



BANK OF THAILAND

Payment Systems Roadmap 2012 - 2016

November 2011

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Executive Summary

The PSC endorsed the Payment Systems Roadmap 2012-2016 together with implementation plans on 4 November 2011. The Roadmap will be used as a framework for Thailand's payment systems developing during 2012-2016 with the aim of establishing payment systems that are efficient, sound and safe, as well as comply with international standards. Concerned agencies both public and private were communicated with regarding the direction of the Roadmap so that they can devise business plans accordingly.

The Payment Systems Roadmap 2012-2016 comprises of three main objectives, namely efficiency enhancement, risk reduction and consumer protection. The Roadmap consists of six key projects, including:

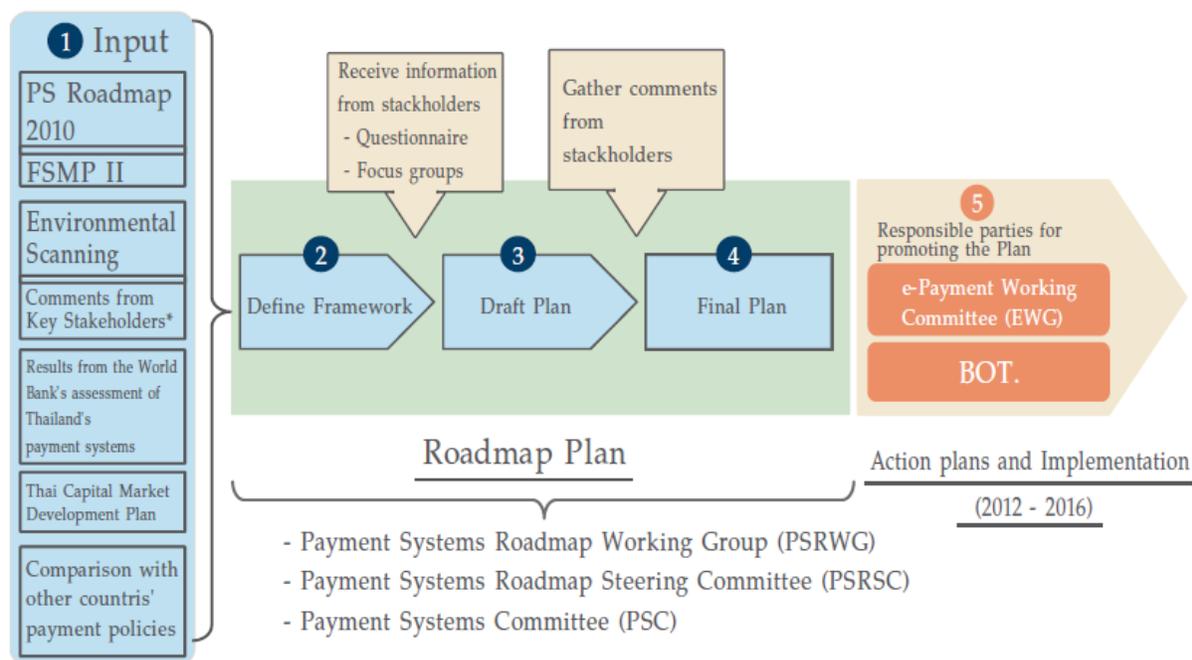
- Promotion and development of electronic payments
- Promotion of payment systems access
- Preparation for the AEC
- Payment systems risk reduction
- Enhancement of safe ATM usage
- Consumer protection and financial literacy

Background

The BOT appointed 2 Task Forces to lay out the Roadmap. The first Task Force was the Payment Systems Roadmap Working Group (PSRWG) who was responsible for drafting the payment systems Roadmap. The PSRWG comprised of BOT's executives whose work was related to the payment systems, financial institutions and legal issues. They studied, analyzed and developed the framework for the Roadmap and submitted to the second Task Force called Payment Systems Roadmap Steering Committee (PSRSC) for further approval. The PSRSC comprised of representatives from the government agencies, business, and banking sectors, independent academics, and BOT's chief executives. The PSRSC then presented the Roadmap for final approval from the PSC on 4 November 2011.

