New Payments Platform Roadmap 2019

Enhancing the platform's capabilities

28 October 2019

Vision

The leading open payments platform in Australia

Provides customers with a modern, digital way of making efficient payments that is always available, 24x7

Has ubiquitous reach with every transaction bank account in Australia able to make and receive NPP payments

Enables data-rich payments which supports processing and efficiency improvements across the economy, from small businesses through to government

Delivers capability that enables innovation, is reusable and extendable across all payment types from P2P payments through to B2B

Supports the ability for third parties to be able to initiate payments in a standardised, consistent and secure way

Supports different payment types (including both credit and debit-like messaging) to maximise volume and utility of platform

New Payments Platform

Provides fair and open access to the platform to ensure wide and diverse participation in the NPP
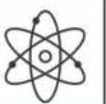
Introduction

The New Payments Platform (**NPP**) is designed to support a 24/7 modern, digital economy. It provides a fast, flexible and data-rich payments system that enables Australian consumers, businesses and government agencies to make real-time data rich payments between accounts at participating Australian financial institutions.

In contrast to payments between bank accounts using the Direct Entry system (which are settled in batches, several times during the day or the next business day), payments made by the NPP move value in real-time between bank accounts, are available 24/7/365 and can carry more data.

Operating as utility payments infrastructure, the NPP was commissioned and funded by NPP Australia Limited's (**NPPA**) founding shareholders[1] for and on behalf of the Australian payments industry. NPPA is a public company established to oversee the development and operation of the NPP.

The NPP brings enormous potential for future payments innovation through its speed, data capability, open-access design and unique layered architecture. The platform can support multiple products and services as well as enable digital processes, which can deliver back-office efficiencies and cost savings to Australian businesses and government agencies.

The NPP has extensive capabilities, in particular:

Speed	Always on	Data enriched	Simpler addressing
Real-time movement of funds and real-time line-by-line settlement in central bank money, which reduces systemic risk and optimises liquidity management	Always available, processing payments 24 hours a day, seven days a week, 365 days a year with no cut off times	Extensive data capabilities with the ability to carry additional data end-to-end together with the payment using the ISO 20022 message structure. The initial service launched on the NPP, Osko, is capable of carrying up to 280 characters of unstructured remittance information	Simple addressing with the PayID Addressing Service which enables payments to be directed to an account using an easy to remember alias (a PayID) which has been linked to an underlying bank account. The platform also continues to support payments using BSB and account numbers

NPPA is committed to ongoing investment to extend and enhance the capability of the platform to meet the needs of participating financial institutions, payment providers and users of the wider payments ecosystem. In particular we are focused on building capability that can support different payment types and a broad range of use cases.

