ACI Worldwide
Real-Time Payments

GlobalData.

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Prime Time For Real-Time

Contents

Welcome

Foreword

Spurred by a year of unprecedented disruption, 2020 saw real-time payments grow larger—in terms of both volumes and values—and faster than anyone could have anticipated. Changes to business models and consumer behavior, prompted by the COVID-19 pandemic, have compressed many years' worth of transformation and digitization into the space of several months. More people and more businesses around the world have access to real-time payments in more forms than ever before. Real-time payments have been truly democratized, several years earlier than previously expected.

Central infrastructures were already making swift progress towards this goal before the pandemic intervened, having established and enhanced real-time rails at record pace. But now, in response to COVID's unique challenges, the pace has increased markedly as countries around the world look to advance their modernization roadmaps to maximize liquidity in their economies and stimulate growth.

For these central infrastructures, and indeed all payment players around the world, India, the world's biggest real-time payments market, remains the benchmark for what's possible when it comes to adoption. It's also a vivid illustration of the way innovation snowballs when the market forces of demand and competition are unleashed onto a robust real-time infrastructure. As each new use case builds on the last, India's real-time market is moving swiftly past entry-level use cases, such as person-to-person (P2P) transfers and merchant payments, to bill, tax and toll payments.

Singling out one country in a global report might seem unusual. But where India is leading, we expect most markets to follow, sooner or later—because it is low-value consumer payments of exactly the type seen in India that drive the highest volumes in almost every real-time payments ecosystem covered in this report.

For consumers, low-value real-time payments mean immediate funds availability when sending and receiving money. For merchants or billers, it can mean instant confirmation, settlement finality and real-time information about the payment. And at the center of these experiences are acquirers, a key enabler in the real-time payments value chain for developing and maturing markets alike. As a result, the space is becoming increasingly competitive, particularly as eCommerce has exploded. The pressure has never been higher for acquirers to leverage the real-time rails to add value beyond enabling merchants to accept customers' preferred payment mediums, whatever they may be. In the year ahead, they must proactively develop overlay services that enhance the consumer experience, such as Request to Pay—or risk allowing fintechs to further encroach on their revenue streams.

With all of that said, however, we are beginning to see the majority of real-time schemes also account for large corporate needs, dispelling the misconception that real-time payments are exclusively a consumer payments and P2P opportunity. It's early stages in this process, but there's no technical reason preventing the infrastructures being put in place from handling payments of millions of dollars. Reserve bank or central government sponsorship inspires ample confidence in the reliability of real-time payments.

Regardless of whether real-time schemes are initially conceived to cater to consumer or business needs, the global picture is one in which heavily localized use cases are "the last mile" in the journey to successfully driving adoption. Market to market buying behavior is unique. So too is mobile phone use and the size, strength and composition of the small and medium business sector—not to mention favored payment types. So, while the universal top line remains that P2P and consumer to business (C2B) drive the majority of transaction volume growth, business-to-business (B2B) use cases promise to create high margin opportunities and drive higher values of transactions through real-time payment networks. New system operators and participants can learn lessons from established markets about schemes' functions and features. But, without real-time payment use cases that reflect and build on local factors, adoption will stall.

That is where this report comes in. Partnering with GlobalData, we've expanded the scope of countries covered this year to reflect the importance of these local factors, as well as the growing global footprint of real-time payment schemes. This unrivaled coverage of the country-level trends that matter most provides vital insights for payment leaders that need to assess where growth is likely to come from, the speed with which it will arrive and the payments modernizations required to capitalize on it.

We're immensely proud of our work with customers to drive real-time payments adoption around the world, and I'm pleased once again to be able to share our experience and reflections in the pages of this report.

Jeremy Wilmot
Chief Product Officer, ACI Worldwide

Introduction

Rachael Tomaney, Director Product Marketing, ACI Worldwide

In this second iteration of Prime Time for Real-Time, we continue to dive into the biggest trends shaping digital payments and help financial institutions to plan for the opportunities and challenges that will come their way.

As recently as two years ago, a national real-time payments infrastructure was considered a luxury in many markets. That all changed in 2020, as the COVID-19 pandemic dramatically accelerated pre-existing but slow-moving trends away from cash and checks and towards greater reliance on digital payments in general, and real-time payments in particular.

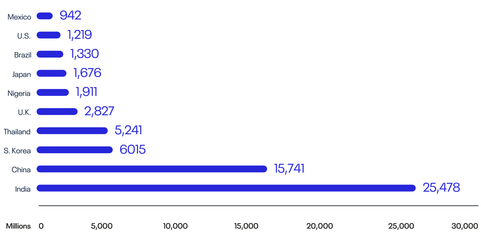
Countries with robust digital payments infrastructure already in place have coped better than those without when it comes to containing the economic impact of the pandemic. Real-time payments form a key part of that infrastructure, as they serve needs not supported by traditional card or ACH rails. Real-time payments have enabled governments, working with their financial institutions, to accelerate much needed disbursements and economic stimulus payments to their citizens. They have also enabled real-time liquidity to businesses that had to adapt to disrupted supply-and-demand patterns, including developing new supplier relationships with whom lines of credit had not yet been established.

The spotlight cast by the pandemic on existing payment infrastructures emphasized the systemic importance of digital payments; global volumes rose drastically, condensing a decade of anticipated innovation into one year and creating human behavioral changes that will not reverse as we emerge from the crisis. The accelerated adoption of mobile wallets, particularly in markets like the U.S., show that these kinds of unprecedented market events can alter cash and check trends even in the markets with the strongest grip.

