Payments Council (NPC) with membership drawn from across the payments system stakeholder community. The objective of the NPC will be to act as a high-level consultative body to the NRB in developing plans for, and implementing, major NPS developments.

47. For each of the nine Pillars, this Section briefly describes the principles on which the Pillar is based and outlines the desired future state of the NPS in Nepal in the context of that particular Pillar. Achieving the desired future state will require the execution of a number of individual development projects. These are described in terms of each Pillar in Section 5, which contains descriptive information on each project and a high level indicative timetable for execution.

4.1 The Legal Framework

48. A sound and appropriate legal framework is generally considered the basis for a sound and efficient payments system. The legal environment should include the following: (i) laws and regulations of broad applicability that address issues such as insolvency and contractual relations between parties; (ii) laws and regulations that have specific applicability to payment systems (such as legislation on electronic signature, validation of netting, settlement finality); and (iii) the rules, standards and procedures agreed to by the participants of a payment system.

49. The legal infrastructure should also cover other activities carried out by both public and private sector entities. For example, the legislative framework may establish clear responsibilities for the central bank or other regulatory bodies such as oversight of the payments system or the provision of liquidity to participants in these systems. Finally, relevant pieces of legislation that have impact on the soundness of the legal framework of the payments system include: law on transparency of payment instruments' terms and conditions; antitrust legislation for the supply of payment services; and legislation on privacy. While laws are normally the appropriate means to enforce a general objective in the payments field, in some cases regulation by the overseers might be an efficient way to react to a rapidly changing environment. In other cases, specific agreements among participants might be adequate; in this case an appropriate professional assessment of the enforceability of these arrangements is usually required. Since the payments system typically includes participants incorporated in foreign jurisdictions or, the payments system might operate with multiple currencies or across borders, in some cases it may be necessary to address issues associated with foreign jurisdictions.

50. Similar considerations apply to securities settlement systems. 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.

51. If the legal framework is inadequate or its application uncertain, it can give rise to credit or liquidity risks for system participants and their customers or to systemic risks for financial markets as a whole. A variety of laws and legal concepts can affect the performance of clearing and settlement systems. Contract laws, company laws, bankruptcy and insolvency laws, custody laws and property laws may impede the performance of a clearing system. The general need is to have an adequate legal basis that is able to accommodate technological advances and, in this way, does not constitute a constraint for the operation or future development of the system. Key aspects of the settlement process that the legal framework should support include: enforceability of transactions, protection of customer assets (particularly against insolvency of custodians), immobilisation or dematerialisation of securities, netting arrangements, securities lending (including repurchase agreements and other economically equivalent transactions), finality of settlement, arrangements for achieving delivery versus payment, default rules, liquidation of assets pledged or transferred as collateral, and protection of the interests of beneficial owners.

52. The rules and contracts related to the operation of the SSS should be enforceable in the event of the insolvency of a system participant, whether the participant is located in the jurisdiction whose laws govern the SSS or in another jurisdiction.

Pillar I: Payment Systems in Nepal work in a sound and robust legal environment able to support settlement finality and the efficiency of payment arrangements

53. *The NRB supports a robust legal framework for payments and securities settlement and is proactively seeking to strengthen the legal and regulatory environment in Nepal. A legal team has been formed between the NRB and the Ministry of Finance to address all pending issues and draft the proposed legislation. The team is supported by a legal expert from the World Bank. The reform of the legal framework is closely linked with several of the issues covered in the other Pillars of the NPS Development plan as described below.*

54. *The NRB will strongly support and encourage, as fundamental to ensuring stability and efficiency, legislation on: (i) clearing and settlement of payment and securities transactions, including rules on collateral; (ii) payments system oversight; (iii) electronic transfers, to permit full recognition of modern ways of payment and to support interoperability; (iv) regulation of remittance service providers; and (v) dematerialisation and immobilisation of securities, depository and custodian functions.*

55. *Any pieces of legislation, including the rules and regulation of all systems, will be discussed with other stakeholders. The overall objective is to reach a general agreement on a co-ordinated body of legislation where each of the stakeholders plays its role, with all relevant primary and secondary legislation, as well as banking agreements, being in place.*

56. *The NRB has initiated a comprehensive review of the legal and regulatory framework of the Nepal NPS, and is now developing by-laws containing the main provisions on regulatory and legal aspects of payment systems and services (including settlement of securities). These will be complemented by relevant secondary measures. When the time is ripe, the NRB will propose a comprehensive Law on the National Payment System for adoption.*

4.2 Settlement Mechanisms for Large Value and Time Critical Payments

57. *Systems to process large value and time critical payments are the most significant component of the national payments system. 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 order to cope with these systemic risks, several measures are adopted, depending on the nature of the large value system. If the system is characterised by a deferred net settlement of payment transactions, risk control measures include the introduction of bilateral and multilateral caps, the implementation of loss-sharing agreements, and the pledging of collateral to cope with the inability of one or more participants to pay. On the other*

hand, the development of Real Time Gross Settlement Systems (RTGS) is one response to the growing awareness of the need for sound risk management in large-value funds transfer systems. RTGS systems can offer a powerful mechanism for limiting settlement and systemic risks in the interbank settlement process, because they can effect final settlement of individual funds transfers on a continuous basis during the processing day. In addition, RTGS systems can contribute to the reduction of settlement risk in securities and foreign exchange transactions by facilitating the delivery-versus-payment (DvP) and payment-versus-payment (PvP) mechanisms.

58. Variants of the basic RTGS system, so called hybrid systems, which take into account liquidity saving features that exist in net settlement systems, are being introduced in some countries. In jurisdictions that do not already have ACH infrastructure, an integrated hybrid model under the ATS model, can be used. This model integrates gross settlement and deferred net settlement functionality in one system and also supports real-time transaction initiation in single transaction mode and also supports bulk mode.

Pillar II: Settlement mechanisms for large value and time critical payments in Nepal are safe and efficient and comply fully with the BIS Principles for Financial Market Infrastructures

59. *All systemically important payments systems in Nepal will, over time, comply with the CPSS-IOSCO Principles for Financial Market Infrastructures.*

60. *The NRB will issue a risk control policy statement, after having discussed its main implications with all stakeholders. All systems and their participants will be required to adhere to this document. Stakeholders will commit to apply the agreed policies.*

61. *The NRB will implement a modern Real Time Gross Settlement (RTGS) facility within the NRB operated payments system, which is intended to represent the foundation of the National Payments System in Nepal. To this end, the NRB will initiate, as a matter of urgency, the procurement of a Real-Time Gross Settlement (RTGS) system for large value and time critical payments that will replace the existing settlement arrangements. This system will have clear rules and procedures, which will specify all the tools for managing legal, financial and operational risks. The design of the system will include the provision of management tools to handle liquidity risks. They include: (i) the provision of queuing mechanisms and queue optimisation mechanisms; (ii) agreeing with system participants efficient operating hours; (iii) establishing sound and efficient interconnections among the systems and clear settlement cut-off times for ancillary systems; (iv) requiring that all high-value customer payments, which are currently made by cheque and cleared through a special daily manual clearing session at the NRB, be made through the RTGS system; and (v) creating routines for channelling government payments early in the operating*

day. In a later stage, the system should provide functionality for collateralised intraday credit.

62. To support intraday liquidity needs of participants, the NRB will continue to allow banks to use their reserve balances held at the central bank for prudential and monetary policy purposes. The NRB will promote the development of the intraday repo market (see Pillar VI).

63. The design of the system will include: (i) a robust and efficient communication network between the bank and system participants, which will reduce and eventually eliminate the use of manual and paper-based procedures; (ii) The enforcement of strict security measures for both physical and electronic access to the system; (iii) implementation of contingency plans and disaster recovery mechanisms, including a secondary processing site; and (iv) implementation of measures for business continuity and resilience across the NPS. These features of the system will be designed, taking into account the specific situation of Nepal.

64. Currently, the NRB does not charge any fee for using its settlement services. Pricing policies for the new payment systems will be consistent with the overall objectives of the NPS reform. In particular any forms of cost recovery will be evaluated vis-à-vis all other externalities that stem from a robust and efficient payments system (i.e. risk reduction). The NRB will establish a cost recovery pricing policy consistent with its general policy objectives, and intends that the obtained benefits will be passed on to the final users. The pricing policy will be regularly reviewed to take account of changing circumstances.