This document provides an update on what has been achieved since the NPP launch and outlines NPPA's plans for future capability development on the platform.
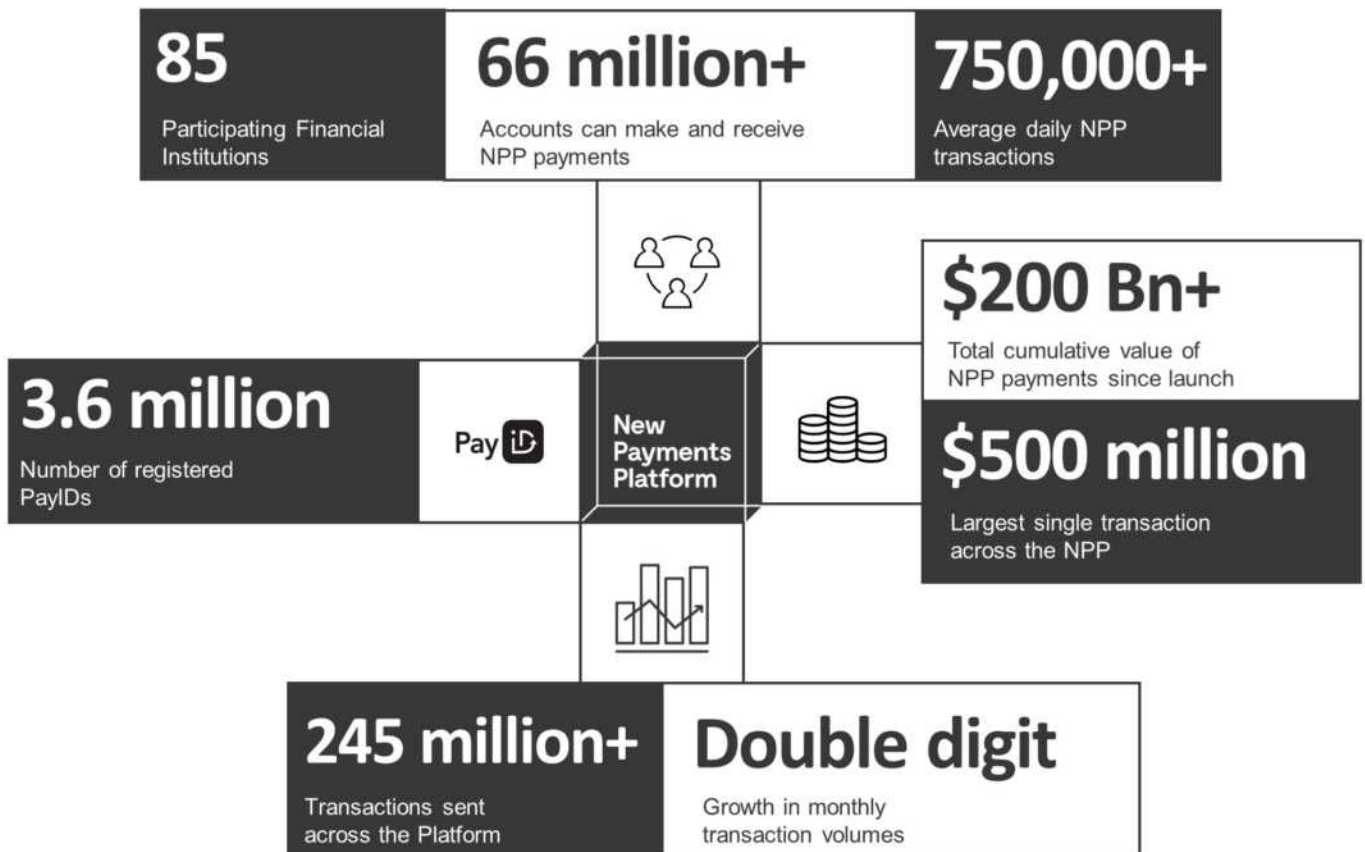
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[1] Current shareholders: Australia and New Zealand Banking Corporation, Australian Settlements Limited, Bendigo and Adelaide Bank Limited, Citigroup Pty Ltd, Commonwealth Bank of Australia, Cuscal Limited, HSBC Bank Australia Limited, Indue Limited, ING Australia, Macquarie Bank Limited, National Australia Bank Limited, Reserve Bank of Australia and Westpac Banking Corporation.

Progress since launch

The NPP became available to the public in February 2018. Since then, approximately 85 banks, credit unions, building societies and fintechs[2] have connected to the NPP (either directly or indirectly) to provide fast payment services to their customers. More than 66 million accountholders can now make and receive payments via the NPP (estimated at about 90 per cent of all accounts that will eventually be reachable) and this number continues to grow as existing financial institutions rollout capability to their customers and new institutions come on board.

NPP Fast Facts

85 Participating Financial Institutions	**66 million+** Accounts can make and receive NPP payments	**750,000+** Average daily NPP transactions
3.6 million Number of registered PayIDs	New Payments Platform	**$200 Bn+** Total cumulative value of NPP payments since launch · **$500 million** Largest single transaction across the NPP
	245 million+ Transactions sent across the Platform	**Double digit** Growth in monthly transaction volumes

As of 21 October 2019

The NPP includes an addressing service called 'PayID', which allows users the choice to address payments to a registered phone number, ABN or email address (instead of their BSB and account number). PayID also provides the benefit of confirming that the person being paid is indeed the person who the payment is intended for, and PayIDs can also be moved between bank accounts at different financial institutions.

Approximately 3.6 million PayIDs have been registered by customers wanting to receive faster payments to their bank account via their PayID, with this number growing at an average of 100,000 per month.

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[2] See https://www.nppa.com.au/find-an-institution/ for more information on who is participating in the NPP

Fast payment services are now widely available to Australian retail customers and the number of businesses and corporates using the platform is growing. Today, approximately one in three transactions involve either a payment to or from a business. As participating financial institutions and third-party payment providers rollout NPP services, businesses are benefiting from real-time payments from their customers, real-time payment validation and automated reconciliation.

The platform is also increasingly being used by government agencies. In particular, the NPP can be used to give instant financial assistance to people in difficult circumstances. For example, Centrelink used the NPP to distribute instant emergency assistance, including Disaster Recovery payments following recent floods and bushfires.