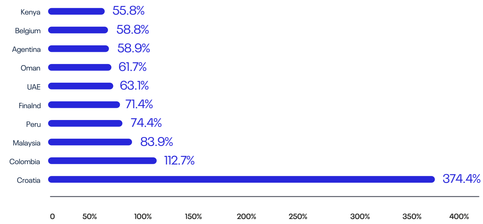
Banks, processors, acquirers and payment networks are under more pressure than ever to rapidly modernize their payment systems to manage this accelerated change. At a national level, this means migrating to modern data standards, launching new real-time systems and new value-added services, such as Request to Pay. And once the infrastructure is in place, the next imperative is for merchants to have more access to new payment services via the real-time rails. This year's research identified a new focus on digital payments acceptance and enabling real-time payments at the point of sale—both as the initial use case for a new system, such as PIX in Brazil, or as a modernization plan for existing real-time environments, such as the planned European Payments Initiative. Markets that have a clear focus on the priority use cases for their consumers, merchants and financial institutions are among those experiencing the most rapid growth of real-time payment transactions.

What is clear from this year's research and analysis is that the rate of change isn't slowing. Even in historically sluggish markets, 2020 was a catalytic year, resulting in new volumes, services and demands with which financial institutions must keep pace. Managing this need for rapid innovation alongside serving the existing needs of customers calls for an agile approach to payments modernization. We see success in this approach by regulators, networks and financial institutions around the world.

Top 10 Markets
by Real-Time Transactions (Millions)



Top 10 Markets
by Real-Time Transactions Growth (five-year CAGR 2020-2025)



Methodology

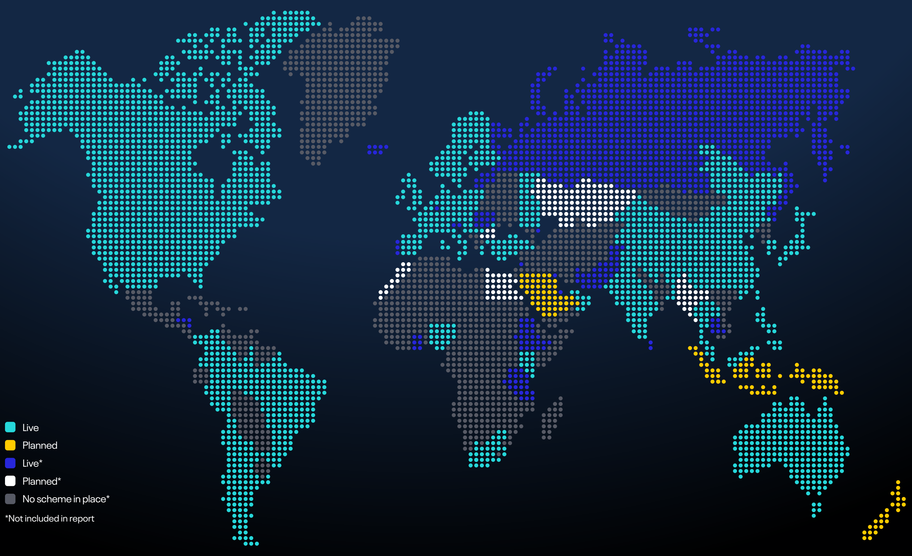
Using a global sample of 48 markets, ACI Worldwide and GlobalData present the developmental state of the market based on the various dynamics at play in each country.

We've identified the total transactional size of real-time payments per country in 2020, and provided our forecast for 2025, as well as the future five-year CAGR. We've detailed share of volume for real-time payments—both transactional and dollar—as well as other statistics contributing to real-time payments adoption. Each country profile includes details about the scheme(s) in place and a timeline for real-time payments development in the market. Finally, we've provided analysis and insight into what all the presented factors mean for each of the countries profiled.

Though this is not an exhaustive list of all markets with real-time payments in place, we aimed to cover the broadest and most diverse markets currently operating. Our goal is for any reader of this paper to identify overlapping trends in their own market, which will empower them to make decisions around how they should invest in real-time payments modernization.

Some numbers in this report have been rounded up or down to the nearest decimal place. There may therefore be discrepancies where percentages are not equal 100.

Global Real-Time Payments Adoption



North America

Country	Instant Payment Method	Status	Year
Canada	Interac e-Transfer	Live	2002
USA	RTP & Zelle	Live	2017
	FedNow	Planned	2024

Pacific

Country	Instant Payment Method	Status	Year
Australia	New Payments Platform (NPP)	Live	2017
New Zealand	Yet to launch	Planned	2021

Asia

Country	Instant Payment Method	Status	Year
Cambodia	Real-Time Fund Transfer (RFT)	Live*	2019
China	IBPS	Live	2010
Hong Kong	Faster Payment System (FPS)	Live	2018
Indonesia	Yet to launch	Planned	2025
Japan	Zengin System	Live	1973
Kazakhstan	ISMT	Planned*	2025
Kuwait	NBK Quick Pay	Live*	2018
Malaysia	DuitNow	Live	2018
Myanmar		Planned*	TBD
Philippines	InstaPay	Live	2018
Russia	FPS	Live*	2019

Country	Instant Payment Method	Status	Year
Singapore	FAST	Live	2014
	PayNow	Live	2017
South Korea	CD/ATM	Live	1988
	Electronic Banking System (EBS)	Live	2001
Sri Lanka	LankaPay	Live*	2017
Taiwan	Financial XML	Live	2003
	Interbank ATM funds transfer system	Live	1987
Thailand	PromptPay	Live	2016

