Thailand

Bank of Thailand

Collaboration Program with the Private Sector for Disseminating Japanese Technology for Electronically Recorded Monetary Claims Service

Project Completion Report

January, 2019

Japan International Cooperation Agency (JICA)

MUFG Bank, Ltd. Hitachi, Ltd.

OS	
JR	
19-008	

<Notes and Disclaimers>

- This report is produced by the trust corporation based on the contract with JICA. The contents of this report are based on the information at the time of preparing the report which may differ from current information due to the changes in the situation, changes in laws, etc. In addition, the information and comments posted include subjective judgment of the trust corporation. Please be noted that any actions taken by the users based on the contents of this report shall be done at user's own risk.
- Neither JICA nor the proposed corporation shall be responsible for any loss or damages incurred by use of such information provided in this report.

Table of Content

MAP	
List of	Abbreviations
Chapter	1. Summary
1.1.	Summary
1.1.1	Background of the Project (including the developmental problem of Thailand)
1.1.2	Technology that MUFG Bank and Hitachi would like to spread in Thailand
1.1.3	Purpose of the Project
1.1.4	Activity of this Project
1.1.5	Result of this Project
1.1.6	Potential of business
Chapter	r2. Background of the Project
2.1.	Background of the Project
2.1.1	. The Developmental Issue of Thailand
2.1.2	. Company Strategies of MUFG Bank and Hitachi and the Connection with the Project
	Technology that MUFG Bank and Hitachi Would Like to Spread in Thailand, and the Potential of Contributing Developmental Problem in Thailand
2.2.1	. Detail of the Technology that MUFG Bank and Hitachi Would like to Spread in Thailand
2.2.2	. The Feature of This Technology (Pros and Cons)
2.2.3	. Sales Performance
2.2.4	Safety of This Technology
2.2.5	. Comparison with Competing Services in Thailand
2.2.6	Potential of Contributing to the Developmental Problem
Chapte	r3. Activity of the Project
3.1.	Purpose and Goal of the Project
3.1.1	. Purpose of the Project
3.1.2	. Goal of the Project (Contribution to the developmental problem of Thailand)
3.1.3	. Goal of the Project (Business)
3.2.	Activity of the Project
2 2 1	Sahadula

3.2.2	2.	Project Structure	6
3.2.3	3.	Activities of the Project	8
Chapte	r 4.	Result of the Project	,, ç
4.1.	Mal	king Mockup	ې
		cussion between FSA and BOT about adopting the system of ERMC (MUFG Bank and Hitachi regularly e current status with FSA and had discussion)	
4.3.	Vis	iting BOT (1st Activity)	.15
Chapte	r 5.	Overview of the Project (Evaluation of the Project)	16
5.1.	Res	sult of this Project (in Business), Issues Left Unsolved, and Policy for Solving Them	16
5.1.	1.	Result of this Project (in Business)	16
5.1.2	2.	Issues Left Unsolved and Policy for solving them	16
Chapte	r 6.	Plan of Expanding the Business after the Project	16

MAP

Thailand



List of Abbreviations

Abbreviation	Official Name
BOT	Bank of Thailand
FSA	Financial Services Agency
ERMC	Electronically Recorded Monetary Claims

Chapter 1. Summary

1.1. Summary

1.1.1 Background of the Project (including the developmental problem of Thailand)

In Thailand, the subsidiary of Japanese companies usually settle by cheque and have a lot of paperwork to get through. Moreover, the local companies have difficulty in collection of the money because of the late of collection of cheque. Because of this current situation, the Bank of Thailand (BOT) insisted the necessity of improving the SMEs' financial environment.

1.1.2 Technology that MUFG Bank and Hitachi would like to spread in Thailand

The payment and finance service of Electronically Recorded Monetary Claims (ERMC)

1.1.3 Purpose of the Project

a. Purpose (Contribution to solving the developmental problem in Thailand)

To contribute to developing the economy of Thailand with the payment and finance service of ERMC.

b. Purpose (Business)

To have BOT understand the system of ERMC. In order for Bank of Ayudha (the subsidiary of MUFG Bank in Thailand) to start the service of ERMC, it was necessary to get the approval of the policy of this system by the government.