The number and value of transactions going through the NPP have grown steadily since launch. As at the middle of October, the platform is now processing an average of approximately 750,000 payments worth an average of $750 million each day (see graph below). The platform recently processed more than $1 billion in transactions in a single day and the largest single transaction settled on the platform so far is $500 million.
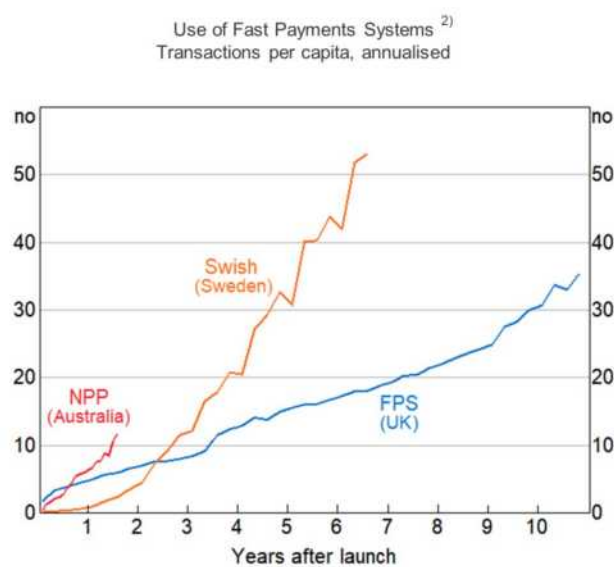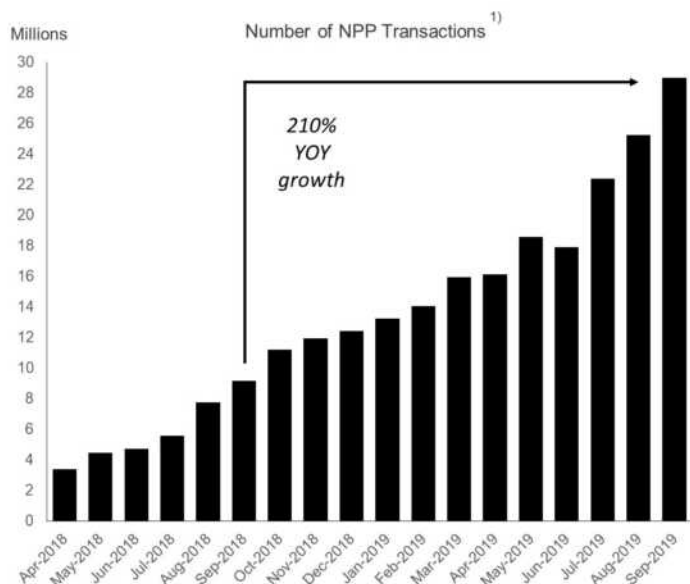
Source: RBA statistics; NPPA analysis

Notes: 1) Data sourced from C06-1 hist schedule; estimated for September 2019 based on NPP data; 2) Payment Systems Board report September 2019

According to Reserve Bank of Australia analysis (see right hand graph above), the adoption of the NPP is proceeding at least as quickly, if not faster, than the take up of real time payments in other overseas markets. Most participating financial institutions are actively migrating some of their direct credit payments to the NPP - primarily 'pay anyone' payments - and this is expected to continue with other Direct Entry payments moving to the NPP over time.

In 2014 BPAY Group was appointed via a tender process to be the provider of the first NPP Overlay Service (the 'Initial Convenience Service' or ICS, subsequently branded as 'Osko').

BPAY Group's vision for Osko is to provide compelling new use cases that enable efficiencies, innovation and growth opportunities in the payments system and true benefits to customers. The first capabilities of the ICS, Osko Payments went live with the NPP in February 2018. Osko uses the NPP to provide a fast, simple and data rich payments service available 24/7.

Osko Payments has seen rapid growth. As at the end of September 2019:

- 67 Financial Institutions have rolled out Osko to their customers
- In September 2019, close to 30 million Osko Payments were made with a value of over $28 billion
- 35% of the population aged 18 and over are aware of Osko and 17% actively use it
- Volume is growing rapidly with September volumes seeing a 31% increase on the previous month

Using the capabilities of the NPP

Given the underlying native capabilities of the NPP in terms of real-time movement of funds, broad account reach, extended availability, simpler addressing with PayID and enhanced data, the NPP is capable of meeting a range of organisations' business objectives and use cases.

We are starting to see a number of organisations using the platform's capabilities to make and receive NPP payments, ranging from new neobanks, payment service providers, cross-border remittance companies and cryptocurrency exchanges, fintechs, corporates and government agencies.

