

World Bank Fast Payments Toolkit

Case Study: Australia

New Payments Platform (NPP) | 2018

Payment Instruments



Credit Transfer

Use Cases / Services



Merchant
Payment



Bill
Payment



THE WORLD BANK
IBRD • IDA | WORLD BANK GROUP

Glossary of terms

S. No.	Term	Definition
1	GDP	Gross Domestic Product at current price
2	Income Category	Classification as per World Bank based on Gross National Income (GNI) per capita
3	CPMI	Committee on Payments and Market Infrastructure
4	FPS	As per CPMI, fast payment System is defined as payments in which the transmission of the payment message and the availability of final funds to the payee occur in real time or near-real time and on as near to a 24-hour and 7-day (24/7) basis as possible
5	Oversight	Regulating or governing body supervising the payments system
6	Operator	Institutions responsible for the operation of the payment system
7	Alias	Alternative to bank account numbers for increased convenience of the customer. For e.g., mobile number, national identification number
8	Access Channels	Modes used by customer to initiate transaction on FPS. For e.g., branch, internet, mobile
9	Individual Payment Type	Person to person (P2P) – Payment between individuals for non-business purposes
10	Business Payment Type	Person to Business (P2B) – Payment from an individual to a business entity Business to Person (B2P) – Payment from a business entity to an individual Business to Business (B2B) – Payment between two business entities
11	Government Payment Type	Person/Business to Government (P/B2G) – Payment from person/Business to a government institution Government to Person/Business (G2P/B) – Payment from government institution to a person or business entity
12	Credit transfers	Credit transfers are payment instruments based on payment orders or possibly sequences of payment orders made for the purpose of placing funds at the disposal of the payee
13	Direct Debits	Direct debits are payment instruments in which the transaction is pre-authorized, and funds are blocked in account for a debit to be initiated at a future date. In direct debits, payer's account is debited on execution of mandate by merchant or payee
14	E-money	E-money is a prepaid value stored electronically, which represents a liability of the e-money issuer (a bank, an e-money institution or any other entity authorized or allowed to issue e-money in the local jurisdiction), and which is denominated in a currency backed by an authority

Abbreviations

S.No.	Term	Expanded form
1	ADI	Authorized Deposit Taking Institution
2	AFCA	Australian Financial Complaints Authority
3	APRA	Australian Prudential Regulation Authority
4	DCS	Distributed clearing system
5	ESA	Exchange Settlement Accounts
6	FSS	Fast Settlement Services
7	IFTI	International Funds Transfer Instruction
8	NPP	New Payments Platform
9	NPPA	New Payments Platform Australia Limited
10	PSB	Payments System Board
11	RADI	Restricted Authorized Deposit Taking Institution
12	RBA	Reserve Bank of Australia
13	RITS	Reserve Bank Information and Transfer System
14	RTPC	Real Time Payments Committee

Select country parameters



GDP

GDP – USD 1.39 trillion



Income Category

High



Population

25.36 million



Access to mobile phone*

90.42%



Access to internet*

91.07%



Bank account*

99.51%



Branches per 100,000 adult

29.60



Made or received digital payment in last 1 year*

95.86%



Received government wages or transfer in account*

79.32%

Source : World Bank – 2019, Income Category: World Bank – June 2019
Currency Exchange Rate USD 1 = MXN 19.26 <2019 Average, World Bank>
Others – World Bank 2017
* For age >15 years

How to read this report

- This **deep dive report** relates to the **New Payments Platform (NPP) system** in **Australia**
- It has been developed based on **primary interviews** with key stakeholders such as **regulators, operators** and **participants** in the system as well as by leveraging **secondary sources**
- Key secondary sources include Reserve Bank of Australia (RBA) website, New Payments Platform Australia Limited (NPPA) website, and Bank for International Settlements (BIS) publications
- The table below presents a legend to assist readers as they navigate through different sections of the report

Legend



The first slide of every section includes a chapter summary to provide readers with an overview of the section contents



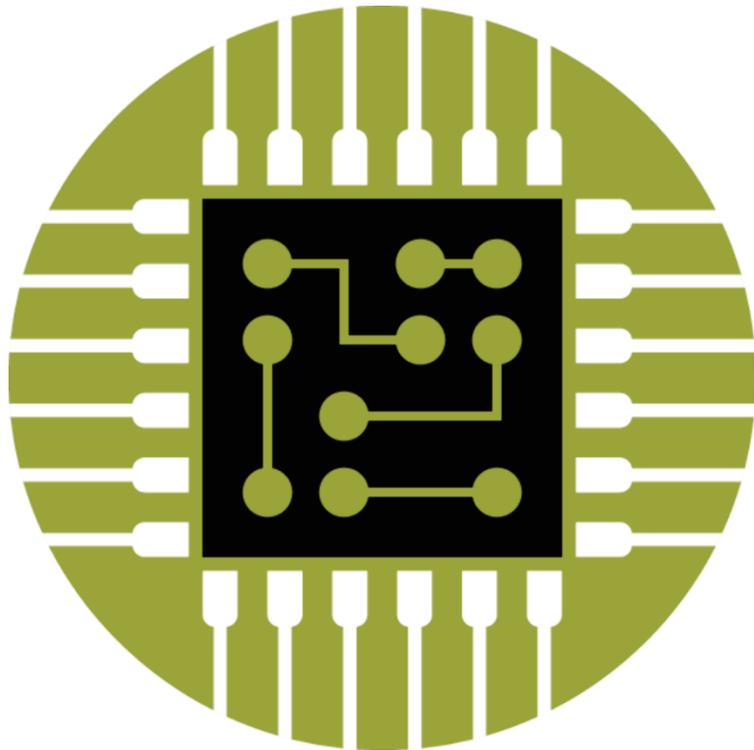
The green box with the adjacent icon indicates **section/sub-section summary across** the report. Reader may choose to read through this for a **high-level overview on the selected topic**

Table of Contents

		Slide number
A.	Executive Summary	8
B.	Detailed Report	
1	Overview	
1.1.	Background	11
1.2.	Objectives	12
1.3.	Key Milestones	13
2	Business and Operating Model	
2.1.	FPS Structure	15
2.2.	Participants	16-17
2.3.	Payment Instruments, Transaction Types	18
2.4.	Aliases, Access Channels and Overlay services	19-20
2.5.	Scheme Pricing and Fee Structure	21
2.6.	Use Cases	22
3	User Adoption	23
4	Technical Details and Payment Process	
4.1.	Technical Details (Messaging Format, QR Codes, APIs, Customer Authentication and Tokenisation)	26-27
4.2.	Payment Process (Customer Registration, Transaction Fulfilment, Liquidity Management and Settlement)	28-31
5	Governance Framework	
5.1.	Legal and Regulatory Aspects	33-35
5.2.	Risk Management	36-37
5.3.	Dispute Resolution and Customer Complaints	38
6	Annexure	
6.1.	Key Features	40
6.2.	System Development	41-42
6.3.	Dispute Resolution	43-45

A. Executive Summary

New Payments Platform | Australia FPS



- **New Payments Platform (NPP)** is a fast payment system launched in 2018 that enables Australian consumers, businesses and government agencies to make real-time, data-rich payments between accounts at participating financial institutions
- NPP came about as a result of **RBA's Strategic Review of Innovation** in the Australia Payment System
- The implementation of the NPP took approximately **6 years** during which a new entity i.e., NPPA was created to oversee the build, operations, management and governance of the platform
- The design of the NPP makes **a distinct separation** between the **basic infrastructure layer** of the FPS and the **business services**. Through a comprehensive and transparent vendor selection process, **SWIFT** was selected to build and operate the basic infrastructure and **BPay** was selected to build Osko, the customer proposition of the platform and the first overlay service
- The access framework of NPP provides **a number of different pathways** for entities to leverage the NPP's functionality

Key features of NPP are

- | | | |
|-------------------------------|--------------------------------|---|
| • Real time payments | • ISO 20022 messaging standard | • Distributed clearing |
| • Simple addressing via PayID | • Operates 24x7x365 | • Line by line settlement in central bank funds |

- Users can make NPP payments via their **internet or mobile banking platforms as well as corporate/business banking platforms**. NPP also supports QR payments though none of the NPP participants have yet rolled out QR code functionality
- Currently, the NPP supports **merchant payments and bill payments**. However, it is planning to roll out enhanced capabilities in the next couple of years to support more use cases such as **Direct Debit, Request for Payment, Third party payment initiation and international payments**

B. Detailed Report

1. Overview

Chapter sections:

- 1.1. Background
- 1.2. Objectives
- 1.3. System Development
- 1.4. Key Timelines



Chapter Summary:

- The Payments System Board of the RBA decided to undertake a “**Strategic review of Innovation in the Australian payments system**” in May 2010. The purpose of this project was to identify areas in which innovation in the Australian payments system may be improved.
- The conclusion of the “Strategic review of Innovation of the Australian payments system” included the need for establishment of a FPS system. The key strategic objectives laid out by the RBA for the NPP were:
 - a. the ability to make **real-time retail payments**
 - b. the ability to make and receive low-value payments **outside normal banking hours**
 - c. the ability to send more complete **transaction information** with payments
 - d. the ability to **address payments in simple manner**
- Additionally, NPP was intended to be a **platform of innovation and** have the mechanism for more business services to exist on top of the platform, being a thriving platform for innovation
- A new entity i.e., New Payments Platform Australia Limited (NPPA) was created to **oversee the build, operations, management and governance of the platform**
- The implementation of the NPP took approximately **6 years** and was **launched in 2018**.
- RBA developed a new infrastructure, **the RITS Fast Settlement Service**, in parallel with the NPP to enable the **line-by-line settlement of NPP transactions** between financial institutions in **real time on a 24/7 basis**
- Post launch of NPP, there has been **a series of enhancements and innovations** rolled out (a couple of more are planned for the near future) in order to enhance customer experience and extend the functionality of the platform

1.1. Background



- Australia had a system called Direct Entry (DE) to facilitate account to account payments. With a view at **driving innovation**, RBA undertook a **Strategic Review of the payment systems** in 2010
- The purpose of this project was to **identify areas in which innovation** in the Australian payments system may be improved through more effective co-operation among stakeholders and regulators
- Real Time Payments Committee, **an industry committee** submitted a proposal in 2013 **to deliver FPS** in Australia

The **NPP** is an open access infrastructure for fast payments that enables Australian **consumers, businesses and government agencies** to **make real-time, data-rich payments** on a **24x7x365** basis between accounts at participating financial institutions. The NPP can simplify payments through its addressing service, **called PayID**. It can also support more information sent with payments, such as written text or links to externally hosted documents.

The NPP infrastructure supports the independent development of 'overlay' services to offer innovative payment services to end-users. An example of a service using these capabilities is **Osko by BPay**, which is the first overlay service on the platform. The Platform has been designed to be extensible, meaning it will evolve to meet the future needs of Australian consumers and businesses.

Before the launch of the NPP, payment transactions in Australia were made through Direct Entry system and cleared and settled via the Bulk Electronic Clearing System (BECS)

The Payments System Board of the RBA decided to undertake a "**Strategic review of Innovation in the Australian payments system**" in **May 2010**. It aimed at taking a medium-term perspective, observing trends and developments overseas in payment systems and identifying potential gaps in innovation in the Australian payments system. To meet this objective, the review included the following objectives and outcomes:

Key objectives

- Review how **payment instruments**, including cash, are currently **being utilized in Australia** and how this has changed over the past few years
- Review payments system **innovation globally** to identify **factors driving innovation**
- Identify areas where Australia appears to be **lacking innovation** and **potential gaps in payments system services** over the next five to ten years
- Assess whether **difficulties with co-operation** in the Australian payments industry **are likely to make filling these gaps difficult**
- **Identify ways** in which any such **gaps in payments services can be addressed**

Outcomes:

The conclusion of the "Strategic review of Innovation of the Australian payments system" included the establishment of a **system that would provide real-time retail payments**, with real-time funds availability. This type of system had been a focus of innovation in a number of other countries and had the potential to **unlock significant future innovation**, resulting in ongoing improvements to the efficiency of the payments system. It set out a list of strategic objectives for the Fast Payment System.

RBA also concluded that removing some of the barriers to cooperative innovation had the potential to deliver significant public benefits over time. Along with Australian Payments Clearing Association (APCA), RBA also initiated a joint consultation on a proposal to establish a new payments industry coordination body, the Australian Payments Council. The industry body created for the purpose of taking a strategic perspective on issues of importance to the payments system, as well as engaging in a dialogue on those issues with the Payments System Board.

1.2. Objectives



- A **key objective** for the fast payment platform was that it was to be a **platform for further innovation**
- The platform was not only intended to be a platform for Fast payments but would have the **mechanism for more business services to exist on top of the platform**, being a thriving platform for innovation

In 2012, as part of the **conclusions of the "Strategic Review of Innovation of Australia's payment system, the RBA** set out a list of **strategic objectives for the Fast Payment System**. The objectives reflected the potential gaps in the payments system identified during the Review.