65. Access criteria for the RTGS system (including exit and exclusion) will be clearly defined on a non-discriminatory basis. Tiered arrangements could be considered to allow the reduction of manual procedures through indirect participation. Initially, direct participation in the system will be limited to financial institutions that are allowed to hold accounts with the NRB. In the medium term, the NRB might consider extending access to non-bank financial institutions provided their participation does not introduce additional financial, operational or systemic risk. Such a decision will be taken only after careful consideration of the needs and benefits for the system as a whole.

66. Effective Users' Groups (i.e. groups of system participants to discuss system development issues) will be introduced. The NRB in the context of its transparency policy will publish the operating rules of the system and any other relevant documentation.

67. The NRB-operated payment system will be integrated safely and efficiently with straight through processing with other relevant internal and external systems. The RTGS application will be used for final settlement of retail systems and appropriate

interfaces will be implemented. The RTGS system will be integrated with all current and future securities settlement systems to achieve DvP. Some interfaces with planned trading platforms for both the securities market and the interbank market will be designed to support efficient liquidity management for financial institutions. Clearing systems operated by the private sector that settle on a net basis will be granted direct access to the RTGS for the purpose of settlement.

68. *The NRB will publish the Rules and operational procedures of the RTGS system and any other relevant documentation.*

69. *The NRB will automate its internal systems, including completion of upgrading the General Ledger (GL) system, custody accounts management system, government accounts operations, and data reporting and data storage platforms, and will implement automated links between those systems and the RTGS system as necessary and applicable.*

4.3 Retail Systems

70. A wide range of payment instruments is essential for supporting customers' needs in a market economy. A less than optimal supply of payment instruments may ultimately have an impact on economic development and growth. Moreover, the safe and efficient use of money as a medium of exchange in retail transactions is particularly important for the stability of the currency and a foundation of the trust people have in it. The design of the retail payments systems affects the soundness of financial institutions and the efficiency with which an economy functions. It has been widely acknowledged that moving from cash and paper based instruments to electronic payment instruments is beneficial for the whole economy. As publications of the Committee on Payment and Settlement Systems (CPSS) have shown,⁸ the use of retail payment instruments differs in industrialised countries both within and between the countries considered. This is due to a variety of reasons including cultural, historical, economic and legal factors. However, some common trends may be observed, namely: the continued primacy of cash (in volume terms) for face-to-face payments; growth in payment cards use; increased use of direct funds transfers, especially direct debit transfers, for remote payments; emergence of a range of innovative payment instruments; and changes in the market arrangements for providing and pricing the retail payment instruments and services delivered to end-users.

71. During the last few years, the attention has increasingly shifted to the innovative retail payment instruments and mechanisms, which have emerged in both high and low income countries to address local market needs. Electronic-money (e-money)

⁸ Bank for International Settlements, Committee on Payment and Settlements Systems, *Clearing and Settlement Arrangements for Retail Payments in Selected Countries*, 2000; and *Retail Payment Systems in Selected Countries: a Comparative Study*, 1999, Basle, Switzerland.

instruments, internet and mobile payments support an expanding range of payment services such as person-to-person transfers, bill payments and basic deposit and withdrawal activities using either traditional bank accounts or carefully designed non-traditional accounts.

72. Developments in retail payments have led to enhancing the scope, efficiency and scale of existing payment instruments and systems. These developments also have the potential dramatically to expand the penetration of existing payment instruments both by significantly increasing the number and variety of service points and through introducing new lower-cost business models.

73. In March 2003, the CPSS published a Report⁹ which identified and explored policy issues for central banks and considered the possible contribution of central banks towards furthering policy goals in this area. Central banks are currently involved in retail payments in three main ways: (i) in an operational capacity; (ii) as payments system overseers; or (iii) as catalysts or facilitators of market and regulatory evolution. Even though the involvement of the central bank in retail payment systems varies from country to country, the report suggests that each central bank should examine developments in its markets periodically in the light of identified policy issues, in order to form a view on whether such issues need to be addressed within their own jurisdictions. Where such issues are judged to arise, relevant public authorities (including central banks) may decide to take action aimed at establishing or re-establishing an acceptable balance between the various aspects of safety and efficiency.

74. The World Bank has developed a strategy for reforming retail payments¹⁰, which contains a number of recommendations for the modernisation of retail payment systems. The public policy goals, the central bank minimum action and the range of possible additional actions identified in the CPSS Report are summarised in Box 1. The draft World Bank guidelines for developing a comprehensive retail payments strategy are presented in Box 2.

Box 1: Public Policy Goals, Central Bank Minimum Actions and Range of Possible Additional Actions for Retail Payment Systems

Legal and regulatory Framework

Public Policy Goal A: Policies relating to the efficiency and safety of retail payments should be designed, where appropriate, **to address legal and regulatory impediments to market development and innovation.**

⁹ Bank for International Settlements, Committee on Payment and Settlements Systems, *Policy Issues for Central Banks in Retail Payments*, 2003.

¹⁰ The World Bank, *Developing a Comprehensive National Retail Payments Strategy*, 2012

The Central bank should, at a minimum:

- (i) Review the legal and regulatory framework to identify any barriers to improvements in efficiency and/or safety;
- (ii) Co-operate with relevant public and private entities so that the legal and regulatory framework keeps pace with the changing circumstances and barriers to improvements in efficiency and/or safety are removed, where appropriate.

The range of possible additional actions could include, depending on the individual central bank's responsibilities, powers and priorities:

- Altering regulations that currently present barriers to improving efficiency and safety, where this is within the central bank's remit and where other public interest arguments do not militate against such action;
- Introducing or proposing new regulations, as the central bank's remit allows, where the legal or regulatory framework is insufficient to support increased efficiency and/or safety;
- Offering expert advice to other responsible authorities, for example in the preparation of relevant legislation.

Market structure and performance

Public Policy Goal B: Policies relating to the efficiency and safety of the retail payments should be designed, where appropriate, **to foster market conditions and behaviors.**

The central bank should, at a minimum:

- (i) Monitor developments in market conditions and behaviours relating to retail payment instruments and services and assess their significance;
- (ii) Co-operate with other public or private entities, as appropriate, to foster competitive market conditions and to address any significant public policy issues arising from market structures and performance.

The range of possible additional actions could include, depending on the individual central bank's responsibilities, powers and priorities:

- Promoting appropriate standards or guidelines for transparency, in co-operation with relevant public and private sector entities;
- Reviewing conditions in the market for cross-border retail payments, with a view to promoting improvements, as such action is warranted;
- Considering and, if appropriate, performing regulatory and/or operational intervention in cases where market forces are judged not to have achieved or not to be likely to achieve an efficient and safe solution.

Standards and Infrastructure

Public Policy Goal C: Policies relating to the efficiency and safety of retail payments should be designed, where appropriate, **to support the development of effective standards and infrastructure arrangements.**

The central bank should, at a minimum:

- (i) Monitor developments in security standards, operating standards and infrastructure arrangements for retail payments which the central bank judges to be important for the public interest, and assess their significance;
- (ii) Co-operate with relevant public and private entities to encourage market improvements in such standards and infrastructure arrangements, where appropriate.

The range of possible additional actions could include, depending on the individual central bank's responsibilities, powers and priorities:

- Participating actively in reviewing and developing appropriate standards and arrangements, in cooperation with relevant public and private entities, where the central bank judges its more intensive involvement to be necessary to furthering the goal;
- Considering and, if appropriate, performing regulatory and/or operational intervention in cases where market forces are judged not to have achieved or not to be likely to achieve an efficient and safe solution.

Central Bank Services

Public Policy Goal D: Policies relating to the efficiency and safety of retail payments should be designed, where appropriate, **to provide central bank services in the manner most effective for the particular market.**

The central bank should, at a minimum:

- (i) Review and, if appropriate, adapt its provisions of settlement services to contribute to efficient and safe outcomes;
- (ii) Be transparent in its provision of services.

The range of possible additional actions could include, depending on the individual central bank's responsibilities, powers and priorities:

- Reviewing the relevant non settlement services it provides and considering their adaptation to changing market conditions;
- Reviewing policies on access to central bank services and on pricing.