Some examples of how organisations are using the NPP are illustrated on the following page[3]:

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[3] See www.nppa.com.au/category/case-studies/ for a number of case studies on the platform

ASSEMBLY

- Assembly Payments is a payment solution provider offering businesses with a range of payment options
- Assembly was the first non-bank payments platform provider to offer instant money transfers via the NPP to its customers

azupay

- Azupay is a consumer-to-business payment service which uses the NPP's speed and PayID to deliver real-time validation and processing for online payments, enabling businesses to get paid by their customers in real-time

BLOCK 8

- Block8 is a blockchain technology company using the NPP to combine fast payments with blockchain to create new products and services, such as myStake, an equity management, compliance and share register platform

earnd

- Earnd is a fintech using the NPP to facilitate payments aimed at enabling 'financial wellness' with employees able to access their income as they earn it in real-time

monoova
make money move

- As the latest non-bank to join the NPP, Monoova offers businesses real-time account payables and receivables functionality via a single API integration to its enterprise-level payments solution

Business Services vs Overlay Services

Based on NPPA's experience, the vast majority of organisations want to use the NPP in a manner similar to the way they access existing payment systems today via their financial institution. This requires a commercial relationship with only one participating financial institution as payment messages sent via one financial institution can reach all of the available accounts on the NPP.
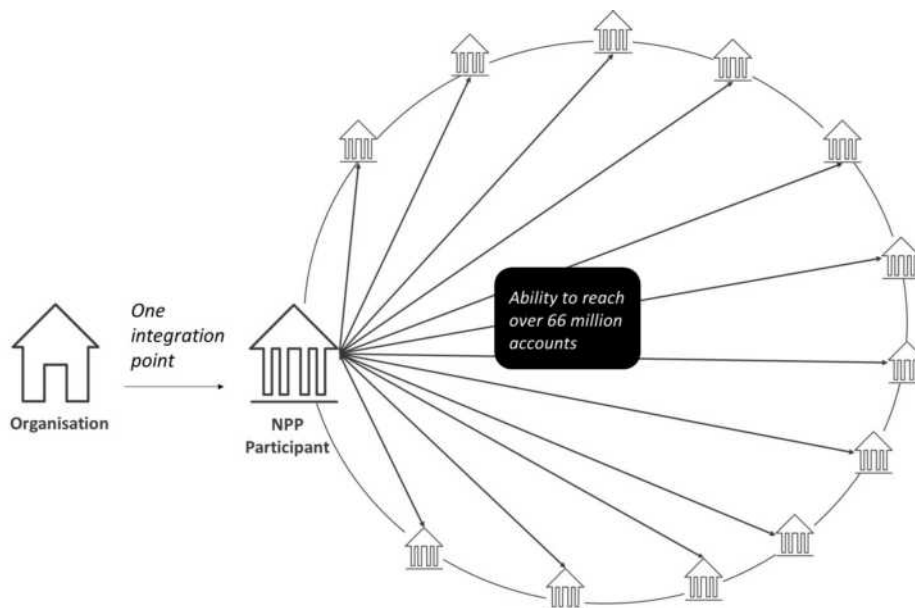
While some organisations may choose to connect to the platform directly or want to develop their own 'overlay service' on the platform, the vast majority of organisations find that using the native capability of the platform meets their business needs, enabling them to develop core offerings and deliver services to their customers outside the platform.

NPPA is focused on developing native capability that can support a range of use cases, which can be used by participating financial institutions and third parties to realise different commercialisation opportunities. By developing native platform capability that is governed by a common rules framework, administered by NPPA, it is akin to providing 'building blocks' that others can put together in different ways to deliver payment products and services outside the platform. NPPA does this by establishing different 'business services' that have different uses. For example, the recently established International Funds Transfer Instructions ('IFTI') Service defines technical and operational requirements for the transmission of the domestic leg of an inbound cross-border payment across the NPP. This business service can either be used in its native form by participating financial institutions and third parties, or it can be further built upon and commercialised by an organisation wanting to develop an Overlay Service on top.

By developing business services and defining standards and rules by which payment messages are exchanged and processed across the NPP between participating financial institutions (i.e. from NPP payment gateway to NPP payment gateway), NPPA is focused on ensuring consistency and standardisation across the network.

NPP Roadmap: future native capability development on the NPP

As the operator of the infrastructure, NPPA is committed to ongoing investment to extend and enhance the capability of the platform to meet the needs of participating financial institutions, payment providers and users of the wider payments ecosystem. The platform can support a wide range of payments types, from retail P2P payments through to more complex B2B payments.

NPPA is focused on developing broad native capability, governed by an appropriate rules framework, which is flexible and extendable enough to support a wide range of use cases. Our focus is on ensuring consistency and standardisation in how payments pass across the platform, and on delivering the minimum network effect required for different organisations to pursue their respective commercialisation objectives.

