



NATIONAL BANK OF CAMBODIA

Riel. Stability. Development.



Making the Bridge to Financial World with Electronic Payment Services in Cambodia

December 16th, 2019

Sang Seung Oh



KFTC

Korea Financial Telecommunications
& Clearings Institute

Contents

1

What is Payment System ?

2

The Enhancement of National Payment System
of Cambodia

A globe is centered in the image, surrounded by a network of white lines and dots, symbolizing a global payment system. The background is a solid blue color with a faint, larger-scale network pattern.

1. What is Payment System?

Infrastructures



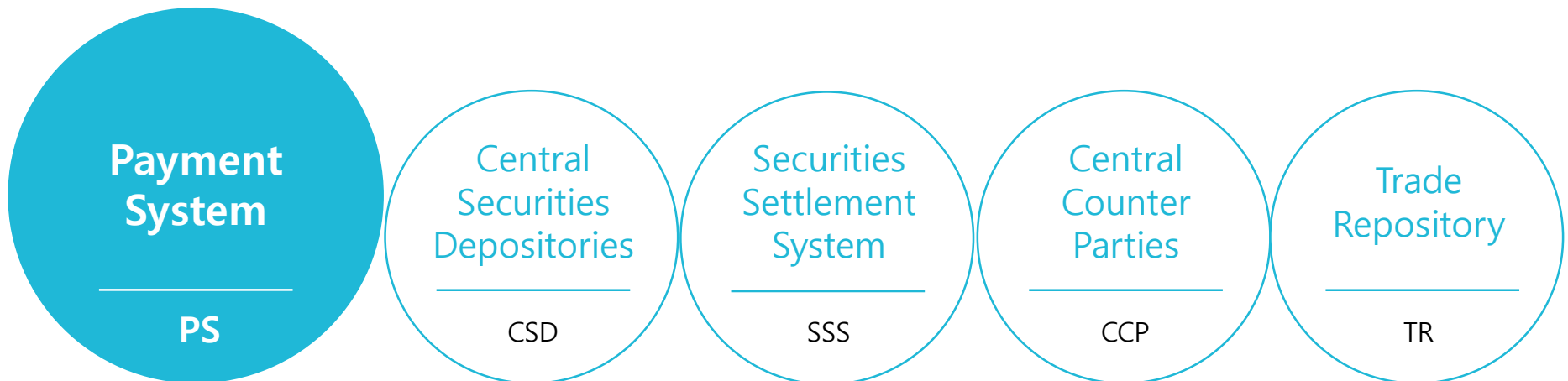
FMI (Financial Market Infrastructures)

Definition

A multilateral system among participating institutions, including the operator of the system, used for the purpose of clearing, settling, or recording payments, securities, derivatives, or other financial transactions.

- PFMI (Principles for Financial Market Infrastructures) of BIS -

5 Types



Payment System

Definition

A payment system is a set of instruments, procedures, and rules for the transfer of funds between or among participants; the system includes the participants and the entity operating the arrangement.

- PFMI (Principles for Financial Market Infrastructures) of BIS -

Payment system is not a IT system which is composed of hardware and software, but a comprehensive arrangement of multiple components.