1.1.4 Activity of this Project

a. Making the Mockup

We made the visual mockup of the service that people can use in Thailand according to "Dente", which is the e-payment service of MUFG Bank. It is made in Thai, English, and Japanese language.

b. Confirming with Financial Services Agency (FSA) the Progress of the Discussion with BOT and FSA

Japanese companies had difficulty in the payment, finance, and investment of the business in Asian countries, because of the immature financial infrastructures of Asian countries. On December, 2010, FSA announced "The Action Plan for the New Growth Strategy". After that, FSA made a contract, have a discussion about the financial system, and held workshops with the Asian countries. In 2011, FSA explored the potential of spreading the ERMC in Asian countries, and picked up Thailand as a promising country. FSA attempted to have BOT make the system of ERMC.

MUFG Bank and Hitachi regularly checked the progress of the discussion between BOT and FSA. FSA conducted a fit and gap analysis about the difference of legal systems in Thailand and Japan. However, it turned out that adopting the system of ERMC was not of high priority for BOT, and on April 2018, FSA decided stoping the discussion with BOT.

c. 1st Visit to BOT (1st Activity in Thailand)

At first, MUFG Bank and Hitachi planned to visit BOT at a time of FSA visiting BOT to report the result of fit and gap analysis. However, due to the discussion between BOT and FSA, FSA could not arrange the appointment, so Hitachi visited Thailand and confirmed the will of BOT on October 2018.

BOT mentioned that spreading the "National e-Payment" was the top priority and BOT reached a conclusion not to go ahead with this project for now.

1.1.5 Result of this Project

MUFG Bank and Hitachi confirmed that adopting the system of ERMC was not high priority for BOT, and reached a conclusion not to go ahead with this project for now.

1.1.6 Potential of business

It is very difficult to spread this business in Thailand.

MUFG Bank and Hitachi decided stopping the discussion for now. However, if the government of Thailand expect the ERMC, we would start this project again and take actions for developing the financial industry in Thailand.

Chapter 2. Background of the Project

2.1. Background of the Project

2.1.1. The Developmental Issue of Thailand

MUFG Bank and Hitachi checked the status quo of settlement and finance in Thailand and were aware of the needs as below.

a. [Needs of the subsidiaries of Japanese companies in Thailand (Interview with 30 companies on August, 2015)]

They placed an order to local companies with the work of manufacturing and machined assembly. They mainly settled with local companies by cheque and there was a lot of paper work. They had strong needs towards reducing the burden of this paper work.

- b. [Needs of the local SMEs (Interview with 40 companies on March, 2016)]
 - (1) Local SMEs settled mainly by cheque (including post dated cheque). They often suffered from the lack of cash because of the late collection of debt.
 - (2) It was difficult to reconcile because the name of payer was not written in bank transfer, which was the reason why local SMEs continued to settle by cheque.
- c. [Needs of BOT (Bibliographic Survey)]

The government of Thailand intends to spread IT and develop SMEs industry in Thailand. BOT had a strong interest on the system of ERMC. BOT intended to develop law and tax systems. BOT announced "SMEs Finance in Thailand" on January 2014, pointing out the necessity of improving the finance environment of local SMEs.

- 2.1.2. Company Strategies of MUFG Bank and Hitachi and the Connection with the Project
 - a. MUFG Bank

MUFG Bank considers the Asian market as the second mother market, and provides integrated financial services for local SMEs and consumers. On December 2013, MUFG Bank took over the Bank of Ayudha which is the fifth largest bank in Thailand. On January 2015, the Bangkok branch of MUFG Bank was integrated to the Bank of Ayudha. MUFG Bank has been expanding financial business in Thailand.

b. Hitachi

Hitachi also considers ASEAN as the one of the most important areas, and has been expanding the business such as railway, healthcare, electronic power, and elevator, through "social innovation". In Thailand, on September 2018, Hitachi founded the Lumada Center to contribute to the EEC (East Economic Corridor) Project. Hitachi plans to expand its business in Asia based on the best practices of IoT solutions in Japan, China and United States. Hitachi undertook this project of ERMC to develop the manufacturing industry.

2.2. Technology that MUFG Bank and Hitachi Would Like to Spread in Thailand, and the Potential of Contributing to the Developmental Problem in Thailand

- 2.2.1. Detail of the Technology that MUFG Bank and Hitachi Would like to Spread in Thailand
 - a. Technology
 - (1) We would like to spread the payment and finance service of ERMC. This service is to improve the convenience of users by utilizing the ERMC in payment and vendor finance. Japanese vendor finance is

called "batch settlement" and city banks and main local banks have provided this services, which is widely spread in Japan. The service mainly provides two functions.