NPPA's planned capability roadmap between now and the end of 2022 (as shown in the Attachment on page 17) has a number of components, primarily:

1. Development of NPP message standards to utilise the structured data capabilities of the NPP
2. Development of a 'Mandated Payments Service' to support recurring and 'debit-like' payments on the NPP
3. Implementation of payment initiation capability across the platform ('Basic Payment Initiation Service')
4. Implementation of services to support the domestic leg of an inbound cross-border payment
5. Supporting the use of QR codes on the NPP
6. Extension of the NPP API framework and an upgrade of the API sandbox

Collectively the development and delivery of the capabilities in the NPP roadmap will significantly enhance the platform's functionality and drive further use of the platform by third parties.

	1. NPP Message standards

The NPP uses the ISO 20022 messaging format, the leading international standard for electronic data interchange between financial institutions or organisations that move money and data. The ISO 20022 message format can carry much richer information than the 18 characters currently available for Direct Entry payments. With more than 1400 data fields in the ISO clearing message, additional data can be carried end-to-end together with the payment or via a reference to externally hosted documents. ISO 20022 provides a clear standardisation for organising data, so the specific data requirements of different payment types can be easily accommodated within the one standard message format. Increasingly, markets around the world are adopting the ISO 20022 message standard for payments and financial transactions.

The structured data capabilities of the ISO 20022 message schema ensure that a common data lexicon or 'dictionary' can be established for particular payment types. This means that data for these payment types is sent in a consistent manner by all participants involved in the processing of a payment. Ingesting these common and consistent data elements into existing business processes and systems will support automation and straight-through processing. This reduces error rates and exceptions, thereby reducing the amount of manual reconciliation effort required, which results in overall efficiency improvements for the industry as a whole.

NPPA has developed NPP message usage guidelines for payroll, tax, superannuation and e-invoicing payments on the NPP. These message guidelines define the use of category purpose codes to identify these payment types and specific data elements that should be included in the payment message, effectively standardising how these payments will pass across the platform. This ensures a consistent approach to the treatment of data for these specific payment types and the

consistent transmission of data from Payer through to Payee, making it easier for third parties to utilise the platform for these payment types[4].

Payroll example:
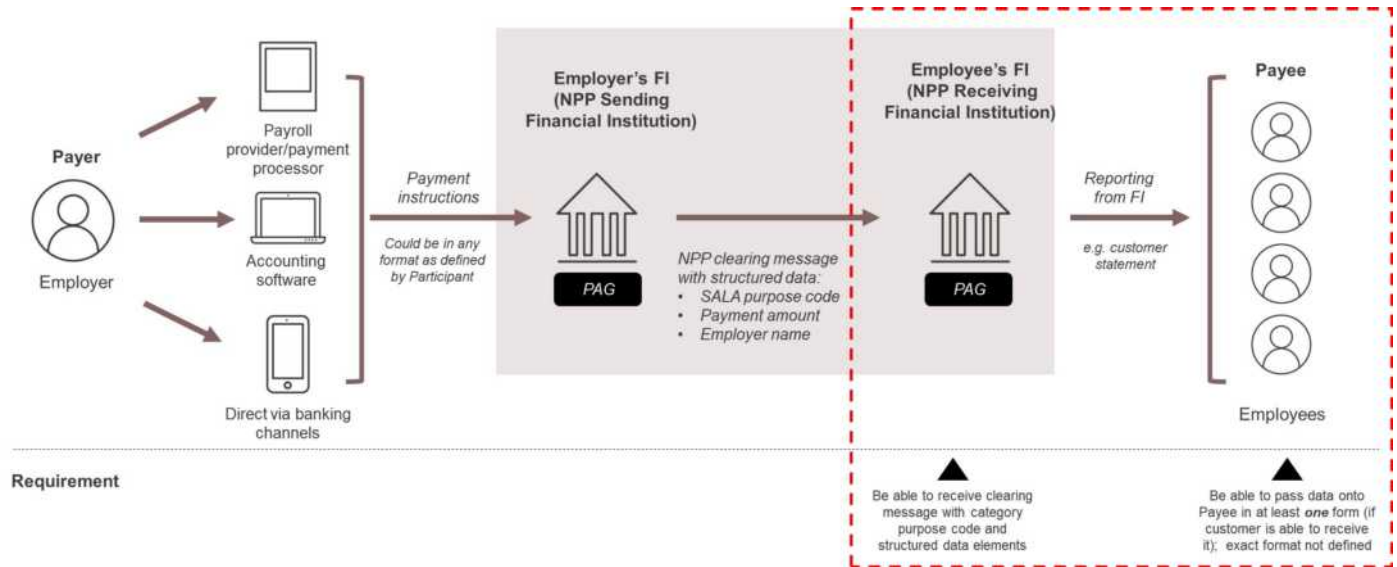
This activity will support the growth of business use and commercial payment volumes on the platform. Market participants, such as payroll providers, cloud accounting software providers and superannuation gateways, can incorporate the specified NPP message standards into their product and service offerings to send payroll, tax, superannuation and e-invoicing payments via the NPP.

