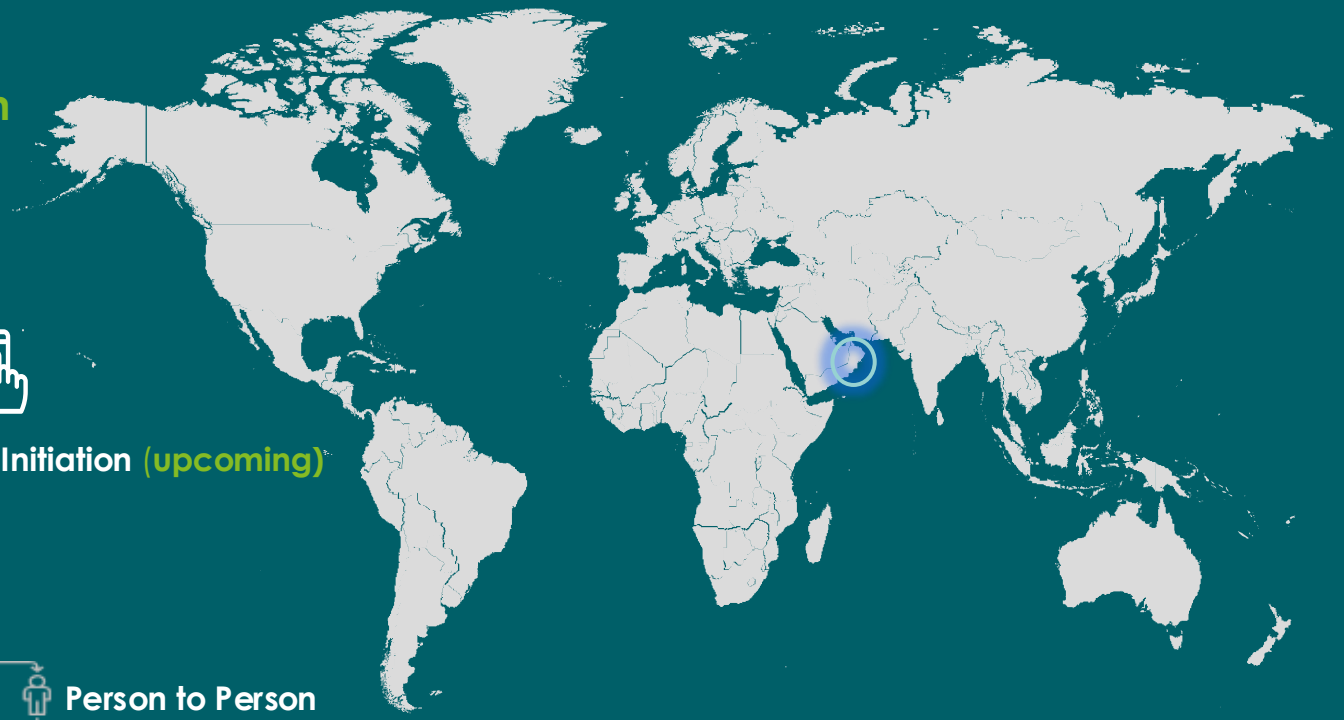
World Bank Project FASTT

Case Study: Sultanate Of Oman

Fast Payment Systems:
Mobile Payment Clearing Settlement and Switching System for digital Transformation (MPCSS)

Payment Instruments

- Credit Transfer
- Request To Pay
- Payment Initiation (upcoming)



Use Cases/Services

- Merchant QR Payments
- Bill Payments
- Person to Person
- Request To Pay
- E – Wallets interoperability

Glossary of terms

Key terms used in the guide are defined in the following table.

Term	Description
Agent	The Agent is an entity that is engaged by an approved Payment Service Provider or MPCSS participant bank under these operating rules to deliver mobile payment service with CBO's approval.
ALIAS	It is an alternative name assigned to a customer account opened with a PSP that can be used as an alternative way of identifying an account rather than using the actual mobile number.
AML\CFT	Law on Combating Money Laundering and Terrorism Financing, issued by Royal Decree no. 30/2016.
Bank Net	A computer data communication network in Oman which adopts the Multi-Packet Label Switching (MPLS) technology. Beneficiary The recipient of funds (whether person or institution) who received credit to his/her banked or un-banked account with the PSP.
Business Day	Official working hours as declared by the Central Bank of Oman in which all participants in the MPCSS perform their financial transactions and the financial transactions are settled in the bank accounts with the CBO.
CBO	Central Bank of Oman

Source: Central Bank of Oman

Terms Abbreviations

Term	Description
Clearing Session	The period determined and managed by the Central Bank for conducting clearing on official business days and holidays.
Clearing	The exchange and confirmation of payment orders and the determination of rights and obligations of any participant to decide the final position of the settlement.
Indirect PSP	Entity licensed by CBO to provide mobile payment services through the MPCSS to the customers. This PSP will have an account with a bank to settle the obligations related to payments.
PSP	Payment Service Provider. Banks licensed by CBO under the extant law in force, and any other entity licensed to provide mobile payment services through the MPCSS to the banked and unbanked customers.
RTGS	Real-Time Gross Settlement System
Transaction Threshold	The maximum amount that can be exchanged per transaction through the mobile payment switching and clearing system as set by CBO.
KYC	Know Your Customer.
Wallet	Virtual account opened to hold electronic money with a payment service provider to enable customers perform financial transactions. A wallet issued should be in compliant with all requirements stipulated in the National Payment Systems Law.

Source: Central Bank of Oman

Terms Abbreviations

Term	Description
Mobile Banking Application (App)	Mobile banking app is an application installed in a smart phone device, which allows customers to use individuals bank accounts to conduct financial transactions remotely.
Mobile Payment Services	A set of services allowed to be allowed through Mobile banking / Mobile wallet apps through the MPCSS.
Mobile Wallet Application (App)	A mobile wallet app is an app that is linked to a wallet account that allows individuals certain financial transactions.
MPCSS	Mobile Payment Clearing Settlement and Switching System. The system operates 24/7 , enabling users to make payments using their mobile numbers, alias name, or QR codes, ensuring that transactions are processed instantly. The system also offers a wide range of payment options, including person-to-person (P2P), person-to-business (P2B), and person-to-government (P2G) payments, providing users with an adaptable payment solution.
PS - Mpclear	A National Mobile Payment Clearing and Switching platform that facilitates interoperability and unified switching and routing services between participants and allows mobile payments to be processed and settled in real-time. Enabling real-time mobile payment exchange using mobile numbers.
Net Clearing Position (NCP)	The financial position for each participant at the closure of each clearing session by offsetting of the mutual obligations on a multilateral basis to arrive at the net debit or net credit positions of the participants
Payer	The initiator of payment instruction (whether person or institution) for transfer of funds from bank account/wallet account with the PSP.

Source: Central Bank of Oman

Select Parameters

GDP*
$106,9 Billion

Income Category
High

Population*
5.2 Million

Access to mobile phone*
120%
(1.2 subscription per person)

Access to internet*
95%

Bank Account*
95.8%

Licensed banks*
26 (15 offering MPCSS)

Licensed PSPs*
10 (9 offering MPCSS)

Licensed money exchange*
Total of 42 of Money Exchange Companies
17 (Offering Remit +Exchange)
25 (Offering Exchange)

*Data available at end of 2024.

