

Two Years of Fast Payments in Australia

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Abstract

It has been two years since the public launch of the New Payments Platform (NPP) and the Fast Settlement Service (FSS). Together, the NPP and FSS now enable customers of more than 90 financial institutions to make fast payments 24 hours a day, every day of the week ('24/7'). Customers can send detailed information with a payment and nominate the payment recipient in a simple way. While the rollout of the NPP has been gradual, usage grew rapidly over the second half of 2019 and compares favourably with other successful fast payment systems introduced overseas. With a range of new functionality under development, the NPP and FSS are well placed to deliver innovative new payment services to support the Australian economy into the future.

Introduction

The NPP is a new payment system infrastructure designed primarily for retail payments, which was developed and is owned by NPP Australia Limited (NPPA).^[1] It allows consumers, businesses and Australian government agencies to make fast, data-rich payments 24 hours a day, every day of the year. NPP payments made between customers of different financial institutions are settled finally and irrevocably in real time in central bank funds through the FSS, a settlement system built by the Reserve Bank of Australia (RBA). This allows institutions to make funds available in recipients'

accounts immediately without settlement or credit risk, whereas funds for other types of retail payments such as cheques, cards and the direct entry (DE) system (which includes direct debits and some 'pay anyone' transactions) may take hours or days to be made available. Between its public launch on 13 February 2018 and the end of January 2020, the NPP processed around 384 million payments, totalling \$344 billion.

This article reviews the use of the NPP and FSS during the first two years of fast payments in Australia. It complements an earlier article explaining the payment process and infrastructure

behind the NPP and FSS (see Rush and Louw (2018)). The article examines the growth of the NPP, the types of payments being made and the payment patterns that have evolved. It also looks at the impact of the NPP and FSS on the operations of the payments industry, including how they have affected settlement liquidity and resiliency, and discusses the roadmap for future developments.

How is the NPP being used?

The NPP is designed to allow different payment services to use and build upon the basic platform infrastructure. Osko, the first payment 'overlay' to come into service, allows customers of participating financial institutions to make immediate payments from their accounts to customers of other participating institutions.^[2] The Osko service specifies that funds should be transferred from the payer to the receiver in under one minute on a 24/7 basis, along with a payment description of up to 280 characters. Participating financial institutions typically enable customers to make Osko payments through their online banking portal or mobile phone banking application – in a similar way to traditional 'pay anyone' payments. Many financial institutions are re-routing traditional 'pay anyone' payments addressed to a BSB and account number through the NPP, so that these payments are now also processed individually in real time.^[3] Many customers may not be aware that many or all of the 'pay anyone' payments they are making are now being processed by the NPP through the Osko service.

While most NPP payments are Osko payments (Graph 1), some financial institutions are also sending 'single credit transfers' through the NPP Basic Infrastructure. Single credit transfers are NPP messages that utilise the NPP Basic Infrastructure's ability to make a payment with real-time settlement between financial institutions; however, unlike a payment made through an overlay service, they do not include rules around how long it should take to make funds available in customers' accounts, specifications around the content of accompanying information or other arrangements such as information flows between financial institutions.

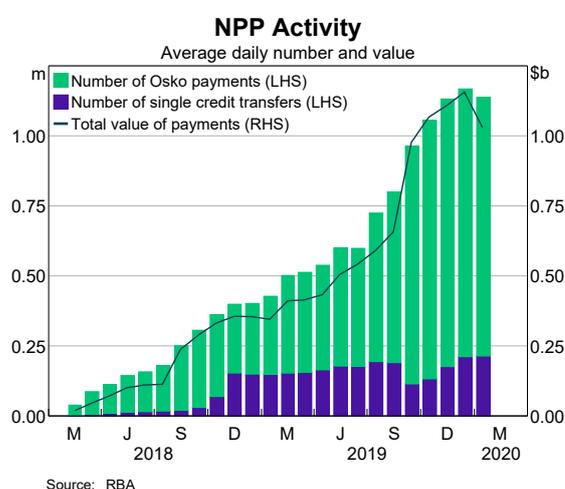
How has use of the NPP grown?