Europe

Country	Instant Payment Method	Status	Year
Austria	SCT Inst	Live	2017
Azerbaijan	IPS	Live*	2020
Belgium	SCT Inst	Live	2019
Bulgaria	Borica Instant Payments	Planned*	2021
Croatia	NKSInst	Live	2020
Czech Republic	Instant Payment	Live	2018
Denmark	Straksclearing	Live	2014
Estonia	SCT Inst	Live*	2014
Finland	Siirto	Live	2017
	SCT Inst	Live	2018
France	SCT Inst	Live	2018
Germany	SCT Inst	Live	2017
Greece	IRIS	Live	2017
Hungary	Azonnali fizetési rendszer (AFR)	Live	2020
Iceland	CBI	Live*	2020
Ireland	SCT Inst (only few banks are offering)	Live	2020
Italy	SCT Inst	Live	2017
Latvia	EKS Zibmaksajums	Live*	2017
Lithuania	CENTROlink	Live*	2017

Country	Instant Payment Method	Status	Year
Luxembourg	BILnet	Live*	2020
Netherlands	SCT Inst	Live	2019
Norway	Straksbetalinger	Live	2013
	Vipps	Live	2015
Poland	Express Elixir	Live	2012
	BlueCash	Live	2012
Portugal	SIBS	Live*	2018
Romania	Plati Instant	Live*	2005
Serbia	IPS	Live*	2018
Slovakia		Planned*	2022
Slovenia	Flik	Live*	2020
Spain	SCT Inst	Live	2017
	Bizum	Live	2016
Sweden	BIR	Live	2012
Switzerland	TWINT	Live	2016
Turkey	Retail Payment System (RPS)	Live	2012
UK	Faster Payments	Live	2007
Ukraine	*No scheme in place*		

Middle East, Africa and South Asia

Country	Instant Payment Method	Status	Year
Bahrain	EFTS	Live*	2015
Egypt	Yet to launch	Planned*	TBD
Ethiopia	EATS	Live*	2011
Ghana	GhIPSS Instant Pay (GIP)	Live*	2007
India	IMPS	Live	2010
	UPI	Live	2016
Iran	*No scheme in place*		
Israel	*No scheme in place*		
Kenya	PesaLink	Live	2017
Kuwait	NBK Quick Pay	Live*	2018
Lebanon	Zaky	Live*	2020
Morocco		Planned*	

Country	Instant Payment Method	Status	Year
Nigeria	NIP	Live	2011
Oman	MPCSS	Live	2017
Pakistan	Raast	Live*	2021
Philippines	InstaPay	Live	2018
Qatar	QMP	Live*	2020
Saudi Arabia	Yet to launch	Planned	2021
South Africa	RTC	Live	2006
Sri Lanka	LankaPay	Live*	2017
Tanzania	Tanzania Instant Payments System (TIPS)	Live*	2019
UAE	Immediate Payment Instructions (IPI)	Live	2019

Latin America

Country	Instant Payment Method	Status	Year
Argentina	DEBIN	Live	2017
	PEI	Live	2016
Brazil	SITRAF	Live	2002
	PIX	Live	2020
Chile	TEF	Live	2008
Colombia	Transfiya	Live	2019

Country	Instant Payment Method	Status	Year
Honduras	SIP	Live*	2008
Mexico	SPEI	Live	2004
Peru	Immediate Interbank Transfers	Live	2016
Uruguay	*No scheme in place*		
Venezuela	*No scheme in place*		

Thematic Insights

Request to Pay Couples Convenience with the Control that Consumers Demand

Q&A with Craig Ramsey, Head of Real-Time Payments, Banking, ACI Worldwide

Request to Pay has been tipped as the global trend in payments for 2021. But what exactly does it describe?

Request to Pay—R2P for short—has different names in different countries. It's "Request to Pay" in Europe, "Request for Pay" in the U.S. and simply "Collect" in India, which is the nation that currently leads the way in Request to Pay adoption.

Yet, it's the same concept everywhere. Request to Pay is exactly what it sounds like: a request to make a payment, but not the actual payment itself. The person or business asking—the requestor—gives you all you need to action a payment with a few taps of your phone or clicks of a mouse, but you decide whether to pay or not.

With all the new payment innovations happening now, what explains the particular interest in Request to Pay?

A combination of convenience and control. Taking convenience first, when consumers want something, they want it quickly—immediately, if possible—and they want to pay for it as simply as possible, preferably using contactless payment. And, if possible, without even leaving the couch to dig out their card or account details. But they also want to keep as much control of their money as possible. Request to Pay provides the convenience of the business simply needing to know your phone number to be able to contact you with the Request to Pay and you authorizing the initiation of the payment.

Request to Pay isn't just about paying a business. It takes the hassle out of person-to-person transactions, like splitting a restaurant bill or avoiding sending a check as a gift. There's no, "OK, pay me later," followed by the awkwardness of reminding friends that they owe you.

What about the benefits Request to Pay brings to businesses?

Businesses have to offer customers the best customer experience, and that translates to payment methods. Consumers will transact more with businesses that make it easy to do so. That needs to include the payments experience. We all transact more with businesses where we trust the payments experience. If you don't let customers pay the way they want to, you're failing your business and your customers. Request to Pay offers your customers the most familiar and secure method of payment—their own banking application on their phone. Nothing will feel safer to them.

From the point of view of the banks, financial institutions and fintechs, Request to Pay is another race in which they have to compete. Of course, they all want to win, but the most important thing is to get into the race in the first place. And that means offering a robust, secure Request to Pay platform to their customers.

There's been a lot of discussion about how Request to Pay combines seamless payments with inherent security. What makes the concept so safe?