Box 2. Developing a comprehensive retail payments strategy

The World Bank Payment Systems Development Group is developing a framework for countries to use in developing a comprehensive retail payments strategy. This is currently in draft stage and will be published in early 2012. This framework has been developed by synthesising the past studies of the World Bank, the CPSS, and other international and national bodies, and also the world-wide experience of the World Bank in supporting payment systems reforms in over 100 countries.

This framework builds a case for expanding the range of public policy goals with respect to retail payments from the general overarching goals with respect to National Payments systems. The minimum list of public policy goals advocated is:

- *Promote affordability and ease of access to payment services;*
- *Promote development of efficient infrastructure to support development of payment instruments and mechanisms to meet retail payment needs; and,*
- *Promote socially optimal usage of payment instruments.*

To achieve these public policy objectives the following guidelines have been advocated:

- *Guideline 1: The market for retail payments should be transparent, have adequate protection of payers and payees interests and be cost-effective.*

- *Guideline II: Retail payments require certain underlying financial, communications and other types of infrastructure; these infrastructures should be put in place to increase the efficiency of retail payments. These infrastructures include inter-bank electronic funds transfer system, inter-bank card payment platform, credit reporting platforms, data sharing platforms, large value inter-bank gross settlement systems, availability of reliable communications infrastructure and also national identification infrastructure.*
- *Guideline III: Retail payments should be supported by a sound, predictable, non-discriminatory and proportionate legal and regulatory framework.*
- *Guideline IV: Competitive market conditions should be fostered in the retail payments industry, with an appropriate balance between co-operation and competition to foster, among other things, the proper level of interoperability in the retail payment infrastructure.*
- *Guideline V: Retail payments should be supported by appropriate governance and risk management practices.*
- *Guideline VI: Public authorities should exercise effective oversight over the retail payments market and consider proactive interventions where appropriate.*

Pillar III: Retail payment systems in Nepal are efficient, sound and interoperable and support the offer of a wide range of payments instruments and services

75. *The NRB will continue to play a role in retail systems as settlement agent, operator, participant, overseer and catalyst for the change. The overall objective is to provide the Nepal economy with a broad range of safe and efficient payment services.*

76. *An Automated Clearing House (ACH) called Nepal Clearing House (NCH), which is part-owned by the NRB, is currently operating in Nepal for clearing truncated electronic cheque records in the Kathmandu Valley area. Future development plans for NCH include extending the electronic cheque clearing to cover the whole country, and subsequently to include a broader range of non-time-critical retail interbank electronic payment instruments such as credit transfers (Direct Credits) and Direct Debits. When fully operational, the system will process payments of businesses and individuals, salary payments, utility bills and other recurrent payments, and government payments. The system will accelerate the move towards electronic credit instruments, reduce the systemic importance of cheques, and reduce the usage of cash.*

77. *Financial risks in the ACH will be minimised by ensuring that large value payments are moved to the RTGS system and possibly considering the introduction of payment amount limits, requiring banks to maintain minimum balances, or introducing a collateral pool. The establishment of settlement assurance procedures, such as cost sharing arrangements or a guarantee fund, and its associated costs, will be studied in terms of the level of systemic importance of the ACH. They can also be*

used as an incentive mechanism to move large value payments out of the cheque clearing system.

78. Interbank card-based payment services (ATM and EFTPOS) are currently provided by SmartChoice Technologies (SCT) and two smaller organisations. The NRB will work with SCT and other market players to encourage the development and extension of card-based services, in particular to rural and low-income segments of Nepali society. The NRB will also develop modern security and efficiency technical standards for card-based payment instruments, particularly chip cards.

79. The NRB will ensure that all current and future retail clearing systems are appropriately linked to the RTGS system, once it is operational, for settlement of net clearing balances.

80. The NRB will approve and oversee the execution of the rules and regulations for the ACH and card switches, and all future retail payment systems. In particular, the following items will be covered: i) definition and characteristics of the system(s); ii) access criteria; iii) risk management mechanisms; (iv) operational instructions including sanctions to be applied in case of non-compliance; v) responsibilities of NCH/SCT and system participants; vi) controls to be applied; vii) message structures; viii) contingency arrangements; ix) fees; x) resolution of conflicts.

81. The NRB will ensure that all ACH and card switch system rules guarantee fair and open access criteria that are balanced with potential financial and operational risk. Direct participation in the systems will be determined by the operators under the oversight of the NRB and will at a minimum be allowed for all banks in Nepal. In order to enable non-bank institutions to meet the needs of their customers efficiently, the system operators and the NRB will assess the possibility of allowing direct participation of such entities, provided: (i) they are regulated by the NRB; and (ii) they comply with the operational, security, and financial risk management requirements of the system. Another option would be to encourage the commercial banks to create specific products that enable non-bank institutions to meet the needs of their customers in an efficient manner while relying upon the banks for clearing and settlement.

82. NCH, SCT and other current and future card operators and other clearing service providers will establish a dialogue with the major stakeholders, through the creation of effective User Groups and through the National Payments Council (NPC).

83. Other financial or non-financial entities may operate retail systems or provide retail payment services. In this regard, the NRB will play a catalyst role for the implementation of safe and efficient systems by the financial sector. All retail systems will be overseen by the NRB (see Pillar VIII) in terms of their safety and efficiency,

with appropriate instruments depending on the level of risk they introduce to the financial system.

84. The NRB will ensure that when other clearing arrangements for retail payments are developed in Nepal, they will all be appropriately linked to the RTGS application for settlement.

85. The NRB will promote a high degree of interoperability of all retail circuits (e.g. ATM and EFTPOS) and high efficiency in terms of their clearing cycles.

86. The NRB will work in co-operation with stakeholders and payment service providers to develop a conducive environment for introduction of innovations in retail payments, such as mobile money and agent-based models. In this regard concerted actions will be taken under Pillar I – Legal and Regulatory Framework – and Pillar VIII –Oversight Framework. In addition the NRB will ensure that these innovative payment mechanisms are efficiently integrated into the NPS and will benefit from efficient clearing and settlement systems.

87. Pricing policies for retail circuits will be formulated in a way that takes into account the principle that costs are borne with respect to the benefits accrued, and consistently with efficiency enhancement objectives. The NRB will review the cost recovery pricing policies to make them consistent with the NPS general policy objectives, and intends that the obtained benefits will be passed to the final users.

88. Effective fraud-prevention and detection measures will be put in place for all retail payment systems in order to ensure that, as far as possible, fraud occurrences in all payment flows are acceptably low. An important objective will be to establish appropriate customer protection mechanisms for the systems.

4.4 Government Payments

89. In all countries, the public sector is a heavy user of the payments system. Government payment flows include many different kinds of payments and revenue receipts (for collection of taxes, Customs duties and sundry Government revenues, and payment of salaries, pensions and other social payments, purchase of goods and services, etc.). In many countries, the public sector has lagged behind the private sector in terms of efficient use of payment instruments and has yet to achieve an effective integration with the banking sector which can often provide a range of modern electronic payment instruments and circuits. In recent years, more and more attention has been devoted to this issue and in many countries increasingly governments are moving to the use of the possibilities offered by new technologies such as electronic credit transfers (through ACH) and innovative payment services using smart cards, mobile phone payments and so on.