Uptake of the NPP has been gradual as financial institutions have rolled out NPP payment functionality to different customer segments and channels. For example, some institutions prioritised the everyday transaction accounts of their retail customers before providing NPP services to business and corporate customer accounts. There were also delays by some financial institutions, including some major banks, in delivering core NPP functionality to customers. As the major banks completed their initial rollout activities, growth in NPP activity accelerated during the second half of 2019 and by the end of January 2020, the NPP was processing a daily average of more than 1.1 million payments worth \$1 billion.

The NPP has performed well compared with overseas fast payment systems

Despite the slower-than-expected rollout to some customers, a comparison of per capita use of fast payment systems suggests that the adoption of the NPP in Australia is at least in line with other successful implementations (Graph 2). Two years after launch, monthly NPP volumes have grown to a rate that is equivalent to around 17 payments per capita per year, which is above that of the MobilePay (Denmark), Swish (Sweden) and FPS (UK) systems after a similar time frame.

Graph 1



There is good coverage of participating financial institutions

At the time of the NPP's launch, fast payments were made available to customers of around 50 participating financial institutions. As at the end of January 2020, that number had grown to 91, comprising 12 'NPP participants' that clear and settle their transactions and 79 'identified institutions' that use one of the directly connected NPP participants to clear and settle payments on their behalf (see NPPA 2019a). The current NPP participants include the RBA, large and mid-sized banks as well as three directly connected authorised deposit-taking institution (ADI) payment service providers. The identified institutions are largely composed of smaller ADIs (banks, credit unions and building societies) and a few financial technology firms ('fintechs').

The three payment service providers specialise in clearing and settling payments on behalf of other institutions. Five other NPP participants, including some major banks, clear and settle a small proportion of their total payments on behalf of their brands and subsidiaries, or other financial institutions. In January 2020, around 20 per cent of the number (and 14 per cent by value) of payments settled in the FSS were made on behalf of identified institutions.

The NPP reaches a significant portion of Australian customer accounts

Over the past two years, financial institutions (including both NPP participants and identified institutions) have made over 66 million customer accounts reachable by the NPP. This represents a significant portion of Australian customer accounts – equivalent to around 78 per cent of the accounts reachable by the 'pay anyone' DE system. It is expected that further accounts will be made reachable by financial institutions currently offering the service and as additional institutions launch fast payments to their customers.

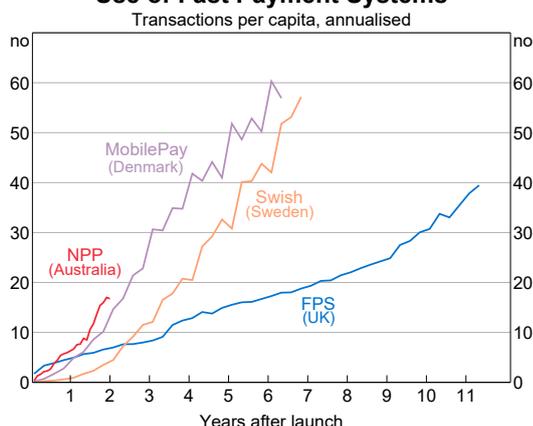
A key innovation provided by the NPP is the ability to address payments using a PayID, in addition to being able to use traditional bank account details (BSB and account number). Financial institutions allow their customers different choices of what can be used for a PayID, including their email address, phone number or ABN. At the end of January, consumers and businesses had registered more than 4.1 million PayIDs through their financial institutions (Graph 3).

Where have NPP payments come from?

The growth of NPP reflects a shift in payment patterns as consumers, businesses and ADIs take advantage of the new technology. Since the introduction of the NPP in 2018, DE credit transfer payments have slowed noticeably from the long-term growth trend and have now begun to decline (Graph 4).^[4] While factors such as changes in