Direct Entry

The Direct Entry (DE) system is used by businesses to make recurring, automated payments to and from everyday transaction account including bulk payments, such as salaries and regular bill payments, along with one-off payments. Direct entry is the workhorse of the Australian payments system carrying average yearly values of more than \$12 trillion.

Key Features of the DE system:

- **Same day settlement** (introduced in 2013 as part of the strategic review)
- **Limit of 18 characters of data for messages**
- Relatively low cost
- **Batch settlements**

The FPS was to be built in addition to the DE system with some additional features.



Strategic Objectives

-  the ability to make **real-time retail payments**
-  the ability to make and receive low-value payments **outside normal banking hours**
-  the ability to send more **complete transaction information with payments**
-  the ability to **address payments in a simple manner**

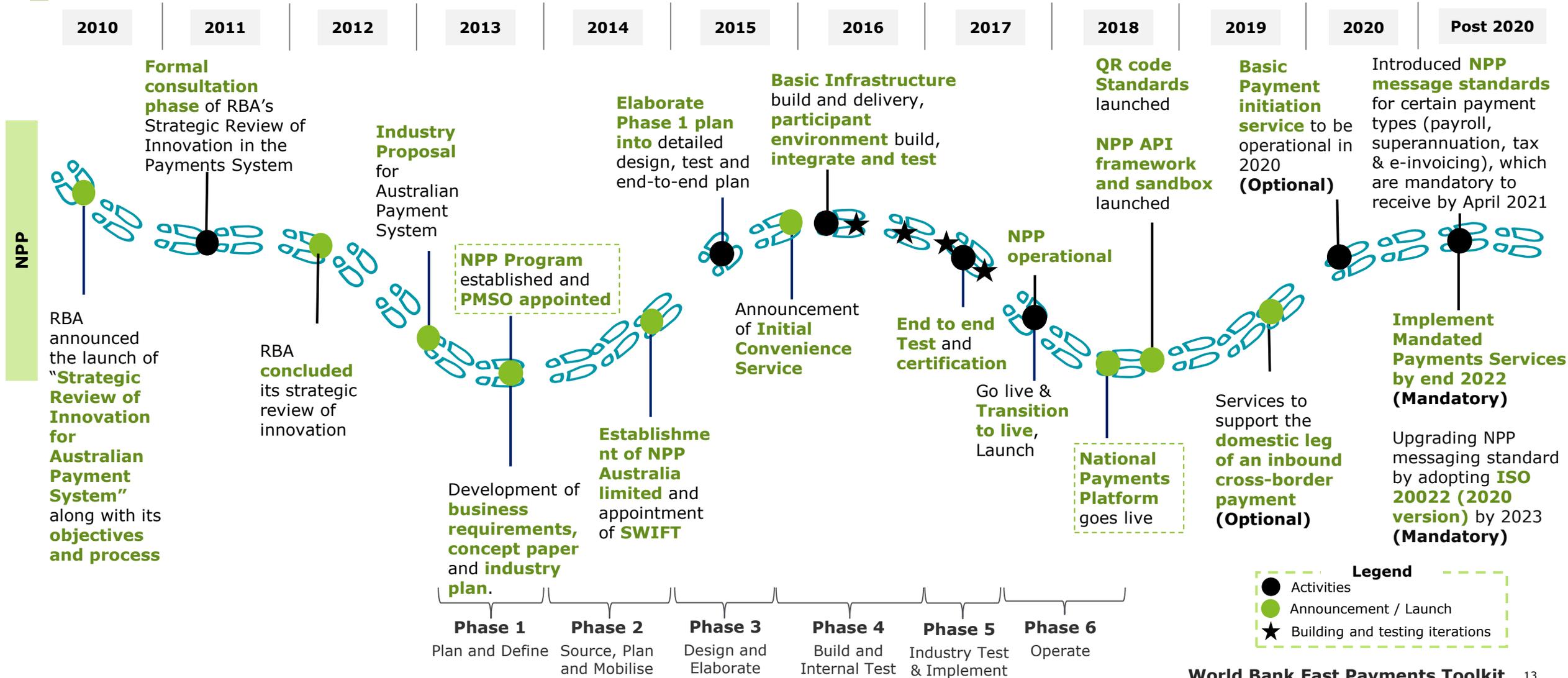
The proposal submitted by the **Real Time Payments Committee (RTPC)** aimed to deliver on the strategic objectives by facilitating fast payments for consumers and businesses, with richer information, easier addressing and close to immediate funds availability to the recipient on 24x7 basis. The RBA welcomed the RTPC's proposal as making substantial initial progress towards meeting the strategic objectives established in the Conclusions of the Strategic Review of Innovation in the Payments System.

Twelve Authorized Deposit Taking Institutions (ADIs) committed to the funding of the build and operation of the NPP and became the founding members of NPP Australia Limited. The Reserve Bank played a significant role in establishing the broad direction of the industry's efforts and is also a founding member of NPP Australia Limited in addition to 12 ADIs.

1.3. Key Milestones



The implementation of the NPP took approximately **6 years** and was preceded by a 2 year "Strategic review of Innovation" by the RBA. Post launch of NPP, there has been a **series of enhancements and innovations** rolled out in order to enhance customer experience



Source: RBA | NPPA

2. Business and Operating Model

Chapter sections:

- 2.1. FPS Structure
- 2.2. Participants
- 2.3. Payment Instruments and Transaction Types
- 2.4. Aliases and Access Channels
- 2.5 Scheme Pricing and Fee Structure
- 2.6 Use Cases



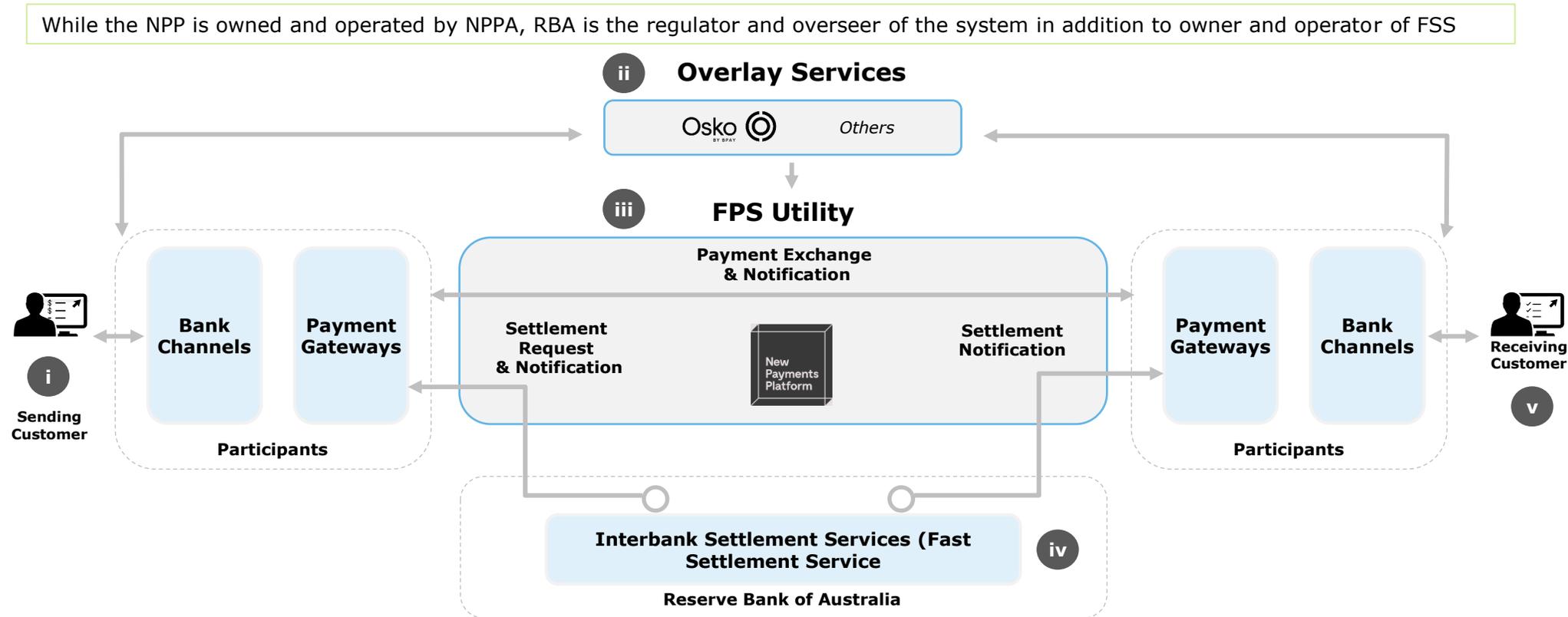
Chapter Summary:

- The introduction of fast payments in Australia was enabled through the development of two new payments system infrastructures – **the NPP and the FSS**
- The design of the NPP **makes a distinct separation between the basic infrastructure layer of the FPS and the overlay services**
- The **NPP basic infrastructure** provides the core capabilities required for fast and flexible payments. Whereas the **Overlay services** are commercial payment services that use the NPP Basic Infrastructure's capabilities to make payments
- The **FSS**, developed and operated by the Reserve Bank, is the settlement system for NPP payments and settles the payments in real-time
- The **NPP access framework** provides **several different pathways to access the NPP**, designed to enable as many organizations as possible to reap the benefits of the platform
- The NPP enables Australian **consumers, businesses and government agencies** to make payments in Australian dollars between accounts at participating financial institutions
- NPP enables simple addressing of payments via **PayID, an aliasing service**
- Payments can be made **via internet and mobile banking** application of participants including business/corporate channels (such as APIs). NPP payments can also be made using **QR codes**.
- NPPA operates **on fixed cost recovery model** with operating costs recovered from shareholders according to size of shareholder (shareholder band)
- Currently, the NPP supports **P2P transfers, merchant payments and bill payments**. However, it is planning to roll out enhanced capabilities in the next couple of years to support more use cases such as **Direct Debit, Request for payments, third party payment initiation**

2.1. FPS Structure



- The introduction of fast payments in Australia was enabled through the development of **two new payments system infrastructures – the NPP and the FSS**
- There is a **distinct separation** between the basic infrastructure layer of the FPS and the overlay services
- While the **NPPA** owns and operates the basic infrastructure, **BPay** owns and operates the overlay service (Osco). NPPA is now focused on developing business services, which will have their own set of processing rules for different payment types



The **NPP Basic Infrastructure**, owned and operated by NPPA, provides the core capabilities, including **PayID**, required for fast and flexible payments. PayID is the addressing service that sits in the NPP basic infrastructure. The NPP uses the ISO 20022 international messaging standard, which is a global standard for financial messaging.

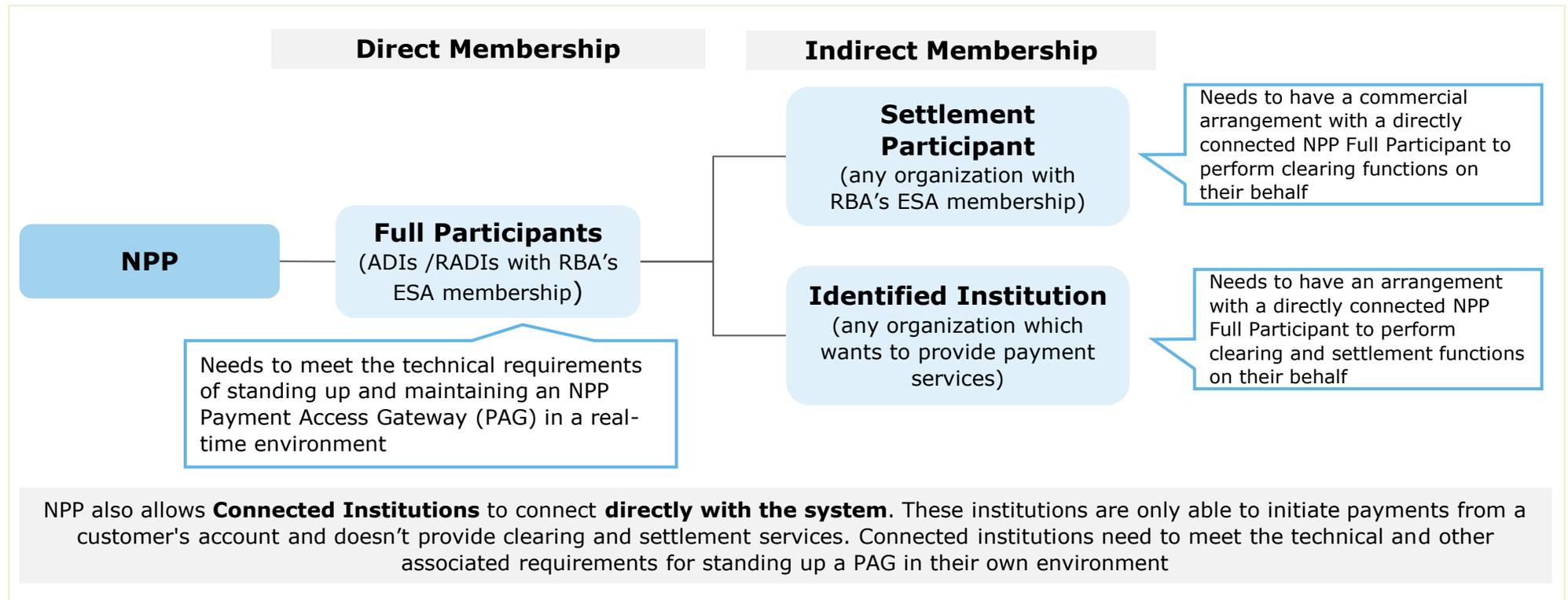
'**Overlay services**' are commercial payment services that use the NPP Basic Infrastructure's capabilities to send payment messages quickly, address payments using PayIDs and send detailed information with payments. The overlay services framework allows for competition and innovation in the provision of payment services.