Three things. First, requests can only come through channels with bank-grade security and from billers and merchants who have passed a bank's background checks.

Second, the request is sent directly to the payer—the consumer, for example—and to respond to the request, they can authorize it via their banking app—again, through a bank-grade security mechanism.

Third, if you decide to pay, you simply choose your account and send the payment. You don't provide any payment credentials to the payee—the security strips out sensitive details like account numbers. And you don't need to know the payee's payment credentials either, although these are checked with the Request to Pay. The payment simply moves along the underlying real-time payment rails.

"If you don't let customers pay the way they want to, you're failing your business and your customers. Request to Pay offers your customers the most familiar and secure method of payment."

The Acquiring Outlook

Cloud is key as acquirers double down on data-driven business models

Q&A with Ciaran Chu, Head of Cloud, ACI Worldwide and
Peter Hazou, Director – Business Development, Financial Services, Microsoft

What are the critical challenges facing acquirers around the world right now?

CC: Most acquirers are reconsidering their business models in light of the COVID-19 pandemic, which has further increased the mounting pressure on traditional revenue streams and accelerated commoditization. Riding interest rates and FX markets is harder than it once was, as uncertainty pervades and rates look set to remain low. In addition, recent struggles to innovate effectively for merchants and consumers means a lack of progress on real-time payments and associated data analytics solutions. This has allowed fintechs to play at the front end of transaction flows and further disrupt revenue.

How do you recommend acquirers respond to these challenges?

CC: The answer to the commoditization of transaction processing isn't real-time versus card versus alternative payment methods. It's about adding value so that consumers or merchants choose to push transactions through their networks.

PH: And yet, the industry has not yet truly thought through all the opportunities to be found in machine readable payments data like that seen in the new ISO standards. Real-time payments, and by extension acquirers, can add value by playing an enormously important role in the global supply chain. Leveraging this data for insights about the flow of goods and services—that's potentially enormously valuable to corporates.

CC: To unlock these opportunities without embarking on years-long modernization projects—which acquirers don't have time for—requires a phased transformation. Many are turning to the cloud for the way it enables a progressive approach. The automation it supports also allows new infrastructures to be spun up in moments, increasing speed to market, revolutionizing their acquirer bases and allowing for more effective partnering with fintechs.

In which markets around the world do you see this kind of modernization taking hold?

PH: Less encumbered by legacy technology than markets such as the U.S. and Europe, acquirers in many Latin American markets have embraced the cloud for their systems modernizations. Among the key drivers for this modernization is finding ways to evolve operating models to deliver value to merchants at a time when central bank real-time schemes are setting stringent limits on processing fees.

CC: Furthermore, the drive for financial inclusion has seen historically dominant incumbents disrupted by new entrants that can get to market faster, with more customer-centric services for merchants. These new entrants have successfully leveraged the cloud's speed of deployment to embrace full technical solutions that allow them to focus on their business, rather than technology and compliance concerns.

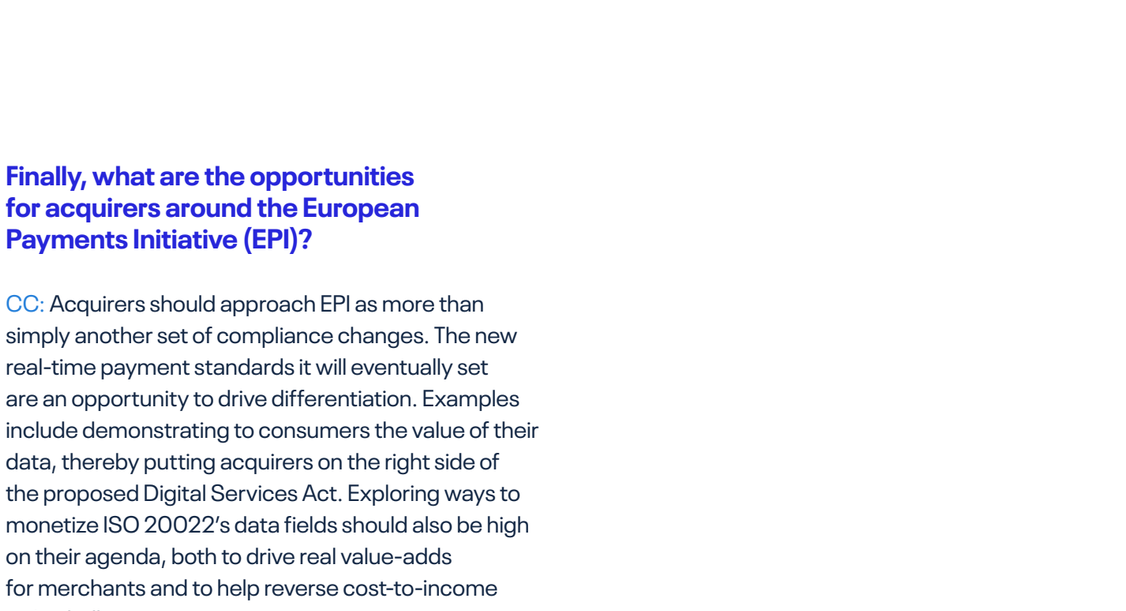
And how do the experiences in a region like Asia, which is very progressive in its digital adoption, compare to this?