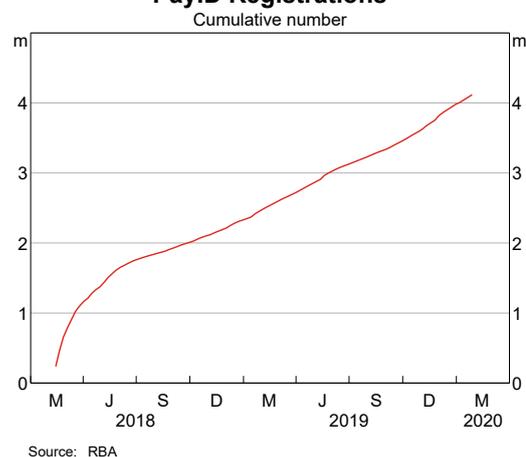
Graph 2

Use of Fast Payment Systems



Graph 3

PayID Registrations



economic activity and broader macroeconomic trends could potentially also be contributing to a decline in DE payments, card payments, which should be similarly affected by these economic factors, have not slowed. Accordingly, the slowdown in DE seems likely the result of financial institutions migrating some DE payments, such as ‘pay anyone’ transfers, to the NPP. We expect this migration from DE to continue as use of NPP continues to expand. However, DE is likely to continue to be used by businesses to make regular payments such as salaries and recurring bills until the equivalent functionality is available in the NPP.

It is likely that some NPP payments have also migrated from cash, cheques and the High Value Clearing System, although we are yet to see significant evidence of this and the effect of migration from the NPP may be difficult to isolate or measure in some of these payment methods.

What can the FSS data tell us?

The FSS was developed and is operated by the RBA as a new service of the Reserve Bank Information and Transfer System (RITS). This is the system used by banks and other approved institutions to settle payment obligations between each other. Settlement in FSS occurs across the exchange settlement accounts (ESAs) held at the RBA by NPP participants, and is final and irrevocable. Currently around 74 per cent of payments made through the NPP are interbank payments that need to be settled between the NPP participants via the FSS. The

remaining 26 per cent are transactions between customers serviced by the same NPP participant (including customers of identified institutions using the same NPP participant to access the NPP) – sometimes referred to as ‘on-us’ transactions.

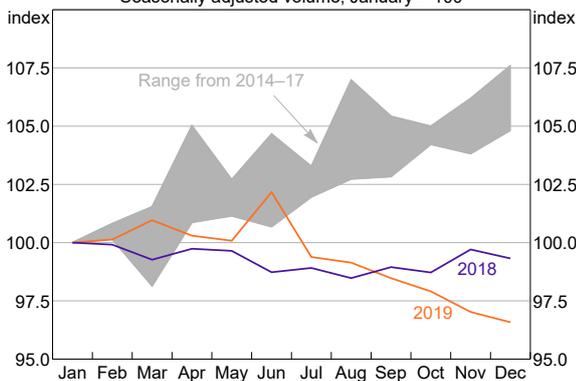
NPP payments are typically low-value retail payments

In 2019, the median value of payments settled in the FSS was \$170, and 87 per cent of settlements were less than \$1,000 (Graph 5). This is consistent with one of the initial objectives of the Payments Systems Board: for the NPP to fill a gap in the provision of ‘retail payments’, which tend to be relatively low-value payments between consumers, businesses and government agencies (RBA 2012). This includes some uses of the NPP, such as for emergency government payments to individuals, including flood and bushfire emergency payments, with the benefit that these payments can be made and received immediately at any time.

While the median payment value has remained steady over the past two years, the average payment value has increased from around \$880 in 2018 to around \$940 in 2019. This likely reflects the gradual rollout of NPP to business and corporate customers, which tend to make higher-value payments. The largest payment to date of \$920 million (a government-related transaction) was settled in the FSS on 10 March 2020, accounting for nearly half of total FSS payment value settled on that day.

Graph 4

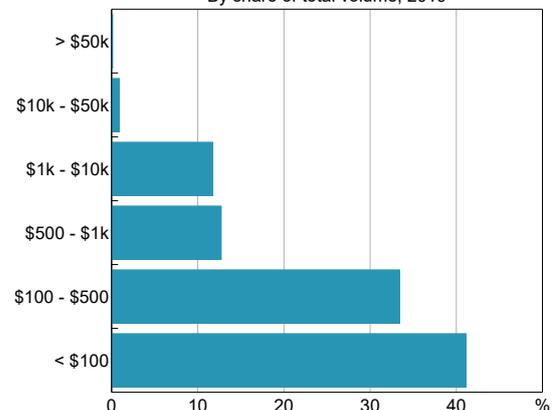
Direct Entry Credit Transfers*
Seasonally adjusted volume, January = 100