Pillar IV: Government collections and disbursements are fully and efficiently integrated with the National Payments System in Nepal and support its smooth functioning

90. *The current arrangements for government payments will be evaluated with a view to ensuring that full advantage is taken of the reformed National Payments System, taking into account the fact that government transactions form a significant percentage of all transactions in the system. In time, the bulk of collections and disbursements of the public sector will be executed electronically using the envisaged systems. This is to ensure that all the benefits of the payments reform will be accrued by all sectors of Nepalese society through an increased efficiency in the payments flow and by eliminating the need for the government to maintain accounts at commercial banks. This process would also facilitate any reforms that might be seen as desirable in the public accounts system.*

91. *In the short term, improvements in efficiency will be gained through implementing fully automated interfaces between the Ministry of Finance's Financial Management Information System (FMIS) and the relevant NRB (and other) systems. This will be facilitated by the full implementation of a Treasury Single Account (TSA) at the NRB from which all GON payments can be made and which can receive all incoming payments. The existing automated systems for electronic credit and debit transfers (NCH) and card switching and clearing (SCT and others), when suitably interconnected with the NRB's General Ledger and RTGS systems, will provide the infrastructure for distribution of payments through the TSA.*

92. *The NRB will seek to enhance the service that it offers to its GON customers, in particular by evaluating the potential to extend the use of the Olympic Banking System, which has recently been installed as the basis of the NRB's internal financial management system, to exploit its capability as a Core Banking System (CBS).*

93. *In the immediate term the NRB will work with the Ministry of Federal Affairs and Local Government in promoting and developing the current pilot scheme for distribution of funds under a number of different social protection programmes via electronic transfers across commercial banks' agent networks. This scheme will ultimately cover approximately one million citizens. In the longer term the NRB will work with all relevant public sector institutions to implement and exploit modern innovative payment systems for the disbursement of GON payments.*

94. *The NRB will work with the Inland Revenue Department (IRD) to improve the efficiency and convenience of tax collections through electronic payment instruments through suitable linkages between the IRD's online Revenue Accounting System (RAS), the RTGS system, the ACH operated by NCH and the commercial banks' CBSs.*

95. Likewise the NRB will work with the Customs Department to make the collection of import duties faster, safer and more efficient by implementing suitable linkages between Customs' ASYCUDA information system, importers' own information systems, commercial banks' CBSs and the RTGS system so that payments can be made in near-real time, thus facilitating more efficient revenue collection and the faster movement of goods across the border.

96. The gains in efficiency and cost reductions for government payments will be among the main results of the reform effort, as it should be possible to recover the investment cost in a very short time-span. Importantly, Government payments will create a critical mass for the wide adoption of innovative electronic payment instruments and new systems.

97. In the longer term, the NRB, banks and other stakeholders will continue to collaborate with the Government to implement innovative payment solutions such as an Internet portal/gateway for all payments to the Government.

4.5 Securities Depository, Clearing and Settlement Mechanisms

98. Securities markets are of high importance for a country's financial sector. Securities, and above all government securities, are used extensively in many countries to carry out monetary policy through Open Market Operations. Also, 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 are, therefore, an essential element for the development of the financial markets.

99. 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. If the legal framework is inadequate or its application is uncertain, it can give rise to credit or liquidity risks for system participants and their customers, or to systemic risks for financial markets as a whole.

100. The safety of the SSS is paramount from a participant and a regulatory perspective and should be given specific attention. The settlement process exposes both market participants and clearing and settlement systems to different risks, and the system should be designed to minimise these risks. The immobilisation or dematerialisation of securities reduces or eliminates certain risks. The transfer of securities by book-entry is a precondition for the shortening of the settlement cycle for securities trades, which reduces replacement cost risks.

101. The major settlement risk is counterparty risk (credit/principal risk). Delivery DvP is one of the primary means by which a market can reduce the risk inherent in securities transactions. The DvP concept seeks to eliminate principal risk from securities transactions by ensuring that sellers give up their securities if, and only if, they receive full payment and vice versa. There are three essential elements in a DvP transaction: (i) good and irrevocable delivery of securities, (ii) final and irrevocable funds, and (iii) simultaneous exchange.

102. There is a variety of risk management procedures to reduce market risk and strengthen a DvP mechanism. Those procedures include admission standards, members' creditworthiness monitoring, novation, participation funds, collateral, margins, buy-ins and sell-outs, net debit caps, bilateral credit limits and loss sharing arrangements. Most settlement systems use more than one procedure to minimise market risk. In addition, there are a number of mechanisms designed to improve the settlement process. Among them are: (i) central lending facilities; (ii) pledge recording facilities; and (iii) prompt re-registration procedures. Properly regulated securities lending and borrowing can bring significant benefits to a market and its users leading to more liquid markets. Short selling could be a useful mechanism to add liquidity. However, when short selling is permitted, regulation must guard against manipulative practices, including those associated with a significant short position.

103. Finality of both payments and securities' ownership transfer is a crucial factor in the development of a securities market. Otherwise, only local investors will operate in the market based on well-established client relationships and the confidence that this provides. In emerging markets, this factor is of critical importance if there is a desire to attract foreign investment. Foreign investors will be reluctant to participate in a market that is not considered to be safe and sound. Payments finality is equally important.

104. The failure of any bank that provides cash accounts to settle payment obligations for members of the Central Securities Depository (CSD) could disrupt settlement and result in significant losses and liquidity pressures. Use of the central bank of issue as the single settlement bank may not, however, always be practicable. In such cases, a private bank is sometimes used as the single settlement bank and steps must be taken to protect CSD members from potential losses and liquidity pressures that would arise from its failure.

105. Regarding regulation and oversight by the authorities, a specific allocation of responsibilities for supervision of securities clearance and settlement is important. However, in most cases, this function is performed together with the general supervision function of the participant entities without any special attention being given to clearance and settlement issues. There is a trend towards regulatory oversight policy being implemented at two levels as a substitute for traditional direct supervisory activity. Under this new way of working, the regulator conducts the

oversight of the activities of the Self-Regulatory Organisations (SROs) (CSDs, exchanges), while these institutions perform the same function with regard to its participants.

106. A securities regulator should have the authority to license Central Clearing Houses and CSDs (System Operators) as SROs and review and approve their rules. As an SRO, a system operator should have the authority to make and enforce rules on its participants. The securities regulator should have the power to issue the guidelines that system operators should follow. In addition, the securities regulator should make sure that the rules and procedures issued by SROs permit a sound and effective operation of the system and provide fair access to all market participants. The securities regulator should also have the authority to conduct periodic inspections, require the production of periodic reports and enforce the securities laws and regulations. Mutual co-operation between the securities regulator and the central bank as well as their co-operation with other relevant authorities is important in achieving their respective policy goals.

107. It is widely accepted that a securities market should be supported by the CSD with the broadest possible industry participation. Admission should be open to all qualified market participants needing access to the CSD. Membership standards for system operators should be established in order to minimise risk. Certain minimum standards of financial responsibility, operational capacity (including system security and integrity), experience and competence should be prescribed for participation in the systems. Mandatory capital requirements for participants are the first safety net to guard against a participant failure and, thus, an important risk management tool. However, these requirements are frequently established for reasons other than clearance and settlement and a system operator should have the authority to impose higher financial standards on its members/participants if the general requirements do not cover adequately the perceived risks. The rules for clearing and depository organisations should avoid unfair discrimination with regard to the admission of participants or among participants in the use of the system. The rules should provide fair procedures for review of decisions concerning denials of access. In addition, the system should provide participants with a meaningful opportunity to participate in the administration of the organisation's affairs.

108. No single set of governance arrangements is appropriate for all institutions within the various securities markets and regulatory schemes. However, an effectively governed institution should meet certain basic requirements. Governance arrangements should be clearly articulated, coherent, comprehensible, and fully transparent. Governance arrangements should therefore seek to minimise the conflicts between the objectives of owners, users, and other interested parties, and as far as possible to work efficiently when participants have access to relevant information concerning the risks to which they are exposed and, therefore, can take actions to manage those risks. The need for transparency applies to the entities that form the

clearing, settlement, and custodial infrastructure of the securities markets. Informed market participants are better able to evaluate the costs and risks to which they are exposed as a result of participation in the system. Relevant information should be accessible to market participants. Information should be current and available in formats that meet the needs of users.

Pillar V: Securities Depository, Clearing and Settlement. Securities Depository, Clearing and Settlement are safe and efficient, fully comply with international standards, and support the development of capital markets

109. *Securities Settlement Systems (SSS) in Nepal will comply with the BIS Principles for Financial Market Infrastructures. The NRB and the Government are committed to this objective.*

110. *The NRB will move to establish an automated Central Securities Depository (CSD) system to provide the necessary functionality to support the GON and its domestic debt operations. Options for implementing the CSD are for the NRB either to procure and install its own system or to use the CSD system which is being implemented by CDSC. The CSD will include an integrated auction system for primary market operations, with a trading platform for secondary market trading. It will also be tightly-coupled with the RTGS system (see Pillar II) for the purposes of: (i) implementing DvP for the settlement of all securities transactions and (ii) supporting (collateralising) the NRB's intraday liquidity facilities in the RTGS system.*

111. *Instruments used to settle the cash leg of securities transactions between CSD members will carry little or no credit or liquidity risk. For this purpose, the NRB strongly favours the use of central bank assets for settlement of securities transactions.*

112. *All securities will be issued in a book-entry form.*

113. *The NRB will initiate the adoption of legal measures covering dematerialisation and immobilisation of securities and custody services (see Pillar I), as well as the operational role of the NRB as a CSD for GON securities. The NRB will develop a regulatory and oversight framework for the CSD for GON securities. This will be conducted via consultation with other stakeholders, particularly the Treasury/Ministry of Finance and the commercial banks.*

114. *The NRB will work with SEBON and market participants to ensure that the settlement of transactions in corporate securities at NEPSE and any other future exchange is linked with funds settlement to enable securities transactions to be settled on a DvP basis, thus, eliminating principal risk. The NRB supports the establishment by CDSC of a CSD for corporate securities that complies with international*

standards. In the longer term, having a single CSD for all types of securities can be considered given the size of the Nepal market.