The **FSS** is a service of RITS, developed and operated by the Reserve Bank, which supports the settlement of NPP payments between ADIs 24/7. It does this by providing fast, high-volume settlement of individual NPP settlement requests received from the NPP Basic Infrastructure across the ESAs of the ADIs.

2.2. Participants (1/2)



- The NPP has been designed to provide a **number of different pathways** for entities to leverage the NPP's functionality
- The access framework enables **smaller FIs and non ADIs to easily connect** to NPP at **lower costs** and this was done to enable as many entities as possible to reap the benefits of the platform
- The most appropriate access option is determined by what an **organisation is seeking to achieve**



Requirements for Full Participants

- To meet certain technical connectivity requirements
- To have real-time fraud protection and detection controls and capabilities in place
- To become a shareholder of NPP Australia
- To have requisite KYC and AML controls and policies in place

Requirements for Indirect Participants

Indirect Participants are required to satisfy the sponsoring NPP Full Participant that they have the requisite KYC and AML controls and policies in place.

However, NPP regulations require the Full Participants to ensure the compliance of the indirect participants that they are sponsoring into the system.

Membership Statistics

- As of July 2020, there are **99 financial institutions** that offer NPP-enabled payments and services.
- As of September 2019, there are **5 financial institutions** which offer access to the NPP and enable NPP connectivity services

2.2. Participants (2/2)



- NPP regulations and access framework **provide the additional requirements** for Full Participants to on-board a sub-member
- NPP regulations require the Full Participants to **ensure the compliance** of their indirect participants
- **Non-ADIs are not allowed** to become Full Participants under the current access framework
- There is a **comprehensive and well structured on-boarding process** for participants

Regulatory Considerations

Additional regulatory considerations:

- Annual assurance programme requires Full Participants to verify and attest to their sponsored institutions' compliance with the NPP rules generally and with particular key obligations each year including the obligations to:
 - have KYC and sanctions compliance frameworks appropriate for NPP in place;
 - comply with Addressing Service use and information security obligations, including the obligation to have technical controls on end user/customer functions that use the Addressing Service and its data - this attestation is required to be co-signed by an independent third party which may be an internal auditor or similar;
 - comply with security requirements - this attestation is required to be co-signed by an independent third party which may be an internal auditor or similar
- In addition, certain high-risk controls (i.e., adequacy of end user controls on Addressing Service lookups) are subject to independent verification by a third party engaged by NPP

Consideration for allowing non-ADIs to become Full Participants: As part of the June 2019 NPP Functionality and Access Consultation, the RBA had asked NPPA to review its access framework in terms of allowing non-ADIs to become Full Participants.

NPPA responded by stating that the risks of admitting non-ADIs as Full Participants or Clearing Participants, outweigh any benefits that might flow from substantially altering the access model. To the extent that an entity is – as the RBA Conclusions Paper notes - ineligible to be an ADI because it does not hold deposits, NPPA suggests that its business objectives are likely to be met by participating indirectly in the NPP as either an Identified Institution sponsored into the NPP or as a Connected Institution, having the ability to send Non-Value Messages, such as payment initiation messages which are cleared and settled by Full Participants or settlement services.

Cost of deployment (Participants)

The cost of deployment **varied significantly across participants**. A few FIs were required to **upgrade their internal systems** to allow posting to customer accounts within a few seconds and a couple of the major banks had decided that they would not implement the FPS on legacy systems and would **implement a fit for purpose capability**, thus they **initiated large internal projects** to upgrade their **payments processing and monitoring systems** (e.g. fraud system, sanctions system) as well as **customer-facing internet banking systems and mobile device applications** (e.g. uplifting the front-end screens which are customer facing).

Source: RBA | NPPA | Primary Interviews

Onboarding Process

The first step is that the NPPA and prospective Participant discuss interest in potential membership

- ✓ **Application process** NPPA provides initial Membership Documentation. Applicant provides completed Participation Application and supporting documents
- ✓ **Acceptance of participant application** NPPA accepts application if all eligibility requirements have been satisfied and determines Applicant's appropriate proportionate share of investment (All direct applicants are required to become shareholders of NPPA)
- ✓ **Plan and Build** Participant develops the Project plan and builds the system as per the technical design
- ✓ **Certification and On-Boarding** Participant is required to meet test requirements (System/buddy testing). Once all testing and certification is completed, Participant is on-boarded

Interoperability

- Enables transfers between participating FIs including between banks and non-banks. However, non-banks can't perform clearing and settlement functions themselves

2.3. Payment Instruments and Payment Types



- NPP enables users to make payments from an account held at a participating FI to an account held at another participating FI
- It enables **Australian consumers, businesses and government agencies** to make payments in **Australian dollars**

Payment Instruments Supported

	Credit Transfer ✓	Interoperability
	Direct Debit	
	E-money	

- Account to account interoperability supported
- Currently, NPP does not support account to wallet transactions and vice versa; however, these transactions will be facilitated through the deliver of third-party payment initiation (with the delivery of the Mandated Payments Service) in 2021

Payment Types and Transaction Limit

Payment Types	Individual	Business	Government	Non-Financial*
	✓	✓	✓	
Transaction Limit	NPP has no transaction limit However, participating financial institutions can set channel / transaction type / customer-wise limits if they deem it necessary. For example, Bank Australia has an overall daily limit of AUD 2,000 (for risk purposes), which includes Osko transactions, Similarly, at Westpac, NPP payments are included within the customer’s Westpac Live Online Banking Daily Payment Limit. Business/corporate limits are significantly higher, e.g., \$10 million in some cases.			

Transaction Currency

(Australian Dollar)

While the NPP is currently designed to settle in Australian Dollars, it is agnostic of the currency that gets sent in the messages and it can be changed to facilitate cross-border payments

*e.g., Balance Enquiry, Transaction status check, etc.

2.4. Aliases, Access Channels and Overlay Services



NPP enables **simple addressing of payments via PayID**, an aliasing service. Furthermore, Payments can be made **via internet and mobile banking application** of participants, **via business/corporate channels (including APIs)** and via **QR codes**

Aliases



PayID is the addressing service, which enables users, through their financial institution, to link their account to a **simple, easy-to-remember unique identifier** called a PayID, such as an email address, phone number or Australian Business Number (ABN). Thus, it **eliminates the need** for customers to **use long, forgettable account numbers** to transfer money to recipients.

- PayID has a **central database** to securely store all PayID Information and is operated by SWIFT as part of the NPP platform. PayID sits in the infrastructure of NPP i.e., it is **a part of the core capability** of the platform and is an enabler which can be used by any overlay service.
- However, NPPA does not have access to personal information in the addressing service. Only financial institutions participating in NPP have access to PayID Information.
- The types of PayID are an **E-mail, Phone number, Business registration number (Australian Business Number (ABN), Australian Company Number (ACN), Australian Registered Body Number (ARBN) or Australian Registered Scheme Number (ARSN)) and Organization ID**. Almost all FIs offer the first three PayIDs and only some FIs are offering Organization ID.
- **A user needs to register a PayID with his/her financial institution**. The process for a user to register a PayID could differ between FIs. Retail customers mostly create a PayID within the usual mobile or internet banking platforms of the FI. (Refer to Section 4.2 for more details).
- **For privacy and security reasons**, PayIDs can only **be registered and managed by** participating financial institutions with account details also encrypted
- This service also provides **confirmation of the payee's account name** when a PayID is entered, **which reduces the risk of misdirecting a payment** compared with using a BSB* and account number to address a payment.

Access Channels



Internet Banking



Mobile Banking/Apps



QR Codes

NPP payments can only be made by logging into the internet and mobile banking application of a participating financial institution and authorizing a payment. This limits channels of access available to a user to make a NPP payment.

Payments can also be initiated through **business/corporate banking platforms and APIs**.

This is because NPP was designed and built with security front of mind.

NPP payments are subject to the same fraud and security protections FIs use for all their internet and mobile banking transactions.

NPP payments can also be made using QR codes. However, NPPA does not mandate support of this QR Code specification for NPP payments by participating financial institutions or third parties. It is optional for them to adopt.

NPPA has published their own QR code standard, built on the **EMVCo Merchant-Presented QR Code Specification for Payment Systems**. (Refer to section 4.1)

*Bank-State-Branch

2.4. Aliases, Access Channels and Overlay Services



Osko by BPay is the first overlay service on the NPP platform. It uses NPP's core capabilities to enable users to make payments between accounts at participating FIs

Overlay Service



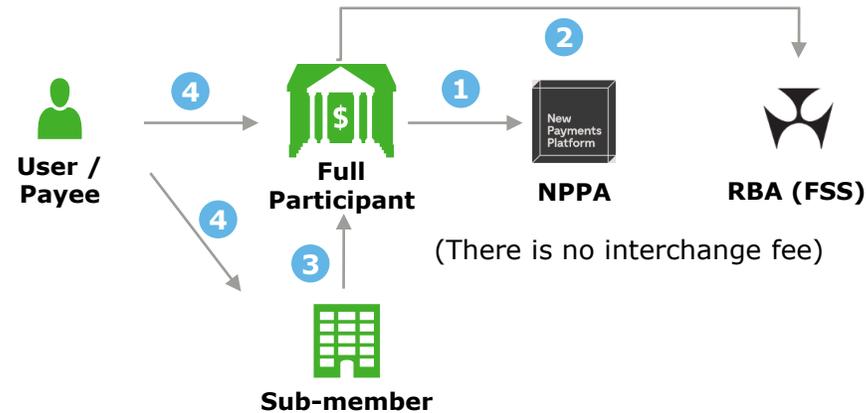
Osko, owned and operated by Bpay, **is an overlay service on the NPP platform**. It is a **consumer-oriented 'convenience' service which works together with banks and financial institutions to enable NPP payments using existing online banking**. The industry realized early on that it was important to have a initial consumer-oriented 'convenience' service at the time of launch in order for the platform to have traction. Thus, BPay was selected as the vendor to design the same and the service is called Osko, the first overlay service on the platform.

- The idea for the platform to 'go to market with a customer value proposition' has been a success as the rate of adoption and uniformity of experience has been great. (As compared to comparable services overseas which have seen slower per capita growth in transactions)
- **70+ Financial Institutions** have rolled out **Osko** and **~80 percent** of transactions through the NPP platform are Osko transactions. Other 20 percent are using the 'native capability' of NPP
- Osko enables users to make payments using PayID as well as BSB or account number
- FIs implemented Osko in a way in which they could **easily route direct credit/entry transactions via Osko without really changing the customer experience** as FIs are automatically routing these transactions via the NPP that customers may not even realize
- BPay had a launch marketing campaign for Osko which included a variety of digital and physical channels. As a scheme, marketing is a core function for BPay and it provides collateral such as flyers, digital media, brochures, advertisements to go on outdoor and provides co-branded collateral to each FI
- This ensures common messaging which allows end-users to understand the service irrespective of which FI they use.
- There were no marketing incentives for FIs to sign up, but a lot of collateral were provided which made it easier for FIs to promote the service
- The following is the roadmap for Osko by BPay that has been agreed with NPP Participants to be implemented through three distinct releases:
 - Release 1 – Requests for social and tax compliant invoicing
 - Release 2 – Enhanced business requests
 - Release 3 – Payments and requests with documents

2.5. Scheme Pricing and Fee Structure



There are **multiple points of pricing** in the NPP ecosystem. The pricing strategy employed at each point **may differ**, but the pricing scheme and fee structure charged to users by participants are **dependent** on the pricing scheme **adopted by the NPPA and RBA**



1 Fee charged by NPPA

All Direct Participants are required to become shareholders of NPPA.

- NPPA operates on fixed cost recovery model with operating costs recovered from shareholders according to size of shareholder (shareholder band)
- There is also an application fee payable to NPPA for new participants
- NPPA does not charge Participants any additional fee for certification

The fixed cost recovery model provided an incentive to direct participants to increase the volume on the platform as the marginal cost for additional transactions was very small and this in turn influenced the pricing offered to identified institutions.