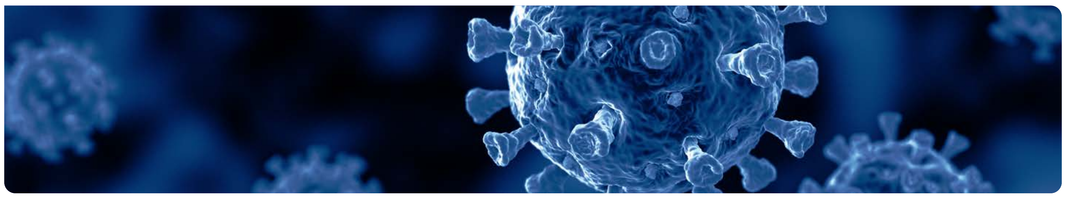
PH: Cultural and political factors, including different concepts of data privacy compared to Western nations, have enabled the adoption of digital processes in Asia to proceed much more quickly. This has spurred the growth of the region's big tech companies, and the development and subsequent adoption of super apps that drive unprecedented insight into consumer behavior.

CC: Here too, real-time payments are a vehicle for infrastructure modernization and financial inclusion. But governments are turning to technology to protect and control their economies. For example, Central Bank Digital Currencies (CBDC) are being piloted in China and may eventually provide a strong use case for blockchain-based national payment ecosystems and yet more data that acquirers could leverage.

Finally, what are the opportunities for acquirers around the European Payments Initiative (EPI)?

CC: Acquirers should approach EPI as more than simply another set of compliance changes. The new real-time payment standards it will eventually set are an opportunity to drive differentiation. Examples include demonstrating to consumers the value of their data, thereby putting acquirers on the right side of the proposed Digital Services Act. Exploring ways to monetize ISO 20022's data fields should also be high on their agenda, both to drive real value-adds for merchants and to help reverse cost-to-income ratio challenges.





Impact of COVID-19 on Real-Time Payments

Samuel Murrant, Lead Analyst, Payments, GlobalData

The COVID-19 pandemic has had a dramatic effect on how we live, work and transact. Our economies, already becoming increasingly digitized before the pandemic, have rapidly accelerated their transformation to the point that the "death" of cash is already being heralded in the industry press.

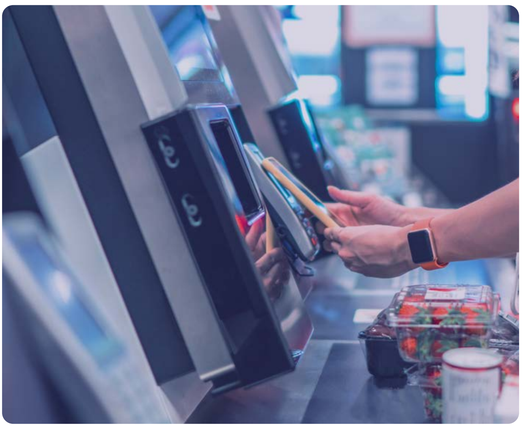
Real-time payments have a major opportunity as a result of this shift from paper-based instruments to digital payments more generally. The natural path for consumers in the developed world is to move to card-based payments (or mobile wallets that almost exclusively use the card-based payments infrastructure). Naturally—because it is inherently tied to revenue for much of the industry—the payments industry, in general, is pushing for this through raising contactless and mobile wallet spending limits, as well as rolling out acceptance infrastructure to support merchants. In the developing world, by contrast, the main beneficiary of the shift away from cash-based payments is the mobile payments sector. Without a developed cards infrastructure already in place, these developing markets are much more likely to move directly to real-time payments from cash.

Consumer spending patterns in the midst of the pandemic are not only moving from paper to electronic payments, they are also moving from in-store to online channels. This, again, favors real-time payments technology. Card-based payments were never designed for remote payments—much of their authentication technology relies on physical proximity—and all efforts to adapt cards to the online channel are, at best, workarounds. GlobalData has observed over the past decade a dramatic fall in the market share of cards in eCommerce, from accounting for over half of all eCommerce spending in 2011 to just over a third in 2020.

Almost all of this lost share has been claimed by alternative payment tools that are specifically designed to meet the needs of the online channel. The root cause of this shift is the greater convenience offered by purpose-built online payment tools.

With eCommerce growth overall being hugely bolstered by the pandemic, real-time payment services are well-positioned for growth in 2021. The comparison with card payments makes them attractive to merchants already. Looking at the extensive legal battles between retailers and card schemes, it is easy to see the appeal to merchants of cheaper options for electronic payments acceptance. The only sticking point is consumer adoption; consumers see none of these costs or difficulties when transacting, particularly at the physical point of sale. However, with a sufficiently convenient user experience, real-time payments-based systems can appeal on the grounds of convenience as compared with payment cards.

Real-time payment systems are still in a nascent stage worldwide and still mostly focused on the obvious use case of P2P payments in many countries. However, the pandemic has provided an opportunity to accelerate the growth path for these instruments, and the critical factor in the short term is for merchants to begin accepting these services online. As consumers become used to the speed of real-time settlement for P2P payments, they will naturally move to using them for eCommerce over the (relatively) slower and less convenient process of using cards online. From there, there is potential to move into in-store payments once enough consumers recognize real-time payment brands and the user base is high enough to deliver sufficient value to merchants.



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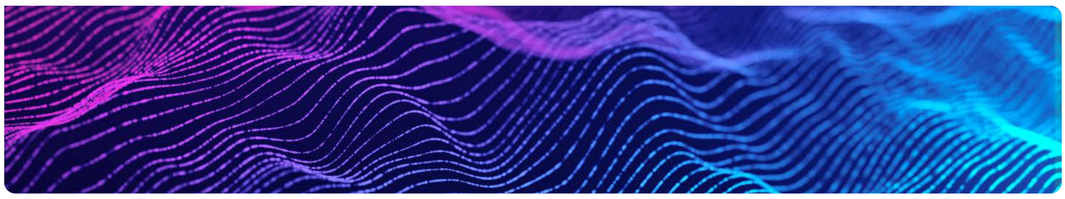


Payment Networks

Markets and trends to watch in a fast-changing global payment networks landscape

Q&A with Bill Reboul, VP – Global Solution Strategy & Innovation, ACI Worldwide and
George Evers, SVP – Product, Real-Time Payments, Vocalink (a Mastercard company)

What are the markets and trends to watch in terms of payment network developments in 2021 and beyond?

