



REAL-TIME PAYMENTS

Understanding the past,
preparing for the future

An NCR white paper

INTRODUCTION

Real-time payments: not a new concept, but one that has experienced significant developments and iterations in markets throughout the world over the past 45 years. It's an idea that is gaining in importance, particularly in light of key changes to national payment systems and infrastructure in countries like the U.S. and Australia.

Real-time payments are executed instantly, and are irrevocable. This gives consumers and businesses instant confirmation of the receipt of funds. As the financial services industry and customer expectations continue to evolve, payments systems must develop with them.

In this whitepaper, we will look at what form these developments could take, as well as looking back at the history of real-time payments and analyzing key trends from a regional perspective.

1. THE ORIGINS AND DEVELOPMENT OF REAL-TIME PAYMENTS

For the earliest origins of real-time payments, we need to go all the way back to the early 1970s. Japan was the first country to test processes for clearing fund transfers in real time, introducing its Zengin System in 1973. The system is still in place today and covers almost all private banks in Japan.

Switzerland was another early adopter. The country launched the SIX Interbank Clearing platform in 1987, enabling Swiss franc payments between financial institutions in real time under the supervision of the Swiss National Bank. Turkey followed five years later, introducing a system that, like many other early platforms, only operated during business hours.

These were the forerunners of real-time payments. But it wasn't until the turn of the century that the concept really gained traction and adoption took off in markets across the globe. During the first decade of the 21st century, systems allowing real-time transfers of funds came into effect in Brazil, South Africa, China, Mexico, Chile, Iceland and other countries.

Perhaps most notably of all, in 2008 the UK launched Faster Payments, the system that would come to be seen as the blueprint for future developments in instant payments infrastructure around the world. According to the organization responsible for running it, Faster Payments was the first "truly 24/7, 365-days-a-year real-time payments system in the world," as well as being the first new payments system in the UK for more than 20 years.

By 2015, less than seven years on from its launch, Faster Payments had handled its five billionth transaction, and in 2017 it broke the record for the number of payments processed in a single year. More than £1.4 trillion was transferred over the course of the year, compared to £1.2 trillion in 2016.

While the first decade of the 21st century saw some landmark developments in real-time payments, the latter stages of the 2010s provided further turning points that could match these earlier milestones in scale and potential long-term significance.

On November 13th 2017, The Clearing House launched the first new core payments infrastructure in the U.S. for more than 40 years. Named simply RTP, the real-time payments system is open to all of the country's depository institutions and is aiming for ubiquitous adoption by 2020.

A little over a week later, on November 21st 2017, the European Payments Council (EPC) officially launched SEPA Instant Credit Transfer (SCT Inst). The voluntary scheme enabled instant, pan-European credit transfers up to an initial maximum amount of €15,000. The EPC called it the beginning of "a new era in payments", arguing that payments should be "no exception to an increasingly digital and immediate society".

Australia then followed suit in February 2018 with the New Payments Platform (NPP), delivering open-access infrastructure allowing consumers and businesses to transfer funds on a 24/7 basis, with close to immediate availability for the recipient.

Looking at these large-scale developments, it's clear just how much the concept of real-time payments has developed over the years, particularly in the last two decades. We can learn more about this subject by looking in detail at some of the key markets within the global financial system.

2. REGIONAL PERSPECTIVES

India

With a population of more than 1.3 billion people, India is a vital part of the global financial system. The country has enjoyed great success with its Immediate Payment Service (IMPS). Launched in November 2010, the real-time interbank funds transfer system is used by more than 50 commercial banks and nearly twice as many rural, district and cooperative institutions.

In the 2017 Flavors of Fast report from FIS Global, India's IMPS was identified as the most-evolved payment scheme of any of the 25 countries surveyed. It was the only system to receive a level five performance ranking, reflecting its ability to meet "most features maximizing customer value". The UK, Singapore, Thailand, Denmark, Switzerland, Spain, Poland, Finland and Kenya were all ranked level four.

The success of IMPS has been partly driven by the Indian government's efforts to encourage adoption of new payment methods by offering incentives. It took this approach again in late 2017, when it was reported that incentives such as cashback and reward points were being made available to support use of new payment applications like Bharat Interface for Money and the Bharat Bill Payment System.

India has also shown readiness and ability to innovate in the instant payments space. In August 2016, the National Payments Corporation of India launched the Unified Payments Interface (UPI), which supports instant transfers of funds via a mobile platform. By the end of 2017, UPI had handled more than 100 million transactions.

