

PAYMENTS DIRECTION

Environmental scan refresh

A high level refresh and validation of the 2017 Environmental Scan Report

June 2018

Executive summary

Executive summary

- Our 2017 Environmental Scan was based on a wide-ranging review of research material relevant to the NZ economy and its payment systems. That scan identified the following six themes relevant to our future payments ecosystem:
 1. Payments are increasingly continuous and international in orientation
 2. Payments are increasingly faster, more mobile, more informative and linked across the value chain
 3. Payments infrastructure refreshes and renewals are widespread and arise for a number of reasons
 4. Financial services and payments regulation is expanding and aiming to produce more inclusive and resilient systems
 5. Payments associations face rising expectations
 6. Payments security and authentication is a key concern
- In our 2017 scan we also identified the following key global drivers of change:
 1. The growth of the 'Internet of Things and its related and enabling technologies
 2. The rise of the API economy
 3. An increased emphasis on the importance of international standards
 4. The power of rapidly shifting consumer and market expectations driven by the proliferation of mobile devices
 5. Ever faster payments including a surge of real time payments platforms being developed
 6. A more complex and diverse payments ecosystem membership
 7. Growing regulatory and central bank action and thought leadership
 8. The automation and integration of payments into other activities
 9. Heightening payment security risks with new innovative risk management technologies

Executive summary

- The 2018 Environmental Scan Refresh represents a high level theme review as to whether our 2017 work remains directionally accurate and up to date.
- It corroborates our original findings and also points to the increasing pace of change underway across payments ecosystems around the globe.
- That increasing pace of change is evident in:
 - The continued push for greater interoperability and removal of pain points in cross border transactions.
 - The rapid growth of application programming interfaces, in the focus on greater openness in banking and financial services, and in the management and leverage of data.
 - The continued trend towards the deployment of real time payment systems or initiatives which make payment systems more available and faster in terms of the customer experience.
 - A growing awareness of the risks posed to payments security from increasingly distributed and open systems and networks and the rapid increase in the sophistication of cyber criminals and bad actors.
 - An increased role for artificial intelligence (AI) and related technologies across a wide range of deployments, from those that are customer facing, to those that help secure payment systems and processes.
 - Pressure for a more inclusive ecosystem, where new entrants and fintechs have a say in how payments system developments take place and where consumers have greater choice and greater control over who can access their data and for what purpose.
 - A greater and more complex set of stakeholder relationships for payment associations and regulators to manage.

Executive summary

Our global change drivers from 2017 remain on point – some have grown stronger in emphasis; one is more nuanced in its influence. None are weaker. APIs appear to be notably stronger in driving change; consumer and market expectations continue to rapidly evolve. The realisation of the benefits of standardisation appear to be growing stronger.

Global change driver	In 2018	Comment
The growth of the Internet of Things and its related and enabling technologies	Same	With the prospect there will be up to 30 billion connected devices by 2020, the growth of the IoT remains a material influence. ¹ Security and prevention of large scale attacks remain a major concern and impediment to IoT deployments
The rise of the API economy	Stronger	APIs are proving themselves as fundamental to the internet of the future. They are likely to play a significant enabling role in delivering future payment ecosystem outcomes, with APIs having a significant part in delivering increasingly personalized mobile payment solutions. ²
An increased emphasis on the importance of international standards	Stronger	The debate over how to best standardise is growing across a range of areas, including distributed ledger technology, APIs and cybersecurity
The power of rapidly shifting consumer and market expectations driven by the proliferation of mobile devices	Same to stronger	A new consumer group (Gen Z) is beginning to have an impact on the design of the payments of the future. This group has a digital bond to the Internet, unlike earlier generations and is likely to demand increasingly sophisticated mobile payment solutions. ³

Executive summary

Faster payments and the automation and integration of payments into other activities continue to be important. The pattern of regulation is more nuanced but remains a significant factor for payment ecosystem players. Payments ecosystems are becoming increasingly more diverse. Payment security is an increasing concern.