BR: Latin American countries continue to make real-time payment networks a key tool for improving financial inclusion. Argentina is due to launch its third iteration of a real-time scheme to add further point-of-sale functionality. Chile's real-time rails are expected to undergo imminent modernization to improve the customer experience and widen access. And Peru's brand new mobile P2P initiative is a boost for financial inclusion, though fragmentation remains in the nation's successful but disparate mobile wallet market.

Elsewhere, Switzerland's banks will soon have access to a world-leading, real-time payments system as SIX Payments, the Swiss central infrastructure, concludes the tendering process for a technology partner. And the world's fourth most populous country, Indonesia, is expected to launch its first-ever real-time payments scheme. The market is expected to go straight to mobile payments thanks to the convergence of several popular wallet solutions onto a single QR code standard.

GE: At a higher level, we're almost certainly going to see more regionalization in payment networks. The proliferation of ACH, RTGS and similar platforms between countries that broadly perform the same process, but in slightly different ways, creates a lot of costs and barriers to innovation, plus makes it easier for fraudsters to move money out of one country and into another. Most now accept that this needs to be addressed and the Nordics' P27 remains the one to watch here.

What are your views on the potential impact of the European Payments Initiative and its relevance to the global payments industry?

BR: EPI looks set to finally deliver on the EU's long-held ambition to create a Europe-owned and operated payments network. Its outcomes will be interesting to markets with developing real-time ecosystems and central infrastructures looking to take greater control over the emergence of new standards and technologies. Europe is a mature market with some highly effective real-time schemes, but it has proved difficult to bring real-time payments to the point of sale. So, any lessons learned around overcoming legacy infrastructure challenges to drive further digital volume will resonate elsewhere.

GE: Today, the European payments market is very competitive and retailers pay the lowest costs of acceptance anywhere in the world. EPI continues to diversify that competition and we welcome this as a driver of product excellence. This competition should be based on a level playing field between any schemes that operate within SEPA and are regulated by the European authorities (regardless of their geographical scope or ownership), but also between card payments and any form of account-to-account (A2A) payments. Approached in this way, EPI also presents the opportunity for further collaboration in the market to deliver additional benefits and reliable choices for people, businesses and governments.

It seems that real-time payments are on the verge of becoming ubiquitous for national and regional payment networks, with central infrastructures and central banks making moves to mandate or motivate development of these new infrastructures. What are the benefits and considerations for these organizations when driving this development?

GE: That depends on where in the world we're talking about. For example, we're seeing intense activity in Latin America, the Caribbean and Asia Pacific, as frustrated central banks look to accelerate payments modernization by exploring and launching new real-time clearing and settlement on their systems. This tends to have the desired impact and has been seen to boost modernization and financial inclusion in these markets—but there are risks. An over-dependency on central banks to design, operate or regulate central infrastructures may stymie the innovation and market development that comes from a highly competitive payments environment. Models that have successfully avoided this—the U.K., India and Singapore, for example—have seen the central bank set the direction of travel and expectations while making industry players responsible for driving that forward.

BR: There are two dimensions to real-time: speed is the obvious one, but there is also precision. When done right, real-time payments make it practical and cost-effective to transfer or pay any amount, anywhere. central infrastructures around the world are tuning into the fact that in a pure real-time system at the scale of a national economy, enabling smaller and smaller transactions with less and less friction drives greater efficiency by precisely matching demand with supply. A lot of pent-up spending power could be released if payment networks supported business models that sliced both payments and products or services into finer and finer segments. It's a long journey to that point, but India's UPI already shows the propensity for real-time payments at scale to gravitate towards this kind of behavior.

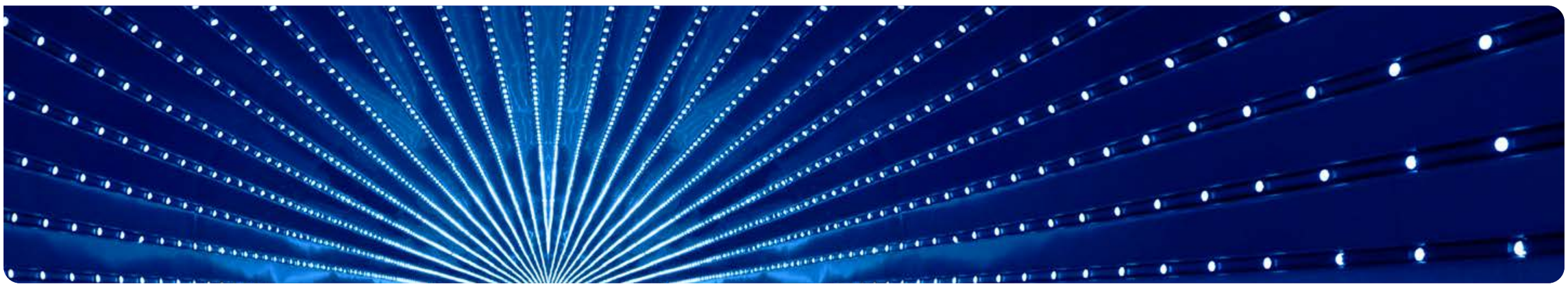
What's the most transformational development in payment networks on your horizon?