NPPA's aim is to move to a unit transaction cost per transaction once volumes stabilize. A wholesale fee could also be charged to all Participants, which is the same regardless of size

2 Fee charged by RBA

RBA charges only direct participants and settlement participants for the use of their ESA accounts for settlements via the FSS. It charges fixed and variable fee.

3 Fee charged by Full Participants to sub-members

Fee charged by direct participants to sub-member FIs is based on the bilateral agreement between the parties. No guidelines have been provided by RBA/NPPA

4 Fee charged to users/payee

Transaction charge for users depends on the commercial decisions of participating FIs and no upper cap has been provided by RBA/NPPA. There are no guidelines from RBA/NPPA on the user charges FIs can charge. Typically, it is free for retail customers and a per transaction cost for business/corporate customers.

2.6. Use Cases / Services



Currently, the NPP supports merchant payments and bill payments. However, it is planning to roll out enhanced capabilities in the next couple of years to support more use cases such as Direct Debit, Request for payments, bulk / batch payments



Merchant Payments (P2M)

- The NPP enables businesses to extend FPS usage from business-to-business payments to accept merchant payment
- Additionally, NPP has published its own QR code standard for both dynamic and static QR codes which merchants can use

Payment Instruments

Bank account

Access Channels



Internet

Mobile

QR Codes



Request for Payment (under development)

- Participants will be able to leverage on the core capabilities of FPS to provide users with 'customer authorized payments requested by the creditor', e.g., e-Commerce payment and In-app payments
- The functionality will complement other use cases such as bill payments and merchant payments

Payment Instruments

Bank account

Access Channels



Internet

Mobile

QR Codes



Direct Debit and Future Payments (under development)

- Participants will be able to leverage on the core capabilities of FPS to provide users with 'scheduled payments with customer pre-authorization', e.g.
 - Recurring payments
 - Subscription payments
 - Scheduled Payments
- Recurring payments could be automatically set up via Request to Pay messages

Payment Instruments

Bank account

Access Channels



Internet

Mobile



Bill Payments

- Bill payments can be used if the customer pushes the payment from their account. Approximately 1/3 of all payments going through the NPP are either to or from a business
- However, there is an additional service called BPay which specializes in Bill payments and all bill payments via BPay are currently settled via Direct Entry system instead of NPP

Payment Instruments

Bank account

Access Channels



Internet

Mobile

QR Codes



Bulk / Batch Payments (under development)

- Number of participating financial institutions are considering or actively developing capability required to support the processing of bulk payments on the NPP.
- This may include the ability to convert an existing bulk payment file (or 'debulk' those files) into single NPP payments.

Payment Instruments

Bank account

Access Channels

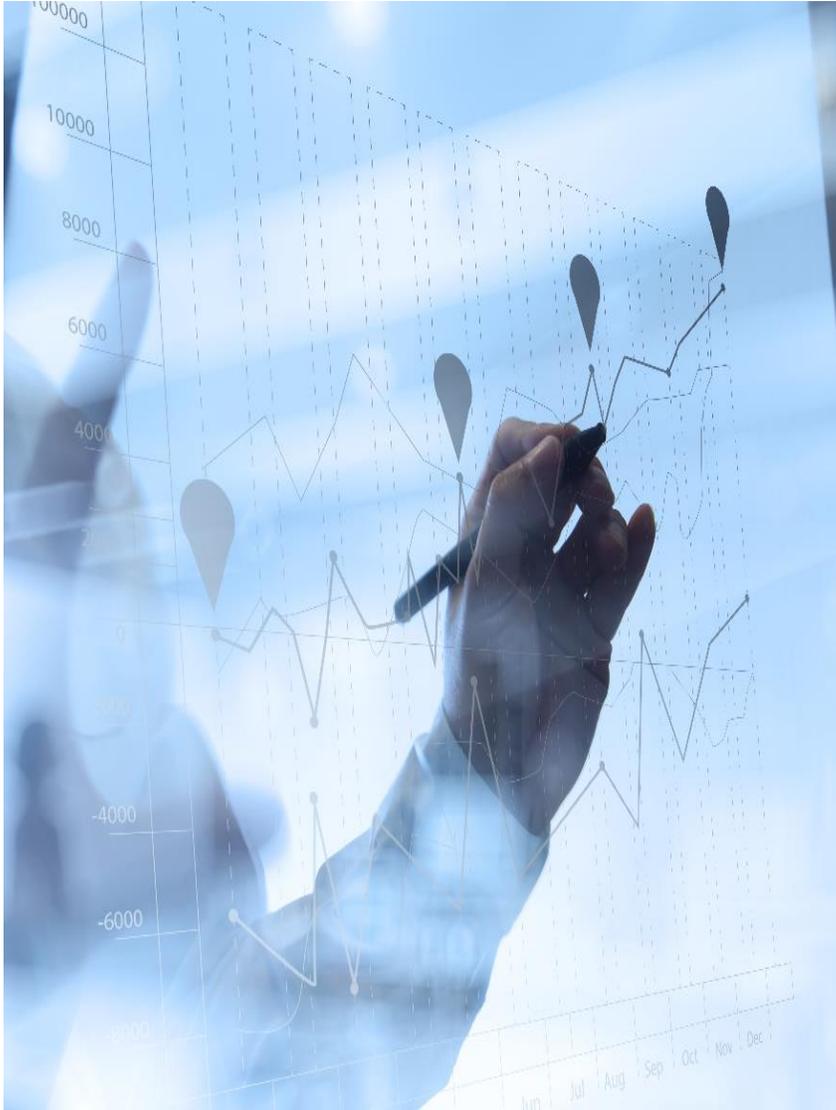


APIs or host to host systems

Internet

In 2019, NPPA **published a roadmap** with plans to roll out the "**Mandated Payments Services**", which is the core capability to enable the above-mentioned use cases. The development of this critical capability will involve a considerable change effort to implement, requiring change to existing back-office processes and systems. All participating financial institutions are required to implement this capability by **December 2021**. Thus, it is anticipated that financial institutions will begin to rollout these services in **early 2022**.

3. User Adoption



Chapter Summary:

- User adoption of NPP has been encouraging. NPP has witnessed steady growth since its launch.
- One third of transactions made via NPP are either to or from an organization, which is a positive sign in terms of adoption by businesses

3. User Adoption

NPP has witnessed **double digit growth YoY** since being launched. As of October 2020, **72 Million+** accounts can make and receive NPP Payments.. There have been a total of **730 million+ transactions** sent across the platform since its launch with the **average daily number of transactions reaching 1.7 Million**. The platform is scalable and is capable of processing all the current account to account transactions in the market (approx. 3.5 billion transactions per annum).

Apart from P2P payments which form a major proportion of payments, one third of transactions are either to or from an organization. The platform is also increasingly being used by government agencies and can be used to give instant financial assistance to people in difficult circumstances. Participants are responsible for **communication of FPS services to end users via their communication channels**. As customers access the NPP via their banking channels, the most effective means of communication is through the bank's communication channels. NPPA ran an above the line advertising campaign for a limited time for the addressing service PayID.



The largest single transaction across the NPP was for AUD 19.8 Billion between 2 government agencies

A **driver for adoption** was that fee charged to customers (corporate customers) was **only marginally higher** (e.g., 40 cents compared to 25 cents) for fast payments as compared to overnight payments. Additionally, Osko was implemented in a way in which banks could **easily route direct credit/entry transactions via Osko without really changing the customer experience** which helped increase adoption by making it seamless for the customers. The pricing strategy employed by NPP i.e., having **fixed cost allocation instead of transaction pricing** as the transaction cost was initially high incentivized FIs to boost usage of the platform.

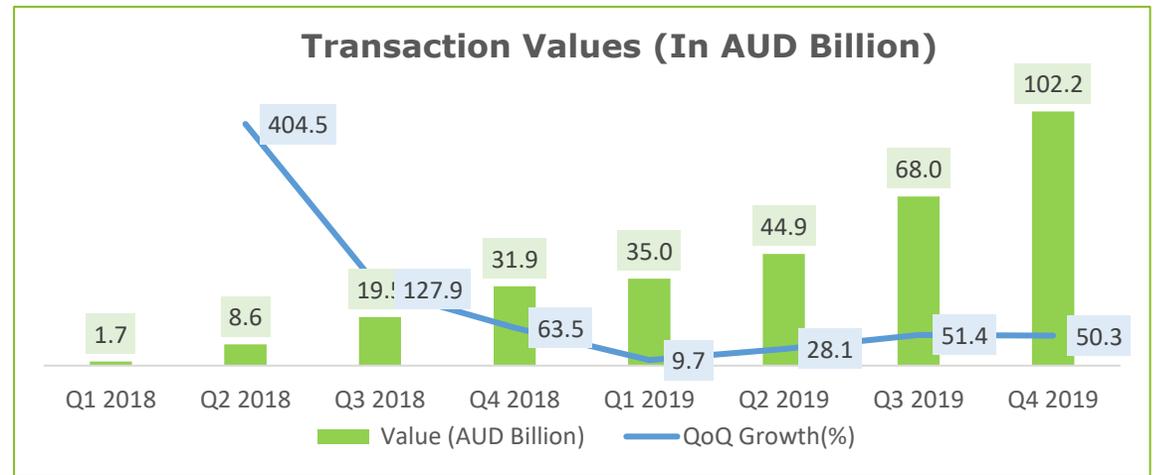
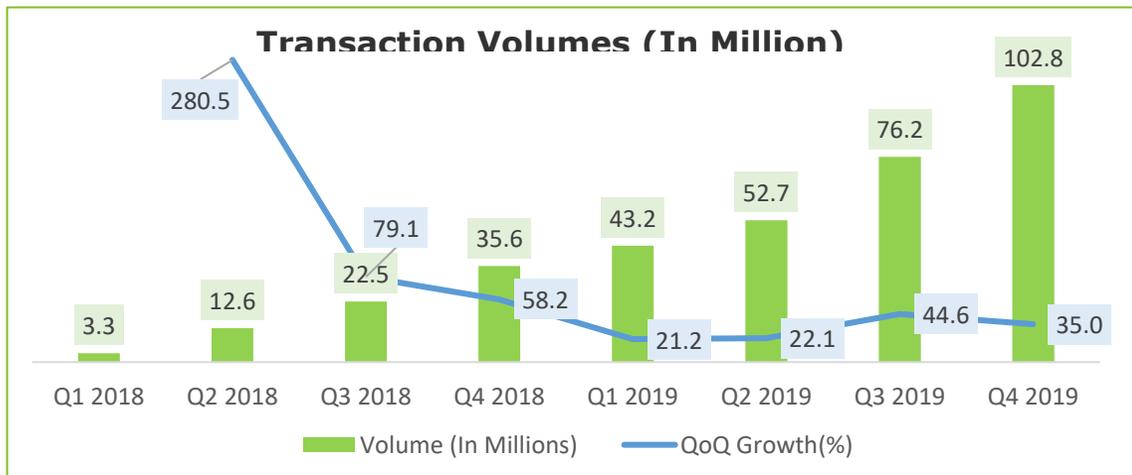
Both PayID and Osko have played a crucial role in the early adoption of Fast payments



5.4 Million registered users



70+ Financial Institutions have rolled out Osko



4. Technical Details and Payment Process

Chapter sections:

4.1. Technical Details | Messaging Format and QR Codes

4.2. Technical Details | APIs, Customer Authentication and Tokenization

4.3. Payment Process (Customer Registration, Transaction Fulfilment, Liquidity Management and Settlement)



Chapter Summary:

- Both, the FSS and NPP have adopted the **ISO 20022 messaging standard**
- The NPP QR standard builds on the **EMVCo Merchant-Presented QR Code Specification for Payment Systems** and defines the mandatory elements required to facilitate a consistent NPP payment experience for both static and dynamic QR Codes.
- The NPP has published its own API Framework, which is designed to support interoperability and standardization
- NPP payments are subject to the same customer authentication standards banks use for all its internet and mobile banking transactions
- The payment process includes one-time customer registration, payer-payee transaction fulfilment and inter-participant settlement.
- User registration for sending and receiving payments via NPP is not required. However, users are required to register a PayID with their participating financial institution if they want to use PayID to receive payments into their account
- There are several confirmation and clearing steps and settlement steps that occur in quick succession to enable users to make payments with immediate funds availability to the payee
- NPP transactions are settled via the **FSS**, which follows a **line-by-line settlement model** and settles the payment in **real-time**

4.1. Technical Details | Messaging Format and QR Code



Below are the **technical details of NPP** covering the **messaging format and QR standards**. The messaging standard is extremely important in terms of connectivity and interoperability. Additionally, NPP provides a detailed standard to standardize payments via QR code



Messaging Format

ISO 20022

The ISO 20022 message schema can capture and transmit data in a consistent and structured way alongside a payment. These data elements can be customised for specific payment types and their data requirements.