Source: Central Bank of Oman

How to read this report

- This deep dive report relates to MPCSS in The Sultanate of Oman
- Key secondary sources include the CBO website
- The table provided below serves as a guide to aid readers in navigating various sections of the report.

legend

The initial slide of each section contains a summary of the chapter, offering readers an outline of the section's contents

The red box with the adjacent icon indicates **section/sub-section summary across** the report. Reader may choose to read through this for a **high level overview on the selected topic**

Source: Central Bank of Oman

Table of Contents

A. Executive Summary

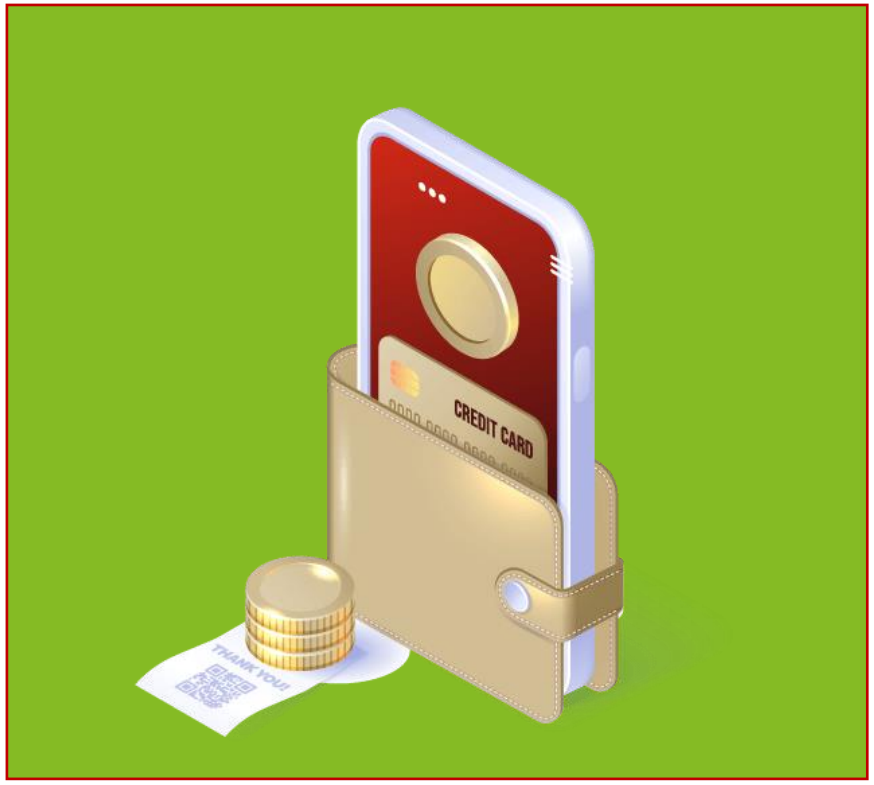
1. Overview

Chapter sections:

1.1. Background | MPCSS in Oman - Milestones

1.2. Objectives

1.3. MPCSS 2.0 – Upcoming Features



Chapter Summary

- **Mobile Payments Clearing Settlement and Switching System** (MPCSS) Launched in July 2017, it is a national interoperable platform operated and regulated by the Central Bank of Oman.
- It enables smooth switching, clearing, and netting of mobile payment transactions using mobile numbers, aliases, or QR codes, with final settlement through RTGS. The system also provides reporting and monitoring functions for CBO.
- MPCSS operates 24/7, uses ISO 20022 messaging standards, and follows defined business-day schedules and cut-off times. CBO issues the operating rules that govern its use in the Sultanate of Oman.
- This chapter covers the key features supported with MPCSS in the current system and the new features which can be enhanced by new version with specific architecture illustrate the system development with key timelines. Additionally, different standards for POS and QR-based payment has been identified with opportunities, regulation and readiness for cross boarder payments would be extended.

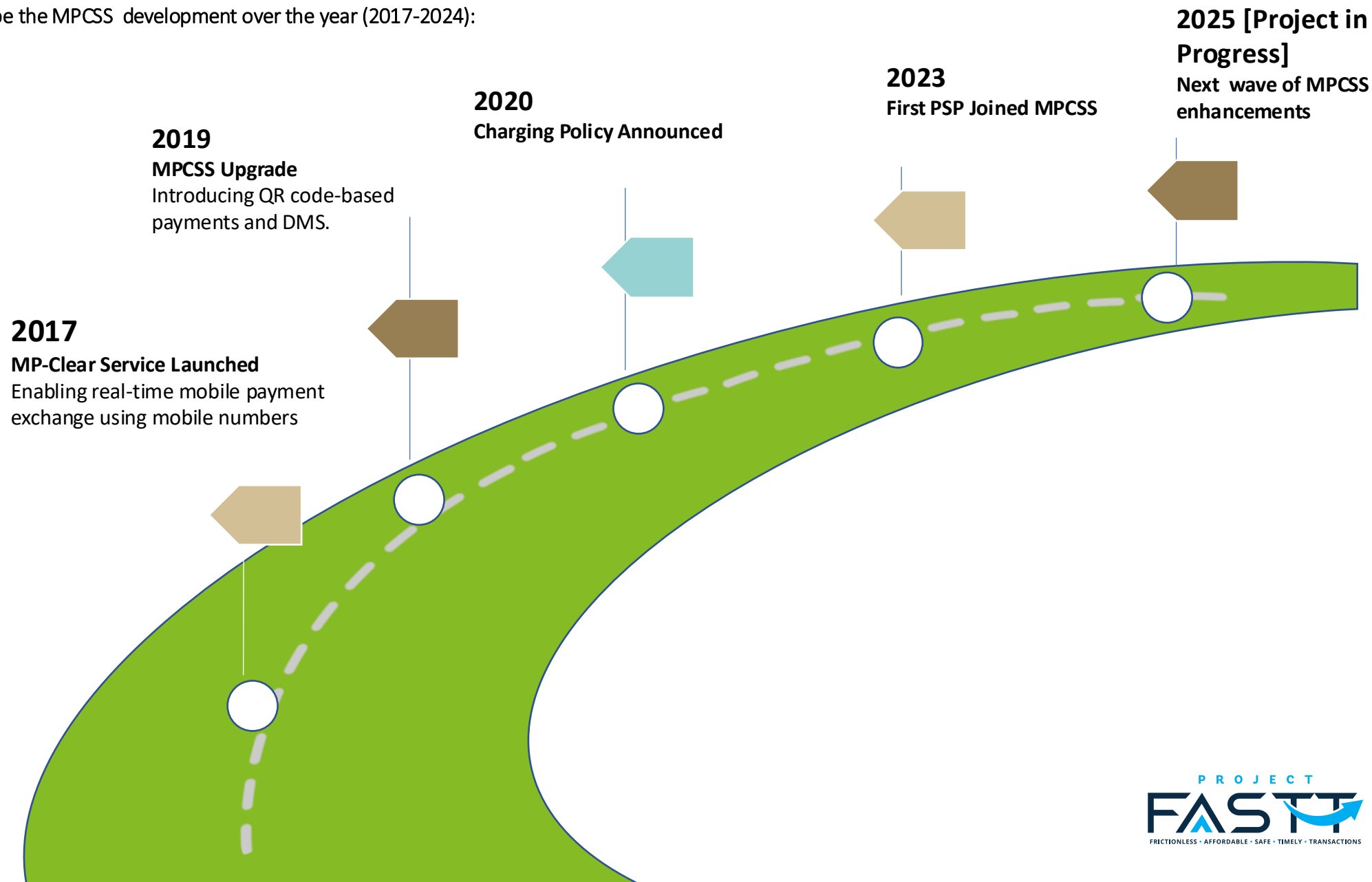
Source: Central Bank of Oman

1.1. Background | *MPCSS in Oman - Milestones*

Below Chart describe the MPCSS development over the year (2017-2024):

MPCSS development over time:

- ***2017:*** MPCSS started to enable interoperable mobile payments.
- ***2018:*** Supported by new legal rules through the ***NPSL***
- ***2019: QR code*** payments were added.
- CBO created ***a national QR code standard*** for easy and consistent use.
- ***Fees*** were made ***affordable*** through a balanced charging policy.
- A ***dispute process*** was set up for payment issues.
- ***PSPs*** were encouraged to ***connect to MPCSS*** for full interoperability.