This sort of innovation and willingness to embrace new technologies could prove increasingly important as India continues its mission to improve financial inclusion over the coming years. With nearly a fifth of the population still unbanked or financially excluded, according to a 2017 report from EY and Indian commerce group Assocham, new payment methods could offer a solution to challenges linked to physical infrastructure and improve service availability for citizens living in more remote areas.



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Europe

The long-term success of SCT Inst in Europe could depend on the level of adoption by financial institutions and payment service providers (PSPs). Shortly after the scheme was launched, the EPC urged businesses to get on board and stated that this is "only the beginning of the European journey towards instant payments". More firms are expected to sign up over the course of 2018 and 2019, and there is also scope for the scheme to expand its geographical remit.

If it does take off and experiences increased adoption across Europe in the coming years, it's possible that compliance with SCT Inst could be made mandatory, to ensure a level of service for customers and consistency between providers.

The large-scale launch of new systems and processes in financial services often prompts concerns around fraud risk. This is clearly something regulators, businesses and consumers in Europe will need to be aware of, but it's possible that growing expectations for real-time payments will also drive progress in fraud detection and prevention.

Speaking to the EPC, Craig Tillotson, chief executive of the Faster Payments Scheme Limited, explained that the UK system initially provided a two-hour window for participating banks to conduct the necessary checks and mitigate risk. However, as demands for instant service have intensified, PSPs have increasingly sought to offer true real-time payments.

"This has driven back-end fraud systems and software to improve, with many key checks carried out more quickly through automation," Mr Tillotson said. "Each participant bank will have its own risk checks set up, but they generally include both an automated stage which triggers a manual stage for any risks that are flagged initially."

The U.S.

Much like in Europe, security will be a big priority in the U.S. as the country's regulators, financial institutions, PSPs and consumers acclimate to RTP. Like SCT Inst, the U.S. system could benefit from the fact that it is a relatively late arrival on the real-time payments stage, meaning it could learn from the experiences of earlier adopters.

As far as fraud is concerned, the country could benefit hugely from recent innovations and new technologies that were not available when Faster Payments was launched in the UK, for instance. U.S. financial services providers can learn from the previous experiences of their counterparts in other countries and reap the benefits of cutting-edge strategies in fraud detection and prevention.

One notable example is machine learning, which is constantly developing, improving and growing in business adoption. Advanced machine learning technologies give financial institutions more power to track emerging trends in the threat landscape, identify risks and stop fraud in its tracks. This could prove invaluable for banks that, under new real-time payment systems, need to make decisions on whether to authorize transactions in a matter of seconds.

Another key challenge for the U.S. is unification. Unlike other countries, the U.S. does not have a clear mandate to create a real-time payments system from the federal government or central bank, although there is a Federal Reserve working group exploring this possibility. There are also competing schemes in existence, such as Zelle, which focuses on the P2P side of instant payments.

The current lack of a central bank mandate could offer benefits such as the freedom to find the model that is best-suited to businesses and consumers, but it could also mean slower adoption and a lack of consistency.

These are questions the U.S. financial services industry will have to find answers to in order to reach the target of ubiquitous real-time payments by 2020.

2. WHAT THE FUTURE COULD HOLD FOR REAL-TIME PAYMENTS

A global system?

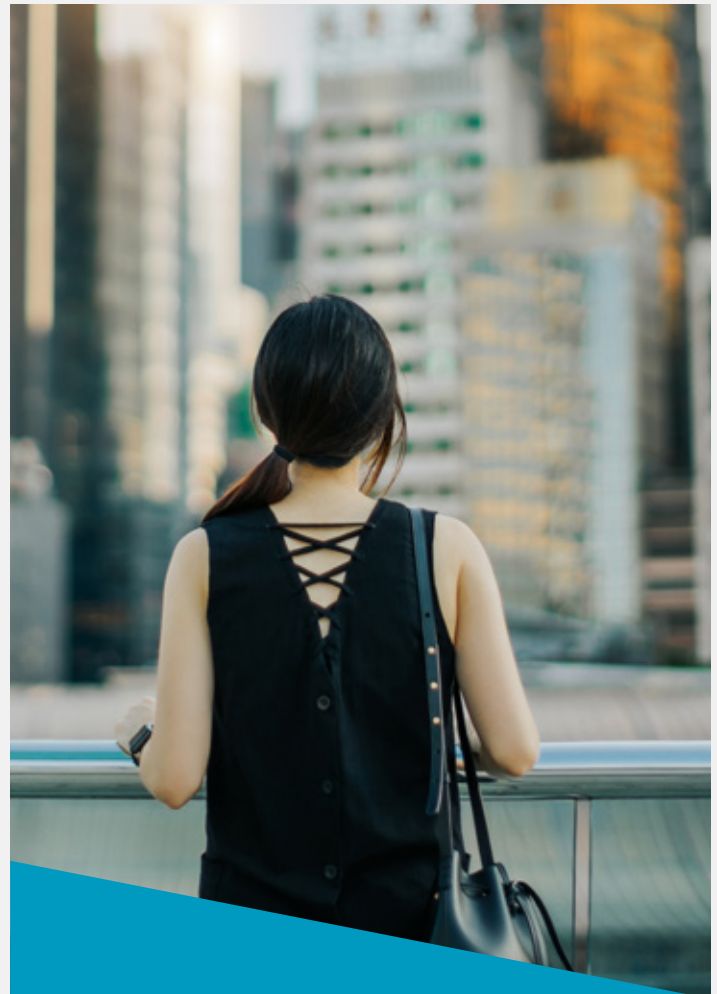
With so many exciting developments taking place on a regional level, is it time for the industry to start considering the possibility of a global real-time payments network? There are signs that such a thing could be possible, but there are also many roadblocks to overcome and questions to answer first.