Global change driver	In 2018	Comment
Ever faster payments including a surge of real time payments platforms being developed	Same	Real time payments continue to be a point of emphasis in many jurisdictions, with a push to enable new overlay services
A more complex and diverse payments ecosystem membership	Stronger	There is a growing sense collaboration and stakeholder engagement is fundamental to realising the network effect of payments, in part because the power of the network rises exponentially according to the number of players in the ecosystem
Growing regulatory and central bank action and thought leadership	More nuanced	Regulators continue to have a keen interest in payment systems, albeit in different ways across different jurisdictions
The automation and integration of payments into other activities	Same	This is taking place at several levels from wearable devices to the rise of social payments (where payments occur within social media platforms) and the growth of contextual commerce. Payments are increasingly device enabled
Heightening payment security risks with new innovative risk management technologies	Stronger	Not only have the points of exposure increased, those seeking to breach payment security arrangements are innovating at a rapid rate

Introduction & approach

Introduction & approach

- Our previous Environmental Scans (2015 and 2017) have been designed to identify the key themes which capture the trends and influences relevant to our future ecosystem.
- This refresh involved a high-level desktop review of relevant research material to confirm our fact base remains up to date and that our 2017 scan remains directionally correct.
- As the refresh was based on a high-level desktop review, it did not replicate the depth of research that underpinned our 2017 scan. This is consistent with the approach we took in the refresh of our 2015 scan.
- In the remainder of this refresh we:
 - revisit each of the themes from our 2017 scan
 - set out a key takeaway conclusion from our high-level desktop review of relevant material
 - cite several examples from different jurisdictions in evidence of our takeaway conclusion
 - present selected New Zealand developments

Before doing that we briefly comment on those areas where we see clear evidence of the increasing pace of change.

Increasing pace of change

Increasing pace of change – a brief review

Our refresh of the 2017 Environmental Scan identified seven areas where the increasing pace of change across global payments ecosystems was clearly evident. We review those seven areas immediately below and provide some selected examples to illustrate current developments.

- 1) The continued push for greater interoperability and removal of pain points in cross border transactions.
 - SWIFT is consulting globally on adopting ISO 20022 for cross border payments as the de facto replacement for the current MT format. The inherent functional and technical advantages of ISO 20022, together with its widespread use in market infrastructures in more than 70 countries, presents a compelling case for migration of cross-border business from MT to ISO 20022.⁴ Interestingly, nearly half of the global messaging standard ISO 20022 initiatives are happening in payments.⁵

- 2) The rapid growth of APIs, in the focus on greater openness in banking and financial services and in the management and leverage of data.
 - Accenture is flagging 2018 as the year in which attitudes towards open banking, enabled by open APIs, will separate those organisations who want to collaborate from those that want to hunker down behind the barriers associated with old business models.⁶
 - According to ACI Worldwide banks and fintechs have very similar perceptions on the role open APIs play in fintech opportunities (44% of fintechs and 46% of banks believe fintech opportunities lie in open APIs).⁷
 - In Europe, the API enabled environment has opened the door to collaboration across the ecosystem.⁸

Increasing pace of change – a brief review

3) The continued trend towards the deployment of real time payment systems or initiatives which make payment systems more available and faster in terms of the customer experience.

- Globally banks are in general agreement about where they see the benefits of immediate payments but have different views about their priority.⁹
- According to Ovum's survey of ASEAN banks, 82% of respondents say immediate payments will drive revenue growth, 77% say immediate payments will increase operating efficiencies, and 86% say immediate payments have or will improve customer services. Paradoxically, 57% of banks say the business case is weak due to a lack of use cases for immediate payments.¹⁰

4) A growing awareness of the risks posed to payments security from increasingly distributed and open systems and networks and the rapid increase in the sophistication of cyber criminals and bad actors.

- According to a survey by Accenture half (50 percent) of all surveyed respondents, and nearly two-thirds (63 percent) of those in Europe, believe that implementing open banking will increase the level of risk in the banking industry.¹¹

5) An increased role for AI and related technologies across a wide range of deployments, from those that are customer facing to those that help secure payment systems and processes.

- A survey by EY of 221 financial institutions across 29 markets revealed 40% to 60% of the respondents that are investing now in AI plan to increase their investment.¹²
- Increased data availability, coupled with faster processing and more sophisticated machine learning (ML) technologies have the potential to offer near real time fraud detection.¹³

Increasing pace of change – a brief review

6) Pressure for a more inclusive ecosystem, where new entrants and fintechs have a say in how payments system developments take place and where consumers have greater choice and greater control over who can access their data and for what purpose.