115. *The NRB will co-operate with SEBON in the development of a regulatory and oversight framework for the securities depository and settlement systems. This will be done through formal co-operation arrangements (e.g. a Memorandum of Understanding) between the parties (see Pillar IX below).*

116. *Governance arrangements for the depository/ies need to permit fair and open access provide market participants with sufficient information for them to accurately identify and evaluate the associated risks and costs. A strong, capitalised, autonomous and independent depository/ies, with reliable and flexible systems to expedite settlement of transactions and accessory rights is crucial for the development of the secondary market.*

4.6 Interbank Money Market

117. The adequate functioning of an interbank money market goes beyond clearing and settlement considerations. An efficient mechanism for trading and settlement of these transactions will allow for improvement of liquidity management and thus for increased safety and stability of the financial system. In addition it will help securities settlement through lower interest rates that will be to the benefit of broker-dealers in the credit lines they negotiate with banks. Another important concern for the authorities is the smooth and effective functioning of monetary policy, because the interbank money market is normally the market that central banks use to give a clear signal to banks that is then extended to the rest of the financial sector. If the operational procedures or the organisational and regulatory arrangements do not provide for an efficient system, the central bank can have difficulties in clearly signalling the type of monetary policy it is following.

118. Two key elements for the development of interbank money markets are a special purpose system for large-value payments (RTGS system) to provide secure electronic interbank transfers with immediate settlement interconnected to an electronic book-entry securities system (CSD) to register and record changes in ownership of securities. The development of the depository function is an important discussion that a country has to undertake involving responsible authorities and all market participants. An adequate strategy that takes into account the national interest and takes no account of any particular interest should be defined and agreed.

Pillar VI: Interbank money markets are fully developed and closely integrated with settlement systems

119. *The interbank money market is an important element for liquidity management and its improvements should be done in parallel to those of payment and settlement systems. Procedures, settlement cycles, and operating hours will be designed to obtain maximum gains. The NRB will adopt the necessary measures to strengthen the interbank money market (see Pillars I and V). Such measures will include the development of the interbank repo market and securities lending operations. The legal, regulatory and oversight framework for repo and securities lending operations will be developed.*

120. *In the medium term, the NRB will seek to establish a modern interbank money market system, which will serve as an important element for liquidity management, to facilitate the timely settlement of transactions in the RTGS system and to support the NRB's monetary policy operations.*

4.7 International Remittances

121. International remittances are increasingly relevant for economies and their societies as a result of current global realities, particularly a growing economic integration and interdependence among countries at all levels and the increasing flow of immigrants all over the world. Nepal is among the top five countries in the world in terms of the flow of inward remittances as a proportion of GDP.

122. From a policy-making perspective, 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 customer, 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 ATM cash withdrawals. However, remittances can be expensive relative to the often low incomes of migrant workers and to the rather small amounts sent (typically no more than a few hundred dollars or its equivalent at a time). Also, it may not be easy for migrants to access remittance services if they do not speak the local language or do not have the necessary documentation, while the relatively undeveloped financial infrastructure in some 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. In addition, some markets are uncompetitive or have regulatory barriers to the provision of remittance services.

123. Initiatives are in place worldwide to enhance the efficiency and integrity in the provision of remittance services. The World Bank and the CPSS convened a Task Force to address the needs of international policy co-ordination for remittance systems. Central banks from sending and receiving countries, international financial institutions, and development banks make up the Task Force (TF), which issued the *General Principles for International Remittance Services* in January 2007 (see Annex

2). The General Principles (GPs), together with the Special Recommendations of the Financial Action Task Force (FATF), are guiding the action of authorities, multilaterals, and service providers in this area.

Pillar VII: International remittances and other cross-border payments are distributed rapidly and conveniently in Nepal, and are cost efficient from the perspective of end users

124. *The NRB will work with the market to ensure that international remittance services in Nepal comply with the CPSS-WB General Principles. The NRB will also cover this area as part of its payments system oversight activities. A major goal will be to promote the most efficient use possible of the existing and planned payment infrastructure in Nepal, including that of banks and non-bank institutions. The NRB will undertake a stock-taking exercise vis-à-vis the General Principles, following which it will identify in detail the specific actions to be taken.*

125. *The NRB will ensure that the regulatory perspective covers payments system issues, in particular efficiency, transparency and risk management in addition to “traditional” issues of balance of payments and money laundering. The proposed NPS Law and implementing regulations will articulate NRB’s role in oversight of providers of remittance services. Eventually, in co-ordination with other authorities, the NRB will decide whether other regulations are necessary to foster a safe and efficient provision of remittance services and protect customers.*

4.8 Oversight of the National Payments System

126. The smooth and reliable functioning of money transfer mechanisms affects the efficiency of the real economy and the financial markets; they also have an impact on central banks’ lending of last resort and the conduct of monetary policy. Market forces alone may not achieve the objectives of efficiency and reliability of the payments system since participants and operators may not have adequate incentives to minimise the risk of their own failure, or failure or costs they impose on other participants. In addition, the institutional structure of the payments system may not provide incentives or mechanisms for efficient design and operation.

127. These are the reasons why in all countries central banks’ involvement in the payments system is an integral component of their overall mandate to ensure stability of the financial system and to maintain confidence in the domestic currency. In this context central banks perform a number of different functions in their national clearance, settlement and payment arrangements. These functions may include direct involvement in managing clearing and settlement systems and in overseeing the payments system by developing rules, principles and best practices under which

private payment arrangements operate. The oversight role of the central bank has been established in many countries as key in central banks' activity.¹¹

128. The role of the central bank is particularly relevant when the country is engaged in a comprehensive reform of its payments system. In this case, the central bank will have to play a leading role in developing a vision for the reformed system, in co-ordinating with all stakeholders and in carrying out the reform plan.

129. In recent years, in an increasing number of countries, payments system oversight has been explicitly entrusted to central banks by law. Specifying the objectives in relevant legislation may be the most direct way for providing a well-founded legal basis for the central bank to implement its policies and make it accountable in pursuing its goal and mandate in the payments system. For countries facing the implementation of the project of reform in the payments system, it is of utmost importance for the central bank to have a well-founded legal framework that clearly defines its payments system role and objectives. In addition, the adequacy of legal enforcement for central bank action in the payments system facilitates the fulfillment of central bank's objectives.

130. As for the scope of the oversight function, at the international level there is consensus on the fact that systems that pose systemic risks should definitely fall under the direct control of the overseer. Typical examples of these systems are those that handle transactions of a high value at both the individual and aggregate level.

131. Increasing attention is being given to securities clearance and settlement systems as relevant components of the overall payments system. The oversight of these systems might well be a co-operative effort of two or more regulatory agencies, depending on the specific circumstances of the country in question. In some countries also, retail or bulk payment systems fall under control of the oversight agency because of: (i) their importance for the overall efficiency of the payments system; (ii) their potential impact on the public trust of money; and (iii) their relevance to the sustenance of the ultimate objective of economic growth.¹²

132. The internal organisation of the central bank as far as payments system activities are concerned may also be worth evaluating. Experience in many central

¹¹ Principles for payments oversight have been developed in the CPSS Report *Central bank oversight of payment and settlement systems*, 2005. Other examples are the focus on central bank's responsibilities in the CPS-IOSCO *Principles for Financial Market Infrastructures*, 2012. See also the paper on Payments system oversight of the Bank of England and Bossone-Cirasino, *The oversight of the payments system – A framework for the development and governance of payment systems in emerging economies*, 2001.