- (a) Bank pays for the vendor on behalf of payer
- (b) Bank buys the nominative claim according to needs of supplier.
- (2) The feature of this service is that banks can buy claims of supplier according to the credit of payer. Banks can finance companies by buying claims even though suppliers do not have trading performance or credit.
- (3) The purpose of adopting this service in supply chain is not only to free up hours of office work but also to stabilize management of supply chain through financing. The stable management of supply chain helps companies have superiority on product delivering. Moreover, this service will help supplier keep good business condition even if a disaster happens.
- (4) MUFG Bank and Hitachi would like to expand this service by developing the batch payment service of ERMC after the law of ERMC was enacted in Japan on 2008. Besides the function of batch payment, this service has three superiorities.
 - (a) ERMC has the legal validity because the institution with approval of the government records this claim electronically.
 - (b) ERMC saves the cost of managing actuals and diminish the risk of loss.
 - (c) ERMC has liquidity and company can settle with transfer of receivables.

b. Picture of Product



2.2.2. The Feature of This Technology (Pros and Cons)

- a. There are four types of service utilizing ERMC in Japan. The providers are the three big city banks and densai.net Co., Ltd. .
- b. The service of MUFG Bank, which is called "Dente", has the only service that has the functions of financing, network, and split-up/transfer.

	MUFG Bank	SMBC	Mizuho	Densai Net
Feature	Supply chain finance	Network Infrastructure that all financial institutions attend		
Function ① Finance	(No Examination, nonrecourse)	(No Examination, nonrecourse)	(No Examination, nonrecourse)	(Examination Needed · Recourse)
Function ② Split-up/ Transfer	0	×	0	0
Function ③ Network	(45 financial institution)	×	×	(573 financial institutions)

2.2.3. Sales Performance

MUFG Bank is the first bank that provided the service of ERMC in Japan. The other two city banks do not show the data of ERMC service but it is assumed that MUFG Bank has the top share in ERMC market in Japan.

2.2.4. Safety of This Technology

MUFG Bank has managed this service for more than 9 years, but there has been no big system failure that stop customers' payment and finance. Also, this system use the system infrastructure of MUFG Bank with enough stability and security.

2.2.5. Comparison with Competing Services in Thailand

There is no competing services in Thailand.

2.2.6. Potential of Contributing to the Developmental Problem

The payment and finance service of ERMC can contribute to the financial industry in Thailand in the way below.

- a. It frees up hours of office work.
- b. It frees up hours of reconciliation and collection of checks. This service notifies the information about a payer, payee, amount of money and due date.
- c. It helps local SMEs collect money safely by spreading the ERMC of payer with high credit.
- d. It helps bank finance local SMEs by enabling banks to buy the ERMC of payer with high credit.

Chapter 3. Activity of the Project

3.1. Purpose and Goal of the Project

3.1.1. Purpose of the Project

a. Basic Strategy

MUFG Bank and Hitachi aimed to spread the payment and finance service of ERMC as the financial infrastructure in Thailand

3.1.2. Goal of the Project (Contribution to the developmental problem of Thailand)

MUFG Bank and Hitachi aimed to contribute to developing the economy of Thailand with the payment and finance service of ERMC.

3.1.3. Goal of the Project (Business)

To have BOT understand the system of ERMC. In order for Bank of Ayudha, which is the subsidiary of MUFG Bank in Thailand, to start the business, it was necessary to get the approval of the policy of this system by the government.

3.2. Activity of the Project

3.2.1. Schedule

From November 2016, to February 2019.

3.2.2. Project Structure

a. Information about the Institution in Thailand

BOT. In order to have the government of Thailand establish the system of ERMC, it was necessary to have BOT, the central bank of Thailand, to understand the system of ERMC.

b. Project Structure

(1) Main Institution of the Project

Main Institution	Role
MUFG Bank IT and Payment Solution Div.	A division in charge of promoting ERMC. It provided know-how of the system architecture and end user's operation of ERMC.
MUFG Bank System Div.	A division in charge of developing IT system of MUFG Bank. It provided know-how of the IT system of the service of ERMC in Japan and asked the Bank of Ayudha to cooperate by defining the requirements of the system.
Hitachi Financial Business Unit	A division with the experience of developing the IT system of ERMC with MUFG Bank. It provided know-how of IT system of ERMC and asked Hitachi Asia to cooperate by introducing the pilot users of local companies.

