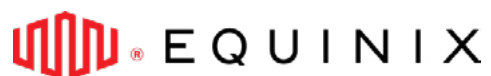


A RESEARCH PAPER FROM FINEXTRA IN ASSOCIATION WITH EQUINIX

MARCH 2020

# UNDERPINNING INNOVATION WITH REAL-TIME PAYMENTS



**Finextra**

# CONTENTS

01 Introduction .....	3
Real-time payments growth is just the beginning .....	3
Global standards provide the catalyst for innovation .....	4
Moving away from legacy systems has significant implications .....	5
New infrastructures create benefits for an entire ecosystem .....	7
Connecting real-time infrastructures relies on effective cloud computing .....	8
Collaboration in the ecosystem spurs innovation .....	9
02 Conclusion .....	11
03 About .....	12

# INTRODUCTION

*Real-time payments systems are proliferating around the world, with higher values and volumes together with greater cross-border connectivity. The industry is tasked with designing and creating the market infrastructure that supports this growth, and is increasingly turning to hybrid multi-cloud deployments to deliver a new wave of innovation that can take place within all manner of systems, from fraud detection through to liquidity management and accounting software. Increased collaboration and global standards underpin the upward trajectory of digital transformation in a rapidly changing financial ecosystem.*

## REAL-TIME PAYMENTS GROWTH IS JUST THE BEGINNING

Real-time payments are not just faster or just instant; they are laying the foundations for the next generation of commerce. When combined with rich data, open banking, and interoperability in a highly-networked global economy, real-time payments will underpin a new world of possibilities.

With real-time payments, funds now travel from account to account instantly, at any time, with both the sender and receiver being notified instantly. Although real-time payment systems are not new – Japan introduced its version in the 1970s – there has been a proliferation of domestic schemes in recent years. This includes the launch of Malaysia's Retail Payments Platform (RPP), the expansion of SEPA Instant Credit Transfer (SCT Inst), and more – in Colombia, Canada and Peru – are expected to come online soon. At the last count, according to Flavors of Fast, FIS Global, 56 real-time systems were expected to be live by the end of 2020.

The payment values are also growing which opens up the potential beyond retail payments while also increasing the risk if fraud is not detected in real-time. In early 2020, for example, The Clearing House in the US raised its limit to \$100,000, while the UK's Faster Payments Service (FPS) has long had a limit of £250,000. Meanwhile, real-time payment volumes are also expected to grow.



While faster payments within national borders are on the rise, cross-border real-time transactions are also becoming a reality. For example, SWIFT launched its gpi instant service after successful trials that separately tested banks connecting to Singapore's Fast And Secure Transfers (FAST) as well as instant cross-border payments with Europe's TARGET Instant Payment Settlement (TIPS). This growth underscores the need for market infrastructure providers to architect the infrastructure and technology, particularly cloud services, that will drive this new era of interconnectivity and the services that will be layered on top.

The focus, however, should not be on the payments, but rather what they enable. When the iPhone was introduced in 2007, the revolution was not in the device or the hardware itself, but what it made possible. At that time, it was hard to imagine the ways in which smartphones are used today. In the same way, real-time payment systems are just the beginning, laying the foundations for the future. When the ability to clear and settle transactions in real time is combined with other technologies, such as application programming interfaces (APIs), open banking and the internet of things, a new world opens up.

## GLOBAL STANDARDS PROVIDE THE CATALYST FOR INNOVATION

When two parties speak a common language, it is easier for them to share ideas without the friction of translation or risk of errors through misunderstandings. In the real-time payments ecosystem, there are numerous players – banks, corporates, market infrastructures, technology vendors – that need to work to the same standards if their solutions are to be widely adopted. Enter ISO 20022, the format which means they are speaking the same language when they exchange data that accompanies transactions. In the same way that VHS fuelled the growth of videotapes and home movies, or the TCP/IP protocol laid the foundation for the internet, ISO 20022 is the catalyst for payments innovation.

Due to the use of a common messaging format, real-time payments are now more efficient: treasury teams, for example, no longer have to translate various formats as payments come in. The standard was designed with fields to include rich data that don't just aid in processing and reconciliation but can be used to attribute new value to the payment. Additional data can accompany the transaction, which is proving to be just as, if not more, important than the transaction itself.

The global standard creates economies of scale for developers, making it worthwhile for them to create universal solutions that can be used many times over rather than creating unique formats for individual clients – they only



need to build it once. This means that other services can overlay payments, making greater use of the data that can accompany transactions. Payments with invoice information enable automatic reconciliation; transactions with value-added tax calculations allow easier accounting; and car purchases with accompanying vehicle information make for easier registration. Such solutions are possible because they are built using the same standards and can be applied uniformly across the various real-time payments infrastructures around the world.