¹² Many examples can be adduced as to how an inefficient retail payment system can affect economic activity, for example by failing to accommodate the needs of customers and merchants in their desire to finalise a transaction, which as a result cannot take place.

banks has indicated that significant improvements can be derived by setting up a unit specifically devoted to payments policy issues. Typically, such a unit would develop an appropriate policy framework and tools (e.g. data collection, periodical inspections, etc.) for use in assessing individual payment systems. This function might possibly be undertaken in close co-ordination with the banking supervisory function, for example, which typically has a high level of competence and experience in examining some of the related issues. In addition, it would be important for those staffing the unit to have appropriate skills. Typical aspects to be analysed in administering the oversight functions include, inter alia, potential risks emerging from the various Clearing Houses, the adequacy of risk control measures in place, the potential implications of any requirement to resort to unwinding procedures, and in addition efficiency issues.

Pillar VIII: The oversight and supervisory framework for payments and securities settlement systems is clearly defined, and the NRB exercises its oversight authority effectively in co-operation with other regulators and supervisors

133. *The NRB intends to exercise effectively the function of payments system oversight in Nepal. To this end, the NRB will seek appropriate legal empowerment to underpin its oversight function.*

134. *The NRB will have a clear legislative authority for the oversight of payment and settlement systems. The law will provide the NRB 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 I).*

135. *The NRB will disclose publicly its objectives and policies relating to all significant payments system matters along with its implementation strategies.*

136. *With regard to policy objectives, the NRB will aim at achieving efficiency and reliability for all systems. Also, the NRB will promote competition in the payment services market and the protection of consumer interests in co-ordination with other authorities.*

137. *The NRB will oversee all clearing and settlement arrangements in Nepal, including retail systems, since they are especially important in supporting economic activity and the public trust in money.*

138. *The NRB in exercising its oversight role will have the ability to carry out this function effectively. To this end, the NRB will:*

- i) establish appropriate organisational arrangements and staffing, including staff training and rotation. The oversight function will be assigned to a unit within the NRB separate from the unit(s) in charge of the payment systems operated by the NRB;*
- ii) ensure that an adequate degree of participant co-operation exists and is sufficient to promote and realise the desired organisational and operational arrangements;*
- iii) verify that individual payment systems satisfy user needs as well as risk and efficiency requirements through appropriate interventions both at the development stage and during the on-going system implementation and operational phases;*
- iv) define and implement appropriate actions should participants not comply with published rules and regulations (e.g. the application of pre-determined penalties and sanctions for compliance failures);*
- v) collect and distribute relevant statistical information to demonstrate the use being made of each system and the extent to which the systems are satisfying end-user and other market needs. Information and public policy statements relating to all substantial payments system matters will be disclosed in a manner that assures wide dissemination among payments system stakeholders.*

4.9 Co-operative Framework for the Payments System

139. Effective co-operation among market participants, between regulators and market participants and among regulators is essential for the development of a sound and efficient payments system. In particular, the ‘cross-nature’ element that characterises the transfer of money and the ‘systemic nature’ of the underlying operating procedures make the payments system an ‘institution’ whose existence and smooth functioning requires effective co-operation between all participants. On the one hand, widespread use of new payment instruments and services relies heavily on public confidence in them. On the other hand, within the payments system, the supply of services can be affected by co-ordination failures due to the existence of conflicts of interests (and information costs) as well as the intermediaries’ unwillingness to co-operate. This can lead to ‘sub-optimal’ equilibriums in the organisational arrangements as to the system’s reliability and efficiency. For example, in these systems the risk profiles – both at the system level and at the level of the individual intermediary – may not be fully assessed by participants. In addition, the concern with having to support less reliable intermediaries may lead larger participants to discriminate against smaller ones, even when these are technically eligible to participate in the system. Finally, the payments system industry also depends on

agreements between producers to ensure that different components of the system are compatible. Most recently, the emergence of new types of non-bank intermediaries and payment instruments has strengthened the need for a comprehensive level of co-operation in the payments system.

140. Central banks that do not have bank supervisory powers may face considerable information limitations, especially in crisis management situations. The overseer would have to rely on information from the supervisory authorities, or should develop their own independent access to information on payments system participants. While the first option transfers de facto the responsibility for triggering oversight action to the supervisory authority, the second option raises risks of duplication of information collection, inconsistent public action, and additional costs to participants. An effective way to overcome most of these problems is to stipulate rules for granting the overseer with adequate access to supervisory information. The institutionalisation of information sharing arrangements may reduce the risk that the exchange of information be hampered by frictions in co-operation between different institutions. Various solutions can be adopted for this purpose, from signing a memorandum of understanding that specifies the framework for co-operation, to assuring contacts between institutions through joint board membership, the establishment of a comprehensive market regulatory/supervisory body where all the institutions with oversight responsibilities are represented and mandated to co-operate.¹³

141. Co-operation must be pursued also between the overseer and the securities markets regulators, as securities settlement is an integral part of the payments system and problems in securities markets clearing and settlement may easily spillover to the payments system and vice versa.

142. With regard to the co-operation among regulators, the safety and efficiency objectives of payment and securities settlement systems may be pursued by a variety of public sector authorities, in addition to the central bank and the securities commission. Examples of these regulators include: legislative authorities, Ministries of Finance and competition authorities, among others. There are also complementary relationships between oversight, bank supervision and market surveillance.

143. Appropriate co-operation among supervisors can be achieved in a variety of ways, for example, exchanges of views and information between relevant authorities may be conducted by holding regular or ad hoc meetings. Agreements on the sharing of information may be useful for such exchanges.

¹³ See Banca d'Italia, *White Paper on Payments System Oversight*, 1999 and the CPSS Report *Central bank oversight of payment and settlement systems*, 2005 for a description of the institutional arrangements adopted in some leading industrial countries.

Pillar IX: Effective, structured and fruitful co-operation is in place within the NPS

144. *The NRB, as payments system overseer, will evaluate, identify, and implement procedure and process changes to address any weaknesses or inconsistencies in the regulatory arrangements and assure a high level of co-operation in the way that policies are implemented.*

145. *A National Payments Council (NPC) will be established in Nepal under the leadership of the NRB. The NPC will be a permanent body for high-level co-operation and consultation in the area of payment and settlement systems and services under the leadership of the NRB. The Terms of Reference of the NPC¹⁴ will ensure clear tasks and responsibilities, appropriate level of representation, and expanded membership to include all relevant stakeholders. This body is intended to include high-level representation of all elements of the commercial banking sector, as well as other major stakeholders with an interest in payments and securities clearing and settlement systems, such as other financial institutions, the different GON institutions concerned with payments, payment service providers, payment systems operators and SEBON . The NPC will be an extremely useful tool to secure constructive discussion among all players and stakeholders.*

146. *The NPC will have the ability to create subgroups/task forces to address problems of common interest at a technical level in specific areas (for example, retail payment systems, large-value payment system, securities settlement systems, operational and IT security, legislation) or for the implementation of specific projects. Appropriate Memoranda of Understanding will be prepared between regulators and between the NRB and the Government.*

147. *The communication strategy for the reform objectives and policies and for any issues related to the payments and securities settlement systems, as well as the different roles to be played by Council members in this effort, will be defined co-operatively.*

¹⁴ A Model for NPS Terms of Reference is provided in Annex 3.

5. IMPLEMENTATION PLAN FOR THE NPS DEVELOPMENT

148. This section contains a brief plan and timetable for the execution of the activities described in the previous sections of this document. The NRB recognises that a successful initiative requires active participation from key stakeholders at both policy and operational levels, and will work with all market participants to achieve the objectives of the plan. In addition, the NRB recognises the need to increase the payments system knowledge of key stakeholders and thus to ensure that they have the opportunity to influence the evolution of the NPS strategy and implementation to satisfy the needs of their institutions and customers.

149. In pursuing its objectives, the NRB will establish an appropriate project management discipline and will make resources available for the implementation of the envisaged reforms. A key activity will be to establish co-ordination arrangements to incorporate the views and opinions of all stakeholders through working groups which will be created to support the implementation of the planned RTGS and CSD systems, development of government payments and remittances and other activities. In the medium term the NRB will initiate and lead the formation of the NPC which will assume overall co-ordination of these activities.

Human resource requirements

150. There will be a separate division/department in the NRB to implement the strategies and policies in this regard. The division/department will have sufficient number of dedicated human resources. In the beginning, there will be one Director, Two Deputy Directors, Four Assistant Directors and Assistants. The staffs will be well equipped with training and development in regard to the advanced payment and settlement system.