(2) Institution Cooperating with the Project in Thailand

Institutions Cooperating with the Project in Thailand	Role
Bank fo Ayudha	It provided the idea of financial infrastructure, commercial distribution, and corporate finance in Thailand.
Hitachi Asia (Thailand)	It helped us to interview with the local companies about the operation of accounting and business practice in Thailand.

3.2.3. Activities of the Project

Table 1: Activity of the Project, goal and result

	Task	Activity Plan						
#		1st 2nd		3rd 4th		5th	Activity	Result
		17.11	18.03	18.05	18.07	18.09		
		(Thailand)	(Thailand)	(Thailand)	(Thailand)	(Thailand)		
	Having the government of Thailand						FSA would introduce the system of ERMC in Japan to the government of Thailand. →On May 2016, FSA agreed with BOT that FSA would	 Having the government
1	understand the system of ERMC. (Conducted by FSA.)	•••••					explain a result of fit and gap analysis of law to the government of Thailand. However, it was on April 2018 that FSA prepared the report, and the opportunity to explain the report did not happen.	of Thailand understand the system of ERMC.
2	Making the mockup.	•••••	•				 Make a visual mockup made in English, Thai and Japanese. → Completed. 	Mockup developed.
3	Confirming needs of local companies.			•			Introduce the service of ERMC to local companies and confirme their needs. It was planned that FSA discussed with BOT (#1), but on October 2018, we visited BOT and introduced the mockup in order to confirm the current status of BOT.	 Having BOT understand the system of ERMC. Hearing of issues related to settlement and finance under the status quo.
4	Proposing to establish the system of ERMC①. (Conducted by FSA.)						Propose establishing the system of ERMC to the government → Equal outcome as #1.	Having the government start to consider the policy of ERMC.
5	Preparing for defining requirements of the system.			•			 Prepare for defining requirements of the system according to the policy of ERMC. → Equal outcome as #1. 	Hearing of issues related to the operation for requirement decision.
6	Proposing to establish the policy of ERMC② (Conducted by FSA)						 Propose the draft of policy of system of ERMC → Equal outcome as #1. 	Having the government of Thailand establish the policy of ERMC.

Chapter 4. Result of the Project

4.1. Making Mockup

- a. Process of Making the Mockup
 - (1) According to the requirements of the service of ERMC of MUFG Bank, MUFG Bank and Hitachi listed up 9 scenarios and 17 functions required for the use in Thailand.
 - (2) According to the screen images of the service of ERMC of MUFG Bank, 74 screen sheets were prepared in Japanese for the use in Thailand.
 - (3) Words in the screen sheets of the mockup were translated into English and Thai.

b. Requirements

(1) Scenario

#	Name of Scenario (Player)	Detail
1)	Settlement (Payer)	Applicant requests for record of accrual by filling in or uploading the data. Approver approves the request. Payer checks the result of request.
2	Checking payment date (Payer)	Payer checks its payment date.
3	Checking receive date (Supplier)	Supplier checks its receive date.
4	Discounting a bill (Supplier)	Supplier requests to discount a bill or upload a request of discount and then ask for approval.
5	Referring to an operating manual in the help screen (Payer /Supplier)	Payer/Supplier refer to the operating manual in the help screen.
6	Checking log data of each device (Payer /Supplier)	Payer/Supplier check the log data of each device.
7	Requesting for change of contract (Payer /Supplier)	Payer/Supplier request for the change of contract
8	Registering email notification recipient (Payer /Supplier)	Payer/Supplier register or delete the email notification.
9	Requesting for issuing a bank certification of deposit (Payer /Supplier)	Payer/Supplier request for issuing the bank certification of deposit.