Using the structured data capabilities of the NPP payment message will deliver a number of benefits:

Business automation

Straight-through processing such as automating acceptance and payment of securities entitlements or electronic invoicing.

Improved reconciliation:

Automatically match a payment's origin and its purpose.

Enriched reporting:

Align to reporting standards and regulations, such as the Australian Taxation Office's SuperStream2 reporting standard or Single Touch Payroll.

Financial crime prevention:

Including data such as Legal Entity Identifier in the payment message helps financial crime prevention

Implementation (mandatory):
NPP participating financial institutions will be obliged to **receive** NPP messages with additional defined data elements for payroll, tax, superannuation and e-invoicing payments by December 2020. Financial institutions can choose whether or not to support sending these payment message types according to the needs of their customer base and their individual commercial offerings.

NPPA is also seeking to have the NPP message usage guidelines for NPP superannuation payments approved by the ATO, thereby incorporating the NPP as an approved payment method within the SuperStream Data and Payment Standards. NPPA will consider developing additional message standards for other payment types in the future according to market demand.

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[4] For more information, see https://www.nppa.com.au/the-platform/iso-20022-message-usage/

By the end of 2022, NPPA intends to upgrade the version of ISO 20022 used by the NPP and participating financial institutions from the 2015 version of ISO 20022 (currently being used) to the 2020 version. This will be a mandatory change for all participating financial institutions.

	2. Mandated Payments Service

The NPP currently supports credit transfer payments or "push" payments, where a customer authorises payments to be taken out of their account at the time of making a payment. The functionality that NPPA is asked most often about is the ability to initiate payments from a customer's account, either by a third party requesting payment or a third party authorised by a customer to initiate payments from that customer's account.

NPPA is developing capability to enable third party payment initiation on the NPP, governed by a rules framework that provides for the processing of the payment initiation messages as well as a robust and comprehensive liability model.

Central to this proposition is the account holder's authorisation (or consent) for payments to be initiated on their account with the creation of a digital payment arrangement or a 'mandate' in advance of the payments being made. This functionality increases the visibility and control that account holders have over these various payment arrangements, which will resolve some of the most frequent pain points with these kinds of payments today.

This core foundational capability will enable a range of use cases in the future, such as recurring or subscription type payments, ecommerce and 'on behalf of' services such as a corporate using a cloud accounting software provider to do their payroll run. Having a standardised and consistent approach to this payment initiation capability will maximise the utility of the capability and provide a broad, scalable approach to third party payment initiation.
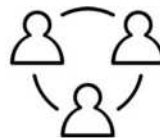
Potential use cases:

'Direct Debit' alternative:
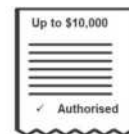
Scheduled payments with customer pre-authorisation

Request for payments

Customer authorised payments requested by the creditor, e.g. ecommerce and in-app payments

'On-behalf-of' payment initiation:

Customer pre-authorised push payments such as payroll payments

Parameter based payments:

Pre-authorised payments within pre-set parameters created by the customer, e.g. rights issues

Implementation (mandatory):
NPP participating financial institutions will be obliged to receive and process payment initiation messages and support account holder authorisation for these NPP payments.

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. It is anticipated that financial institutions will begin to rollout services utilising this capability in early 2022.

⊕	**3. Basic Payment Initiation Service**

As a precursor to the Mandated Payments Service, NPPA will work with interested financial institutions to implement a basic payment initiation service in 2020.