151. The NRB will seek technical cooperation support from other international institutions, donors and central banks, as appropriate, to support implementation of various elements of the NPS.

152. The rest of this section describes, for each of the nine Pillars, the proposed actions to achieve the strategy objectives.

Pillar I: Payment Systems in Nepal work in a sound and robust legal environment able to support settlement finality and the efficiency of payment arrangements

153. In the immediate term the NRB will introduce by-laws to provide the necessary legal underpinning for the planned NPS developments, including the clearing and settlement of Government securities in book-entry form.

154. In the longer term the NRB intends to adopt a comprehensive National Payment Systems Law.

155. Once these legal measures are adopted, a general NRB regulation, containing the major body of rules on oversight (as well as secondary measures, such as guidelines on cards, mobile payments and other instruments as applicable), will be put in place.

Pillar II: Settlement mechanisms for large value and time critical payments in Nepal are safe and efficient and comply fully with the CPSS/IOSCO Principles for Financial Market Infrastructures (PFMIs)

156. A key objective is the realisation of an efficient and integrated RTGS system that will support: (i) control of systemic risk throughout the NPS; and (ii) integration with a broad range of other payment systems as depicted in Figure 1 (in Section 2).

157. In the immediate term the NRB will initiate the procurement of an RTGS system which will be based on packaged software, tailored as required to suit the specific local conditions. The RTGS system will be integrated with:

- (i) The NRB's internal financial management system;
- (ii) core banking systems of its participant banks (where these have the necessary interface capability);
- (iii) the CSD which will be implemented under Pillar V;
- (iv) the FMIS operated by the Ministry of Finance;
- (v) the Revenue Accounting System operated by the IRD;
- (vi) the ASYCUDA system operated by the Customs administration;
- (vii) the cheque and electronic credit payment clearing system operated by NCH;
- (viii) card switching and clearing systems operated by SCT, Nepal Investment Bank Limited and Nepal Electronic Payment Services;
- (ix) all future retail payment clearing systems;
- (x) A possible future automated money market system as discussed under Pillar VI.

Pillar III: Retail payment systems in Nepal are efficient, sound and interoperable and support the offer of a wide range of payments instruments and services

158. The NRB will form and lead a Retail Payments Working Group, with membership drawn from all parties involved in retail payment systems. The objective of this Working Group will be to develop a strategy and action plan for fostering the development of electronic, innovative retail payment systems in Nepal, taking particular account of the need to promote Financial Inclusion among the less advantaged sections of society. The NRB will support and monitor the implementation of this action plan.

Pillar IV: Government collections and disbursements are fully and efficiently integrated with the National Payments System in Nepal and support its smooth functioning

159. The NRB will evaluate the potential for extending its use of the Olympic Banking System to provide a full banking service to the GON.

160. The NRB will work with the Ministry of Finance to develop and implement an action plan for executing all payments from the FMIS in the form of electronic credits, either through NCH for retail-level payments or through the RTGS system (see Pillar II) for large-value payments.

161. The NRB will work with the IRD to develop and implement an action plan for collecting revenue payments in electronic form from accounts at commercial banks or via the commercial banks as collecting agents, via either NCH (for retail-level payments) or the RTGS system (for large-value payments) with direct electronic interfaces into the IRD's RAS.

162. The NRB will work with the Nepal Customs Service to develop and implement an action plan for collecting Customs payments in electronic form from commercial banks via the RTGS system with a real time electronic interface into the Customs Service's ASYCUDA system.

Pillar V: Securities Depository, Clearing and Settlement. Securities Depository, Clearing and Settlement are safe and efficient, fully comply with international standards, and support the development of capital markets

163. In the immediate term the NRB will initiate the implementation of an electronic CSD which will provide auction, registry, custody and maturity functions for all GON securities. The CSD will be tightly coupled with the RTGS system in order to: (i) ensure safe settlement of securities transactions following the principles

of DvP; and (ii) support the provision of intraday liquidity by the NRB to RTGS participants.

164. The NRB will draw up the specifications for the CSD to suit its requirements. Following this it will decide whether to make use of the CSD which is currently being implemented by CDSC, or alternatively to procure and implement its own in-house CSD.

Pillar VI: Interbank money markets are fully developed and closely integrated with settlement systems

165. In the medium term the NRB will initiate work to develop an interbank money market in Nepal and will work with market players to evaluate the requirement for a centralised money market information and trading system, integrated with the RTGS system. If appropriate the NRB will initiate the procurement of a suitable system.

Pillar VII: International remittances and other cross-border payments are distributed rapidly and conveniently in Nepal, and are cost efficient from the perspective of end users

166. In the immediate term the NRB will carry out an updated assessment of the international remittances in Nepal against the World Bank/CPSS *General Principles for International Remittance Services*, building on the one conducted by the World Bank in 2009.

167. Also in the immediate term the NRB will form a Working Group to develop an action plan for ensuring that international remittance services in Nepal comply with the CPSS-WB *General Principles*.

168. As necessary the NRB will introduce regulations for management of remittances.

Pillar VIII: The oversight and supervisory framework for payments and securities settlement systems is clearly defined, and the NRB exercises its oversight authority effectively in co-operation with other regulators and supervisors

169. In the immediate term the NRB will establish a Payment Systems Oversight Unit which will have 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.

170. The Oversight Unit will oversee all clearing and settlement arrangements in Nepal, including retail systems, and will aim at achieving efficiency and reliability for all payment systems in Nepal. It will promote competition in the payment services market and the protection of consumer interests in co-ordination with other authorities.

171. An early task of the Oversight Unit will be to conduct a stocktaking of the Nepal NPS against the CPSS/IOSCO *Principles for Financial Market Infrastructures* (PFMI).

Pillar IX: Effective, structured and fruitful co-operation is in place within the NPS

172. In the immediate term the NRB will move to establish a National Payments Council (NPC). Membership of the NPC will include representatives from all major stakeholders with an interest in payments and securities clearance and settlement systems improvements. The NPC will be an extremely useful tool also to secure constructive dialogue between regulators and market participants.

Annex 1. CPSS-IOSCO Principles For Financial Market Infrastructures (PFMI)**PRINCIPLES FOR FINANCIAL MARKET INFRASTRUCTURES****GENERAL ORGANISATION**

Principle 1: Legal basis: An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.

Principle 2: Governance: An FMI should have governance arrangements that are clear and transparent, promote the safety and efficiency of the FMI, and support the stability of the broader financial system, other relevant public interest considerations, and the objectives of relevant stakeholders.

Principle 3: Framework for the comprehensive management of risks: An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.

CREDIT AND LIQUIDITY RISK MANAGEMENT

Principle 4: Credit risk: An FMI should effectively measure, monitor, and manage its credit exposures to participants and those arising from its payment, clearing, and settlement processes. An FMI should maintain sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence. In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions. All other CCPs should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions.

Principle 5: Collateral: An FMI that requires collateral to manage its or its participants' credit exposure should accept collateral with low credit, liquidity, and market risks. An FMI should also set and enforce appropriately conservative haircuts and concentration limits.

Principle 6: Margin: A CCP should cover its credit exposures to its participants for all products through an effective margin system that is risk-based and regularly reviewed.

Principle 7: Liquidity risk: An FMI should effectively measure, monitor, and manage its liquidity risk. An FMI should maintain sufficient liquid resources in all relevant currencies to effect same-day and, where appropriate, intraday and multiday settlement of

payment obligations with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate liquidity obligation for the FMI in extreme but plausible market conditions.

SETTLEMENT

Principle 8: Settlement finality: An FMI should provide clear and certain final settlement, at a minimum by the end of the value date. Where necessary or preferable, an FMI should provide final settlement intraday or in real time.

Principle 9: Money settlements: An FMI should conduct its money settlements in central bank money where practical and available. If central bank money is not used, an FMI should minimise and strictly control the credit and liquidity risk arising from the use of commercial bank money.

Principle 10: Physical deliveries: An FMI should clearly state its obligations with respect to the delivery of physical instruments or commodities and should identify, monitor, and manage the risks associated with such physical deliveries.