During the process of developing the Roadmap, the PSRWG evaluated input data from various sources namely the results from previous Roadmaps, internal and external environmental factors that may impact Thai payment systems in the future, payment systems development plans of other central banks, as well as the alignment with other major development plans such as the Financial Sector Master Plan 2 (2010 – 2014) and the Thai Capital Market Development Plan. The process also included in-depth brainstorming on related issues by all concerned parties, including bank and non-bank service providers, users from the public and private sectors and selected academics.

Figure 1: Payment Systems Roadmap 2012 – 2016 establishment process



* Chairman of the Thai Banks Association, President of the Stock Exchange of Thailand, and representatives from the Association of International Banks, Thai Bankers' Association, Thai Chamber of Commerce, and Thai e-Commerce Association.

Source: Bank of Thailand

Summary of Thailand's payment systems assessment

The PSRWC evaluated the strength and weakness of Thailand's payment systems, including external factors that will impact future developments of payment systems. The PSRWC conferred with relevant parties and conducted a comparative study of other countries' payment systems' developments to use as the basis for defining the framework for future developments of payment systems.

Results from assessing Thailand's payment systems between 2010 – 2011 can be summarized as follows:

1) Needs of Key Stakeholders

Payment systems are key mechanisms for capital mobilization in the economy and linked to all economic sectors, including service providers, users, and regulators. Consequently, the BOT evaluated the needs of stakeholders in the payment systems to ensure that the Roadmap will incorporate needs of these various groups of stakeholders, which can be summarized as follows:

- (1) **Service Providers** (banks and non-banks) need clarity on official policies which are important inputs for the efficient formulation of business plans and business undertakings.
- (2) **Service Users** (government agencies, businesses, consumers) need convenient, fast and cost efficient payment services in order to increase competitiveness as well as confidence in payment systems' security.
- (3) **Government agencies** need the BOT's policy been consistent with those of the government and other public sectors.
- (4) **The BOT** needs to be assured that the payment systems are efficient, stable and safe, and that there are appropriate levels of competition.

2) Assessment of payment systems' environment

(1) Legal infrastructure

Overall, the legal infrastructure in Thailand concerning the oversight of the payment systems and service providers is effective. That is, Thailand has legislations that provide the BOT absolute authority in oversight the payment systems, namely The Bank of Thailand Act B.E. 2485, amended by Section 3 of the Bank of Thailand Act (Number 4) B.E. 2551, and the Financial Institutions Business Act B.E. 2551. As for the regulation of electronic payments, the BOT acquires legal power pursuant to the Royal Decree Regulating on Electronic Payment Services B.E. 2551(2005) to oversee electronic payment service providers in the provision of stable, safe and credible services, as well as compliance with the laws.

However, the BAHTNET system, which is a national systemically important payment system, still has legal shortcomings that need to be further developed. Results from the assessment of Thailand's payment systems by the Financial Sector Assessment Program (FSAP) by the International Monetary Fund (IMF) in collaboration with the

World Bank in 2007, and the Global Payment Systems Survey by the World Bank in 2008, stated that Thailand still did not have absolute laws regarding payment finality, and the exemption of the Zero Hour Rule for transfers and settlement via BAHTNET. This may cause payment transactions which are sent through BAHTNET to be voided in cases where participants are declared insolvent by the Court.

From the aforementioned points, Thailand mostly received an evaluation from FSAP for matters relating to the payment systems at the “Observed” level (passed all set criteria). Only matters relating to legal infrastructure and payment finality received evaluations at the “Broadly Observed” level (some issues are not consistent with the standards but are not seen as barriers in implementation). The assessments are consistent with results from the Global Payment Systems Survey, which evaluated the development of Thailand’s legal infrastructure to be at the Medium-low level.