While a number of NPP participating financial institutions support payment initiation messages outside the platform (ie. customers of a financial institution can send instructions directly to their financial institution for payments to be made from their account), the NPP basic payment initiation service will enable instructions for a payment to be initiated and carried across the platform via one access point to the financial institution where the customer holds their account. This service could be used to support certain use cases, such as a corporate making payroll payments to their employees via their payroll or accounting software provider, as illustrated below:
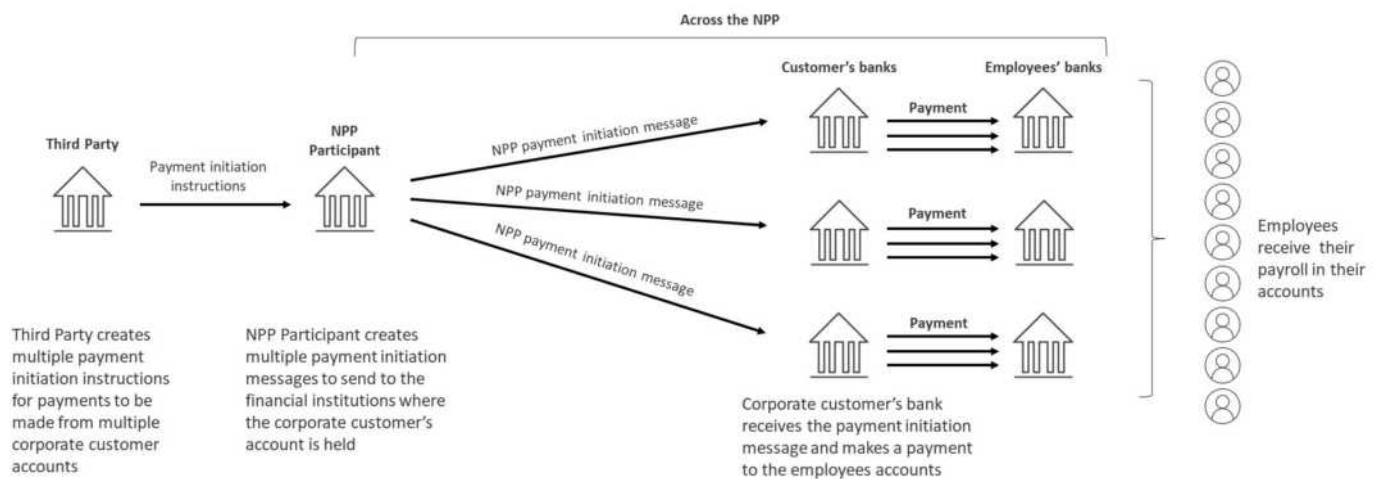
Prior to the implementation of the Mandated Payment Service, the basic payment initiation service will be somewhat more bespoke requiring proprietary arrangements to address associated risk and liability issues (as occurs today with certain payment arrangements such as TNA's[5]). However, the implementation of the basic payment initiation service will allow early adopters to begin offering such services on the NPP.

Implementation (optional):
NPP participating financial institutions can choose to opt into the payment initiation service which will be available in production from October 2020.

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[5] A Transaction Negotiation Authority (TNA) is an agreement between an account holder/their bank in favour of a third party, such as a payroll vendor, allowing that party to effectively make transactions on the account holder's behalf up to the authority limit.

	4. Services to support the domestic leg of an inbound cross-border 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[6] Instant Overlay Service, which utilises the NPP IFTI business service and incorporates additional rules around posting standards and use of the gpi tracker.

Implementation (optional):
NPP participating financial institutions can choose to opt into the IFTI service and SWIFT gpi instant service, which will be available in production from October 2019.

	5. QR codes on the NPP

In May 2019, NPPA published a QR code standard for the use of QR codes on the NPP. Based on the EMVco standard, this framework defines the mandatory elements required for the creation of NPP QR codes and can be used for both static and dynamic QR codes for various use cases such as bill payment, invoices, e-commerce and at POS. As an optional standard, it will be up to individual organisations to choose to adopt the NPP QR code standard, but making the standard available ensures consistency in how QR codes are developed for use on the NPP.

Implementation (optional):
The NPP QR Code standard is available now. NPPA will work with any interested organisations seeking to use QR codes on the NPP and will refine and enhance the QR standards over time as required.

	6. NPP API Framework and sandbox

APIs play an important role in supporting third parties to use the NPP's capabilities. In 2018, NPPA released version 1.0 of its API Framework which defines the key technical approach and mandatory data attributes for NPP APIs, aligned to ISO 20022 standards, including a number of sample APIs[7]. This API framework drives inter-operability, standardisation, and consistency in how organisations can use APIs to access the NPP. The initial version of the API framework focused on standardised third-party payment initiation messages and PayID resolution requests, and was further extended in May 2019 to include payment notifications and return requests.

NPPA is currently working on version 3.0 of the framework which will include APIs aligned to the NPP message standards work and use of category purpose codes, and will also include a Batch Payment Initiation API. NPPA will continue to extend the API framework to add additional payment types and features, aiming to publish an updated version of the framework every year.

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[6] See https://www.swift.com/our-solutions/swift-gpi
[7] See https://www.nppa.com.au/the-platform/api-framework-and-sandbox/

It is important to note that NPPA itself is not publishing APIs for use on the NPP. APIs are made available to third parties at the option of NPP participating financial institutions.