Meanwhile, banks and other institutions are realising the potential of their customers' transaction data and the value-added services this could entail. The amount of data, like the growth in real-time payments, is set to increase exponentially, requiring careful planning for how it is collected, stored and accessed – all of which calls for substantial computing power. In this data lies a treasure trove of behavioural patterns, meaning that payment providers can get smarter about the solutions they offer and better at engaging with their customers.

## MOVING AWAY FROM LEGACY SYSTEMS HAS SIGNIFICANT IMPLICATIONS

As institutions take advantage of this real-time era, old systems need to be replaced and the back office needs to be brought up to speed. Not only do payments need to be instant, the accompanying processes - such as fraud detection, risk management and accounting systems – also have to be brought in line with the always-on, real-time environment. Moving away from batch, end-of-day processing has significant implications: there is no downtime for maintenance, and a technical glitch can wreak havoc as the payment system plays catch-up with the backlog.

It cannot be ignored that along with instant payments comes instant fraud, instant money laundering and instant bank runs. Such speed obviously has implications for treasurers and their liquidity management. Rather than calculating their cash positions at the end of the day, they need to be assessed at regular intervals. Now there are no cut-off times and financial reporting must adapt to this always-on system.

When real-time payments systems were first introduced, there was a spike in fraud as criminals took advantage of the novelty and the speed of the technology. Account takeover fraud was common, where the criminals take over an account, through malware for example, and route payments to accounts of their choice. Because the payments are instant, by the time the account holder realises what has happened, it is too late. The payment has gone. Real-time payments are also irrevocable – which makes this situation





particularly difficult to resolve. This has also been a problem with invoice fraud, a classic scam where the criminal exploits weaknesses in human nature. The criminal contacts a company, pretends to be their supplier and notifies them the payment instructions on their invoice has changed. The company then unwittingly pays their supplier's bill into the criminal's account. Again, the payment is irreversible, and because they actively made this payment, their bank would be reluctant to reimburse them for their mistake. Similarly, with money laundering the methods of criminals have not changed, they have just sped up. Money launderers typically move money through a long chain of accounts – often through money 'mules' – to disguise where the payment originated. This now happens instantly, making it even more difficult for banks and law enforcement to trace.

These examples demonstrate the need for risk management to also be in real-time, with compliance solutions that are sophisticated enough to detect sanctions violations and money laundering, for example, in milliseconds. This all needs to be done on an increasing volume of payments, while also not impacting the convenience and experience of the customer. In doing this there is a huge opportunity for third party developers, who can take advantage of the latest developments in machine learning and artificial intelligence, to provide their solutions via APIs. For them to be effective, however, they need to have the capacity and computing power to process the data quickly and effectively. Institutions need to future-proof their engine rooms to handle these changes, and those who rely on quick-fix solutions now may find themselves unstuck in the future and unable to take advantage of the latest opportunities and innovations.

**"Fifty-six real-time systems expected to be live by the end of 2020."**

FLAVOURS OF FAST, FIS GLOBAL, 2019



## NEW INFRASTRUCTURES CREATE BENEFITS FOR AN ENTIRE ECOSYSTEM

As real-time payments grow in popularity, cross-border payments in particular have the potential to stimulate economic growth and break down barriers to trade. To make this a reality, many payments providers realise that the infrastructure is a scale game that requires collaboration to make real-time payments economically viable – and cheaper for the end users. This was one of the drivers behind Project 27, more frequently known as P27, a real-time platform that is owned by Danske Bank, Handelsbanken, Nordea, OP Financial Group, SEB and Swedbank, and named after the 27 million people in the Nordic region it aims to benefit. The platform will streamline nine clearing solutions into one, providing both real-time domestic and cross-border payments, starting with Denmark, Finland and Sweden. Norway and other countries will possibly be added later. The project aims to go live in 2021, subject to regulatory approvals. This infrastructure is unique as it is being built as a multi-currency, cross-border system from the outset, with a clear objective of boosting the economy, and innovation, in the region.

The future benefits of this kind of system are numerous. Just as a person in Sweden can send a WhatsApp message to their friend in Finland, in the future they will be able to send a payment to another country, in real-time, from their smartphone. Once this way of paying takes off, it is possible that cross-border payments further afield will become the norm, which will encourage global economic activity as well as the velocity of money.

As more individuals and companies adopt this way of paying, there will be changes in the nature of payments. Cheques and payment cards may become a thing of the past, with digital accounts and wallets becoming the main transaction account. Also, it may not be traditional banks providing these services. Since the systems are being built from scratch, and replacing legacy payments infrastructure, newcomers have the opportunity to connect to the real-time system. In some markets, new entrants are offering digital accounts that have the functionality of a traditional bank account, even though it is not provided by a bank. This also means that those who were previously excluded from the banking system now have the opportunity to have a digital payments account.