Table 1: Assessment of the BAHTNET under the FSAP

| Principles | Results |
|---|------------------|
| 1. Legal basis | Broadly Observed |
| 2. Understanding of risks | Observed |
| 3. Management of risks | Observed |
| 4. Prompt final settlement | Broadly Observed |
| 5. Netting arrangement | Not Applicable |
| 6. Settlement assets | Observed |
| 7. Security and Operational reliability | Observed |
| 8. Efficiency | Observed |
| 9. Access | Observed |
| 10. Governance | Observed |

Source: International Monetary Fund and World Bank 2007

Table 2: Assessment of legal issues under the Global Payment Systems Survey in 2008

| Assessment Level | Country |
|------------------|--|
| High | Hong Kong, Sri Lanka, Australia, USA, England and Canada |
| Medium-high | Malaysia, Indonesia and Singapore |
| Medium-low | Thailand , Cambodia, China, Taiwan, Japan, Fiji |
| Low | Philippines |

Source: World Bank 2008

(2) The payment system as the infrastructure of financial system

BAHTNET is the Thai payment system which is efficient, stable safe as well as complies with international standards. The Global Payment Systems Survey evaluated the Important Payment Systems in different countries by considering two key points, which were (1) systems design and policies relating to security, and efficiency, and (2) the proportion of high-value settlements through the Real Time Gross Settlement (RTGS) System compared to the use of cheques for high-value payments.

For the first key point, the systems design and policies relating to security and efficiency. Thailand has RTGS system for high-value payments with effective measures and transparent policies to reduce credit risks, liquidity risks, and operational risks. Consequently, Thailand's system is assessed as High Development Group. For the second key point, the proportion of high value settlements through the RTGS compared to the proportion of cheque usage, Thailand's systems are assessed as Medium-High Development Group. That is, some high-value payments in Thailand are still being made by cheques.

Table 3: Assessment of design and risk prevention in high-value funds transfer system under the Global Payment Systems Survey in 2008

| Assessment Level | Country |
|------------------|---|
| High | Thailand , Indonesia, Singapore, Taiwan and Canada |
| Medium-high | Malaysia, Philippines, China, USA, England and Japan |
| Medium-low | No countries within the SEACEN group |
| Low | Cambodia and Fiji |

Source: World Bank 2008

Table 4: Assessment of cheque usage in high-value funds transfer system under the Global Payment Systems Survey in 2008

| Assessment Level | Country |
|--|---|
| - Do not prefer using high value cheques - Value of payments through RTGS is greater than 90% | Malaysia, Indonesia, Singapore, Hong Kong, Japan, Taiwan, USA, England, Australia and Canada |
| - Use high value cheques, and value of payments through RTGS is greater than 75% but less than 90% of all payments | Thailand , Philippines, Sri Lanka and China |
| - Prefer using high value cheques - Value of payments through RTGS is less than 75% of all payments | No countries in South East Asia |
| - Use cheques for high value payments - Do not have RTGS | Cambodia and Fiji |

Source: World Bank 2008

The aforementioned assessment concluded that although Thailand’s payment systems infrastructure can be deemed as efficient, stable and safe, there were still some matters that can be developed further to increase the efficiency and reduce risks, such as:

- Risk prevention in inter-bank settlements to reduce the risks associated with Thailand’s ongoing reliance on high-value cheques
- Efficiency enhancement in the provision of services for financial institutions to increase convenience and reduce payment costs. An example is the development of the Imaged Cheque Clearing and Archive System (ICAS)
- Development of the Business Continuity Plan (BCP) for the payment systems infrastructure such as the BAHTNET system and other inter-bank payment systems to ensure continuity of services as well as handle different types of risks that may increase, such as political unrest and natural disasters.

(3) Retail payment systems

The World Bank’s assessment stated that although Thailand has readiness concerning the payment infrastructure as it is assessed to be in the Medium-High Development Group in terms of the readiness of the payment infrastructure and payment systems policies to support efficient and safe payment services, it is evaluated as Medium-Low Development Group in terms of electronic payments usage compared to other countries.