Arrangement

Participants



Instruments



Procedures



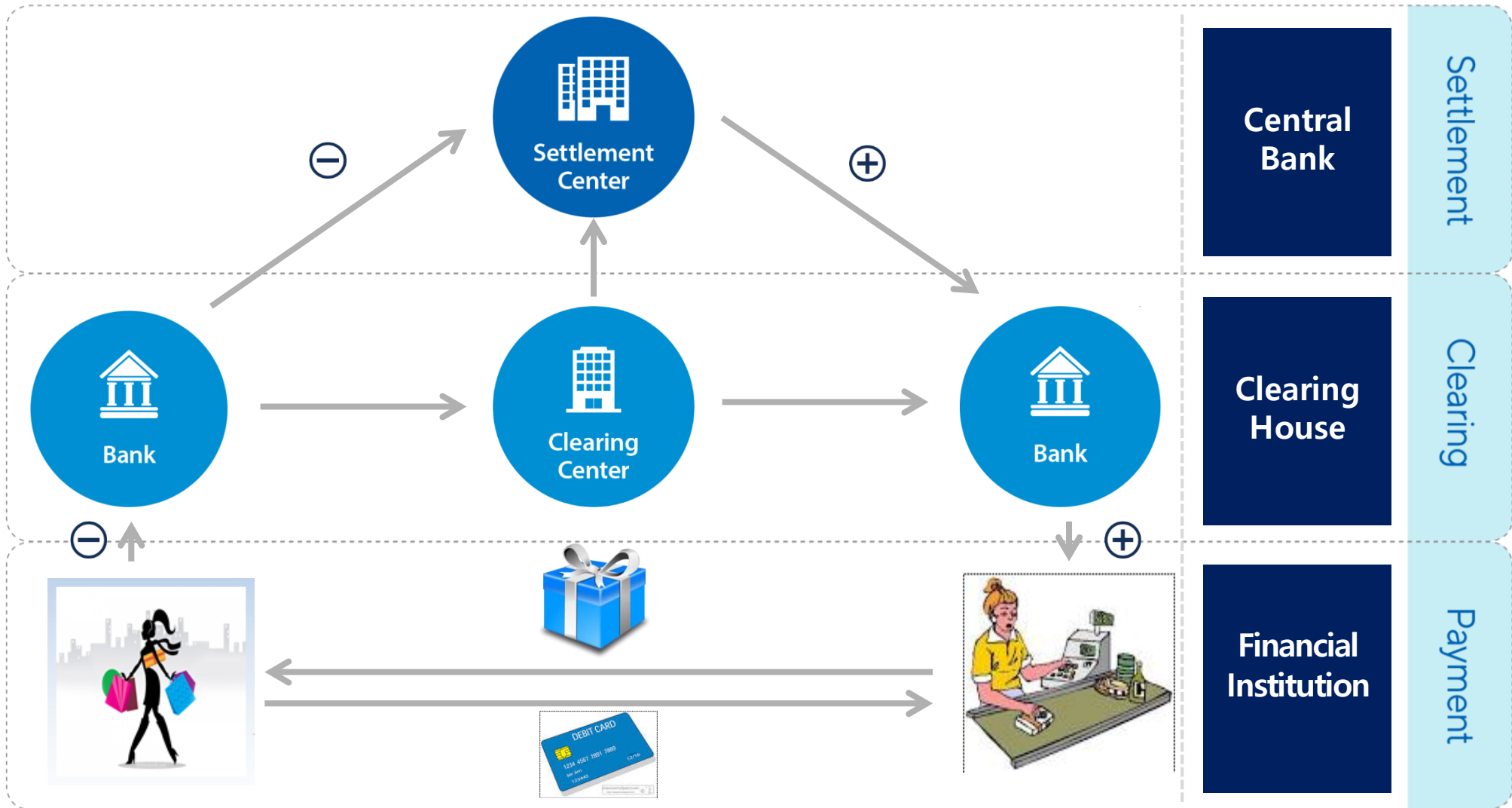
Rules



IT Systems

The entity operating the arrangement

Electronic Payment Process



Financial Inclusion

Definition

Financial inclusion means that individuals and businesses have access to useful and affordable financial products and services that meet their needs – transactions, **payments**, savings, credit and insurance – delivered in a responsible and sustainable way. Being able to have access to a transaction account is a first step toward broader financial inclusion since a transaction account allows people to store money, and send **and receive payments**.

- World Bank -



Payment system is one of the most essential component for Financial Inclusion, because it makes people send and receive payments.

KFTC's Global References (1/2)

System Implementation



State Bank of Vietnam (1999~2000)

- **Scope of Work:** Analysis & design, development, supply and installation of Inter-Bank Payment System (IBPS)
- **Key roles of KFTC:**
System Analysis & Design / Testing & Auditing of the system / Consulting on Rules & Regulation, Operational know-how, etc.



Central Bank of Nigeria (2003~2006)

- **Scope of Work:** Analysis & design, development, supply and installation of Real Time Gross Settlement(RTGS) System
- **Key roles of KFTC:**
Consulting on Payment & Settlement system – System, S/W, Rules & Regulation, Operational know-how, etc.



Central Bank of Armenia (2016~2017)

- **Scope of Work:** Analysis & design, development, supply and installation of Remittance Unified System
- **Key roles of KFTC:**
System Design & Project Management / Consulting on Rules & Regulations, etc.



National Bank of Cambodia (2017~2019) – ODA Project (KOICA)

- **Scope of Work:** Analysis & design, development, supply and installation of National Retail Payment System
- **Key roles of KFTC:**
Main Project Contractor / System Design & Development / Training / Rules & Regulations, etc.