* DE credit transfers of tier 1 participants settled in RITS only.
Source: RBA

Graph 5

Value of FSS Transactions
By share of total volume, 2019



Source: RBA

Larger payments are made during business hours but smaller payments continue through the evening

The value of FSS settlements is elevated on business days between 9.00 am and 5.00 pm, likely reflecting the higher values involved in business-related transactions (Graph 6). However, the number of payments stays elevated until around 9.00 pm, consistent with lower-value customer payments being made throughout the day and into the evening. An observed early morning uptick in activity may be from payments that have been instructed by customers to occur on a particular day and are scheduled by ADIs to occur at off-peak times. These patterns have remained broadly unchanged since the NPP’s public launch in February 2018.

This pattern of business-related versus consumer-related payments is particularly evident when looking at payment value bands. Payments over \$10,000 – more likely to be business-related – decline sharply just after 5.00 pm, while payments less than \$10,000 – more likely to be consumer-related payments – show a more gradual decrease later in the day (Graph 7).

Payments peak on Wednesdays or Thursdays and drop on weekends and public holidays

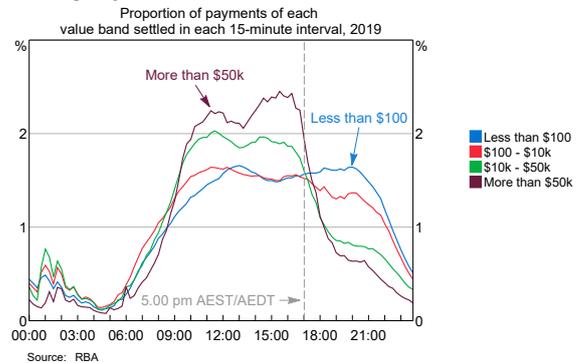
The volume of FSS settlements peaks mid week on Wednesdays and Thursdays, while the value of FSS settlements is more stable across the weekdays (Graph 8). Again, this likely reflects, at least in part,

the difference in business versus consumer payment patterns. Higher-value business payments are more stable through the week, whereas lower-value consumer payments are more concentrated mid week, including around salary days. Weekends tend to have around half of the level of weekday settlement activity, with values dropping off more than volumes, consistent with higher-value business payments being less prevalent on the weekend.

Public holidays show payment patterns that are very similar to weekends (Graph 9). Interestingly, there is no subsequent increase in settlement activity on the following business day, beyond what is considered ‘normal’ activity for those days of the week.

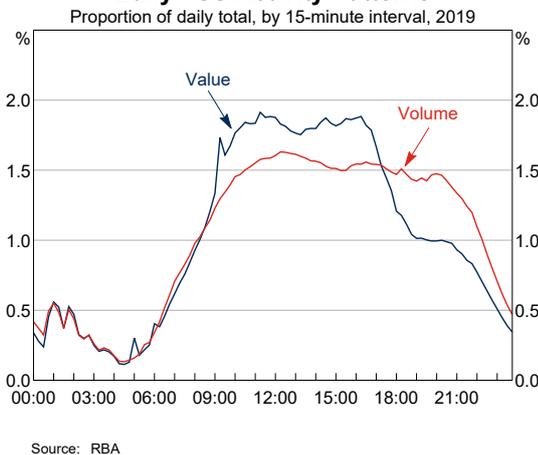
Graph 7

Linking Payment Value and Settlement Time



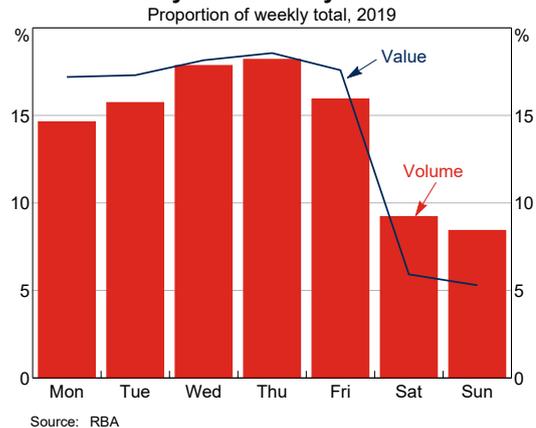
Graph 6

Daily FSS Activity Patterns



Graph 8

Weekly FSS Activity Patterns



How have the NPP and FSS affected the operation of the payments system?