Both, the FSS and NPP have adopted the ISO 20022 messaging standard, which is a global standard for financial messaging that is flexible and extensible, and therefore enables the sending of richer and more complete transaction information with a payment (280 characters) than other systems (for instance the 18 characters currently available for Direct Entry payments).

Benefits for NPP for adopting ISO 20022 messaging standard:

- **Business automation:** straight-through processing.
- **Improved reconciliation:** automatically match a payment's origin and its purpose.
- **Enriched reporting:** align to reporting standards and regulations
- **Financial crime prevention:** include data such as a Legal Entity Identifier

Use of ISO 20022 with its data rich capability will support significant B2B opportunities such as the ability to include a document with the payment transfer (payment would act as a remittance).

Additionally, the design team of NPP envisioned a day where there might be enough FPS systems around the world with ISO 20022 messaging capabilities. This would enable linking of all the domestic FPS schemes with ISO 20022 capabilities, which in turn could effectively replace correspondent banking.



QR Code

Static and Dynamic QR Codes

The NPP QR Code Standard has been designed to support a consistent user experience across a number of NPP use-cases including e-commerce, invoices, terminals and P2P scenarios. It also enables interoperability in the payments industry.

The Standard builds on the **EMVCo Merchant-Presented QR Code Specification for Payment Systems** and defines the mandatory elements required to facilitate a consistent NPP payment experience for both static and dynamic QR Codes.

However, NPPA does not mandate support of this QR Code specification for NPP Payments by participating financial institutions or third parties. It is optional for them to adopt.

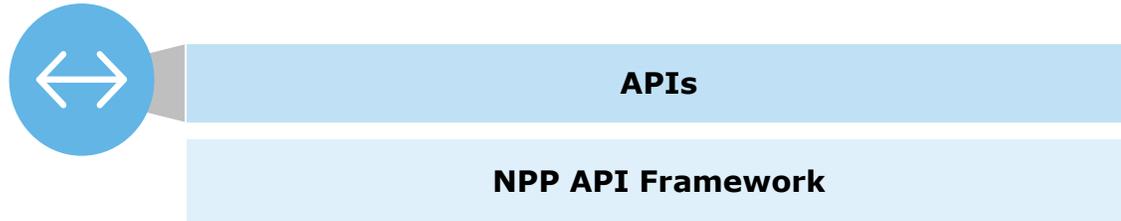
Although, QR codes have penetrated the Australia market to some extent, there isn't a huge uptake and they are not as prevalent as they are in other jurisdictions such as China and other parts of Asia. Australia is experiencing a huge uptake in "tap and go" payments and is seen as an extremely convenient payment channel; as a result of which there isn't a huge drive or demand to move to a QR code solution. The delivery of **payment initiation capability** is likely to help drive the take up of QR codes when this capability is delivered with the **Mandated Payments Service**.

Osco by BPay updated their QR code to be compliant with these standards. However, it is also not experiencing a lot of appetite for the uptake of this service.

4.1. Technical Details | APIs, Customer Authentication & Cross-Border Payments



Below are the **technical details of NPP** covering the **API Framework and customer authentication standards**. However, the **API framework is optional**



Designed to support inter-operability and standardization, the NPP API Framework defines the key technical approach and mandatory data attributes for NPP APIs, aligned to ISO 20022 standards. Furthermore, NPPA aims to extend the NPP API Framework over time

APIs play an important role in helping innovators and third parties to use the NPP's capabilities. From supporting the ability to initiate payments through to assisting ecommerce transactions and other payment experiences, the applications of APIs are endless

While NPPA does not mandate the use of this framework, it encourages NPP Participants, third party service providers and software developers to refer to this framework, or build further upon it, when developing API solutions for NPP transactions

NPPA does not offer APIs, however some NPP Participants are currently offering this service. For example, NAB built a suite of APIs to allow its sponsored identified institutions to initiate a NPP transaction

There is still a lot of scope in the NPP ecosystem for APIs specially in terms of payment initiation

When NPPA was being designed and built, Open access APIs were not prevalent, and APIs were only being used internally. However, now APIs can also be used to integrate smaller FIs to participate on the platform using standardized APIs (API integration access)



NPP payments are made by logging into the internet and mobile banking application of a participating financial institution and authorizing a payment. This means NPP payments are subject to the same fraud and security protections including customer authentication standards banks use for all its internet and mobile banking transactions i.e., biometrics, two factor authentication, etc. There are no specific customer authentication standards for making a NPP payment.



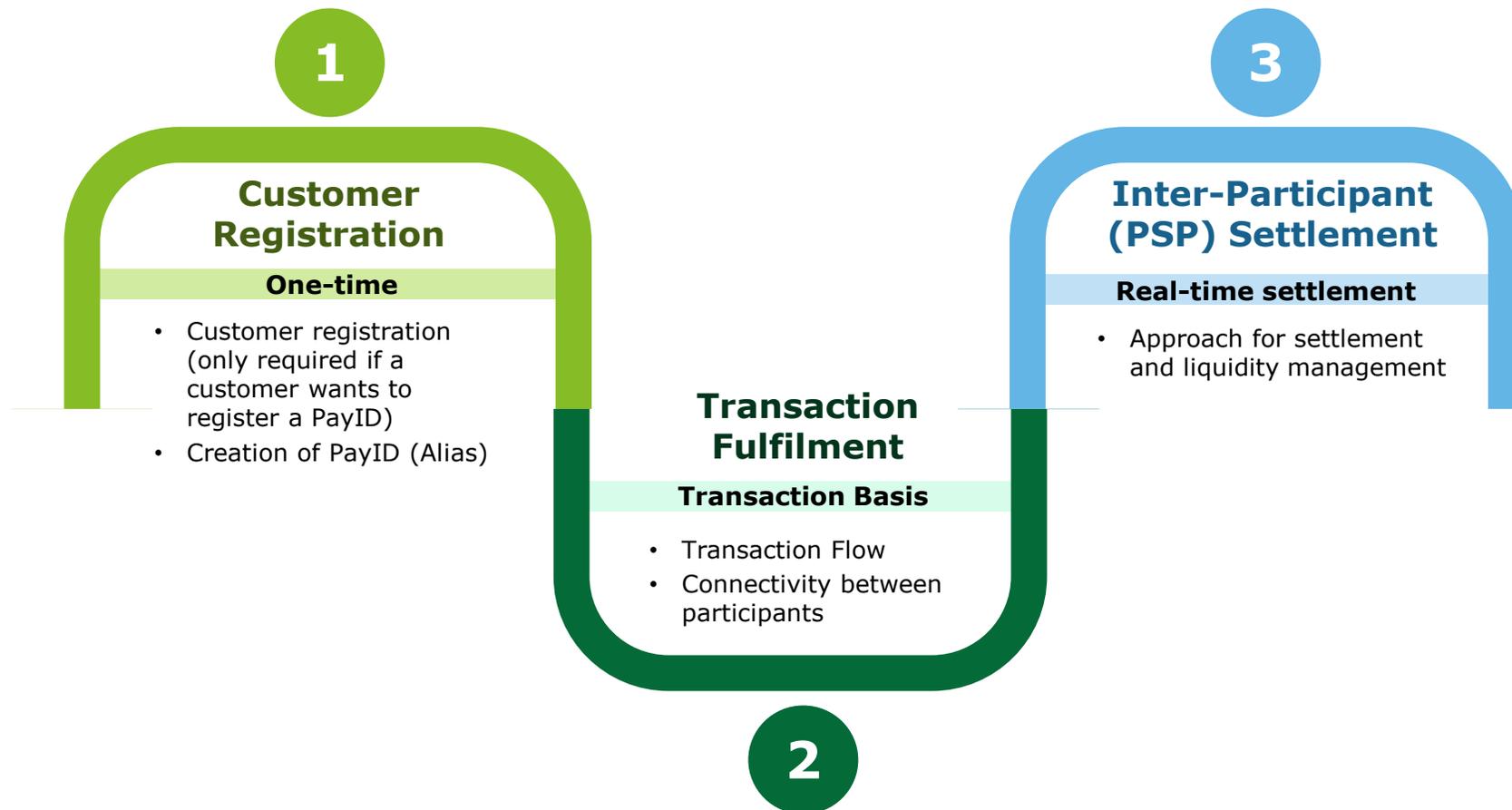
The NPP infrastructure and associated rules framework has been enhanced and extended to support the domestic leg of an inbound cross-border payment with the creation of a **scheme agnostic IFTI** (International Funds Transfer Instruction) business service. This enables correspondent banks to send these payments to the ultimate beneficiary or customer over the NPP as the final leg of the cross-border payment process

NPPA is also working with **SWIFT** to implement a **gpi Instant Overlay Service**, which utilizes the NPP IFTI business service and incorporates additional rules around posting standards and use of the gpi tracker

4.2. Payment Process



The steps in the payment process include **one-time customer registration, payer-payee transaction fulfilment and inter-participant settlement.** Subsequently, various aspects related to these areas are covered





4.2. Payment Process | Customer Registration



NPP via Osko was implemented in a way such that FIs could **easily route direct credit/entry transactions via Osko without really changing the customer experience** which **helped increase adoption by making it seamless for the customers**

- ✓ User registration for sending and receiving payments via NPP is not required. Users are only required to have an account with a participating financial institution
- ✓ User registration is only required if the customer wants to be able to receive payments into their account using their PayID. Customers can send payments using a PayID without having to have register themselves

Process for users to register a PayID with Financial Institutions

- Step 1: User accesses his/her account with a FI via its internet /mobile platform
 - Step 2: User logs into his/her account with the FI
 - Step 3: Once logged in, user selects "PayID Setting"
 - Step 4: User chooses the "Create PayID" Option
 - Step 5: User reads and accepts the PayID Terms of Use
 - Step 6: User selects the eligible account to link to PayID
 - Step 7: User chooses the type of PayID (email address or mobile number) and his/her PayID **
 - Step 8: User selects his/her PayID Name (will be displayed when payer inputs user's PayID to make a payment)
 - Step 9: A security code will be sent to the user's mobile phone or email (depending on the PayID being registered). User enters the security code
- PayID is created and ready for use

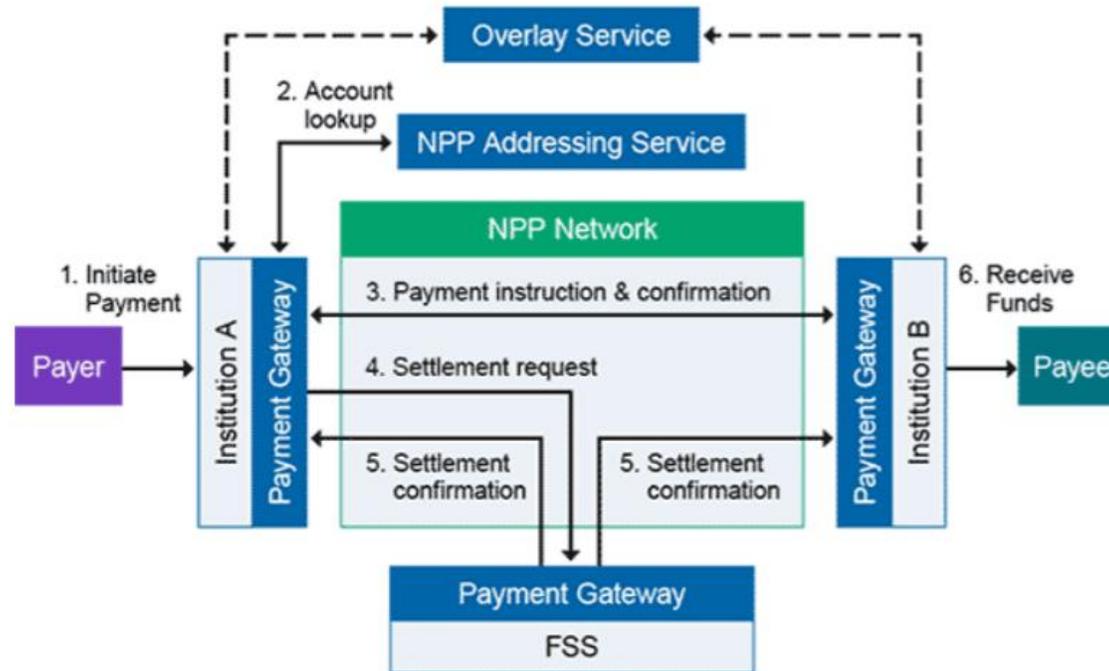
*Illustrative. Option labels may vary from FI to FI
**Choices of type of PayID vary from FI to FI. Businesses can also select their ABN

4.2. Payment Process | Transaction Fulfilment



The NPP allows customers of a participating FI to make payments from their account to a customer of another participating FI with immediate funds availability to the payee. From the perspective of the customers, the **process is simple and takes only moments**. However, there are **a number of confirmation and clearing steps and settlement steps** that occur in quick succession to make this happen.*

- 1 A customer (the payer) initiates a payment through a banking channel such as an on-line banking portal or mobile phone banking application
- 2 If the payer has chosen to use a PayID to direct the payment to the recipient of the funds, the payer's institution will send an enquiry message to the addressing service to find the payee's BSB and account number linked to the PayID. The account name associated with the PayID is returned to the payer for confirmation
- 3 The payer institution then sends a message with all the relevant payment details, subject to any overlay service requirements, to the payee's institution through its payment gateway. The payee's institution clears the payment by checking the payment details and sends a response back to the payer's institution via its payment gateway, confirming it is able to credit the payee



- 4 With clearing of the payment complete, the payer institution's payment gateway automatically initiates settlement by sending a settlement request to the FSS, which tests that the payer institution has sufficient credit funds, and then transfers value between the two institutions' ESAs in real time by simultaneously debiting the ESA of the payer institution and crediting the ESA of the payee institution
- 5 The FSS then returns a settlement confirmation to both institutions indicating that settlement has occurred
- 6 Once the settlement confirmation has been received, the payee ADI makes the funds available to its payee customer

*Above is a typical process which is followed involving Full Participants for both payer and payee.