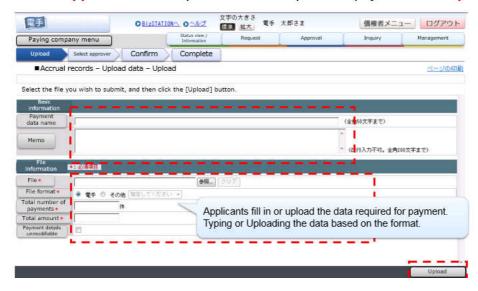
(2) Function

	Name of Function	Player and Scenario									
#		Payer			Supplier			Payer/Supplier			
		1	2	3	4	5	6	7	8	9	
1	Display the home screen for customer	0	0	0	0	0	0	0	0	0	
2	Display notification screen for customer (Payer)	0	0			0	0	0	0		
3	Request for record of accrual (register on the screen)	0									
4	Request for record of accrual (upload)	0									
5	Approve requests (Payer)	0									
6	Check requests (Payer)	0									
7	Check payment date (Payer)		0								
8	Display notification screen for customer			0	0					0	
0	(Supplier)				Ŭ						
9	Request for discount (register on the screen)				0						
10	Request for discount (upload)				0						
11	Approve requests of mortgage of discount				0						
12	Check requests (Supplier)				0						
13	Check deposit date (Supplier)			0							
14	Check log data of each device					0					
15	Request for change of information of user (Supplier)						0				
16	Register email notification recipient (Payer)							0			
17	Request for issuing a bank certification of deposit								0		

- c. Screen Image (Excerpt from the mockup in English)
 - (1) Applicant requests for record of Accrual (Applicant fill in or upload the date required for payment and request)

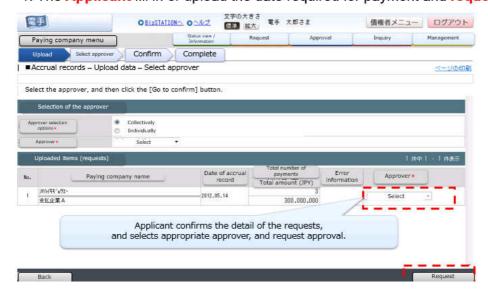
Accrual (1) ~ To fill in the data for payment ~

1. The Applicant fill in or upload the date required for payment and request.



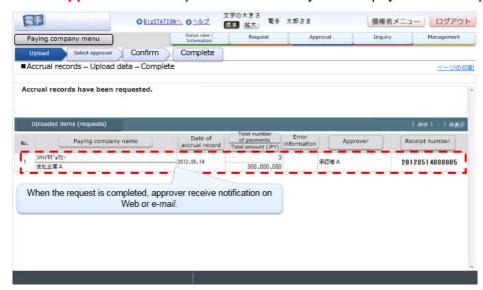
Accrual (2) ~ select approver ~

1. The Applicant fill in or upload the date required for payment and request.



Accrual (3) ~ The completion of the request ~

1. The Applicant fill in or upload the necessary data for payment and request.



(2) Approver approves the request (Approver checks the data and approves the request)

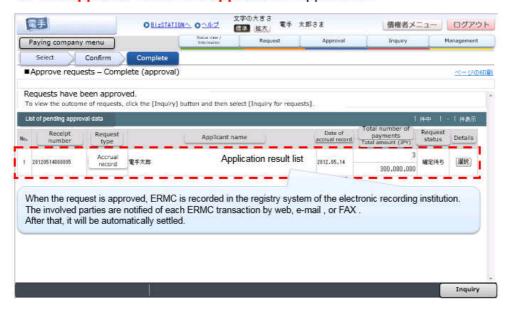
Approval (1) ~ To check and select the data items ~

2. The Approver check and approve the application.



Approval (2) ~ The completion of the transaction ~

2. The Approver check and approve the application.



4.2. Discussion between FSA and BOT about adopting the system of ERMC (MUFG Bank and Hitachi regularly checked the current status with FSA and had discussions)

a. Background

On May 2016, FSA explained to BOT that FSA would conduct a fit and gap analysis of law systems in Thailand and Japan, cooperating with MUFG Bank and Hitachi. In order to spread ERMC, it was necessary to develop legal systems in Thailand.

- b. MUFG Bank and Hitachi regularly checked the current status of discussion between BOT and FSA
 - (1) Analysis of fit and gap about the law systems in Thailand and Japan
 - (a) On February 2017, MUFG Bank and Hitachi confirmed to FSA that FSA outsourced an research of analysis of fit and gap to KPMG AZSA, LCC.
 - (b) The research finished on March 2017, but FSA had been discussing about this research and FSA published the report based on this research on July 2018. MUFG Bank and Hitachi checked the overview of this report on April 2018.

In this report, three features were listed up as below relating to the adoption of the ERMC in Thailand,.