The NPP and FSS are complex new systems, involving real-time 24/7 operations with a very high number of transactions, which have required the RBA and financial institutions to make significant IT system enhancements and operational changes.

The NPP and FSS have been designed to high standards of resiliency, capacity and security. The RBA's availability target for the FSS is 99.995 per cent, equivalent to having a maximum of approximately 26 minutes per year when the system is unavailable to settle payments. This presents a number of challenges and has resulted in some operational changes in order to meet this target for the FSS: planned maintenance and upgrades to the FSS are carried out while the system remains in operation; the FSS is continuously monitored by the RBA's RITS Help Desk staff; and the FSS can be operated from two geographically diverse sites. Separately, in the design of the NPP Basic Infrastructure and the FSS, it was decided that in the case of a contingency event, the NPP will be able to continue processing payments for up to 12 hours without settlement, storing settlement requests until the FSS is available again, which allows customers to continue initiating payments even during contingency events.

FSS availability over 2018 was 99.961 per cent – slightly below target. This was largely due to a major operational incident that involved the loss of power to most of the RBA's Head Office IT systems on 30 August 2018. Following a full review of the

incident, a number of improvements have been made to critical infrastructure maintenance, system restoration and communications. In 2019, the FSS did not experience any downtime, meeting the target with an availability of 100 per cent.

Over the past two years, financial institutions participating in the NPP have also experienced incidents that have affected the availability of fast payments for their customers. These incidents have included software and hardware issues that have impacted connectivity to the NPP, as well as incidents involving mobile or internet banking services that customers use to make NPP payments. It is hoped that as participants learn lessons from these incidents and improve their technologies or processes, the number and duration of incidents will moderate over time.

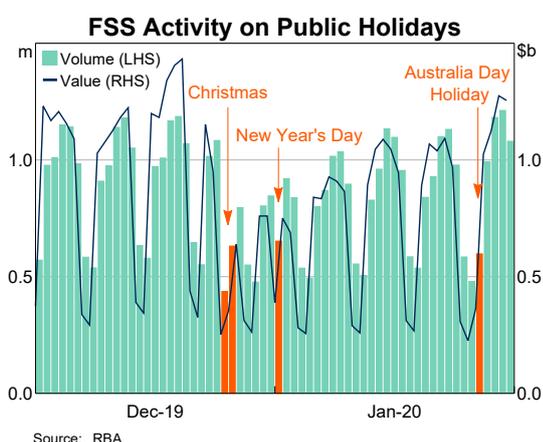
Participants are managing their FSS liquidity well

Another important consideration for participants in the NPP is the management of their liquidity for settlement of transactions in the FSS. Participants that settle directly in the FSS designate a portion of their ESA funds to settle their FSS transactions, which is known as their FSS allocation. FSS settlements are credited or debited against this allocation.

Although individual institutions have different approaches to their liquidity management, all are holding ample liquidity to ensure smooth settlement of NPP transactions. In late 2019, in aggregate, institutions' FSS balances during RITS hours (07:30 – 22:00 on weekdays) were around double the average daily value of FSS settlements (Graph 10). The incoming payments of NPP participants also provide additional liquidity to fund outgoing payments throughout the day.

Outside of RITS hours, both overnight during the week and on weekends and public holidays, all of an institution's ESA funds are transferred to their FSS allocation. In aggregate, this increases the amount of funds available for FSS transactions to around \$24 billion. When RITS opens again, excess funds being held in the institution's FSS allocation are transferred back to its RITS allocation, based on pre-set parameters.

Graph 9



Where to from here?