BR: Central Bank Digital Currencies (CBDC) feel like a far future trend, but they're already being piloted in China. To varying degrees, as a market's digitization develops, the drivers for solutions in that direction couldn't be stronger. The influence of private interests over digital payments is growing, but central banks' control over economic security depends on standardization and interoperability in order to maintain full visibility into—if not direct oversight of—payment flows. From their point of view, consolidation of those flows into a single CBDC network would facilitate tight control of domestic fiscal policy, plus drive economic growth through greater efficiency.

GE: On the technical side, to make digital currencies a reality, central banks have big decisions to make around the technology they might use to provision and operate. At Mastercard, we are already working on blockchain sandbox experiments to support this. More pertinent, however, is what would be the impact on the systems that we operate today? In one sense, the concept of central bank digital money exists already. Clearing house accounts underpin a central bank's position on the clearing house infrastructure, meaning central bank money is being used to transfer payments. So, if a central bank issues an additional currency, it's quite a simple technical extension of what systems do today.

BR: In the meantime, there are huge issues to solve before digital cash or something like it could take hold universally, not least of which are privacy concerns. CBDCs should be on the far end of payment players' visions and long-term estimations for now. But the infrastructure out of which they could evolve is emerging today.

> "An over-dependency on central banks to design, operate or regulate central infrastructures may stymie the innovation and market development that comes from a highly competitive payments environment."



Consumer Payments Modernization

Keeping up with aggressive digital growth demands progressive payments modernization

Q&A with Dean Wallace, Director, Consumer Payments Modernization, ACI Worldwide and George Sam, Co-Founder & Business Head, Mindgate Solutions

As the range of payment methods grows and becomes increasingly digital, which factors most influence consumer adoption?

DW: The payment method a consumer reaches for in any given scenario is influenced by a combination of choice and convenience, which comes down to considerations such as sources of funds—pre-paid, debit or credit—and the method, mobile, card, app and so on.

But consumers' wallets—physical and digital—are also becoming increasingly crowded and highly fluid, with favorites regularly emerging and fading away. This is where a third factor comes in for the banks and issuers: control.

Control influences both getting into consumer wallets in the first place and then staying top of mind once there. It can overlap with consumer convenience and choice—sourcing funds is also a control factor, for example—but in the digital payments world it extends deeper into added-value features that help consumers to manage and secure their finances, manage their accounts or do something unique with their account data, such as change their utility provider to make best use of a relevant offer.

GS: India has shown what can really be achieved with real-time payments when customer needs are met. With month-on-month growth consistently in the 5-10% range and at 2+ billion transactions per month since the end of 2020, India's UPI demonstrates how to respond to the key factors driving consumer adoption.

Convenience to pay is met via UPI's integration of payments into platform apps and other experiences they provide to enhance the user journey. Of course, convenience must be delivered alongside reliability and confidence: consumers gravitate to the apps and platforms with a perceived high degree of security. Brand value and awareness is also an important factor, as there is a clear preference among consumers to adopt payment brands that they can recall, such as Google Pay, PhonePe, Bhim App, etc., which are experiencing strong growth in India and driving more transactions on UPI.

The integration to the real-time rails as preference over other rails is the last driver. With real-time rails, the responsibility for initiating funds transfers sits with the consumer on their own device, with immediate confirmation of transfer. This helps create a sense of consumer control and trust in the payment type. But really, these factors influence consumer adoption.

What do the dynamics of choice, convenience and control mean for banks when it comes to competition in the market and sources of differentiation?

GS: These dynamics have caused banks to realign their strategies to accelerate adoption of new business models and partnerships. In a real-time open payments ecosystem, fintechs and PSPs can easily leverage the national infrastructure to drive new offerings, such as overdraft lending and loyalty programs, to name a few. These offerings can be delivered through merchants via these national connected platforms. The challenge for banks is to leverage these dynamics to shape consumer behavior and create demand. This can be achieved via strategic partnerships with fintechs and PSPs that add value to the customer experience for real-time payments.

DW: The act of making and processing the payment is becoming an incidental factor in the relationship between provider and customer, and in consumer experiences in general. In this context, the speed of real-time is vital for driving responsiveness. When speed is combined with the richer data generated by digital rails, it enables new features and functions that are vital for changing payment habits and ultimately retaining customers—or winning them from competitors.

At the same time, rival services and solutions are being brought into much closer proximity, as consumers consolidate their payment options into a single mobile device, and even a single mobile wallet or super app. That makes it easier for customers to switch between payment methods, and it also brings big tech intermediaries into the customer relationship.

Furthermore, these wallet and app services tend to disrupt revenue rather than directly generate it, and yet consumer demand is such that they can't be ignored. So, to maximize value, banks must leverage the data generated to create additional revenue-generating capabilities, such as dynamic credit extensions or loan facilities, for example.

How do you expect these considerations to impact banks' technology strategies in the coming years?

DW: Choice, convenience and control mean different things to different customers. The reality is that banks are going to have to invest in developing as many capabilities as they can to ensure they can get to the front of wallet and top of mind—and stay there—while also continuing to support most of what they already have today. That means they must find a cost-effective way to develop an infrastructure that can reliably do both, at scale, and support rapid innovation.