- **Intra-bank payments or intra-sponsored organisation payments** are cleared and settled via 'on-us' capabilities and do not go through the NPP platform. However, 'On-us' transactions are **counted in the adoption figures** regularly published by the RBA
- **Commercial arrangements are determined** between the **sponsoring participant (Full Participant)** and the **organisation they are sponsoring (sub-members)** for clearing and settlement of transactions
- All parties directly connected to the infrastructure must use the **SWIFT NPP componentry** to connect and secure messages. All messages are signed through this process using the SWIFT infrastructure components, e.g., the HSM (Hardware Security Module)



4.2. Payment Process | Liquidity Management and Settlement



FSS follows a **line-by-line settlement model** i.e. individual NPP payments are **settled with finality by simultaneously crediting and debiting** Exchange Settlement Accounts (ESAs) of Full and Settlement Participants held at the RBA

Direct Member Settlement

Approach



Distributed Clearing

Type | Time

Real Time

Not Applicable

- Although the FSS uses some of the existing RITS infrastructure (such as the user interface), NPP payments are settled by the FSS independent of other types of payments submitted to RITS (which are settled by the RITS System Queue). While RITS members use a single ESA to settle payments, institutions divide their ESA funds between an FSS Allocation and a RITS Allocation. NPP payments are settled using funds available in the FSS Allocation only. Entire funds in the Participant's ESA are available to settle NPP payments outside of business hours and on weekends/public holidays
- Each settlement request relating to an NPP payment is validated and tested by the FSS against technical criteria and for the availability of sufficient funds in the payer institution's FSS Allocation:
 - If testing is successful, settlement occurs. The payee institution's FSS Allocation is credited simultaneously with the debiting of the payer institution's FSS Allocation, and a settlement confirmation is sent to both institutions
 - If a settlement request fails, due to insufficient funds or any other validation error, the NPP payment is rejected, settlement is not completed, and a rejection message is returned to the institutions. In order to process and settle payments quickly, it is also not possible to recall NPP payments, since the FSS settles or rejects payments very quickly
- Institutions are encouraged to ensure that they always maintain sufficient funds in the FSS for the settlement of NPP payments. The Reserve Bank assists institutions with their liquidity management through the automated system liquidity management tools in RITS (including the FSS) and eligible institutions can access funding through the RBA's Standing Facilities
- With the introduction of the FSS, a new liquidity management tool was built into RITS. Through this tool, institutions are able to adjust the amount of funds available in the FSS and RITS Allocations of their ESA by setting upper and lower 'trigger points' on their FSS Allocation
- Participants have to certify up to certain processing thresholds before going live (number of transactions that could be processed per second – this was higher for the big banks and lower for the smaller players). This ensured that a maximum level of capacity could be reached without any issues and currently there is still plenty of headroom before this capacity threshold is met

Sponsored (Indirect) Member Settlement

- Sponsored organisations use **their Sponsoring Participant's Exchange Settlement Account at the RBA** (except in the case of Settlement Participant)
- **Settlement participants** use the **sponsor FIs to clear the transactions but settle their transactions directly** using their ESA accounts held with RBA

Arrangement between Sponsor and Sub-member FI

- **Commercial arrangements are determined** between the **sponsoring participant and the organisation they are sponsoring (sub-member)**
- There are **no guidelines** around the **clearing and settlements between sponsor and sub-member FIs**
- Sponsoring participants are **free to choose a different settlement model** with their sponsored FIs (sub-member). For example, Cuscal follows a **deferred net settlement with its sub-members (Identified Institutions)**

5. Governance Framework

Chapter sections:

- 5.1. Legal and Regulatory Aspects
- 5.2. Risk Management
- 5.3. Dispute Resolution
- 5.4. Customer Complaints



Chapter Summary:

- The **legal framework in Australia** provides an explicit mandate to **RBA for regulating the payment and settlement systems**
- The legal framework has also been enhanced **to detect and deter money laundering and terrorism financing**, which is regulated and overseen by a different regulator - AUSTRAC
- The RBA's policies under **Payment Systems (Regulation) Act 1998** are determined by its **Payments System Board (PSB)**
- RBA is responsible for the payment system oversight, and it **also has an operational role in the payments system**
- Post launch of the NPP, RBA conducted '**RBA and ACCC's Consultation into NPP Functionality and Access**' in June 2019, to assess how well the strategic objectives have been met and to ensure consistency with the Payment System Board's policy objectives
- NPP Australia Limited is a public company established to oversee the operation of the NPP. It is a **mutually-owned, economically self-sustaining entity, with profits directed to the Platforms' ongoing development**
- **The NPP was designed and built with security front of mind. The integrity and performance** of the NPP is **safeguarded by minimum technical, operational and security obligations** that must be met by participating financial institutions and organizations
- The **Dispute resolution guidelines of the NPP** include the **definition of dispute, commencement of proceeding, procedure for resolution of Disputes and all associated costs and expenses**
- As per the NPP regulations, the **first point of contact** for a customer will be the **customer's financial institution in case of any complaints related to NPP transactions**

5.1. Legal and Regulatory Aspects (1/3)



The legal framework in Australia provides an **explicit mandate to RBA** for regulating the payment and settlement systems. Additionally, the legal framework has been enhanced significantly **to detect and deter money laundering and terrorism financing**

Institutional and Governance Framework

Legal Framework

Reserve bank Act 1959,
Payment System Act 1998

Regulator and Overseer

RBA and its Payments
System Board, AUSTRAC

Owner and Operator

NPPA

The **Reserve Bank of Australia (RBA)** was given an explicit mandate for payments system matters through an **amendment to the Reserve Bank Act 1959 in 1998**. Most of the RBA's powers and functions in the payments system derive from that amendment and the Payment Systems (Regulation) Act 1998.

- The **Payment Systems (Regulation) Act 1998** gives the RBA powers to regulate payment systems and purchased payment facilities. It allows the RBA to regulate where it considers it to be in the public interest to do so. In determining the public interest, the Bank must have regard to the desirability of payment systems being
 - financially safe for use by participants;
 - efficient;
 - competitive; and
 - not materially causing or contributing to increased risk to the financial system.
- The **Payment Systems and Netting Act 1998** allows the RBA to protect transactions in systems which settle on an RTGS basis from the potential application of the "zero hour rule". The Act also gives legal certainty to multilateral netting arrangements in the payments systems that are approved by the RBA. The effect of those protections is to ensure that authorised payment system rules operate according to their terms, i.e. payments are final and irrevocable. A system does not have to settle in central bank money to be an RTGS system for purposes of this legislation. It also allows the RBA to exercise its powers if it considers that systemic disruption to the financial system could otherwise result.
- The **Corporations Act 2001** provides for a single licensing regime for "clearing and settlement facilities". Under the Act, the RBA is empowered to set financial stability standards for licensed clearing and settlement facilities and is required to monitor facilities' compliance with these standards and with their legislative obligation to reduce systemic risk.

The **Anti-Money Laundering and Counter-Terrorism Financing Act 2006** (the AML/CTF Act), which has substantially replaced the **Financial Transactions Reports Act 1988**, significantly enhanced Australia's regulatory scheme to detect and deter money laundering and terrorism financing. The AML/CTF Act sets out a principles-based framework, with higher-level obligations that encourage a risk-based approach to AML/CTF compliance. The Proceeds of Crime Act 1987 makes money laundering an offence, and several supporting pieces of legislation provide for the confiscation of the proceeds of crime.

Provisions in the **Competition and Consumer Act 2010** dealing with restrictive trade practices and consumer protection are relevant to the operation of the payments system. The Act prohibits conduct such as price agreements, boycotts and exclusive dealing with the purpose or effect of substantially lessening competition.

5.1. Legal and Regulatory Aspects (2/3)



RBA is responsible for **oversight and regulation** of the payments system and is empowered to set Financial Stability Standards for clearing and settlement facilities. RBA also has an operational role in the payments system, including owning and operating Australia's RTGS system, RITS, which includes the FSS

Institutional and Governance Framework

Legal Framework

Reserve bank Act 1959,
Payment System Act 1998

Regulator and Overseer

RBA and its Payments
System Board, AUSTRAC

Owner and Operator

NPPA

The RBA's policies under **Payment Systems (Regulation) Act 1998** are determined by its **Payments System Board (PSB)**, which (under the Reserve Bank Act 1959) determines **payments system policy**. The **Reserve Bank Act 1959** requires the **Payments System Board** to determine payments system policy in a way that will best contribute to:

- controlling risk in the financial system
- promoting the efficiency of the payments system; and
- promoting competition in the market for payment services, consistent with the overall stability of the financial system

The **PSB** comprises the Governor as chair, one other RBA appointee (appointed by the chair), an appointee from the Australian Prudential Regulation Authority (APRA) (appointed by APRA) and up to five other external members (appointed by the Treasurer). All members of the Board have equal voting rights.

The RBA has used its powers to regulate payment systems by imposing Standards and Access Regimes upon them.

However, responsibility for the development and maintenance of industry rules and procedures for clearing and settlement in major payments clearing systems rests with **AusPayNet** (previously APCA), an industry body, although, it has no jurisdiction over the NPP.

Payment System Oversight:

RBA is responsible for the payment system oversight. While the PSB determines the RBA's payments system policy, the powers to carry out those policies are vested in the RBA and it may:

- determine rules for participation in a payment system, including rules on access for new participants;
- set Standards for safety and efficiency for any payment system. These may deal with issues such as technical requirements, procedures and performance benchmarks; and
- arbitrate on disputes in that system over matters relating to access, financial safety, competitiveness and systemic risk, if the parties concerned so wish

Post launch of the NPP, RBA conducted '**RBA and ACCC's Consultation into NPP** Functionality and Access' in June 2019, to assess how well the strategic objectives have been met and to ensure consistency with the Payment System Board's policy objectives. It also ensures there are no conflicts of interest that may impede access for new entrants and undermine competition.

Operational role

There are a number of aspects to the RBA's operational role in the payments system.

- The final settlement of payments between financial institutions occurs across ES Accounts held at the RBA
- The RBA owns and operates Australia's real-time gross settlement (RTGS) system, known as the Reserve Bank Information and Transfer System (RITS), which includes the Fast Settlement Service (FSS).
- The RBA also participates in the payments system as banker to a limited range of customers. It provides specialised banking services to the Australian Government, a range of government instrumentalities and a number of official international financial institutions

5.1. Legal and Regulatory Aspects (3/3)



The NPP is payments infrastructure **commissioned and funded by NPP Australia Limited's founding shareholders** for and on behalf of the Australian payments industry. The system and all its participants are **regulated by RBA and governed by NPPA**

Institutional and Governance Framework

Legal Framework

Reserve bank Act 1959,
Payment System Act 1998

Regulator and Overseer

RBA and its Payments
System Board, AUSTRAC

Owner and Operator

NPPA

NPPA Governance and Authorisation:

- The strategic review of Innovation of the Australian payments system by the RBA's PSB identified opportunities for the Australian payments system, principally the capability to make payments in real-time.
- In 2014, NPPA was formed as a result of an unprecedented industry collaboration in response to this review by the RBA to oversee the build, operation, management and governance of the FPS platform.
- NPP Australia Limited (NPPA) is a public company established to oversee the operation of the NPP. It is a mutually-owned, economically self-sustaining entity, with profits directed to the Platforms' ongoing development. It is responsible for maintaining and developing the Platform to ensure it evolves to meet the future needs of Australia's industry, consumers and businesses. Its approach to enabling access to the infrastructure is focused on encouraging competition within the Australian financial services sector.
- The NPPA is mutually owned by 13 organisations including the RBA.
- Its Board comprises of 13 directors. Five are independent of the shareholders – the CEO, Chair, two Independent Directors and a director representing the Reserve Bank of Australia's Settlement Department. The four major banks have a director on the Board and the remaining shareholders of NPP Australia elect four directors on the Board. Each Board director has one vote except for the CEO who is a non-voting director.
- In addition to the board, NPPA has a number of NPPA Board Committees to guide and assist the Board to fulfil its oversight responsibilities in a number of key areas. The following are the NPPA Board committees:
 - Audit Finance and Risk Committee
 - People and Culture Committee
 - Strategy Committee
 - Governance Committee
- AusPayNet, an industry body supports NPPA through collection of fraud statistics and it's role of industry self-regulation and standardization naturally supports NPPA, for example in ensuring that standards used by NPPA are harmonised across industry (an example is the strategic opportunity to harmonise ISO 20022 messages across domestic high value, cross-border, and NPP).