Source: Central Bank of Oman

1.2. Objectives

The initiative led by the Central Bank of Oman to establish a mobile-based payment system lies within the broader framework of financial and technological advancements in the Sultanate of Oman.

Technological Transformation: The initiative uses mobile technology to modernize the country's payment systems.

Financial Inclusion: The initiative promotes accessible mobile payment solutions to improve financial inclusion.

Transition to a Less Cash-Dependent Economy: The initiative supports the national goal of reducing reliance on cash.

Operating Rules and Legal Framework: The establishment of operating rules outlines the system's architecture and delineates the roles and responsibilities of various stakeholders within a legal and regulatory framework.

Key features

- Runs 24 /7/ 365 days *Instant Payment System.*
- The system is distinguished by its ability to perform fund transfers using only a **mobile phone number**, an **(Alias),** or a **(QR code).**
- Standardized specification for the National QR Code (National QR).
- Mobile wallet support for financial inclusion and readiness for cross border transactions.
- It captures all transfers, whether conducted within the same bank (On-us) or between different banks (Inter-bank).
- The system provides users with the ability to perform a wide range of payments, including:
  - Person-to-Person (P2P)
  - Person-to-Business (P2B)
  - Person-to-Government (P2G)

Strategic Objectives

- The World Bank has recommended the development of retail payment systems.
- The system addresses market demands by providing instant, unified and interoperable mechanism for collaboration among banks.
- The system is designed to accommodate the participation of non-banking financial institutions.
- It supports the national strategy for Digital transformation vision 2040.
- *The System utilizes industry standard protocols, such as ISO 20022.*

Key characteristics to achieve

Technological Transformation | Financial Inclusion | Transition - to a Less Cash Dependent Economy | Operating Rules and Legal Framework

Source: Central Bank of Oman

1.3 MPCSS 2.0 – Upcoming Features

Registration:

- *Register from any BANK / PSP app*
- *Create MPIN*

Instant Payments:

- *Pay to any Account Number*
- *Pay to any IBAN Number*
- *Request Payment from any Bank*

Payment Types:

- *Direct Credit*
- *Recurring Payments*
- *Pre-authorized Payments*
- *Account Balance and Statement*

Other techno functional Enhancements:

- Customer Registry Enquiry
- Return Customer Masked/Full Name in Name Verification
- Multiple Partial Returns
- Return amount Surplus
- Processing Bulk Disputes
- List of accounts with default account

Source: Central Bank of Oman

B. Detailed Report

2. Business and Operating Model

Chapter sections:

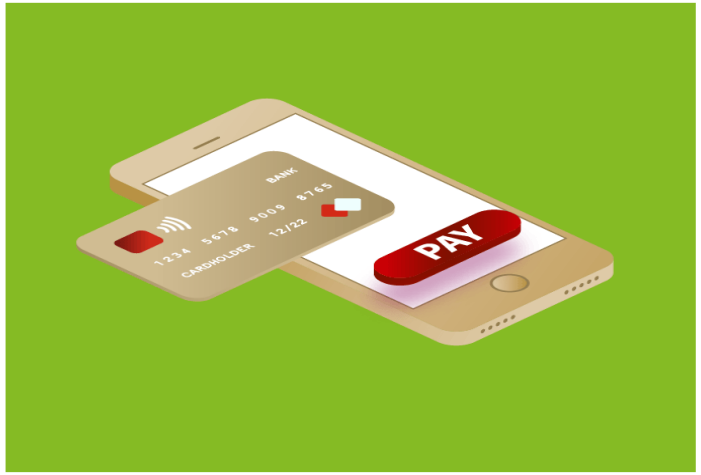
2.1. FPS Structure

2.2. Payment Instruments and Transaction Types

2.3 Scheme Pricing and Fee Structure

2.4 Use Cases

2.5 User Adoption



Chapter Summary:

The system currently supports mobile payments only in Omani Rial, though the Central Bank of Oman may add other currencies in the future. It also includes clearly defined thresholds and limits for different payment types and customer categories, set according to CBO's operational guidelines

Banks and PSPs must follow and monitor the transaction limits set by the CBO. These limits vary by transaction type, customer category (banked or unbanked), and customer type (individuals, businesses, and government). Agent limits must also stay within the maximum limits defined by their PSP

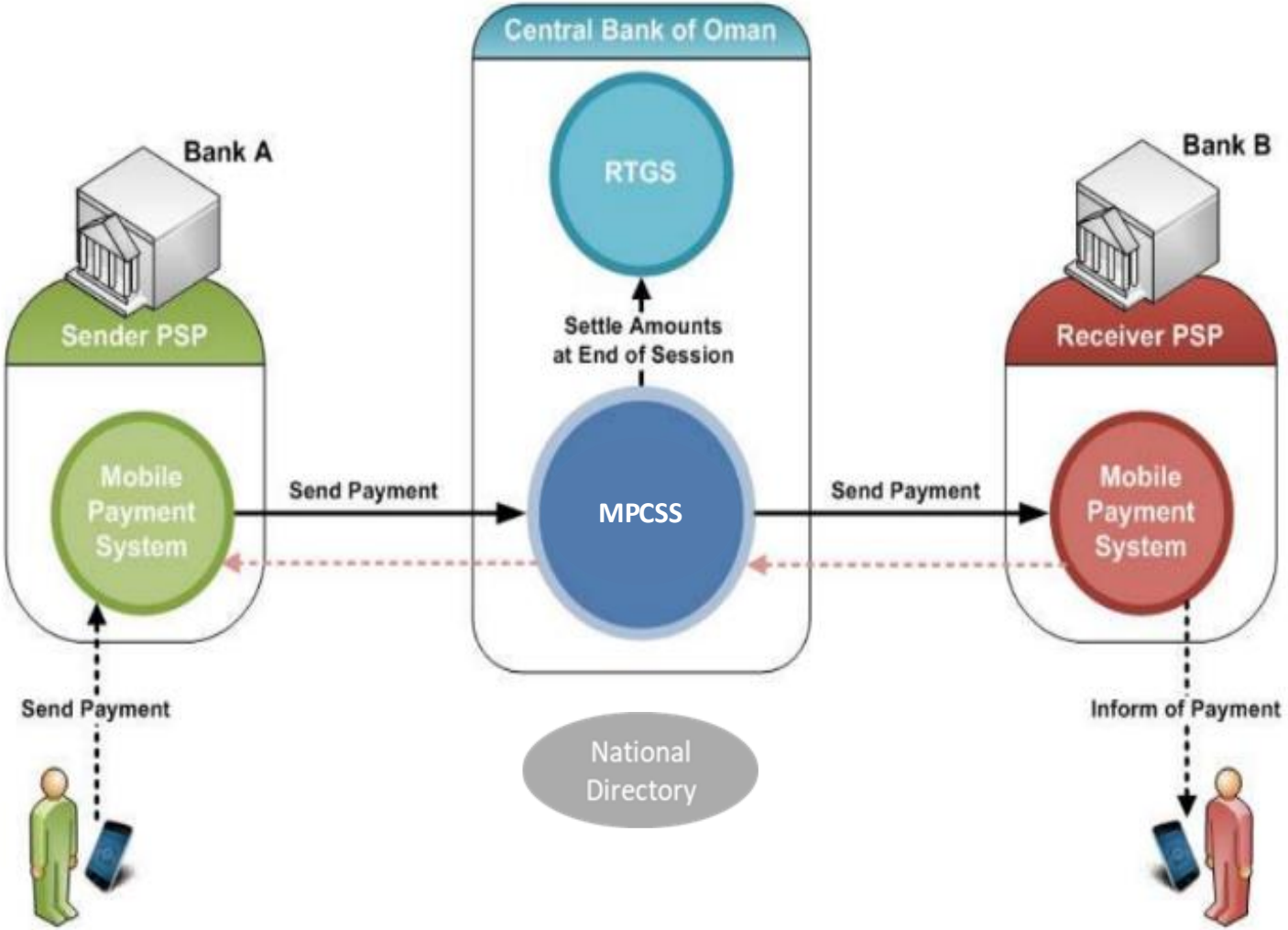
Section 2.3 of the operating rules defines how mobile payments must operate and outlines the responsibilities of the CBO, PSPs, and agents. All PSPs are required to follow these rules to ensure smooth and consistent delivery of mobile payment services.