KFTC's Global References (2/2)

Consulting



Central Bank of Algeria & Society of Automation Interbank Transactions and Electronic Payment (2008~2009)

– Development and Promotion of Payment Card System



Bank Indonesia (2009)

– National Payment System Modernization Roadmap



National Institutional Facilitation Technologies–Cheque Clearing House in Pakistan (2009)

– National Cheque Clearing System



United Arab Emirates Government (2010))

– e-Payment Gateway (On-line Tax and Bill Payments)



Bank of the Lao PDR (2011, 2018)

– National Payment System Modernization Roadmap, Rules & Regulations for National Payment System



Bank of Mongolia (2011)

– National Payment System Modernization Roadmap



National Bank of Moldova (2012~2014)

– National Payment System Modernization Roadmap (Establishment of Clearing House)



Central Bank of the Philippines (2012)

– National Payment System Modernization Roadmap



Central Bank of Armenia (2013~2015, 2019)

– National Payment System Modernization Roadmap, System Development Plan for Remittance Unified System



National Bank of Cambodia (2014~2016)

– National Payment System Modernization Roadmap and System Development Plan, PKI infrastructure



Central Bank of Egypt (2018)

– Retail Payment System Improvement Plan, New Electronic Payment System Development Plan

What happened in Vietnam?

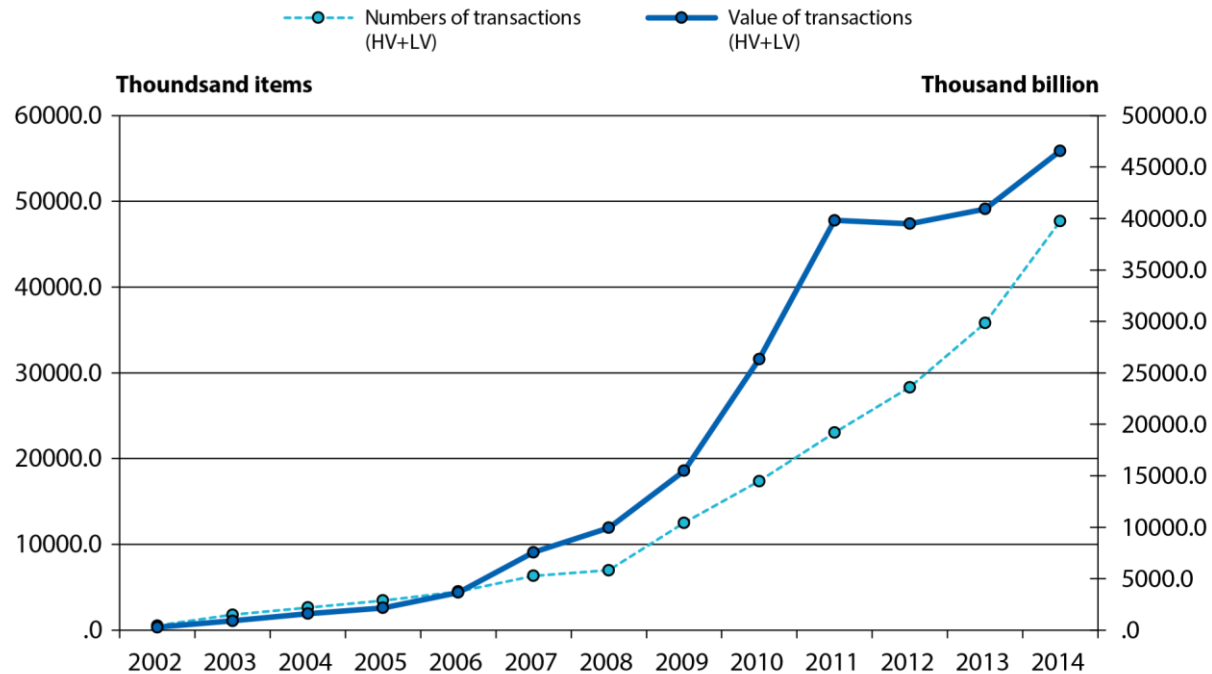


Chart 1: Transactions through the IBPS 2002-2014

* Source : Overview of Large Value Payment System Oversight in Vietnam, Banking Academy of Vietnam

After the implementation of Inter-bank Payment System (IBPS) which includes both High-Value Payment and Low-Value Payment, transactions through the IBPS have grown exponentially.