In collaboration with SWIFT, NPPA launched a testing sandbox environment in December 2018 that allows fintechs and other third parties to test the benefits and capabilities of the NPP using demonstration versions of APIs defined by the NPP API Framework[8]. This API sandbox, which currently has 90 registered users, is hosted in the cloud and protected by state-of-the-art security. The intention of the sandbox is to foster innovation and open up the NPP ecosystem to third parties. NPPA is currently working with SWIFT to upgrade the sandbox to a dynamic version, which will deliver greater utility to users.

Together these two capabilities further open the door to the NPP's infrastructure allowing organisations and developers to learn and test the platform's capabilities in a way that promotes standardisation, inter-operability and a consistent experience. As NPP participating organisations continue to extend their NPP enabled services to their corporate customers and develop APIs consistent with this framework, we expect to see more and more fintechs, corporates and businesses using the NPP.

Implementation (optional):
NPPA is intending to publish version 3.0 of the NPP API framework in November 2019 and to launch the dynamic version of the sandbox shortly afterwards. APIs for use on the NPP are currently available from some NPP participating financial institutions and are being developed by others in line with the NPPA API framework (which is optional for participating financial institutions).

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[8] https://nppa.com.au/wp-content/uploads/2018/12/SWIFT-and-NPP-launch-sandbox-for-testing-APIs-Media-Release.pdf

Capability development by individual participating financial institutions

In addition to capability being centrally developed by NPPA, individual participating financial institutions are also developing capability to support NPP payments, in a number of areas, according to their respective business objectives and implementation timing.

- *Bulk payments* – a 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.

- *APIs* – as mentioned earlier, APIs for the use on the NPP are made available by participating financial institutions. APIs for use on the NPP are currently available from some NPP participating financial institutions and are being developed by others.

- *Transaction value limits* – while the platform has no technical transaction value limit, participating financial institutions have limits according to customer segments and channels which are largely determined by their respective risk policies and appetites. Changes to these transaction value limits are at the discretion of individual financial institutions.

- *QR codes* – it is up to individual financial institutions to enable their customers to be able to scan a QR code within their mobile banking applications (as distinct from native smartphone QR scanning capability). Implementation of this capability will be at the discretion of individual financial institutions.

Additionally, participating financial institutions either have available, or will make available, additional capability and proprietary product and service offerings that utilise the NPP's capabilities according to their respective business priorities and timings. Given the distributed nature of the NPP architecture, the availability of capability is driven by what the individual end points have deployed.

Future plans for Osko and completing the Initial Convenience Service

BPAY Group continues to enhance Osko Payments. Work is currently focusing on Osko versions of NPPA's standards for QR Codes and APIs, supporting enhanced data for businesses, and alignment with NPPA's payments standards for payroll, superannuation and similar.

BPAY Group is ready to complete the rollout of the remaining Osko capabilities, which deliver significant value for Osko enabled Financial Institutions and their customers. The enabling technology is complete, including product standards, technical specifications, certification platform and certificate authority.

The roadmap for completion 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

Current plans are to commence implementation of Release 1 in late 2019. However, committed funding and priority within NPP Participants remains challenging, particularly in the context of other significant payments initiatives on the NPP and elsewhere.

BPAY Group continues to work with NPPA and NPP participants to align on an appropriately prioritised and funded plan, including the potential to fast-track implementation with a subset of Participants and high-volume users such as government agencies.

BPAY Group remains committed to ensuring that the promise of the Initial Convenience Service is met.

For more information, please contact marketing@bpay.com.au.

NPP Roadmap

	2019		2020				2021				2022			
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
NPP Message Standards						Implementation of NPP message usage standards for superannuation, payroll, tax and e-invoicing	Participant Mandatory requirement							ISO Message Version (2020 Version) **Mandatory Participant ISO Change**
Mandated Payments Service										Mandated Payments Service — Participant implementation **Participant Mandatory Service**				
Basic Payment Initiation					Basic Payment Initiation Service	Participant Optional Service								
IFTI Services	SCT IFTI Service / FAST GPI IFTI Service		Participant Optional Service											
QR Codes	◆ Version 1.0 Published May 2019													
NPP API Framework	Category Purpose Payments / Bulk/Batch Payments ◆ API Version 3.0		Basic Payment Initiation ◆ API Version 4.0					Mandated Payments Service ◆ API Version 5.0				ISO Message Version Change ◆ API Version 6.0		
Osko Services	QR code standards **Published December 2019**		P2B data standards compliance **October 2020**											

Legend:
- ■ Participant Mandatory
- □ Participant Optional

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Payme
inno

For further information, please visit www.nppa.com.au or email info@nppa.com.

28 October 2019

NPP AUSTRALIA LIMITED
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