Table 5: Assessment of payment systems infrastructure readiness and payment systems policy under the Global Payment Systems Survey in 2008

| Assessment Level | Countries |
|------------------|--|
| High | No country from the SEACEN group Australia, Canada, Japan, Germany, England and USA |
| Medium-high | Thailand , Indonesia, Singapore, Taiwan, Sri Lanka, Malaysia, China and Hong Kong |
| Medium-low | Philippines |
| Low | Cambodia and Fiji |

Source: World Bank 2008

Table 6: Assessment of electronic payments under the Global Payment Systems Survey in 2008

| Assessment Level | Countries |
|------------------|---|
| High | Singapore, Australia, Canada, Japan, Germany, England and Hong Kong |
| Medium-high | Taiwan, Malaysia, China and USA |
| Medium-low | Thailand and Indonesia |
| Low | Cambodia, Philippines and Sri Lanka |

Source: World Bank 2008

An example of electronic payments that is not widely used is debit cards. For the past several years, payments through debit cards have not yet gained popularity and they have been mainly used for cash withdrawal only. This was due to consumer behaviour, lack of knowledge and understanding in using the service, and the fact that some retailers advised customers to use cash instead of debit cards to avoid the merchant fees.

3) Factors that will impact payment systems development during 2012 – 2015

External factors that may positively and negatively impact payment systems development and business directions for service providers in the future can be summarised as follows:

- (1) The advancement of information technology and consumer behaviour that is more receptive of technology will affect forms of payment services such as the prevalence and lowered prices of high-speed Internet service (ADSL) and mobile devices, especially smart phones and tablet PCs that have been developed to offer different applications to support various activities. In addition, the availability of 3G services for mobile phones has resulted in greater convenience in making payments. These factors offer greater opportunities for businesses and consumers to utilize electronic payments, especially among the younger generation who are well acquainted with technology. Nonetheless, new forms of frauds may increase in line with technological advancement.
- (2) Uncertainties in the economic environment have led businesses to place greater importance on cost reduction and efficiency enhancement in order to maintain competitiveness. This should play a supporting factor for the business sector and service providers to utilize more electronic payments. This is because electronic

payments can help reduce costs and risks in their operations, especially those relating to using cash and cheques, which incur high costs for both service providers and users.

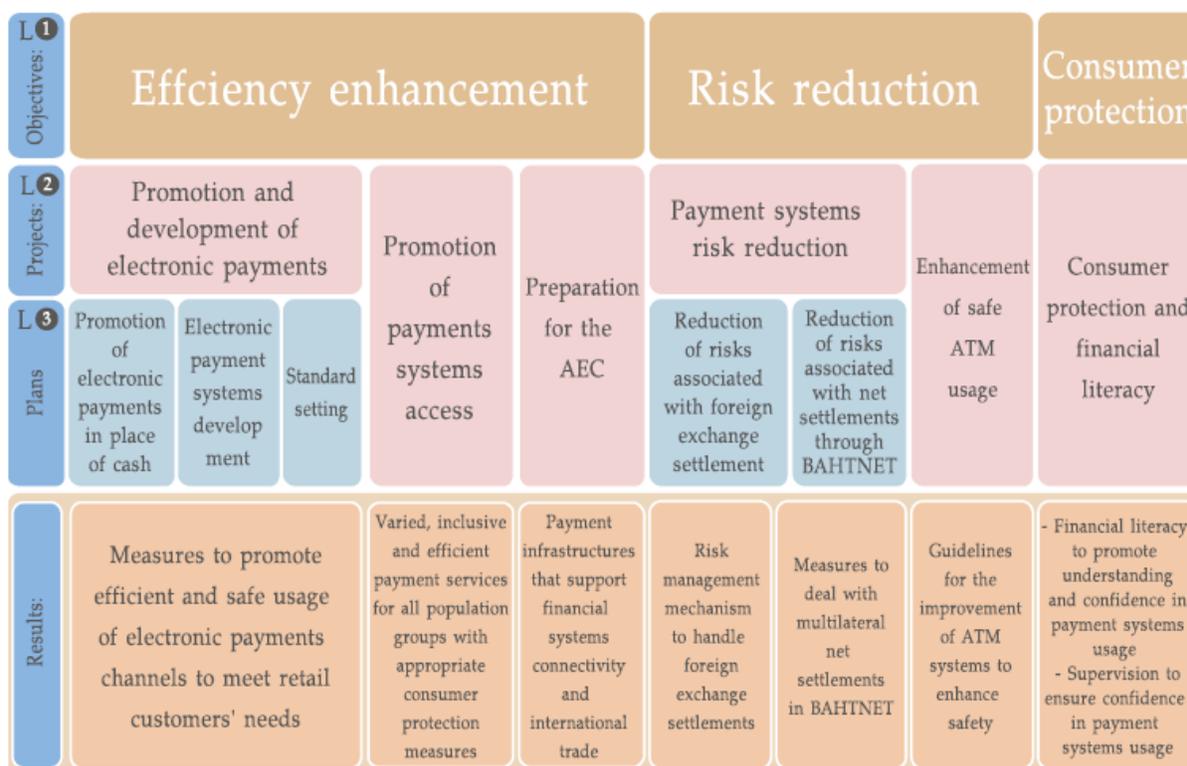
- (3) The expansion of economic integration that brings about opportunities and new competitions, such as trade liberalization and formation of the ASEAN Economic Community in 2015, implies that formulation of policies for international payment systems linkages will be crucial in allowing trade and investment proceeding with efficiency, stability and security. Therefore, this is an important mission that needs cooperation from the public and private sectors.
- (4) The call for promoting access to payment services and consumer protection has prompted the enhancement in the role of regulators. In addition, in the case of Thailand, a large proportion of consumers and businesses still lack of knowledge and understanding of payment systems services. As a result, they cannot make choices for payment services as efficiently as they should do. Furthermore, there is still a lack of confidence in electronic payments usage.