The background features a central globe with a grid of latitude and longitude lines. This globe is enclosed within a complex, multi-layered network of white lines and dots, resembling a digital or financial network. The entire scene is set against a solid blue background with faint, larger-scale network patterns.

2. The Enhancement of National Payment System of Cambodia

Project Overview

Project Description

- Project Size: 8,000,000 USD (KOICA's one of the biggest IT project), around 500 Man/Month
- Project Dates (23Months)
 - ✓ Implementation : September 2017 ~ July 2019
 - ✓ Soft Launch : October 2019
- Stakeholders
 - ✓ Beneficiary : NBC (The National Bank of Cambodia)
 - ✓ Project Contractor : KFTC Consortium (KFTC, Direa, MCNC)
 - ✓ Employer : KOICA
- Current Participant Banks : 17 (Acleda, Canadia, Prasac, PPCB, Kookmin, etc.)

Benefits

- Enhance the payment systems in Cambodia
 - ✓ Establishing modernized payment infrastructures will contribute to the economic growth of Cambodia and transparency of financial transactions.
- Accelerate IT system modernization at financial institutions
- Secure reliability and extensibility of payment services
- Support small-sized financial institutions to provide Fin-Tech services to its customers at lower cost.

Main Tasks



IT System Development

- Real Time Fund Transfer Service (RFT)
- Mobile Banking Service (MPS)
- QR Code Payment Service (QPS)
- Electronic Clearing System and Net Debit Limit Management System (ECS)
- H/W and 3rd Party S/W



Establishment of Regulatory Framework

- Dispatch Policy and Operation advisor for consultation
- Support enacting Prakas, Rules and Procedures for new payment system

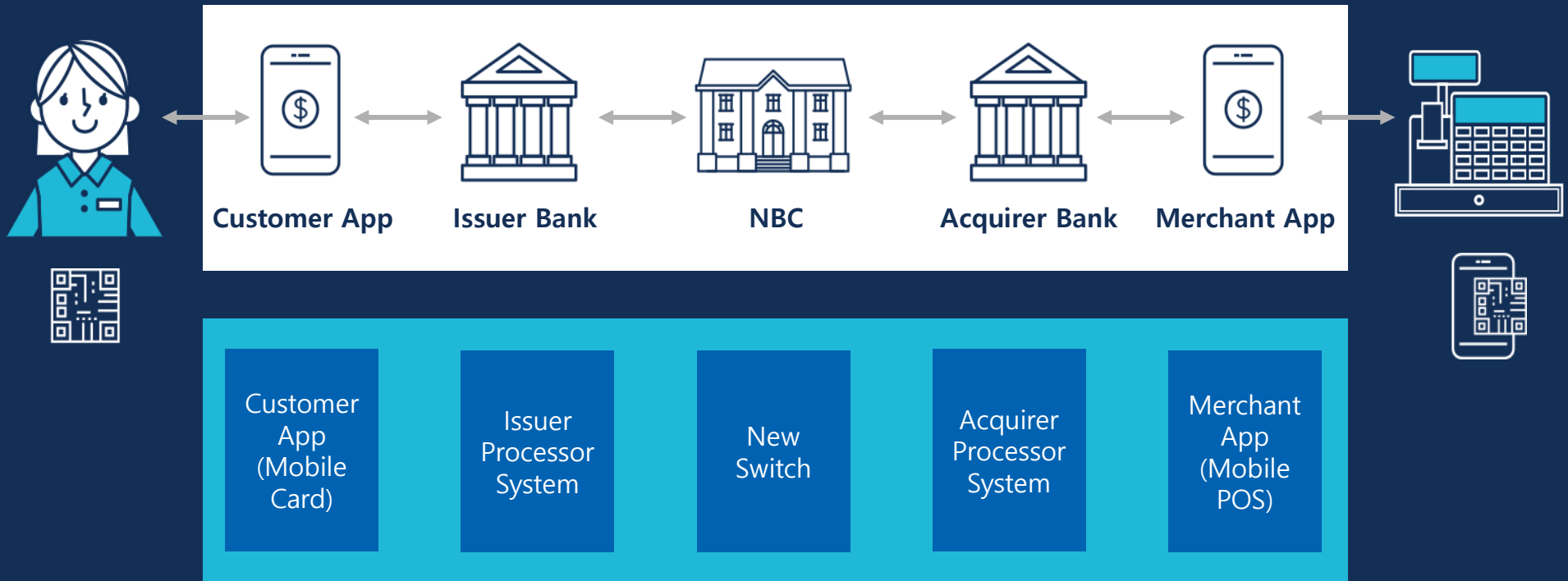


Capacity Building

- Invitation Training : Visit Financial Institutions, Fin-tech trend, Cultural experience
- Local Training : Database, Network, Security, Open-source software
- Co-development : Joint Development, Man-to-Man OJT Training

QPS (QR-Code Payment) Service

Bank's customers can make a **payment** with their **mobile phone** without **plastic cards**.