For payment providers, the real-time infrastructure means they can engage with their customers in a new way, offering services that were not previously available. There is the potential for a range of overlay services to be introduced. For example, Request to Pay – a kind of real-time direct debit – gives individuals and companies more control over when their bills are paid. This can free up working capital for corporates; their real-time account balance in

a real-time world will be a true reflection of their situation, as opposed to an estimate based on which payments may, or may not, go out in the next few days.

Infrastructures such as that of P27 provide the opportunity for other organisations to streamline their payment processes, with payment hubs for example. They can optimise their processes so that all types of payments are brought together in a single hub, where there is greater control and visibility of all transactions, which in turn will create efficiencies.

## CONNECTING REAL-TIME INFRASTRUCTURES RELIES ON EFFECTIVE CLOUD COMPUTING

As these new payment platforms are being built and legacy systems replaced, so too are the means of connecting and powering the systems. Institutions, such as banks, that are planning their new payments architecture are realising that other legacy practices – such as building and operating their own data centres – also need to be revised. There is also a reluctance, in an environment where return-on-investment windows have shrunk, for banks to invest upfront in hardware that may not be used to its full potential. Adapting to a global real-time environment could be prohibitively expensive for any institution that attempts to do it by building their own infrastructure in every location they need to have a presence.

Cloud technology spurs innovation because it is easier for large and small players to experiment; it creates adaptability and agility. Many industry executives realise they cannot predict what the financial technology trends of the future will be; instead they are focusing on being agile enough to run with opportunities as they present themselves. In a cloud environment they can easily test, learn and go to market with a minimum viable product. This contrasts with the old way of building a solution to completion and then finding out whether it works or not, or even whether it is popular. The lumbering giants with legacy systems, and legacy practices, won't be able to keep pace in the real-time world of innovation.

Using the pay-as-you go model, offered by the cloud, is more cost efficient, and for smaller institutions it lowers the barriers to entry as they don't have to sink their limited funds into an initial infrastructure investment. This has produced a wave of cloud-driven fintech players, who, through the use of APIs, have been able to plug their solutions into the legacy financial infrastructure operated by the banks. Collaboration and partnerships between fintech providers and incumbent banks are spurring innovation and creating new possibilities – all of which highlights the critical importance of establishing secure, reliable, and low latency connectivity between ecosystem participants.





While fintech players use the public cloud to power their solutions and reach their customers, there is still caution with how banks share their data, with private connectivity being more suitable than the public internet for the transmission of bank data because private connectivity offers more security and reliability. Security is obviously a concern for banks, and often cited in the past by decision makers as a reason for not moving to the cloud. Now, however, there is a realisation that third party cloud providers have the economies of scale to invest in security to a degree that a bank would not be able to do on their own. Added to this, regulators in various jurisdictions are also now more comfortable with the cloud. However, regulatory requirements in certain markets that there should not be a concentration of risk with a single provider mean that many banks are adopting a multi-cloud strategy.

For the foreseeable future the infrastructure of choice for many banks will be a combined hybrid multi-cloud strategy, using private connectivity to link to workloads and fintechs in the cloud.

## COLLABORATION IN THE ECOSYSTEM SPURS INNOVATION

In the ecosystem that has been created around the real-time payments infrastructure, all kinds of innovation will be possible as various players collaborate and bring their applications to individuals and companies.

In this digital environment, banks must decide what kind of institutions they want to be and whether they want to be pure infrastructure players that provide the pipes for payment flows, for example. Or, alternatively, they could abandon the goal of universal banking – which aims to provide all things to all customers – and instead opt for a platform model, where they provide the platform for developers to offer apps and services to their customers. Similar to the app store model of the iPhone, this opens up a world of possibilities. When the iPhone was introduced, if Apple had stuck with creating all the apps for the smartphone itself, innovation would have been limited. By opening up, and making its APIs available, all sorts of apps became possible, apps we have now that were unthinkable at the time the platform was created. A new wave of innovation swept in, and it is likely something similar will happen with the introduction of open banking, especially now that foundation of real-time payments is in place to underpin it.

There has been a recognition by many financial institutions, and fintech companies, that they cannot do everything themselves and so they have embraced a collaborative partnership approach. For those who have not embraced being open, regulation in some jurisdictions is now mandating it – forcing banks to rethink their business models. For example, with the



second Payments Services Directive (PSD2), data is viewed as belonging to the customers – and not banks – and financial institutions must allow third party providers access to customer accounts, if the customer requests it. This enables a range of players to offer financial solutions, not just banks. In a simple form, it could be an account aggregator app that has data from various accounts feeding into it, crunching transaction data to offer financial advice. Or it could be an app that plays a musical note for each transaction on an account – a high note for credit, a higher note for more credit, a low note for debit, and so on, playing a melody of current account payments. The possibilities are endless, all enabled by the principles of open banking, APIs, and because of the real-time payment system that lies underneath.