Guidelines and their enforcement:

The integrity and performance of the NPP is safeguarded by minimum technical, operational and security obligations that must be met by participating financial institutions and organisations. Some of these may further be deemed 'Mandatory Compliance Requirements' by the NPPA Board, meaning they are fundamental to platform performance and security, enforceable through non-compliance charges.

5.2. Risk Management (1/2)



The NPP was designed and **built with security front of mind**. The central infrastructure is certified to the **highest data security standards and monitored 24-hours-a-day, seven-days-a-week**. Financial institutions can only offer services via the NPP if they **comply with security requirements** and have **appropriate fraud controls in place**

The **integrity and performance** of the NPP is **safeguarded by minimum technical, operational and security obligations** that must be met by participating financial institutions and organisations.

Some of these may further be deemed 'Mandatory Compliance Requirements' by the NPPA Board, meaning they are fundamental to platform performance and security, enforceable through non-compliance charges.

NPP payments can only be made by logging into the internet and mobile banking application of a participating financial institution and authorising a payment. Corporate customers can also use **business banking channels/platforms and APIs**. This means NPP payments are subject to the **same fraud and security protections FIs use for all of their internet and mobile banking transactions**.

Direct participants are required to be licensed as an authorised deposit-taking institution (ADI) or restricted ADI (RADI) by APRA and **meet any associated prudential and operational standards imposed by APRA**.

ADIs are subject to extensive prudential requirements and oversight by APRA including in relation to capital, liquidity, business continuity management, financial and regulatory reporting, governance and risk management. The requirement for an NPP participant to be an ADI is considered necessary to ensure prudential safeguards for the platform and to protect the integrity and stability of the platform. Therefore, NPPA relies on the prudential oversight by APRA.

Indirect Participants are required to satisfy the sponsoring NPP Full Participant that they have the requisite KYC and AML controls and policies in place. However, NPP regulations require the Full Participants to ensure the compliance of the indirect participants that they are sponsoring in the system



5.2. Risk Management (2/2)



Following are the **mitigating steps** taken by NPPA and RBA to **minimize the key risks** faced by the payments system

Liquidity Risk

- RBA launched a new liquidity management tool built into RITS while developing FSS. Through this tool, institutions are able to adjust the amount of funds available in the FSS and RITS Allocations of their ESA by setting upper and lower 'trigger points' on their FSS Allocation.
- RBA's offers Standing Facilities such as intraday repurchase agreements (repos) and 'open' repos to direct and settlement participants to help manage their outgoing and incoming payment flows through their ESA

Credit and Settlement Risk

- RBA is not exposed to any credit risk from the settlement of NPP payments in the FSS and are settled using the member's FSS Allocation. The allocations can't be overdrawn, and RBA does not guarantee any transaction submitted for settlement in the FSS.
- RBA's FSS settles payments line-by-line in real time and each settlement request relating to an NPP payment is validated and tested by the FSS against technical criteria and for the availability of sufficient funds in the payer institution's FSS Allocation. Settlement only occurs when testing is successful, else the payment request is rejected.

Fraud Risk

- Participants are required to have real-time fraud protection and detection controls and capabilities including KYC and AML controls and policies in place at the time of on-boarding
- NPP payments are subject to the same fraud and security protections FIs use for all of their internet and mobile banking transactions.

Technology Risk

- NPPA provides technical design requirements for building and connecting to the NPP platform and details out technical regulations in the NPP Regulations document. Any new organization being on-boarded as a directly connected Participant undergoes rigorous testing and certification process before going live
- Participants must provide an annual attestation, given by a senior officer, of its compliance with its obligations under the NPP Security Framework and provide details of any identified non-compliance, proposed or executed remediation actions and remediation timeframes
- All Participants' and Connected Institution's Back Office Systems relevant to the operation of the NPP must be built in a way that enables another site to automatically take over processing of NPP services during an event of total failure of a single site.

Operation Risk

- Escalation Manual defines procedures for trigger events. NPPA's Incident Management Framework defines response/SLAs for identified risk/event types. Participants required to have 24/7 operational support teams and resourcing to respond to alerts or incidents
- Financial institutions that offer PayID payments are required to have controls in place to monitor, detect and shut down any attempts to misuse the PayID service. This includes technical capabilities, such as automated locks outs, when unusual activity is detected.

Information Security Risk

- NPPA is committed to protecting and maintaining the privacy, accuracy and security of individuals' personal information. It has a Privacy Policy that describes how NPPA manages the personal information that it may collect, hold, use or disclose for the purposes of its functions and activities. NPPA does not hold or have access to any personally identifiable information. Any personally identifiable information contained in the NPP payment message is always encrypted

5.3. Dispute Resolution and Customer Complaints



Dispute may arise between NPPA and the participating FIs of FPS, while a customer complaint may arise between the participating FIs and end-users

Dispute Resolution

NPP regulations provide a **detailed mechanism** for **dispute resolution** including:

1. Definition of dispute
2. Commencement of proceedings
3. Resolution of disputes
 - a) NPP Operating Committee
 - b) Reference to the Board or to Arbitration
4. Fees and costs

- 1. Definition of dispute** provides the different parties between which a dispute can arise, and which disputes are eligible to be referred for resolution
- 2. Commencement of proceedings** details out the different scenarios under which dispute resolution proceedings may be commenced by either the NPPA or the aggrieved participant (including sub-members)
- 3. Resolution of disputes** states that a dispute can either be referred, for resolution, to the NPP Operating Committee, NPP Board or directly for arbitration. In addition, it sets out the various criteria and conditions for the same
- 4. Fees and Costs:** There are numerous fees and costs associated with dispute resolution and are detailed in the regulations. NPPA is to be reimbursed for all costs and expenses incurred by it for resolution of a dispute.

Please refer to **Section 6.5. (Annexure)** for more details

Customer complaints

As per NPP FAQs, In case of any complaints related to NPP transactions, the first point of contact for a customer is the customer's financial institution

- If an account has been compromised or funds have been taken from a user's account without his/her authorization, the user is required to contact his/her FI immediately
- If the user thinks someone has fraudulently used his/her information to create a PayID, the user should contact his/her bank immediately and the bank will help launch an investigation

In addition, the Australian Financial Complaints Authority (AFCA) independently assists consumers and small businesses to make and resolve complaints about financial firms.

Complaints about privacy:

- If a user believes that NPPA has breached its obligations under the Privacy Act, he/she may complain to the General Counsel at NPPA.
- The complaint may be made by mail or email

Regulatory Initiatives

NPPA brings together leading security and fraud experts from each of the participating banks to collaboratively manage, monitor and undertake activities aimed at combatting any NPP-related fraud.

IDCARE: a national identity and cyber support service that help reduce the harm customers/users experience from the compromise and misuse of their identity information by providing effective response and mitigation.

Scamwatch: a website run by the Australian Competition and Consumer Commission that provides information to consumers and small businesses about how to recognize, avoid and report scams

6. Annexure



Chapter sections:

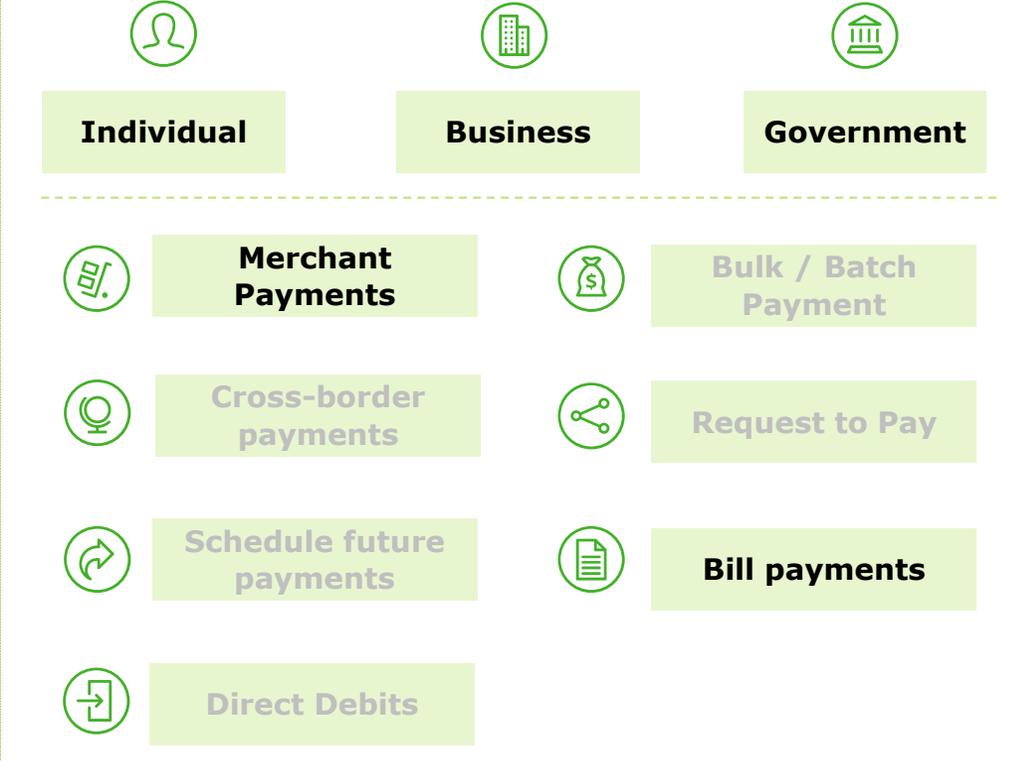
- 6.1. Key Features
- 6.2. System Development
- 6.3. Dispute Resolution

6.1. Key FPS Features

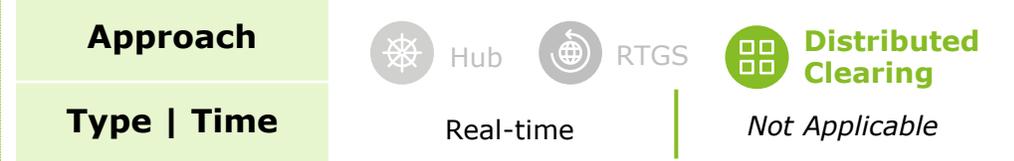
Key Highlights

	Operating hours	<ul style="list-style-type: none"> • 24*7 including weekends and public holidays
	Payment speed	<ul style="list-style-type: none"> • Real time (~ 6-15 seconds)
	Transaction limit	<ul style="list-style-type: none"> • NPP - There are no transaction limits. However, participating financial institutions can set limits if they deem it necessary
	Alias	<ul style="list-style-type: none"> • Mobile Number, E-Mail Address, Australian Business Number(ABN) and organizational id
	Channel	<ul style="list-style-type: none"> • QR Code, Internet and Mobile channels, business/corporate banking channels, and APIs
	User charges	<ul style="list-style-type: none"> • Decided by the banks
	Infrastructure setup	<ul style="list-style-type: none"> • New System
	Messaging format	<ul style="list-style-type: none"> • ISO 20022
	Use of Open APIs	<ul style="list-style-type: none"> • Open APIs available
	Authentication	<ul style="list-style-type: none"> • No specific customer authentication standards, depends on individual FIs

Payment Types & Use Cases/Services



Settlement



6.2. System Development (1/2)

RBA's Strategic Review of Innovation (including multiple consultations with industry) **identified gaps and articulated the 'what' but not the 'how'**. **The industry was charged with the responsibility for the 'how'**. It was the **'APCA real time payments committee proposal'** which led to the establishment of the **NPPA**. With an **aim to deliver on the strategic objectives** laid out by the RBA, the industry contracted SWIFT, an external vendor to develop the NPP. It was developed within 6 years and was launched in 2018.