The CBO can revise operating rules as needed and will notify stakeholders of any updates and their effective dates. All PSPs must follow these rules when offering mobile payment services, in accordance with Omani law and without overriding existing legal provision.

Source: Central Bank of Oman

2.1. FPS Structure

2.1.1 Architecture and Technology Stack



- National Directory of Mobile Numbers, Aliases and registered Bank / PSP.
- ISO 20022 format.
- Support for SWIFT MT 103.
- MT 971 for Net Clearing Position File.
- MQ – Channels of Communication

Source: Central Bank of Oman

2.2. Payment Instruments and Transaction Types

MPCSS participants in Oman are expected to comply with the listed messages with MPCSS system

Customer Mobile Banking & Wallet App System

#	Message Type	Inward	Outward
1	Registration with MPCSS (Account & Customer)	N/A	Mandatory
2	Credit request message (Push Payment)	Mandatory	Mandatory
3	Debit request message (Pull Payment for P2P)	Mandatory	Mandatory
4	Debit request message (Pull Payment for P2B)	Mandatory	Optional
5	Customer name Verification	N/A	Mandatory
6	Payment Enquiry	N/A	Mandatory
7	Check Default Account setup	N/A	Mandatory
8	Heart Beat	Mandatory	Mandatory
9	Refund	Mandatory	N/A
10	Bulk Registration with MPCSS	N/A	Optional

Merchant App or Merchant System Processing Mobile Payments

#	Message Type	Inward	Outward
1	Registration with MPCSS for merchants	N/A	Mandatory
2	Direct Credit Message (Push Payment for P2B)	Mandatory	N/A
3	Debit request Message (Pull Payment for P2B)	N/A	Conditional
4	Payment Enquiry	N/A	Mandatory
5	Heart Beat	Mandatory	Mandatory
6	Refund	N/A	Mandatory

Source: Central Bank of Oman

2.3. Scheme Pricing and Fee Structure

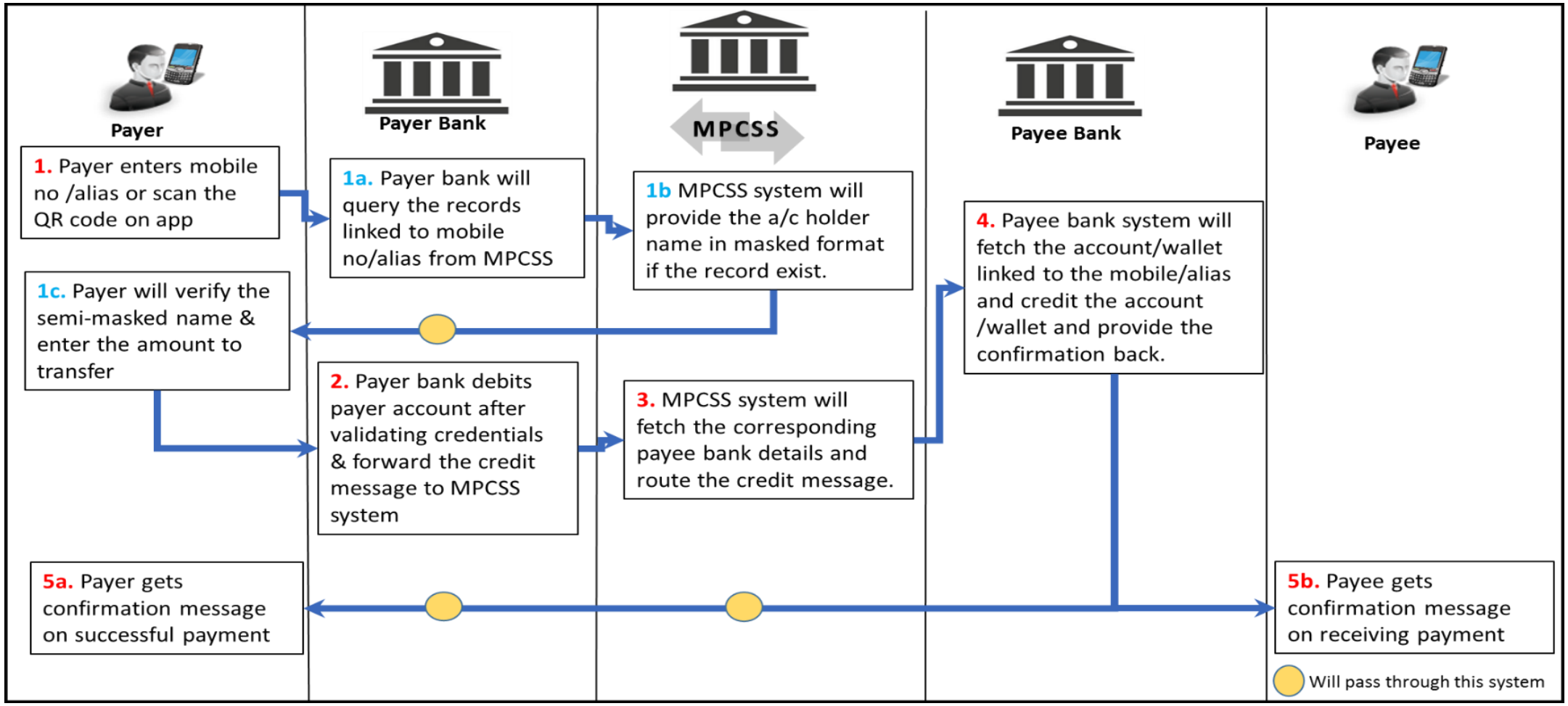
The below Fee details for MPCSS are in line with CBO circular reference: PS/Banks-PSPs/2025/91 dated 6th November 2025

CBO Payment System		Current Charges to Customer		Revised Charges to Customer (Retail and Corporate)	
		Payer	**Payee**	**Payer**	**Payee**
Instant Payment System (MPCSS)	P2P (Off-us)	0.100	Nil	Zero	Nil
	P2P (On-us)	0.050	Nil	Zero	Nil
	P2M MSF fees to Merchant (Payee)	0.75% (Max 1/Min 0.030 - Govt./Pvt Merchant)		0.50% (Max 2/- for all merchant type)	
	P2M- Issuer interchange	0.30% (Max 0.500/Min 0.015- Govt./Pvt. Merchant)		0.20% (max 1/- for all Merchant type)	