Demonstration of QR-code Payment



Background of QPS



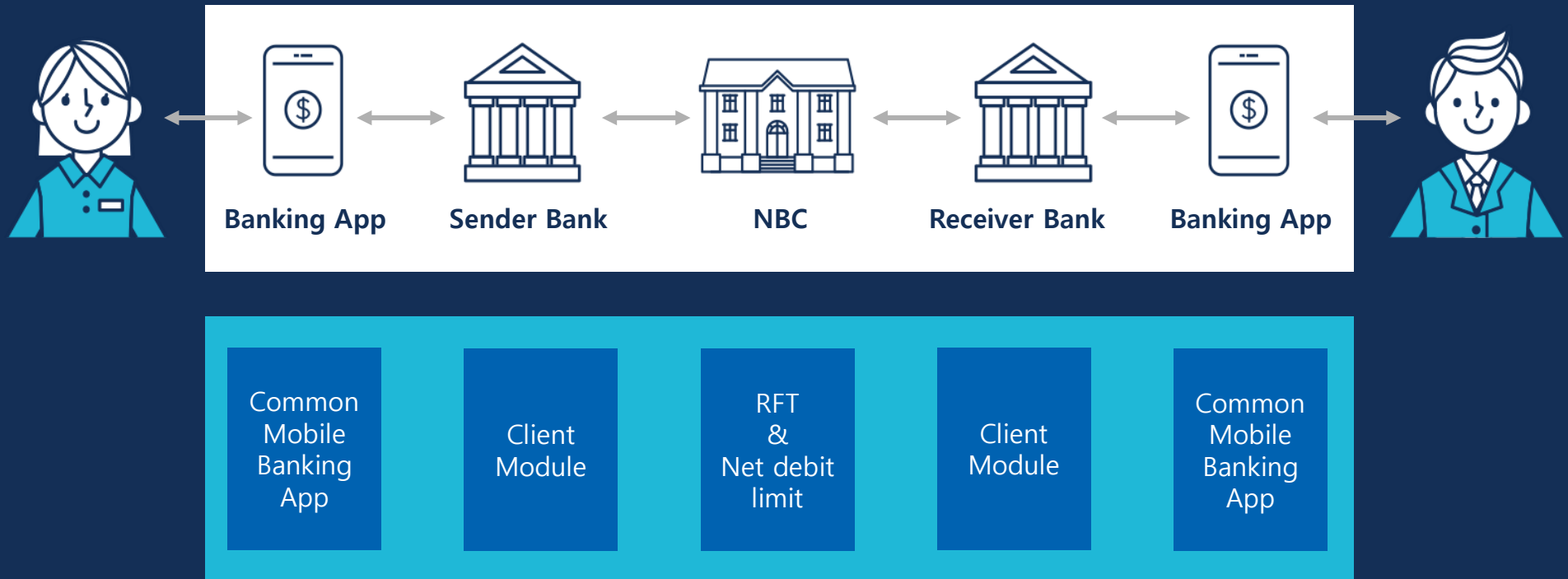
- QPS is the title of the payment system that KOICA and KFTC is building in Cambodia through ODA project.
- NBC(National Bank of Cambodia) and KFTC designed together to overcome the lack of payment infrastructures.
- It is the first QR-Code Payment Switching System operated and settled by a Central Bank in the world.
- Customer needs only a smartphone including payment app and bank account information.
(No need to carry physical cards or wallet)
* Even he/she can withdraw cash at the store using the app.
- Merchants also do not need POS terminals and any other devices, only a smartphone is enough.
- It can reduce a tremendous amount of costs and fees.
- The almost same system is being developed in Korea.
(Zero-Pay).