- In the United Kingdom (UK) the New Payment System Operator (NPSO) is establishing new Advisory Councils to ensure the needs of consumers, business and other payment users are formally placed alongside those of industry.¹⁴
- In Australia there has been a decision to legislate a Consumer Data Right (CDR) to give Australians greater control over their data, empowering customers to choose to share their data with trusted recipients only for the purposes they have authorised. The CDR will be implemented initially in the banking (Open Banking), energy, and telecommunications sectors, and then rolled out economy-wide on a sector-by-sector basis.¹⁵

7) A greater and more complex set of stakeholder relationships for payment associations and regulators to manage.

- The launch of the New Payments Platform (NPP) has spawned a debate over the extent to which the NPP is a critical piece of national infrastructure. As you would expect the issues of system integrity and access are the key points of debate. The Australian Productivity Commission appears to favor a regulated access regime for the NPP.¹⁶

Theme refresh - summary

Theme 1 Payments are increasingly continuous and international in orientation

The expectation payments will be 'always on', irrespective of payment scenario, geographic location or currency is now very much central to consumer expectations

Major Takeout From 2018 Refresh

- Removing the friction from and improving the customer experience in cross border payments continues to be a point of emphasis, especially in the Asia Pacific region. Many blockchain use cases centre on facilitating cross border payments, with that technology also offering the promise of disrupting the global remittances market, especially for flows to developing countries. Payment systems continue to expand their levels of service availability and to pursue efforts to increase cross border interoperability.

Selected Examples

- SWIFT has held exploratory talks with a group of banks from Australia, China, Singapore and Thailand to develop a cross-border real-time payments service in the Asia Pacific region, based on SWIFT gpi. The initiative is structured in three phases. Phase 1 involves a new real-time gpi sub-scheme. Phase 2 involves extending SWIFT gpi rails into existing real-time payment systems within each recipient country. Phase 2 is targeted for Sibos in October 2018. Phase 3 would aim to link domestic real-time payment systems via SWIFT gpi to facilitate full cross-border real-time payments between each banks' respective customers.¹⁷
- While banks and fintechs are looking to distributed ledger technology to provide more timely, more convenient and lower cost cross border payments, challenges relating to scale and lack of standardization need to be addressed.¹⁸

Theme 1 Payments are increasingly continuous and international in orientation

- Migration continues to drive global remittance flows, with flows to developing countries in 2017 reaching about \$466bn - around three times as much as flows of development aid. Increasingly the global remittance market is being targeted by digital disrupters looking to lower the cost and improve the value propositions of the service offerings, with blockchain offerings appearing to offer the greatest promise for the future.¹⁹
- In November 2017 members of the Asian Payments Network (Singapore, Malaysia, Vietnam, Indonesia and Thailand) signed an MoU for payments system modernization which is predicated on using ISO 20022 as a first step towards regional real time payments connectivity and greater interoperability.²⁰

In New Zealand

- Industry is expected to endorse the in principle implementation of 365-day availability of its Settlement Before Interchange system (with a firm implementation date still to be finalised).

Theme 2 Payments are increasingly faster, more mobile, more informative and linked across the value chain

Payments are increasingly linked across the value chain and are rapidly becoming integrated, where the payment is embedded in a host of daily interactions and activities

Major Takeout From 2018 Refresh

- Faster, more mobile, and more integrated payments continue to be points of emphasis. Increasingly AI is being used to enhance the consumer value proposition and to make the payments experience more personalised and secure. While defined somewhat differently across jurisdictions, open banking is seen as making it easier for customers to access more personalised products and payment experiences. Open banking is also providing the impetus to treat data as a new digital business.