Infrastructure Setup

- At the time of system development, RBA and the industry considered **upgrading the existing DE system** instead of building a new system from scratch. However, it was concluded that the DE system would not be the right starting point and that **an entirely new system was needed** as this would be the least disruptive approach to both system participants and businesses and would allow those businesses that had a need for new services to access them.
- The Reserve Bank developed new infrastructure, **the RITS Fast Settlement Service (FSS)**, in parallel with the NPP, to enable the **line-by-line settlement of NPP transactions** between financial institutions in **real time on a 24/7 basis** across exchange settlement accounts at the Reserve Bank. The line-by-line settlement model was chosen as it removes settlement risk for transactions which enables the platform to clear and settle transaction of any amount. It also makes the system resilient particularly in the event of outages.
- A **distributed clearing system (DCS)** was chosen as opposed to a hub model as a **DCS provides resilience** i.e., if one node goes down, the other nodes can continue to be operational unlike the hub approach which becomes non-operational with failure at the center. The choice of clearing model was also influenced by the vendors appraised.
- The NPP was **built as a new system** and in order to **create a thriving platform for innovation** i.e., have the mechanism for more business services to exist on top of the platform, the industry made a **distinct separation between the basic infrastructure layer of the FPS and the overlay services** that could sit on top, allowing innovation and flexibility at the user interface level.
- The **BI consists of distributed connectivity points (Full Participants), message flows, a switch, a fast settlement service and an addressing service**. Whereas the provision of overlay services allows NPP participants, approved third parties and fin-techs **to develop payment services that sit on top of the basic layer**. This forward-looking design enables the platform to evolve while keeping the underlying architecture stable.
- After a **15-month long vendor selection process** which included a structured process with a strong and competent PMO to keep the process objective, scorecards to keep the process transparent, 3 rounds of shortlisting and evaluating the final 2 vendors in parallel, the **industry committee contracted SWIFT to build NPP's Basic Infrastructure**.
- Additionally, the industry realized early on that it was important to have an **initial consumer-oriented 'convenience' service at the time of launch** for the platform to have traction. Thus, **BPay was selected as the vendor to design the first overlay service i.e., Osko, the customer-oriented convenience service**.
- The industry predicted and anticipated that some major banks **might have problems with integration due to legacy systems**. Thus, agreed on a **minimum criteria to 'Go-live'** 12 months before the go live date. The minimum criteria was that it would be enough to 'Go-Live' if **2 of the major banks and a handful of other smaller banks** were ready.

6.2. System Development (2/2)

RBA's Strategic Review of Innovation (including multiple consultations with industry) **identified gaps and articulated the 'what' but not the 'how'. The industry was charged with the responsibility for the 'how'**. It was the **'APCA real time payments committee proposal' which led to the establishment of the NPPA**. With an **aim to deliver on the strategic objectives** laid out by the RBA, the industry contracted SWIFT, an external vendor to develop the NPP. It was developed within 6 years and was launched in 2018.

Development Process

- The development of the NPP involved extensive cooperation between ADIs to build the capability to send and receive individual payment messages between themselves, as well as settlement instructions to the Reserve Bank's FSS, in real time.
- Additionally, the project required ADIs to upgrade their internal systems to allow posting to customer accounts within a few seconds. The enhanced capability of the NPP also meant that participating financial institutions initiated large internal projects to upgrade their payments processing and monitoring systems, as well as customer-facing internet banking systems and mobile device applications.
- Given the significant effort required both across and within ADIs, the NPP program took place over a number of phases:
 - The first two phases began in June 2013 and focused on program planning, the development of business requirements, and sourcing of service providers
 - The third phase, which started in December 2014, involved the detailed design of the infrastructure along with the development of the operating procedures, industry test strategy and overall industry implementation plan
 - The fourth phase, which commenced in August 2015, involved the build and configuration of the core elements of the NPP infrastructure, including the NPP network, the switching capability (which co-ordinates and facilitates the movement of messages across the NPP network) and the addressing service
 - Following these phases, there was then a staged period of testing for both the new NPP infrastructure and ADIs' own internal system enhancements.
- The RBA developed the FSS in parallel with the NPP to enable final and irrevocable settlements of individual NPP transactions in real time. It leveraged the approach employed by some stock exchanges i.e. employing in-memory processing to enable fast settlement-processing times. It has a median settlement-processing time of around 50 milliseconds since launch
- The NPP and FSS went live for use between participant institutions on 27 November 2017. At this time, there was a period of 'live proving' where a small number of real transactions were processed to verify participants' various end-to-end payments-related systems and processes in a production environment. Following this final live-proving phase, the NPP was officially launched to the public on 13 February 2018, making fast payment services available to customers of around 50 participating financial institutions on the day of launch.

Implementation Timelines

Development Timeline	Initial setup	2018 (including PayID) Osko: 2018	Any delays	<ul style="list-style-type: none"> Initially, as per the conclusions of the Strategic Review, the FPS was to be launched by 2016. Furthermore, post launch of the NPP, a few of the major banks were slow to make the new system available to their customers due to issues with service providers and their internal systems
	Any overlay services			

6.3. Dispute Resolution (1/3)

Definition of Dispute for NPP

Dispute means a dispute or difference between:

- (A) The NPPA, any sub-committee established by NPPA, any delegate of any such sub-committee and any NPP Participant, Connected Institution or Overlay Service Provider
- (B) Two or more NPP Participants, Connected Institutions or Overlay Service Providers; arising out of, or in any way connected with the Constitution (insofar as it relates to the operation or management of the NPP Basic Infrastructure), these Regulations or the NPP Procedures and includes, without limitation, a dispute or difference
- (C) Arising out of, or in any way connected with, any non-compliance with the Constitution (insofar as it applies to the operation or management of the NPP Basic Infrastructure), these Regulations or the NPP Procedures;
- (D) Arising out of, or in any way connected with, any decision of NPPA or any sub-committee of NPPA or any delegate of such sub-committee;
- (E) As to any sum of money claimed to be payable pursuant to, or any liability or obligation or other matter to be ascertained or dealt with or which arises under, Regulation 9.5; or
- (F) Arising out of, or in any way connected with, the non-payment or alleged non-payment of any sum of money otherwise payable or alleged to be otherwise payable pursuant the NPP Regulations or the NPP Procedures, other than sums due in relation to the subscription for Shares, which will be resolved in accordance with the dispute resolution procedures in the Shareholders Agreement; other than a dispute arising out of or connected in any way with those matters, which is required by the terms of the Shareholders Agreement to be resolved in accordance with that agreement.

Introduction

Commencement of Proceedings

- (A) If an NPP Participant, Connected Institution or Overlay Service Provider (in this Regulation, the "Defendant Participant") fails or refuses to give effect to a determination of the NPP Operating Committee in relation to a Dispute to which this Regulation applies, which determination is evidenced by a Dispute Resolution Certificate, then the NPP Operating Committee may resolve that proceedings be commenced and prosecuted against the Defendant Participant by NPPA in its own right.
- (B) Alternatively, any aggrieved NPP Participant, Connected Institution or Overlay Service Provider which was a party to these Regulations and the NPP Procedures at the date of issue of the relevant Dispute Resolution Certificate (other than the Defendant Participant) may commence proceedings against the Defendant Participant and request the assistance of NPPA in relation to such proceedings in which event the NPP Operating Committee may require NPPA to provide whatever administrative assistance the NPP Operating Committee determines should be rendered by NPPA to facilitate the conduct of such proceedings.
- (C) If the NPP Operating Committee resolves that proceedings be commenced by NPPA against the Defendant Participant, or if, in the opinion of the NPP Operating Committee it is desirable for NPPA to render administrative assistance to facilitate the conduct of proceedings by any NPP Participant, Connected Institution or Overlay Service Provider which was a party to these Regulations and the NPP Procedures at the date of issue of the relevant Dispute Resolution Certificate (other than the Defendant Participant), then every NPP Participant, Connected Institution and Overlay Service Provider irrevocably authorises NPPA to commence such proceedings or render such administrative assistance.

6.3. Dispute Resolution (2/3)



Disputes in the NPP ecosystem can be resolved by the NPP Operating Committee, Board or can be directly referred to arbitration

Resolution of Disputes

NPP Operating Committee

- (A) All Disputes must be referred in writing to a meeting of the NPP Operating Committee for determination by the NPP Operating Committee. A determination of the NPP Operating Committee in relation to a Dispute must be evidenced by a Dispute Resolution Certificate and a determination so evidenced will be binding upon all parties to the Dispute, including, without limitation, any NPP Participant, Connected Institution or Overlay Service Provider which, subsequently to the occurrence of the events giving rise to the Dispute, resigns as an NPP Participant, Connected Institution or Overlay Service Provider
- (B) No proceedings, other than proceedings for urgent interlocutory injunction or similar interim relief, may be commenced in any court of law or equity or otherwise in relation to any Dispute unless:
 - i. the Dispute has first or already been referred to the NPP Operating Committee
 - ii. the Dispute has been determined by the NPP Operating Committee
 - iii. the determination has been evidenced by a Dispute Resolution Certificate
- (C) Subject to the Constitution and the Shareholders Agreement, nothing in this Part 12 affects the right of NPPA, or of any NPP Participant, Connected Institution or Overlay Service Provider to submit to mediation or arbitration, or to commence proceedings in relation to, any dispute, matter or issue which does not fall within the definition of a Dispute
- (D) If the parties to a Dispute settle or wish to withdraw the Dispute prior to determination of it by the NPP Operating Committee, they may withdraw the Dispute from the NPP Operating Committee by each giving written notice of withdrawal to NPPA

Reference to the Board or to Arbitration

- (A) Prior to the NPP Operating Committee taking any preliminary or other action in relation to a Dispute, an NPP Participant, Connected Institution or Overlay Service Provider party to that Dispute may refer that Dispute either directly to the Board for determination by the Board or directly to arbitration (in accordance with regulation mentioned in point D), in which case the Dispute will not be referred to the NPP Operating Committee for its determination
- (B) Within 3 months of the date of a Dispute Resolution Certificate, an NPP Participant, Connected Institution or Overlay Service Provider party to the relevant Dispute may refer that Dispute to:
 - i. the Board by way of a written request for a merits review of the determination of the NPP Operating Committee (which determination is evidenced by that Dispute Resolution Certificate) for further determination by the Board; or
 - ii. arbitration (in accordance with regulation mention in point D)
- (C) A determination of the Board in relation to a Dispute referred to it under must be evidenced by a resolution of the Board and a Certificate and a determination so evidenced will be binding upon all parties to the Dispute
- (D) An NPP Participant, Connected Institution or Overlay Service Provider who is party to a Dispute may refer the Dispute to arbitration in accordance with the Australian Centre for International Commercial Arbitration ("ACICA") arbitration rules ("ACICA Arbitration Rules")

6.3. Dispute Resolution (3/3)



The resolution of disputes includes certain costs and expenses. Below are the details of the same

Dispute Resolution Fee and Cost

(A) Rules:

- Each NPP Participant, Connected Institution or Overlay Service Provider party to a Dispute which is referred to the NPP Operating Committee or to the Board must:
 - i. pay to NPPA, within 10 Business Days of the date on which the Dispute is first referred to the NPP Operating Committee, a dispute resolution fee which, subject to review and variation by NPPA will be AUD 5,000;
 - ii. pay to NPPA, within 10 Business Days of determination of the Dispute by the NPP Operating Committee, and (in such proportions as the NPP Operating Committee shall determine are reasonable and appropriate in all the circumstances) all costs and expenses incurred by the NPPA in relation to that referral (including, without limitation, all costs and expenses (on a solicitor and own client basis) incurred in obtaining legal, financial, actuarial, accountancy or other technical advice and administrative costs reasonably incurred by NPPA).
- The NPP Operating Committee may determine that all costs and expenses referred above are to be paid by any one party to the relevant Dispute
- If a Dispute is withdrawn from the NPP Operating Committee, and the parties concerned have agreed, as to the apportionment among them of costs and expenses, then the parties involved must notify NPPA in writing, within 5 Business Days of the date on which all notices of withdrawal of the Dispute have been received by NPPA of the agreed apportionment of those costs and expenses and the NPPA will render invoices in accordance with the notified agreed apportionment payable within 10 Business Days of the Withdrawal Date. If an agreement as to the apportionment of costs and expenses has not been reached between the parties, NPPA may render to those parties' invoices for recovery of those costs and expenses requiring each party to pay to NPPA within 10 Business Days of the Withdrawal Date an equal portion of those costs and expenses.
- NPPA must keep confidential to itself, and its employees and advisers all information provided to it with respect to settlement of a Dispute, excluding the fact that a settlement has been agreed

(B) Types of costs:

- i. costs including costs as between solicitor and own client and disbursements incurred by the NPPA in relation to any proceedings commenced and prosecuted;
- ii. administrative costs reasonably incurred by NPPA in relation to any such proceedings;
- iii. costs (including disbursements) and damages which may be awarded against NPPA in relation to any such proceedings (or be payable by NPPA as the result of any settlement of any such proceedings);
- iv. liabilities and losses arising from any such proceedings which are suffered or incurred by NPPA

(C) Reimbursement of Expenses:

If any proceedings are commenced by any one or more NPP Participants, Connected Institutions or Overlay Service Providers, and NPPA renders administrative to facilitate the conduct of those proceedings, then any award of damages or costs in favour of that or those parties must first be applied to reimburse NPPA for all costs incurred by it in rendering such administrative assistance.