Central securities depositories and exchange-of-value settlement systems

Principle 11: Central securities depositories A CSD should have appropriate rules and procedures to help ensure the integrity of securities issues and minimise and manage the risks associated with the safekeeping and transfer of securities. A CSD should maintain securities in an immobilised or dematerialised form for their transfer by book entry.

Principle 12: Exchange-of-value settlement systems: If an FMI settles transactions that involve the settlement of two linked obligations (for example, securities or foreign exchange transactions), it should eliminate principal risk by conditioning the final settlement of one obligation upon the final settlement of the other.

DEFAULT MANAGEMENT

Principle 13: Participant-default rules and procedures: An FMI should have effective and clearly defined rules and procedures to manage a participant default. These rules and procedures should be designed to ensure that the FMI can take timely action to contain losses and liquidity pressures and continue to meet its obligations.

Principle 14: Segregation and portability: A CCP should have rules and procedures that enable the segregation and portability of positions of a participant's customers and the collateral provided to the CCP with respect to those positions.

General business and operational risk management

Principle 15: General business risk: An FMI should identify, monitor, and manage its general business risk and hold sufficient liquid net assets funded by equity to cover

potential general business losses so that it can continue operations and services as a going concern if those losses materialise. Further, liquid net assets should at all times be sufficient to ensure a recovery or orderly wind-down of critical operations and services.

Principle 16: Custody and investment risks: An FMI should safeguard its own and its participants' assets and minimise the risk of loss on and delay in access to these assets. An FMI's investments should be in instruments with minimal credit, market, and liquidity risks.

Principle 17: Operational risk: An FMI should identify the plausible sources of operational risk, both internal and external, and mitigate their impact through the use of appropriate systems, policies, procedures, and controls. Systems should be designed to ensure a high degree of security and operational reliability and should have adequate, scalable capacity. Business continuity management should aim for timely recovery of operations and fulfilment of the FMI's obligations, including in the event of a wide-scale or major disruption.

ACCESS

Principle 18: Access and participation requirements: An FMI should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access.

Principle 19: Tiered participation arrangements: An FMI should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.

Principle 20: FMI links: An FMI that establishes a link with one or more FMIs should identify, monitor, and manage link-related risks.

EFFICIENCY

Principle 21: Efficiency and effectiveness: An FMI should be efficient and effective in meeting the requirements of its participants and the markets it serves.

Principle 22: Communication procedures and standards: An FMI should use, or at a minimum accommodate, relevant internationally accepted communication procedures and standards in order to facilitate efficient payment, clearing, settlement, and recording.

TRANSPARENCY

Principle 23: Disclosure of rules, key procedures, and market data: An FMI should have clear and comprehensive rules and procedures and should provide sufficient information to enable participants to have an accurate understanding of the risks, fees, and other material costs they incur by participating in the FMI. All relevant rules and key procedures should be publicly disclosed.

Principle 24: Disclosure of market data by trade repositories: A TR should provide timely and accurate data to relevant authorities and the public in line with their respective

needs.

RESPONSIBILITIES OF CENTRAL BANKS, MARKET REGULATORS, AND OTHER RELEVANT AUTHORITIES FOR FINANCIAL MARKET INFRASTRUCTURES

Responsibility A: Regulation, supervision, and oversight of FMIs: FMIs should be subject to appropriate and effective regulation, supervision, and oversight by a central bank, market regulator, or other relevant authority.

Responsibility B: Regulatory, supervisory, and oversight powers and resources: Central banks, market regulators, and other relevant authorities should have the powers and resources to carry out effectively their responsibilities in regulating, supervising, and overseeing FMIs.

Responsibility C: Disclosure of policies with respect to FMIs: Central banks, market regulators, and other relevant authorities should clearly define and disclose their regulatory, supervisory, and oversight policies with respect to FMIs.

Responsibility D: Application of the principles for FMIs: Central banks, market regulators, and other relevant authorities should adopt the CPSS-IOSCO *Principles for financial market infrastructures* and apply them consistently.

Responsibility E: Cooperation with other authorities: Central banks, market regulators, and other relevant authorities should cooperate with each other, both domestically and internationally, as appropriate, in promoting the safety and efficiency of FMIs.

Annex 2. CPSS-World Bank General Principles for International Remittance Services and Related Roles

GENERAL PRINCIPLES FOR INTERNATIONAL REMITTANCE SERVICES

The general principles are aimed at the public policy objectives of achieving safe and efficient international remittance services. To this end, the markets for the services should be contestable, transparent, accessible and sound.

Transparency and consumer protection

General Principle 1. The market for remittance services should be transparent and have adequate consumer protection.

Payment system infrastructure

General Principle 2. Improvements to payment system infrastructure that have the potential to increase the efficiency of remittance services should be encouraged.
Legal and regulatory environment.

General Principle 3. Remittance services should be supported by a sound, predictable, non-discriminatory and proportionate legal and regulatory framework in relevant jurisdictions.
Market structure and competition.

General Principle 4. Competitive market conditions, including appropriate access to domestic payments infrastructures, should be fostered in the remittance industry.

Governance and risk management.

General Principle 5. Remittance services should be supported by appropriate governance and risk management practices.

ROLES OF REMITTANCE SERVICE PROVIDERS AND PUBLIC AUTHORITIES

A. The role of remittance service providers. Remittance service providers should participate actively in the implementation of the general principles.

B. The role of public authorities. Public authorities should evaluate what action to take to achieve the public policy objectives through implementation of the general principles.

Annex 3. Model for National Payments Council – Terms of Reference

Objectives

The National Payments Council aims to support the achievement of sound and efficient payment and securities clearance and settlement systems in Nepal. It can also serve as a forum for cooperation to maintain orderly conditions in regional and international payment systems.

Main Tasks

- ◆ The Council works to facilitate the necessary cooperation between all market participants and regulators in the payment area.
- ◆ The Council promotes common initiatives towards the implementation of the payment system infrastructure. These initiatives should not impede, and should in fact foster, healthy competition among market participants.
- ◆ The Council plays a key role in preparing strategic documents for the overall payment system architecture in the country.
- ◆ The Council plays a key role in monitoring the implementation of payment systems reforms.
- ◆ The Council plays a key role in facilitating the sharing of information on economic and business requirements of all parties impacted by the payment system.
- ◆ The Council helps to identify the impact of different options on participants business and daily operations and on end-user interests.
- ◆ The Council plays a key role in selecting the main principles and options for system designs.
- ◆ The Council plays a key role in endorsing the priority and the schedule of individual projects to be launched, financed and implemented.
- ◆ The Council promotes standardisation of procedures and systems.
- ◆ The Council is responsible for promoting knowledge of payment system issues in the country. To this end, the Council uses any means it might find appropriate (workshops, seminars, web pages, newsletter, etc.).
- ◆ The Council seeks to promote cooperation among all institutions active in payment and securities systems within the region and at the international level.

Methodology

- ◆ The Council prepares ad hoc reports on payment system issues. The reports would not have prescriptive nature. However, they would serve as a reference for the ongoing payment system reforms in the country.
- ◆ The Council establishes ad hoc working groups on payment matters. Working groups may or may not be composed of the totality of the institutions represented in the Council.
- ◆ The Council reports on its activities to Steering Committee on Payment Systems and the Top Management of the constituting institutions on an annual basis.

Representation and Organisational Structure

- ◆ The Council gives representation to all the stakeholders of payment and securities clearance and settlement systems. These include: the NRB, the Ministry of Finance/Treasury, the commercial banks, the non-bank financial institutions, the clearinghouses and payment service providers, the Stock Exchange (when established), the Central Securities Depository(s), the broker/dealers, the end-users, and other regulators (e.g., Telecom authorities), et cetera.
- ◆ The NRB serves as the secretariat of the National Payments Council.

- ◆ Appointed representatives of the stakeholders are senior managers with an involvement in payment matters. They report directly to the top management of their respective institutions.
- ◆ The Council is comprised of an appropriate number of experts. The composition of the Council should be consistent with the objective of having effective discussion in the meetings.
- ◆ The Council has an internal governance structure with a chairperson and deputy(s), an executive body, formal rules to determine the terms and conditions for the appointment of the executive positions, and formal rules to govern the activity of the executive body.
- ◆ In the early stage of its life, the Council might seek, if necessary, assistance from other national and international entities highly experienced in managing payment system groupings.
- ◆ The Council may invite, if needed, other institutions and/or individual experts to participate in its meetings.