Source: Central Bank of Oman

2.4. Use Cases / Services 1/2

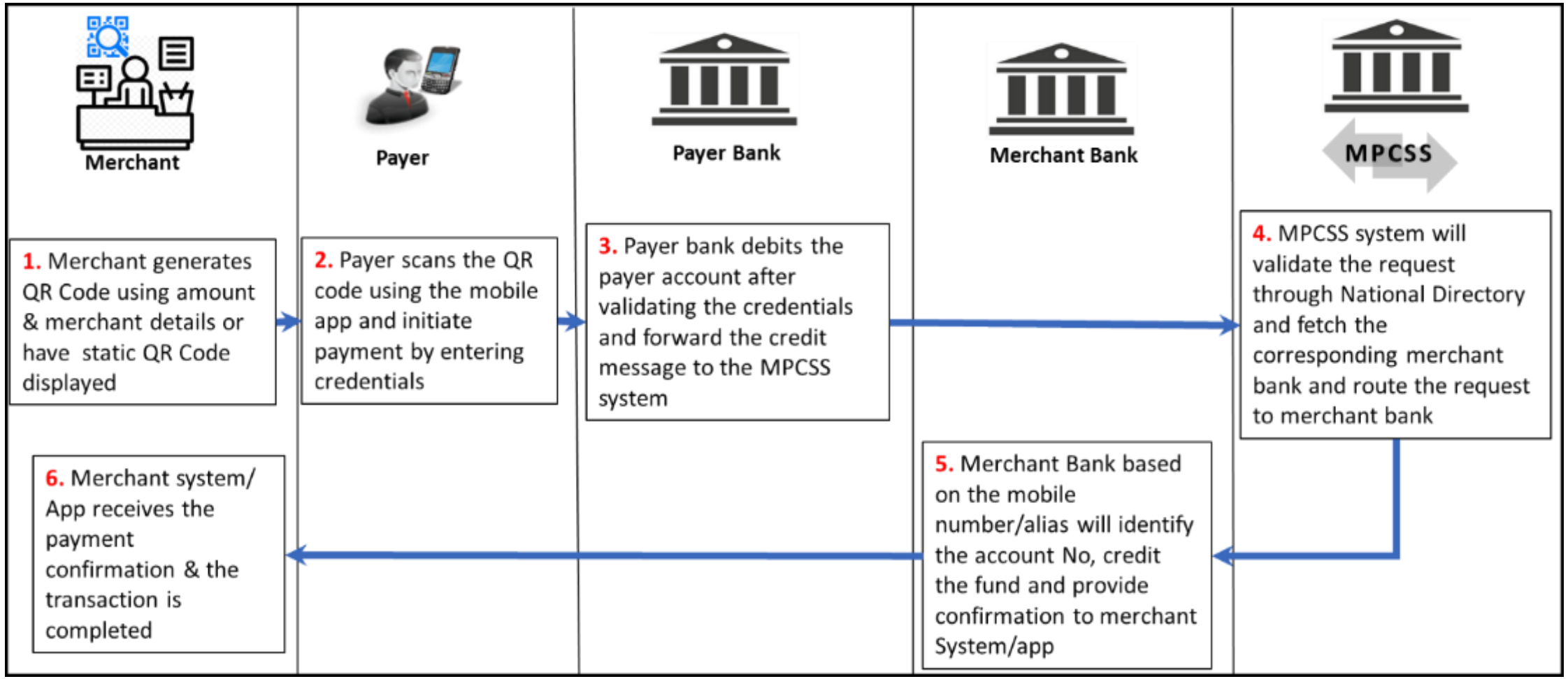
Person 2 Person – P2P Transaction



Source: Central Bank of Oman

2.4. Use Cases / Services 2/2

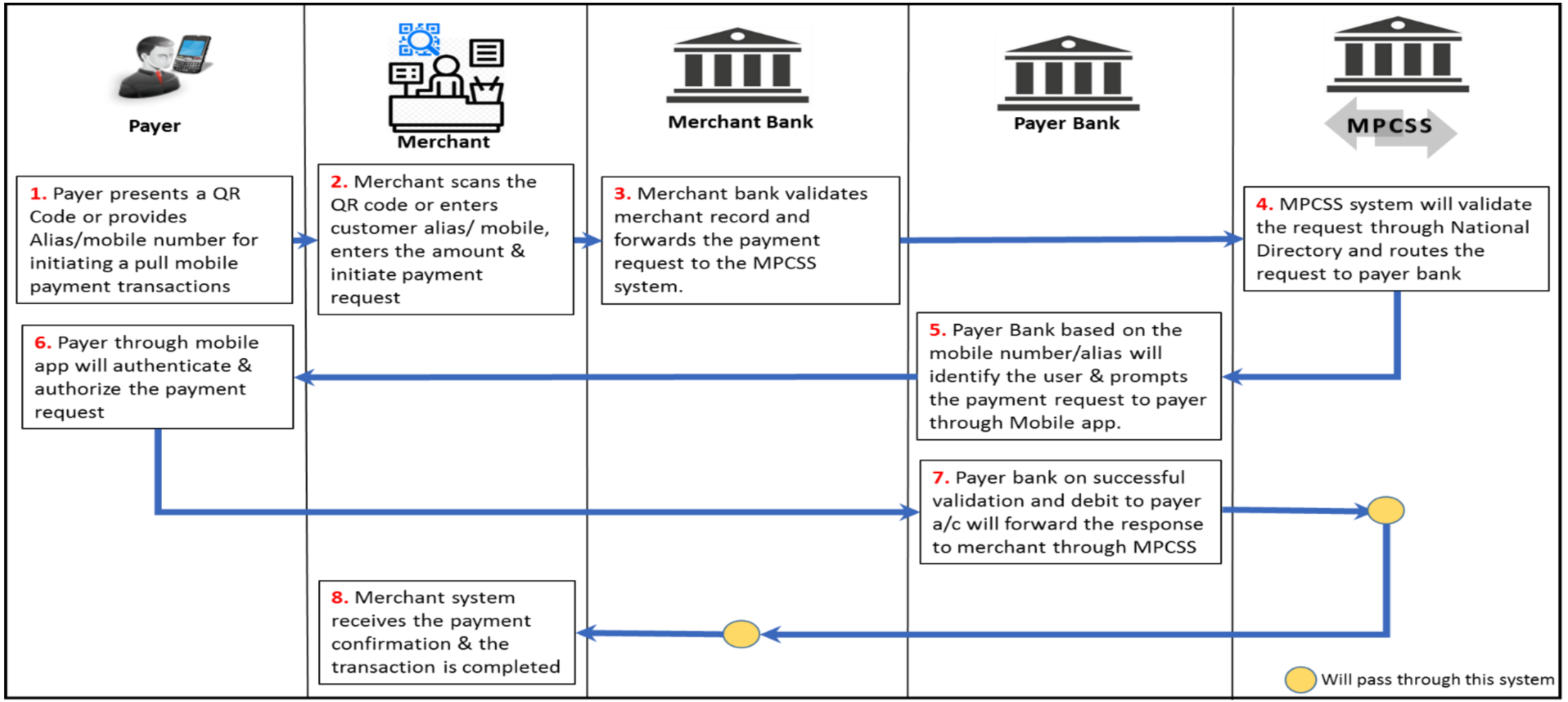
Person 2 Business – P2B Transaction - Push