Selected Examples

- Real time payments are now very real – 39 countries have already implemented immediate payments according to the InstaPay tracker.²¹ While the adoption of fast payments solutions is expected to increase, the adoption of such services in the corporate domain would require further work to be progressed on issues like fraud prevention and AML compliance.²²
- According to a survey on retail banking prepared by Ovum, 85% of all banks surveyed expect real time payments to drive revenue growth (up from 53% in 2017). A further 88% of all banks surveyed are delivering or expect to deliver customer enhancements on top of real time payments (up from 57% in 2017).²³
- AI enabled tools are being used to enhance front-end services. E.g. HSBC customers can connect with the bank's virtual assistant to get answers about credit cards and current accounts. AI is now reaching a level where the phrase mobile first is being replaced with "AI first" in the customer experience.²⁴

Theme 2 Payments are increasingly faster, more mobile, more informative and linked across the value chain

- Gen Z is beginning to influence the design of the future payments experience. The oldest among them are now teenagers and young adults but by 2020 will make up 40% of all US consumers. They are naturally digital. They gravitate to mobile banking apps. 68% of Gen Z consumers are interested in instant person to person payments, more than any other group. They are likely to be the first generation to forgo physical wallets for digital wallets.²⁵
- The Australian Government recently announced it will phase in Open Banking with all major banks making data available on credit and debit card, deposit and transaction accounts by 1 July 2019 and mortgages by 1 February 2020.²⁶

In New Zealand

- Payments NZ recently commenced working with industry to look at options to improve the speed of payment offerings in the domestic market.
- Payments NZ is also working with industry to examine options for customers to conveniently direct payments using alternative identifiers such as mobile phone numbers (similar in nature to PayID functionality in Australia).
- Payments NZ is currently facilitating a pilot of two shared API standards and an accompanying management and governance framework.

Theme 3 Payments infrastructure refreshes and renewals are widespread and arise for a number of reasons

Infrastructure refreshes and renewals continue to be widespread, with enhancements to the service availability of existing systems and an acceleration in the adoption of real time functionality at the forefront.

Major Takeout From 2018 Refresh

- New real time infrastructures continue to go live or are scheduled to go live over the next 2 years. Infrastructure refresh and renewal is increasingly thought of as an enabler for greater financial inclusion, financial integration and interoperability, especially within the ASEAN region. While refresh and renewal – especially in the real time space - has been regulator or Government driven in many jurisdictions, there is evidence it is starting to become market driven.

Selected Examples

- The NPP in Australia had its public launch in February this year.²⁷
- The Australian Federal 2018/19 Budget signaled an intention to leverage the NPP to modernise Commonwealth cash management, to assist with the implementation of the Single Touch Payroll and possibly as a mechanism to reduce the size of large cash payments in the shadow economy.²⁸
- Malaysia's real time system is scheduled to go live in 2018 with its Real Time Retail Payments Platform.²⁹
- Payments networks and intermediaries are increasingly looking to rationalise infrastructure in response to a mix of regulatory pressures, new technologies (like AI and blockchain) and industry initiatives aimed at standardisation.³⁰
- As part of its RTGS renewal programme, the Bank of England is consulting on the use of ISO 20022 for high value and time critical payments.³¹

Theme 3 Payments infrastructure refreshes and renewals are widespread and arise for a number of reasons

- In looking across the broad span of central bank operations, BNY Mellon and the University of Cambridge concluded that, “central banks are very focused on whether current technology will support future needs....As such it is no surprise to see half the central banks investing in technology systems or upgrades”.³²

In New Zealand

- The Reserve Bank’s payment system replacement project (dealing with both ESAS and NZ Clear) is now well advanced and is expected to be completed and go live in April 2019.³³

Theme 4 Financial services and payments regulation is expanding, and aiming to produce more inclusive and resilient systems

In some instances, the objective is to improve the resilience of payments infrastructures, to reduce risks and to respond to safety and security threats. In other instances, regulatory action is oriented towards setting the preconditions for greater innovation and competition.

Major Takeout From 2018 Refresh

- The global regulatory picture has become more nuanced. While the regulatory footprint continues to grow in Europe, there is evidence of a degree of stabilization in the United States. Jurisdiction specific regulation continues to put pressure on financial institutions. In some jurisdictions regulators have continued to press for the ecosystem to be more inclusive or for consumers to have a greater set of rights, especially over their data. New cyber security regulations and standards continue to proliferate. Questions are being raised about whether new regulatory bodies are required to respond to specific industry developments.