Summary of the Payment Systems Roadmap 2012 – 2016

The vision of the Payment Systems Roadmap 2012 – 2016 is to ensure that Thailand's payment systems is be an importance mechanism to facilitate efficient, stable and safe economic activities of the public and private sectors, both domestically and internationally. As such, the Roadmap covers three main objectives as follows:

Figure 2: Payment Systems Roadmap 2012 – 2016

Vision: Making payment systems support efficient, stable and safe economic activities of the public and private sectors, both domestically and internationally



Source: Bank of Thailand

1) Payment Systems efficiency enhancement

The objective aims to support domestic and international money transfers and payments to be fast and convenient, have appropriate costs, and meet needs of various groups of users including the public and organizations (public sectors and private sectors). This will in turn help build the country's overall capability. The projects stemming from the Roadmap are:

- (1) **The promotion and development of electronic payments** to stimulate greater use of electronic payments instead of cash among the public. The project has the following action plans:
 - Study user's needs and behavior and related barriers as well as prepare a policy recommendation to support the promotion and development of electronic payments.

- Develop the plan of promotion and development of electronic payments, consisting of:
 - A plan to promote and develop electronic payment services that covers service providers and various groups of users, including households and organizations (public sectors and private sectors). Examples of electronic payment services that will be promoted are card payment, debit cards and e-Money, mobile and internet payments.
 - A plan to improve and develop electronic payment systems infrastructure to support payment services in order to meet needs of various groups of users. Examples of electronic payment systems infrastructure include switching centers, payment systems data, clearing systems, and related common standard.

Information from the earlier step such as the study of user's need and behaviour, obstacles as well as policy recommendations will be incorporated to formulate the plan.

- Implement the plan of promotion and development of electronic payments during 2012 – 2016.

The BOT has established the e-Payment Promotion Working Group (EPWG) on 15 December 2011, consisting of representatives from the BOT, the Thai Bankers' Association, the Association of International Banks, the Thai Chamber of Commerce, and the Federation of Thai Industries. The EPWG is entrusted with the task to develop a plan to promote electronic payments and to study the needs and behavior in various groups of users. The Plan and Findings from the study shall then be presented to the PSC for approval and implementation.