NPPA, the operator of the NPP, has developed a 'roadmap' for a wide range of new functionality that will enable innovative capabilities (see NPPA 2019b):

- NPPA has recently published an update of its Application Programming Interface (API) framework.^[5] This follows the launch of an API sandbox by NPPA and SWIFT to allow fintechs and other third parties to test NPP capabilities.
- International Funds Transfer Instructions Service – NPPA recently introduced an optional service that will allow the domestic leg of an inbound cross-border payment to be made quickly and efficiently over the NPP.
- NPP message standards – NPPA has developed NPP message usage guidelines for payroll, tax, superannuation and e-invoicing payments that define the use of category purpose codes and specific data elements to be included in the payment message. NPP participants will be obliged to receive these NPP messages with additional defined data elements by December 2020.
- Mandated Payments Service – NPPA is also developing functionality to enable third-party initiation of payments on behalf of customers. The service will enable a third party to 'pull' payments from a customer to a business, including to pay recurring bills or subscriptions, which is comparable to existing direct debit

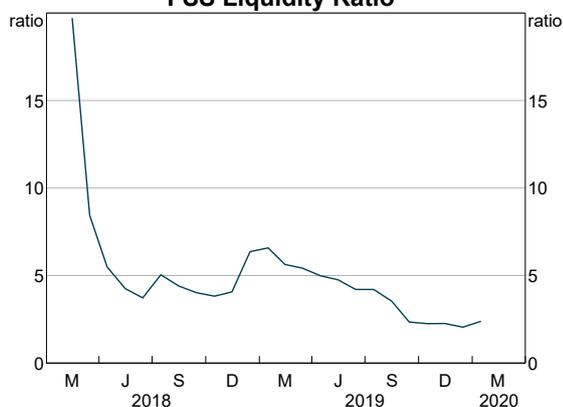
arrangements. Key principles are that the account holder's authorisation (consent) is required for payments to be made from their account, with the creation of a digital payment arrangement (mandate) in advance of payments being processed. The mandates will be held centrally, making it easier for customers to manage their third-party payments and to change banks. All participating financial institutions will be required to implement elements of this capability by December 2021, for rollout of services in early 2022.

- Basic Payment Initiation Service – In advance of the Mandated Payments Service, NPPA plans to implement a Basic Payment Initiation Service. The service will enable a third party to easily initiate a set of payments, potentially for distribution to multiple customer accounts. One possible use case for the service is for a payroll software provider to initiate payroll payments from a business to its employees. NPP participants will be able to opt in to this service, which will be available in October 2020.

Individual participants have also been developing capability in the areas of bulk payments, APIs and transaction value limits. A number of non-bank entities, such as payment service providers and technology companies, have started to develop and use NPP functionality. Examples include a service that enables employees to access their income in real time as they earn it, a service that allows businesses to efficiently process and validate customer payments in real time, and a rental management platform for owners to manage their property rentals without an agent. Over time, it is expected that fintechs and other payment service providers will be able to offer their customers new services that use the capabilities of the NPP infrastructure and a wider range of ways to make fast payments.

Graph 10

FSS Liquidity Ratio*



* The liquidity ratio is the ratio of average daily aggregate FSS balances during RITS hours to average daily aggregate FSS settlement value during RITS hours.

Source: RBA

Conclusions

The launch of the NPP was a significant advancement in the Australian payment system, providing fast, flexible and data-rich payments to support the needs of Australia's modern economy. In the two years since launch, the NPP and FSS have

delivered the capacity for customers of 91 institutions to make fast payments 24/7. Usage of NPP payments has grown significantly, with over 4.1 million PayIDs registered and an average of

1.1 million payments worth \$1 billion made per day in January 2020. With a range of functionality under development, the NPP is expected to continue to deliver new payment services and innovations. ✖

Footnotes

- [*] Emilie Fitzgerald is from Payments Settlements Department and Alexandra Rush contributed to this work while in Payments Settlements Department. The authors would like to thank Gabrielle De Freitas, Kasia Kopec, John Bagnall and Kylie Stewart for their help and suggestions.
- [1] NPPA is the company that was established by the RBA and 12 other participants to develop and operate the NPP as an industry utility.
- [2] 'Overlay services' are commercial payment services that use the NPP Basic Infrastructure's capabilities and can range from simple arrangements that involve setting industry standards to more complex payment solutions that implement new message flows or payment types between participants. Osko is a service developed by the payments platform BPAY.
- [3] In the past, these payments have usually been processed in batches via the DE system.
- [4] In the context of this article, DE credit transfers refer only to the interbank DE credit transfers of tier 1 participants settled in RITS.
- [5] In this context, an API sets out software protocols that can be used by third parties to communicate in a standardised and secure way with a financial institution's systems to access NPP functionality.

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