Selected Examples

- The European financial sector is facing considerable compliance demands to meet the roll out of new regulations, like PSD2 and the General Data Protection Regulations (GDPR) at a time when European banking profitability is about half of what it was in 2006. In contrast, an apparent regulatory roll back in the US, at least for US banks, has started at a time when US banking profitability is already back to above 2006 levels.³⁴
- In the UK, the Data Protection Bill has just received Royal Assent, meaning the UK now has a legislative scheme that will in many ways parallel the GDPR.³⁵ There have been calls for similar legislation in Australia.³⁶

Theme 4 Financial services and payments regulation is expanding, and aiming to produce more inclusive and resilient systems

- In Australia The Royal Commission into Misconduct in the Banking, Superannuation and Financial Services Industry has cast a significant light on industry behaviour. While the focus of that Commission is not on 'payments', governance and the role of boards and directors in shaping and monitoring organisational culture and behaviours are now under tremendous scrutiny, as is the adequacy of industry self-regulation.
- Australia's Productivity Commission has been asked to examine Australia's financial system. The terms of reference extend to improving consumer outcomes, the productivity and international competitiveness of the financial system and economy more broadly, and supporting ongoing financial system innovation, while balancing financial stability objectives. The Commission's draft findings and recommendations include, i) that lowering barriers to entry and expansion, including greater access to consumer data, may lead fintechs to favour competition against incumbents over collaboration, ii) for the Payment System Board to ban card payment interchange fees and iii) for that Board to impose an access regime for the NPP. The Commission's final report is expected in July 2018.³⁷
- In Canada the Government will undertake a review of the merits of open banking in order to assess whether open banking would deliver positive results for Canadians taking into account consumer privacy, data security and financial stability. Additionally, the Government has announced an intention to introduce legislative amendments to implement a new framework for the oversight of retail payments to ensure to these are reliable and safe for Canadians and the providers of such services can continue to develop faster, cheaper and more convenient methods of payments.³⁸

Theme 4 Financial services and payments regulation is expanding, and aiming to produce more inclusive and resilient systems

In New Zealand

- Major banks are dealing with the pressures associated with implementing BS11 (the Reserve Bank outsourcing policy for banks).
- A review of the Reserve Bank Act is well underway. Some commentators have called for the creation of a new regulatory agency to focus specifically on financial sector regulation, leaving the Reserve Bank free to focus on monetary policy.³⁹
- An exposure draft of legislation for the regulation of Financial Market Infrastructures (FMIs) is currently being prepared and is expected to be released sometime 2018. The legislation is anticipated to set out regulatory powers to apply to designated FMIs, including the ability to set regulatory standards, powers to oversee their rules, investigative and enforcement powers, and crisis management powers. The framework will also provide for information gathering powers that would apply to all FMIs (including those which are not designated) to monitor the broader sector.
- The Reserve Bank, with other regulators, has asked the boards of New Zealand banks and chief executives of life insurers to show there are no system-wide misconduct issues in the New Zealand banking and life insurance sectors.⁴⁰

Theme 5 Payments associations face rising expectations

Those expectations require payment associations to develop a range of new and different responses to a broader and deeper range of issues.

Major Takeout From 2018 Refresh

- The complexity of the interactions payment associations need to manage continues to grow, as the payments ecosystem becomes increasingly diverse. Payment associations are leading standardization efforts in several jurisdictions. Regulators have also recognized this more diverse ecosystem in the design of their consultation plans and in the number of touch points they need to manage.

Selected Examples

- In the UK the New Payment System Operator (NPSO) is establishing an End User Advisory Council and a Participant Advisory Council; both councils will be supported by a wider stakeholder community.⁴¹
- In May 2018 the NPSO assumed operational responsibility for Bacs Payment Schemes Limited and Faster Payments Scheme Limited and shared their vision and ambitions for the future of UK payments with over 300 representatives from across the retail payments sector.⁴²
- Payments Canada concluded its public consultation on the 'Modernization Target State', an in-depth view of the target end state for payment system modernisation in Canada. That public consultation established strong support to broaden access to Canada's core payments systems, without compromising safety and soundness, and to encourage competition and innovation.⁴³