Looking at SCT Inst, it's clearly possible that cross-border transactions can be completed in real time. Crucially, however, this scheme is only operational within the eurozone and is overseen by a single body.

Before a global real-time payments network can become a reality, there must be a level of interoperability and consistency between central banks, regulators, financial institutions and various other organizations all over the world. This is no small task.

There has been encouraging progress in areas that could lay the groundwork for worldwide instant payments, such as the widespread acceptance of the ISO 20022 financial messaging standard.

Furthermore, SWIFT—which provides a network for the international exchange of information between financial institutions and also acts as the registration authority for ISO 20022—now enables universal real-time payment tracking. In March 2018, the organization announced that its GPI scheme was being extended to cover all payment instructions sent across the network. Before GPI, SWIFT's standard for cross-border payment processing was at least three days, but this has been reduced to a maximum of 24 hours.



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Emergent technologies

Elsewhere, the industry is starting to see new, developing technologies begin to play a part in the growth of real-time payments. In October 2017, software firm R3 and 22 of its member banks announced Corda, a blockchain-inspired distributed ledger platform with the potential to support instant international payments. Santander also announced plans to offer same-day mobile international payments for personal customers using Ripple's distributed ledger technology.

Replacement of other systems

While it's possible to speculate about all sorts of potential developments and exciting innovations in real-time payments around the world, there is little doubt that - on a national level at least - instant clearing of transfers has never been more significant. In the UK, for example, the view of the Payment Systems Regulator is that the long-term future of financial transactions will revolve entirely around Faster Payments.

Taking the UK's Direct Debit system as an example, there is a strong possibility that this will take the form of a 'request to pay', channeled through the Faster Payments infrastructure.

It could also be argued that - combined with rapid evolution in P2P transaction services and technological innovation in the payments space, supported by open banking initiatives and regulations such as PSD2 - the development of real-time payment platforms could render checks obsolete within a decade, as well as providing an alternative to card payments.