Source: Central Bank of Oman

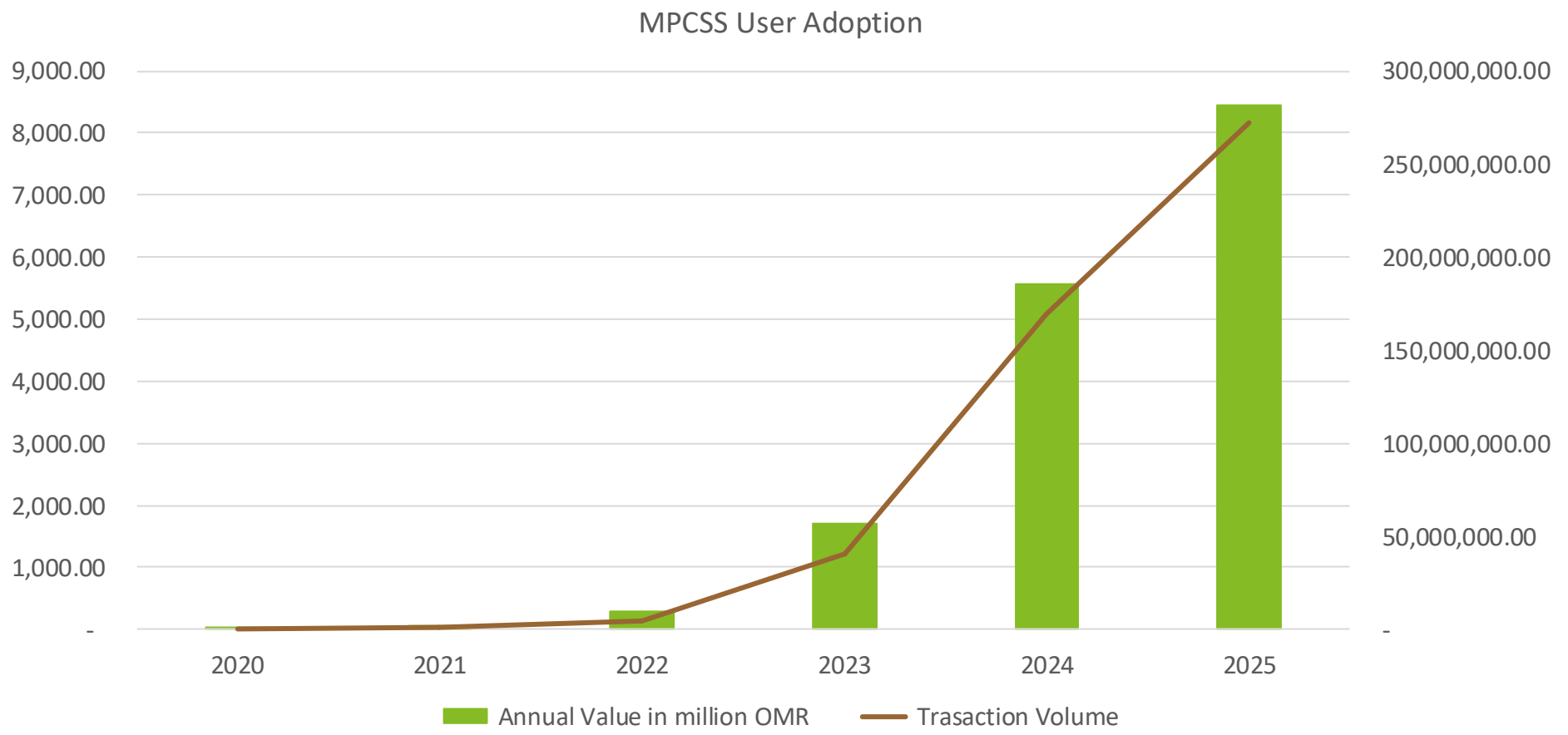
2.4. Use Cases / Services 3/2

Person 2 Business – P2B Transaction - Pull



Source: Central Bank of Oman

2.5. User Adoption



Source: Central Bank of Oman

3. Technical Details and Payment Process

Chapter sections:

3.1. Technical Details |Initiation Technology

3.2. Technical Details | Customer Authentication

3.3. Payment Process (Customer Registration, Transaction Fulfilment)

3.4. MPCSS – Security

3.5. MPCSS – Ecosystem

3.6. Standards for POS and QR-based payments

3.7. Cross Border Payments – Opportunities

3.8 Cross Border Payments – Regulation and Readiness

Chapter Summary:

The Multi-Payment Clearing and Settlement System (MPCSS) provides a secure and interoperable infrastructure for modern payments. It relies on standardized messaging formats and QR code protocols to enable seamless communication across platforms. . It is **ISO 20022 compliance. Therefore, messages exchanged are digitally signed using Key pairs etc.** Core technical elements include APIs for integration, multi-factor customer authentication, and tokenization to protect sensitive data.

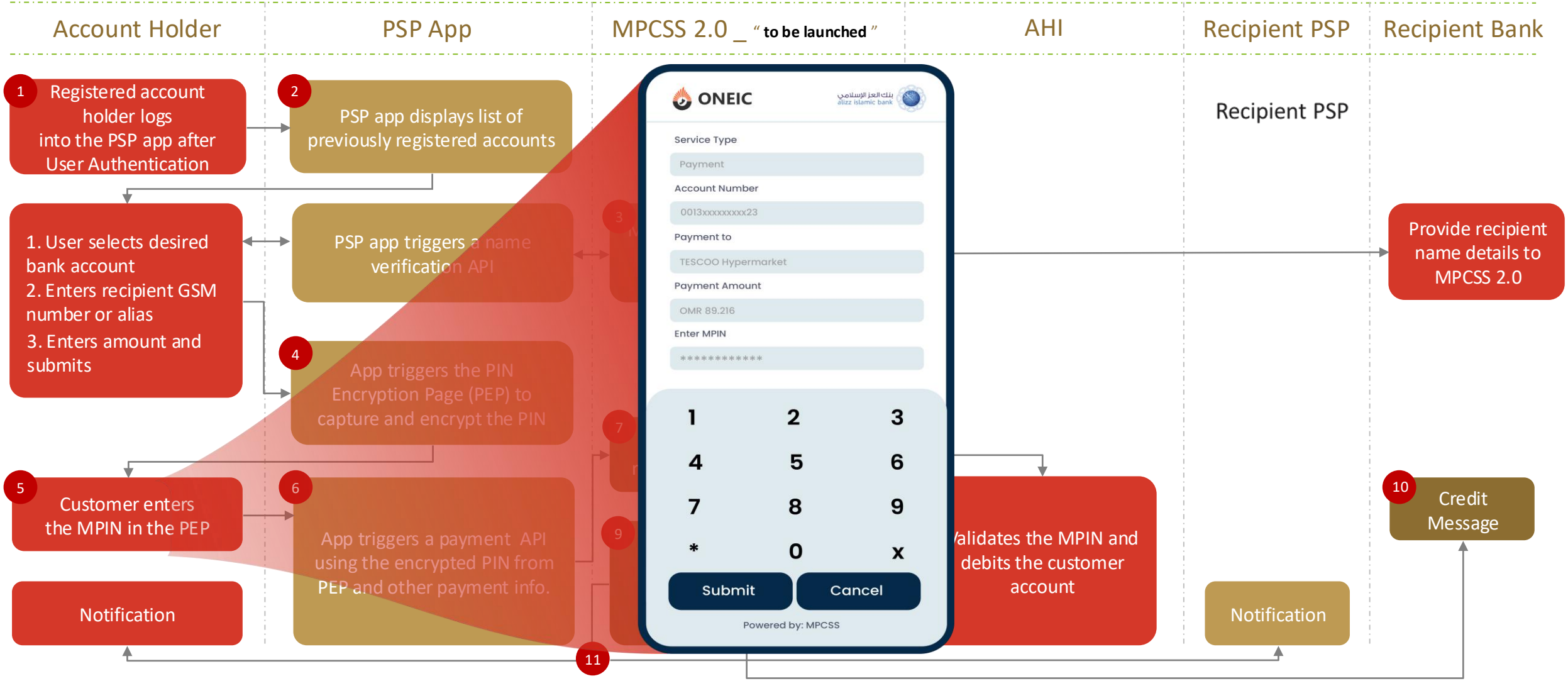
Operationally, MPCSS follows a structured payment lifecycle: customer registration, real-time transaction execution, liquidity management, and final settlement. Security is central, with strict protocols and compliance with POS and QR standards ensuring reliability.

Beyond domestic use, MPCSS is designed for cross-border expansion, with opportunities for global integration supported by regulatory frameworks and final settlement through Real-Time Gross Settlement (RTGS). The system also incorporates reporting and monitoring functions, enabling transparency and oversight by the Central Bank of Oman (CBO).

In essence, MPCSS combines technical innovation, operational rigor, and regulatory compliance to deliver a secure, efficient, and future-ready payment ecosystem.