If banks move to a platform, app store banking model, they could offer corporates cash management, or foreign exchange apps, for example. Collaboration between different parties could see retailers, consumer finance companies and banks joining forces. For example, an individual buying a car could be offered finance by a car dealer, which can be arranged – along with the payment – instantly. On a larger scale, partnerships could mean that car dealers could be offered finance on the spot – and the instant funds to secure the best deal – when they buy cars at wholesale auctions.

These are just some examples of what is already being considered and created. As interconnectivity increases – between people and devices, driven by the exploding internet of things – even more will be possible as data will be used more effectively, at greater speed, and transactions will be in real-time. As the proliferation of real-time payments continues, it is critical that the market infrastructure that supports this growth is designed for high availability, speed, and a diverse financial ecosystem.

“The focus, however, should not be on the payments, but rather what they enable. When the iPhone was introduced in 2007, the revolution was not in the device or the hardware itself, but what it made possible. At that time, it was hard to imagine the ways in which smartphones are used today. With real-time payment systems, when the ability to clear and settle transactions in real time is combined with other technologies, such as APIs and IoT, a new world opens up.”



## CONCLUSION: A REAL-TIME FUTURE REQUIRES PREPARATION NOW

More domestic real-time systems are coming online, and seamless cross-border real-time transactions – through initiatives such as SWIFT gpi and P27 – will soon be a reality. This real-time environment requires preparation as other areas, aside from payments, need to be brought up to speed, such as accounting, risk detection and liquidity management systems.

The transactions, however, are just the beginning. Real-time payments lay the foundation for future innovation which, when combined with rich data, open banking and interoperability in a highly-networked global economy, opens up a myriad of possibilities.

This new era of commerce will be instant, open and everywhere, with banks and fintech companies collaborating in interconnected ecosystems to bring about the next generation of commerce. To accommodate these changes, not only is it critical that the market infrastructure that supports this growth is architected for high availability, speed, and a diverse, interconnected financial ecosystem, but also that it is architected to securely connect to participants in whichever cloud provider they may reside. Markets that do build their real-time payments platforms to be in the middle of a hybrid multi-cloud ecosystem will be at a competitive disadvantage that could last for several years until the next technology refresh. The loftier the expectations are for innovation and digital transformation in real-time payments, the more critical are the infrastructure's foundation to support it.

**“[Faster payments] growth underscores the need for market infrastructure providers to architect the infrastructure and technology, particularly cloud services, that will drive this new era of interconnectivity and the services that will be layered on top.”**



# 03 ABOUT

## Finextra

This report is published by Finextra Research.

Finextra Research is the world's leading specialist financial technology (fintech) news and information source. Finextra offers over 100,000 fintech news, features and TV content items to visitors to [www.finextra.com](http://www.finextra.com).

Founded in 1999, Finextra Research covers all aspects of financial technology innovation and operation involving banks, institutions and vendor organisations within the wholesale and retail banking, payments and cards sectors worldwide.

Finextra's unique global community consists of over 30,000 fintech professionals working inside banks and financial institutions, specialist fintech application and service providers, consulting organisations and mainstream technology providers. The Finextra community actively participate in posting their opinions and comments on the evolution of fintech. In addition, they contribute information and data to Finextra surveys and reports.

### **For more information:**

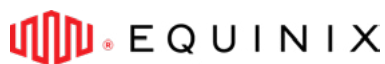
Visit [www.finextra.com](http://www.finextra.com), follow [@finextra](https://twitter.com/finextra), contact [contact@finextra.com](mailto:contact@finextra.com) or call +44 (0)20 3100 3670

# ABOUT

## Equinix

Equinix, Inc. (Nasdaq: EQIX) connects the world's leading businesses to their customers, employees and partners inside the most-interconnected data centers. In more than 50 markets worldwide, over 5 continents, Equinix is where companies come together to realize new opportunities and accelerate their business, IT and cloud strategies.

[www.equinix.com](http://www.equinix.com)



**Finextra**

**Finextra Research Ltd**

1 Gresham Street  
London  
EC2V 7BX  
United Kingdom

**Telephone**

+44 (0)20 3100 3670

**Email**

[contact@finextra.com](mailto:contact@finextra.com)

**Web**

[www.finextra.com](http://www.finextra.com)

All rights reserved.

No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording or any information storage and retrieval system, without prior permission in writing from the publisher.

© Finextra Research Ltd 2020