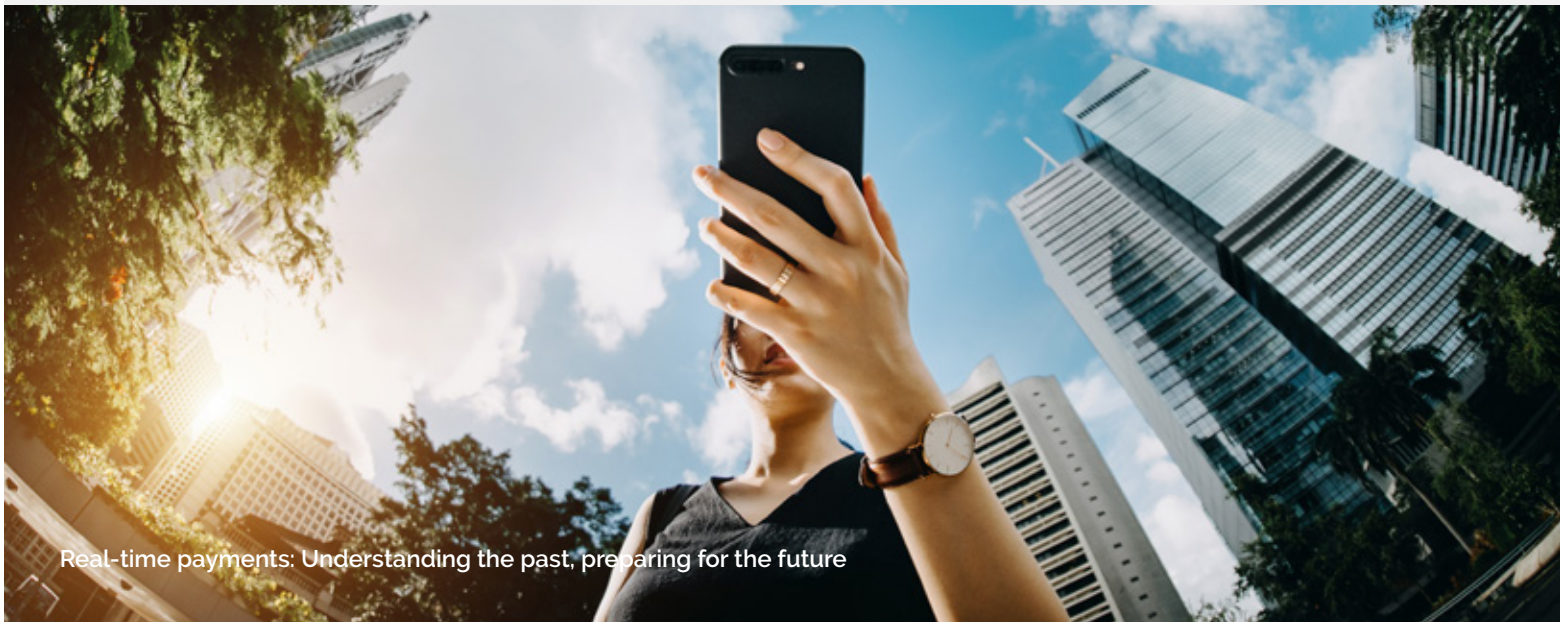
Obstacles to overcome

Of course, there will be challenges to negotiate before the industry and consumers can realize the full potential of real-time payments. The transition to the real-time environment will require many financial institutions to make some significant changes, not only in the core processes they use, but also in mind-set.

A lot of existing interbank systems still rely on batch processing, where a number of transactions are all settled at once. This infrastructure will need to be reviewed and modernized, to enable a move away from batch processing and towards the real-time clearing and visibility so many consumers and businesses now expect.

Another key concern for financial institutions and regulators is protecting against fraud in a real-time environment. Fraud detection and prevention methods must be capable of 'in-flight' identification and assessment of threats, as is already the case with card transactions. 'After-the-event' analysis will no longer be enough.

If banks and payment service providers are able to access the tools and technologies required to answer these questions, there's no doubt that the industry can look forward to a bright and exciting future where real-time payments are concerned.



Real-time payments: Understanding the past, preparing for the future

IN CONCLUSION...

When financial services industry analysts and commentators look back on the development of payment systems around the world, the latter years of the 2010s could well stand out as a key turning point.

There are many strong indicators of just how significant this period has been, not only for payments, but for the global financial system as a whole. Aside from SCT Inst in Europe, RTP in the U.S. and Australia's NPP, the beginning of 2018 saw the introduction of PSD2 across all EU member states and the dawn of open banking in the UK and other countries.

Viewed together, these developments could have major implications now and in the future. The industry has already seen how schemes such as the UK's Faster Payments can have a transformative impact on services and customer expectations. This could soon be replicated in the U.S. and Australia, and in relation to cross-border transactions in Europe.

As far as PSD2 is concerned, this new EU directive will prove significant in context of the ongoing development and adoption of faster payments, since it was designed to drive efficiency in the European payments market and enable new services from a broader range of providers.

Actions taken by SWIFT have also provided a sign that these developments marked a big turning point in the evolution of real-time payments. Under the gpi project, SWIFT began to make the transition from relatively slow, multi-day settlement of cross-border transactions to much quicker response times. This can be read as a clear reaction to national trends and growing expectations for real-time payment services.

Some questions remain, of course. Schemes such as SCT Inst and NPP are optional, and will take time to find their feet. How long will it take for the RTP system in the U.S. to achieve widespread adoption and begin to deliver real benefits for consumers and businesses? If regulators feel progress is too slow, will they consider enforcing compliance with these schemes, or could this do more harm than good?

What appears beyond any doubt is that, by the mid- to late-2020s, real-time payments will absolutely be the norm - the table stakes requirement for any bank or payment services provider, regardless of their size or the unique characteristics of their business.

The most forward-thinking, innovative financial institutions will already be preparing for this exciting future, with strategies that balance security and technical solutions with the speed and service standards their customers have come to expect.



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