(2) The promotion of payment access

Aim to facilitate the public from various groups to have easy access to payment services through various channels thoroughly and efficiently, as well as ensure that necessary consumer protection mechanisms have been put in place. The payment channel with high potential access that should be put into considered is mobile payment as it offers a wide coverage to all groups of users, especially users at the grassroots level. Studies and experiences from different countries, such as the Philippines, Kenya and Mexico, have shown that mobile payment services have been successful in supporting greater accessibility to payment services for the public.

Nonetheless, because mobile payment services in different countries have different models and operations, the BOT is currently studying needs and readiness of all stakeholders, service providers and users, in order to design the suitable plan for Thailand in promoting and developing mobile payment services.

(3) The preparation for the AEC

Aim to ensure that Thailand has the infrastructure to support cross-border payments of Thai business trade and investment among the ASEAN countries. In this regard, the BOT has defined the following action plans:

- Assess Thailand's readiness in five major areas of payment services which are Cross Border Trade Settlement, Cross Border Money Remittance, Cross Border Retail Payments, Cross Border Capital Market Settlement, and Standardization. Legislation readiness regarding payment finality to support payment systems linkages with other countries will also be included. Discussion will be held to gather comments from stakeholders, namely the Thai Bankers' Association, the Thai Chamber of Commerce and payment services providers.
- Propose preparation guidelines for Thailand's readiness in payment services.
- Establish the plan so that Thailand's payment systems will be ready to support the AEC in 2015.

In addition, the BOT also acts as the co-chair together with Bank Indonesia for the Working Committee on Payment and Settle Systems (WC-PSS), which has been entrusted with the role of promoting and monitoring progress according to the Payment Systems Development Roadmap in the region, and coordinate with other Working Committees under the AEC framework so that progress is made in the same direction. Moreover, the BOT will act as the main coordinator with the Central Bank of Laos in a special Working Committee regarding standardization, which is responsible for determining the guidelines for the promotion of common standard for payment transactions between countries. This also includes the promotion of knowledge creation and exchanging of experiences within ASEAN countries to strengthen payment systems development capabilities through conducting workshops, internships and study visits.

2) Risk reduction in payment systems

Risk reduction in payment systems focuses on reducing settlement risks in the financial institutions system. Activities entail defining mechanisms for managing FX settlement risks and managing risks from multilateral net settlements through the BAHTNET. This is to reduce the chance that a failure to settle a net position by one financial institution will not create the systemic impact on other financial institutions. Moreover, emphasis is placed on defining appropriate guidelines to increase safety in ATM usage so that the services meet international standards. These activities are carried out in the following projects:

- **Payment systems risk reduction**

This project is to ensure that there is a procedure for managing FX settlement risk, and also to push for tools to reduce such risks, such as the PvP system, and the measure for managing risks from multilateral net settlements through the BAHTNET called “Securities Requirement for Settlement” (SRS). Such measure will help reduce inter-bank net settlement risks for transactions such inter-bank cheque clearing system, inter-bank retail bulk payments and inter-bank retail transfers through ATMs and bank counters.

- **Safety enhancement for ATM usage**

This project is to increase safety and confidence of customers in using ATMs, so that the services meet international standards and support the economic integration under the AEC. This includes defining standards on cards and services, consumer protection mechanisms, and putting in place a system to efficiently monitor card frauds. Service providers and various stakeholders will be consulted so that an appropriate implementation plan can be determined.

3) Consumer protection and financial literacy

This project is to help the public gain knowledge and understanding of payment services, thereby enabling them to have the ability to select appropriate services to meet their needs. This includes understanding their rights and roles, and understanding the roles of agencies that are responsible for consumer protection. Additionally, the project involves working to ensure that regulations also help ensure consumers’ confidence that payment services usage are efficient and safe.

Moreover, the PSC has assigned the BOT to monitor and assess changes in the payment systems environment that may affect the Roadmap on an annual basis. The BOT will then present findings to the PSC and provide recommendation for any revision and amendment of the Roadmap in order to appropriately align with such new developments.