Theme 5 Payments associations face rising expectations

- Also in Canada, the Government has launched a review of the *Canadian Payments Act* to ensure that Payments Canada is well positioned to continue to fulfill its public policy objectives of ensuring the efficiency, safety and soundness of its systems. The review will include consultations with stakeholders, including provinces and territories. That consultation is now underway.⁴⁴
- In the United States NACHA's 'API Standardization Group' has furthered its efforts on the standardisation of API development in financial services.⁴⁵
- The Federal Reserve's Payments Improvement initiative has recently established a Governance Formation Team, inclusive of all stakeholders to develop a governance framework to support ecosystem development.⁴⁶
- The European Banking Authority (EBA) recently published its conclusions from consultations on its approach to financial technology and produced the EBA's Fintech Roadmap.⁴⁷

In New Zealand

- Payments NZ is facilitating industry discussions on the development of a shared API framework and standards, with a pilot of two API standards and a shared framework now underway.
- The Minister of Commerce and Consumer Affairs asked Payments NZ to play a central role in facilitating greater involvement of fintechs and other stakeholders in the design of the payments system of the future and to facilitate an industry response on improving the transparency of merchant service and interchange fees.⁴⁸

Theme 6 Payments security and authentication is a key concern

Ensuring confidence in the payments process, in the face of a new and rapidly changing set of risks, is now a critical issue for all organisations in the payments ecosystem.

Major Takeout From 2018 Refresh

- The 2017 WannaCry ransomware cyberattack was a sobering reminder of how quickly networks could be disabled. One of the unusual paradoxes is industry is being simultaneously pulled in different directions at the same time; on one hand there is pressure for greater openness (say through PSD2); on the other hand, stringent regulations regarding data security are being introduced (say through the GDPR). This is a difficult proposition for industry to manage, especially at a time where there are more sophisticated bad actors.

Selected Examples

- Deloitte's 2018 Banking Outlook notes cyber risks have been increasing with greater interconnectedness across the ecosystem. Open APIs are one potential cyber vulnerability that will require close attention.⁴⁹
- There is evidence certain groups of payment users have misgivings about security. According to a survey from ING on mobile banking in 2017 over half (56%) of non-mobile bankers in Europe do not trust the security arrangements. The survey result for Australia was 60% and for the United States 63%.⁵⁰
- A combination of AI and Machine Learning (ML) have considerable promise to help secure organisations of all types from data security threats and cyber attacks. According to the 2018 Thales Data Threat Report, 64% of respondents believe these technologies will be a boon to security. Regrettably the same AI and ML tools can be deployed by bad actors for malicious self learning attacks.⁵¹

Theme 6 Payments security and authentication is a key concern

- Blockchain is increasingly seen as offering a range of potential security use cases including protection of customer information and user authentication.⁵²
- Rising concerns over cyber-security and other operational threats to central banking functions have contributed to an even more intensive focus upon infrastructure resiliency than usual.⁵³
- In March 2018 the Federal Reserve concluded its work on secure payments via the Secure Payments Taskforce with the next steps being a Fed sponsored study on payment system security vulnerabilities and how to mitigate those.⁵⁴
- In Australia, the Federal Government has reinforced the need for strong security and privacy requirements to accompany the consumer data right programme by noting, a high level of privacy protection and information security is a non-negotiable element of the consumer data right system.⁵⁵

In New Zealand

- An industry led group has been convened to commence work on building a trusted ecosystem for Digital ID.

Conclusion

Conclusion

Our 2017 work remains right on point and is in step with the payment ecosystem developments taking place in 2018.

- What is notable is the speed at which change is taking place in payments – the payments landscape is rapidly evolving.
- In the past 12 months:
 - APIs have exploded as one of the key enablers of future payments ecosystem development. Internationally fintechs are leveraging their focus on the customer experience to innovate.
 - Increasing consumer demand for faster, more integrated and lower friction experiences are helping drive growth in alternate payment channels, such as wearables.
 - The focus on cyber risk has sharpened remarkably, due in part to greater interconnectedness across the ecosystem and the rapid adoption of new and sometimes emerging technology against a backdrop of continued use of legacy infrastructure.
 - There has been a greater recognition of the role AI and its related technologies can play across the payments ecosystem.
 - In some jurisdictions the call for collaboration continues to grow (e.g. the United States) and even in jurisdictions where regulatory mandates have been strong (e.g. Europe) there is recognition of the importance of collaboration among competitors, to create a ubiquitous network and to let the marketplace drive aspects of development.

Our work in Payments Direction which speaks to greater openness, convenience, availability and speed in payments is consistent with the global ecosystem developments.

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