- Thailand already has almost the same legal system as the one of receivable in Japan, but local companies mainly settle by transfer, cheque or cash. Especially payment with post-dated paper cheque is widely used.
- There is no legal restriction about the due of payment of post-dated cheque in Thailand. If there is a mutual agreement, payer can pay a couple of years later, which means post dated cheque technically has the same function as receivables in Japan.
- On February 2010, Thailand adopted "Imaged Cheque Clearing and Archive System (ICAS)" and started the payment with the electronic file.

In conclusion, FSA reached a conclusion that it was prioritized to upgrade the system of post-dated cheque for adopting the service of ERMC in Thailand.

(2) Discussion between BOT and FSA

- (a) On September 2017, in FinSum (the global event held by FSA and NIKKEI, Inc aiming for globally informing the current status and potential of Japanese FinTech and building the global ecosystem of startup) FSA invited "Payment Systems Policy and Financial Technology Group" of BOT and one of the member presented as a speaker. In his speech, it was presented that the government of Thailand intended to use regulatory sandbox actively because the FinTech in Payment systems became much more important in Thailand than before.
 - On the other hand, MUFG Bank and Hitachi checked with FSA that the unofficial discussion between BOT and FSA about the system of ERMC had not been held for some reason.
- (b) MUFG Bank and Hitachi also checked withFSA that in the joint work meeting held on March 2017 and January 2018 in which the government of Thailand (Ministry of Finance and BOT) and

- the government of Japan (Ministry of Finance and FSA), the unofficial discussion about the system of ERMC was not held due to the reason of the government of Thailand.
- c. Overall, MUFG Bank and Hitachi checked with FSA that FSA reached the conclusion that FSA will stop the discussion with BOT about adopting the system of ERMC because the system of ERMC is not high priority for BOT.

4.3. Visiting BOT (1st Activity)

- a. At first, MUFG Bank and Hitachi planned to visit BOT at a time of FSA visiting BOT to report the fit and gap analysis. However, on April 2018, MUFG Bank and Hitachi confirmed with FSA that FSA had decided stopping the discussion about introducing the system of ERMC in Thailand. Based on this result, Hitachi planned to visit BOT to confirm its priority of adopting the system of ERMC.
- b. Hitachi had an appointment of visiting BOT on October 2018 to introduce the solution of Hitachi based on the background that BOT has been promoting financial digitalization in Thailand such as National e-Payment, and Hitachi was also expanding its business of digital solution in finance in East Asia.
- c. While introducing the solution, Hitachi interviewed BOT about the current status of the system of ERMC and "Digital Thailand" (, which is the policy of the government of Thailand to adopt ICT in Thailand). Hitachi also showed the mockup of the service of ERMC to BOT. Hitachi confirmed the will of BOT as below.
 - (1) Since 2016, BOT had started e-payment and e-KYC by national e-Payment. (KYC, as known as Knowing Your Customer, is the process verifying the identity of its client and assessing potential risks of illegal intentions for business relationship.)
 - (2) Especially e-payment is an important field in FinTech, and upgrading and promoting National e-Payment was the top priority compared with other action including adopting the system fo ERMC.
 - (3) In National e-Payment, people can use its national ID and cellphone number as transfer code. Institutions and companies start adopting National e-Payment as Prompt Pay, the way of transferring funds.
 - (4) In conclusion, introducing and improving National e-Payment was the top priority for BOT. BOT had interest in the technology of ERMC, but it was difficult for BOT to take action for adopting the system of ERMC.

Chapter 5. Overview of the Project (Evaluation of the Project)

5.1. Result of this Project (in Business), Issues Left Unsolved, and Policy for Solving Them

5.1.1. Result of this Project (in Business)

MUFG Bank and Hitachi have confirmed that National e-Payment for promoting e-payment is the top priority for BOT, and it is difficult for BOT to go ahead with adopting the system of ERMC even though BOT has interest in the technology and usability of ERMC.

5.1.2. Issues Left Unsolved and Policy for solving them

The issues of the fit and gap analysis of legal system, the scope of project considering digitizing post dated cheque, and usability of mockup still remain. On the other hand, in order to restart the discussion about adopting the system or ERMC, it is necessary to propose according to the National e-Payment.

Chapter 6. Plan of Expanding the Business after the Project

MUFG Bank and Hitachi reached a conclusion of stopping the discussion about adopting the system of ERMC in Thailand. Both companies have been expanding their business in Thailand, which can contribute to the economy and the government of Thailand. When the expectation of the government of Thailand toward the system of ERMC increases, MUFG Bank and Hitachi would start discussing again and take action for developing the financial industry in Thailand.