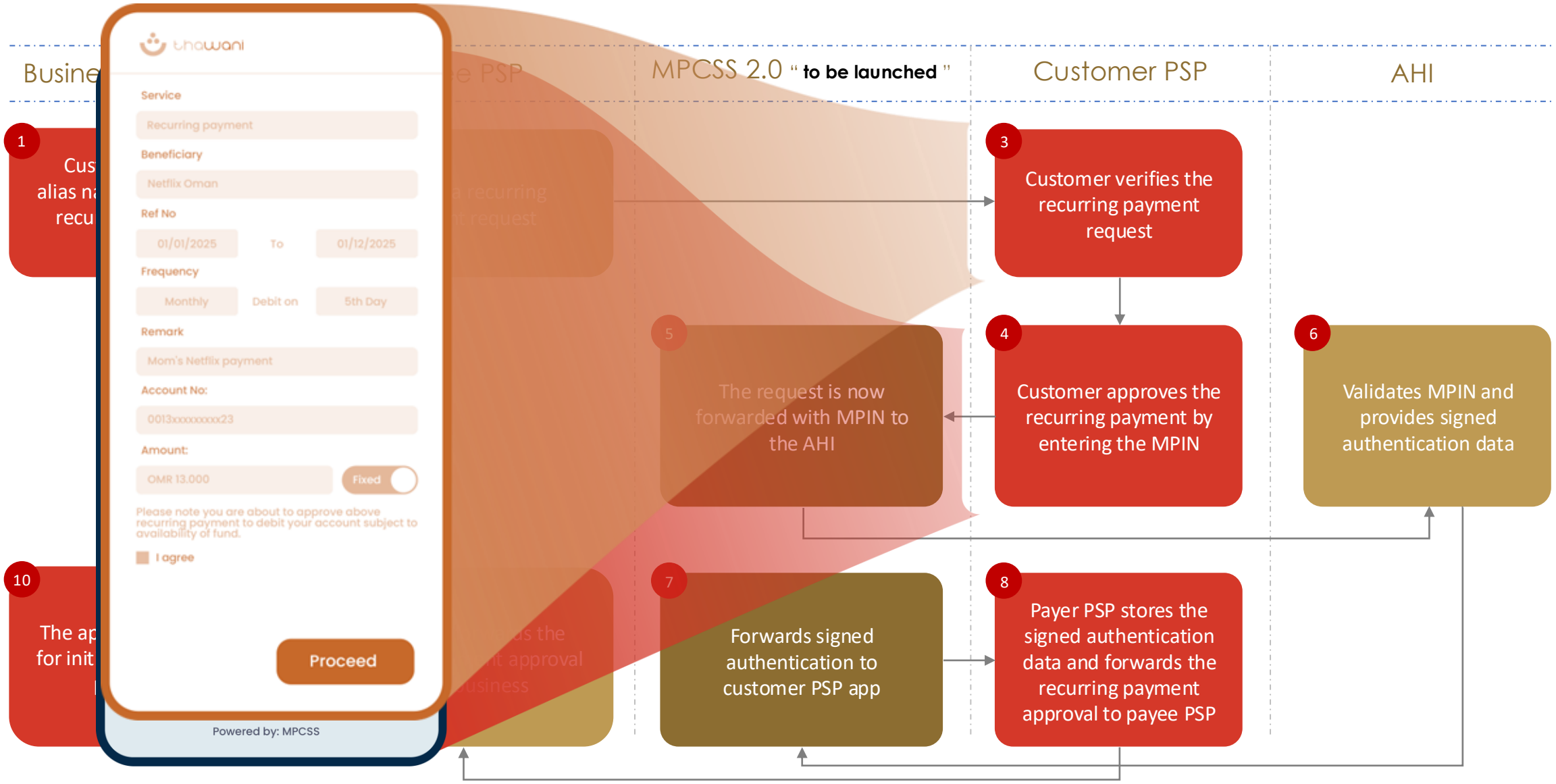
Source: Central Bank of Oman

3.1. Technical Details|initiation technology _ Interoperable Payment from PSP App



Source: Central Bank of Oman

3.2. Technical Details | Customer Authentication _ Interoperable Recurring Payments Approval

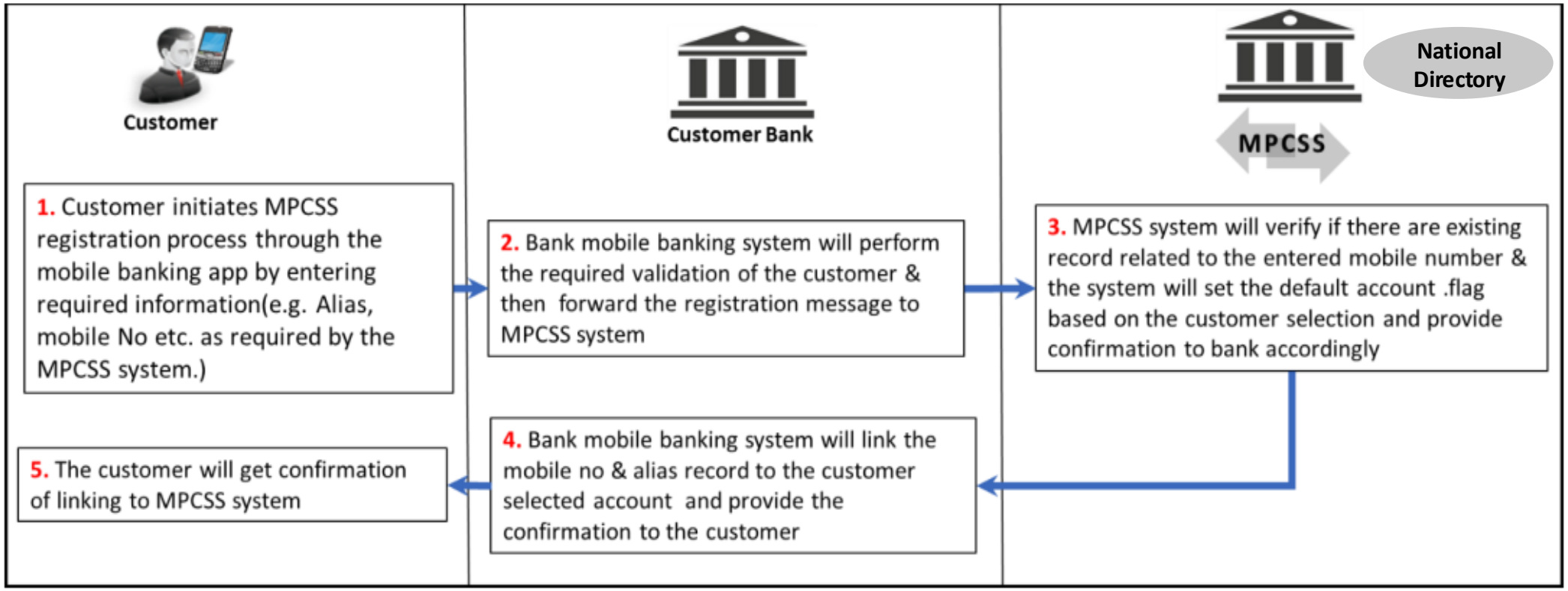


Source: Central Bank of Oman

3.3. Payment Process |Customer Registration and Transaction Fulfillment

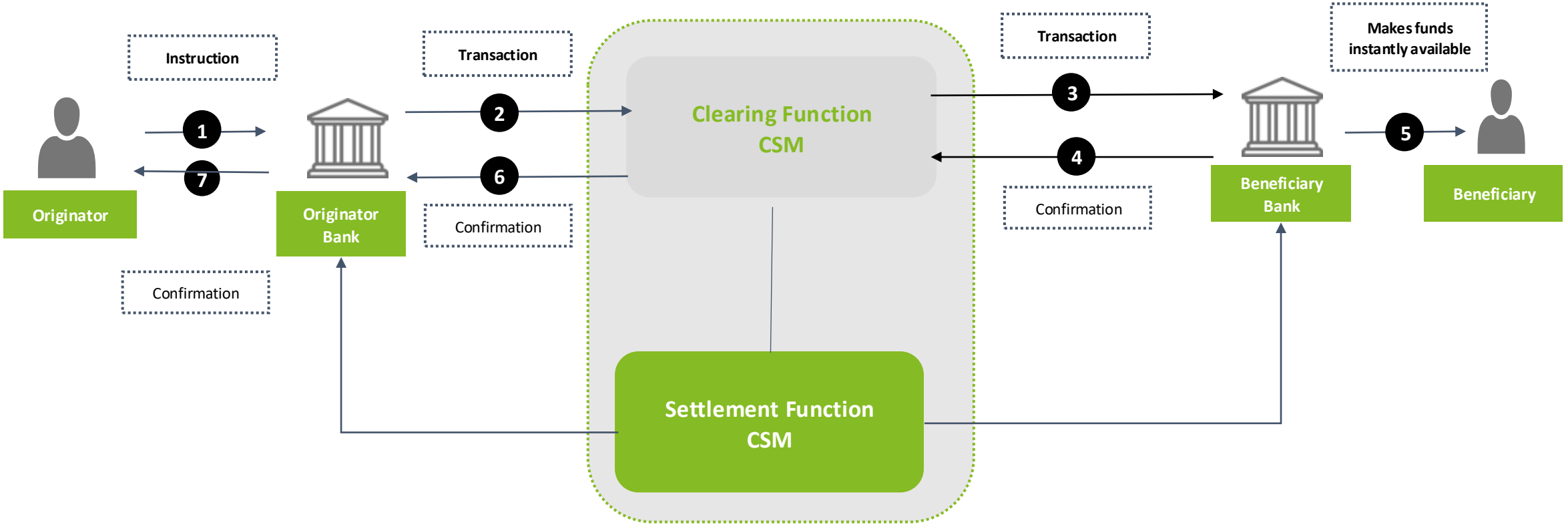
3.3.1 *MPCSS Registration Flow*

Registration process (Bank account)



Source: Central Bank of Oman

3.3. Payment Process | Customer Registration and Transaction Fulfilment
3.3.2 CSM – Clearing and Settlement Mechanism



Source: Central Bank of Oman

3.4. MPCSS – Security

- Privacy, trust, security, and confidentiality of customer credentials and transactions data is ensured.
- Mobile Number is used as second factor of authentication (2FA) (Device & SIM binding is mandatory for the registration process).
- Single mobile number can be linked with multiple accounts across the bank with one account /wallet set as default based on customer consent.
- Digital Certificates and PKI authentication.
- Mobile banking /wallet app must do the device binding using the device ID/IMEI number.
- Encrypted PIN for transactions, mobile payments application shall not allow the option of saving the PIN either on the handset or on the application.
- All Backoffice operation on customer alias management is with maker/checker control.

Source: Central Bank of Oman

3.5. MPCSS – Ecosystem

- **MPCSS allows the customers to make payments regardless of the specific banks or mobile wallets they use instantly to other Bank apps / wallet apps whether it is a P2P payment or P2B payment**

MPCSS Interoperable Ecosystem	
No of Banks	**No of PSPs**
15	**9**

- ***Contributing ~ 1 Million Peak Transactions a Day- Daily avg. total payments value OMR 28 Million***
- ***Average ticket size of MPCSS~ OMR 31-35 (~ USD 12)***
- ***MPCSS users ~ 3 million (60 % of Population, 7.06 mobile subscribers & Debit Card users – 4.5) * million)***