Comparison of QR-Code Payment Services

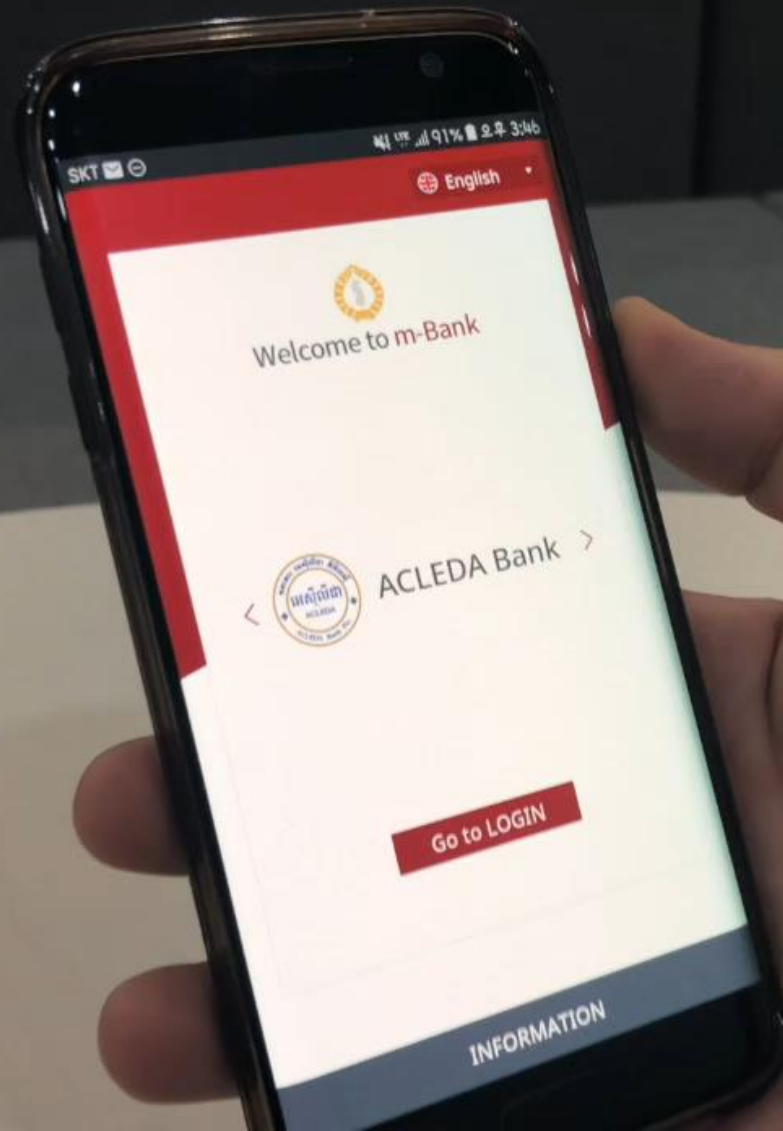
System Types	Korean or Cambodian Model Zero-Pay (Korea) QPS (Cambodia)	General Model Alipay, WeChat Pay
Initiative	– Government-led (Central Bank)	– Market-led (IT companies)
Type	<ul style="list-style-type: none"> – Open Public Platform-oriented • Financial Institutions or various kinds of Fintech firms can provide service by connecting to Payment Center (Open API) 	<ul style="list-style-type: none"> – Private Platform-oriented • Similar to VISA, Master Affiliate of IT Conglomerate Internal Process
Main Providers	Financial Institutions	Affiliate of IT Conglomerate
Clearing & Settlement	Authorized Clearing House & Central Bank	Internal Process
Advantage	<ul style="list-style-type: none"> – Settlement Finality • Risks are controlled by Financial Authority – Promote Competition – Sharing Economy (Shared Switch) 	<ul style="list-style-type: none"> – High Flexibility – Agile to Customer needs – A variety of Related Services
Disadvantage	<ul style="list-style-type: none"> – Focus on Basic & Common Functions – Limited Flexibility 	<ul style="list-style-type: none"> – Private Platform-oriented • Low Reserve level – Monopoly Issue

RFT (Real Time Funds Transfer) Service

Bank's customers can make an interbank fund transfer with their mobile phone on a real-time basis.



Demonstration of RFT



Collaboration through Working Group



Focus on Capacity Building



Making the Bridge to the Financial World

“If you need a friend,
I'll sailing right behind
Like a bridge over troubled water
I will ease your mind”

-'Bridge Over Troubled Water', Simon And Garfunkel

Making the Bridge to the Financial World

We will continue to make a contribution to build
“the bridge over troubled water”
in Partner Countries.

Thank You

Contact information

Sang Seung Oh (Sam Oh)

Head

Global Business Team

livero@kftc.or.kr



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& Clearings Institute