  - *Bank app users ~ 2.7 million*
  - *Non Bank PSP app users ~ 0.3 million*

Source: Central Bank of Oman **MPCSS users* :** This is confirmed by EDC during DCS project

3.6. Standards for POS and QR-based payments

- National Standard for QR code generation has been published by CBO.
- EMV standard QR Code enables the payment eco-system to digitize a payment transaction data between consumers/payer and merchant/Payee.
- QR Code generation and reading is done in line with ISO/IEC 18004-2006-QR code 2005 barcode symbology specifications.
- Mobile banking and mobile wallet app should read all mandatory and conditional data available in the merchant QR code and should be send to MPCSS system without altering it.
- QR code branding and layout is published by CBO and stakeholders are expected to strictly comply.
- Both Static and Dynamic QR Codes are supported.

Source: Central Bank of Oman

3.7. Cross Border Payments – Opportunities

- **CBO has been very proactive and aggressive in enhancing the regional payments connections, examples as;**

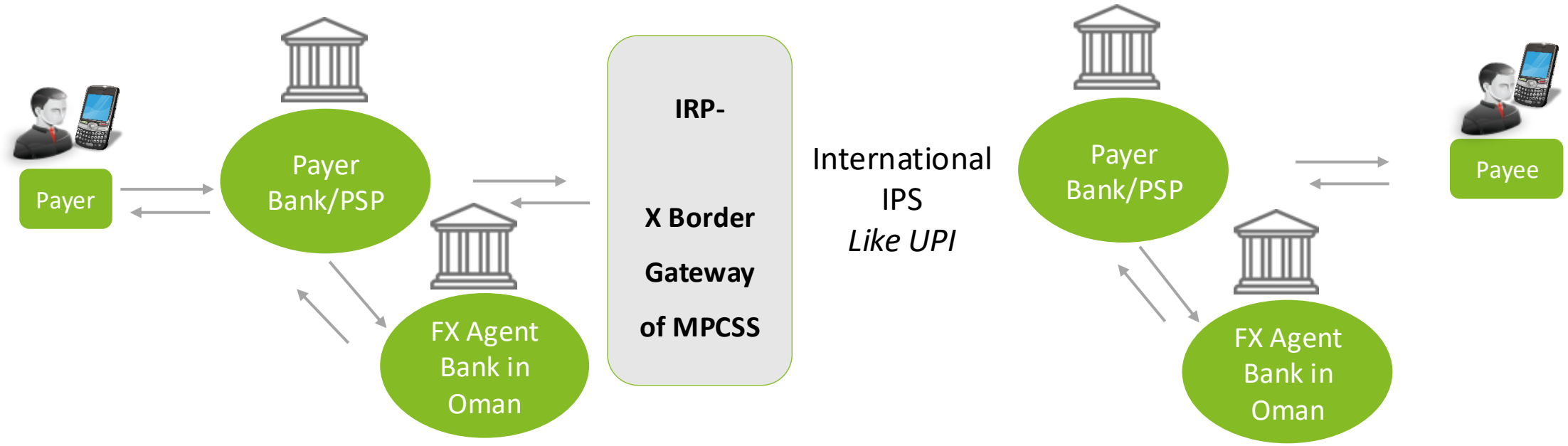
GCC Net	AFAQ	BUNA
• regional payment connectivity for card transactions across the GCC Region	• regional payment connectivity for RTGS transactions across the GCC region, operated by the Gulf Payments Council	• regional payment connectivity for retail payment transactions, operated by the Arab Monetary Fund

- **Currently MPCSS and India's UPI Integration is being explored**
- **Further, opportunities exist in the Middle East region**
  - Integration with BUNA IPS
- **Other opportunities may be taken up at a later date**
  - Project Nexus

Source: Central Bank of Oman

3.8 Cross Border Payments – Regulation and Readiness

- **CBO open regulatory approach for cross border payments and transactions with appropriate risk mitigation, AML and KYC measures in place.**
- **Architecture – technological readiness for cross border payments – shown below:**



Source: Central Bank of Oman