GS: Over the last four years in India, we have seen a complete change in direction of the banks in relation to their consumer technology platforms. Traditionally, retail payments focused on "push payments" from consumer accounts, but UPI achieved phenomenal success by creating a rail that supports pull as well as push, and exchange of data beyond just payments. Banks' technology strategies also reflect this. UPI is the payment processing platform, the volume of which is expected to increase sevenfold by 2025. And UPI's Collect capability (India's acronym for Request to Pay) is a great tool for financial institutions, especially for the collection of small-ticket loans, insurance premiums, investments, etc. Banks can run a cyclical process to generate Collect requests. Fintechs are beginning to use consumer behavior history beyond transactions to make credit decisions. Delivering on these capabilities requires a fully modernized payments platform.

How do banks translate these conditions into a consumer payments modernization roadmap, and a platform for pushing their offerings to the front of digital wallets?

DW: The question that technology leaders and platform owners can expect to be asked soon, if they have not been asked already, is, 'How are you going to support our modernization without taking five years to rebuild everything?'

To enable choice, convenience and control, to innovate while maintaining existing systems and to do so cost effectively—that's going to require a progressive and ongoing payments modernization journey. That will likely mean refactoring platforms over time with cloud-native technologies, such as containers, and using microservice architectures. And it will deliver technology infrastructures better able to keep pace with the accelerating rate of change in payments.

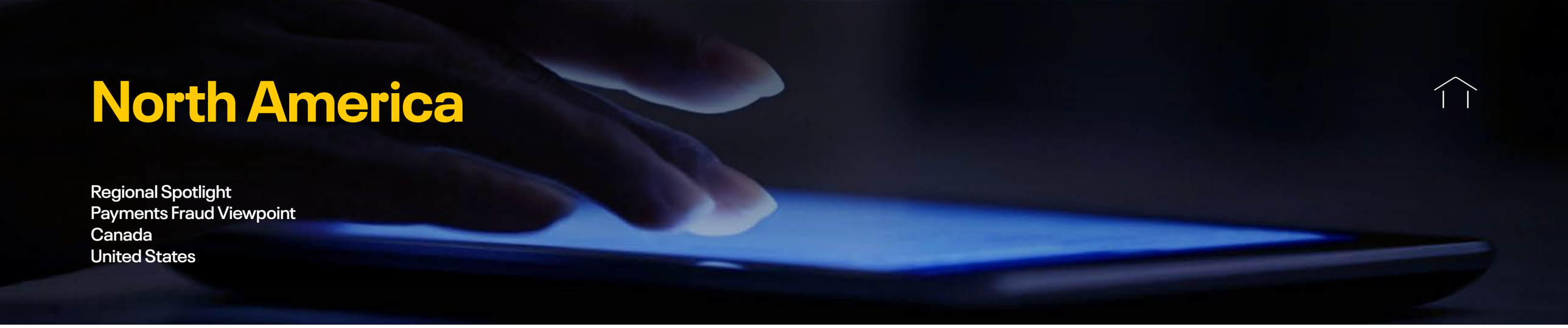
GS: When dealing with such exponential growth in real-time payments, banks must modernize their platform to minimize disruptions, manage rapid changes from the ecosystem via APIs and build in the capability to scale to demand via cloud services. And it does not stop at that. Banks must keep investing to keep pace with the market. Strategic partners, such as fintechs, who help drive adoption and much of the volume, are hungry for banks to provide better data models to feed their applications.

AI-enabled applications hold the potential to help provide customers with new and better experiences and offer tailored financial products from banks—a strong growth strategy. To achieve this, banks do not need to develop AI tools, but they need to be able to leverage AI across their data sets to understand relevant consumer behavior and buying patterns. To effectively push their platforms, they need to make sense of consumer data and effectively present that to their consumer. Most banks still hold the true value of their customer, both in deposits and data, but they must figure out how to leverage its synergies and provide it back to that customer in a way that enhances the customer experience.

India is an interesting market because several faster payments systems already existed before UPI, but the market has still found use cases and ways to drive growth, with multiple use cases in production from a merchant and consumer perspective. But the government is not slowing down its modernization agenda, with plans to drive toward 1 billion transactions per day. Banks should expect even more use cases and even greater volumes, both of which require modern and agile systems.

DW: Although some markets are moving faster than others, the clear trend is towards mobile and digital form factors having a dominant place in the consumer payments mix. The most likely common scenario is one where mobile wallets and application-orchestrated direct access to accounts form a large part of the customer experience. And readiness for that outcome really depends on modernizations made today.

"India is an interesting market because several faster payments systems already existed before UPI, but the market has still found use cases and ways to drive growth, with multiple use cases in production from a merchant and consumer perspective."



North America

Regional Spotlight

Close neighbors but poles apart on their payments modernization journeys

Mandy Killam, Head of North America, ACI Worldwide

North America is home to two culturally similar nations that have diverged considerably when it comes to their real-time payment ecosystems and outlooks.

The U.S. is a mega market with enormous real-time payments potential that, to date, remains almost completely untapped. Today, it finally stands on the cusp of a real-time payments transformation—all that's needed is bold action from one or more of the market's incumbents to nudge it into the mainstream.

That nudge appears increasingly likely to come from the acquiring space. P2P is already well served by various near-real-time services, and many corporate use cases are largely met by Automated Clearing House (ACH) (although their demand for data rather than speed will be what sparks real-time adoption here). But merchants have a range of needs that, with the right approach, could be activated in favor of real-time payments. Their customers increasingly expect them to accept a diverse range of payments, particularly in the age of COVID-19, and they would welcome the chance to improve cash flow and liquidity while getting out from under interchange fees.

Inertia prevails for now, while the status quo's current winners figure out their place in the new future and regulators remain on the sidelines. But, acquirers brave enough to kick-start payments modernization projects that enable them to move earliest here stand to win huge future market share, as merchants seek the best possible digital payment experiences for customers at the fairest prices.

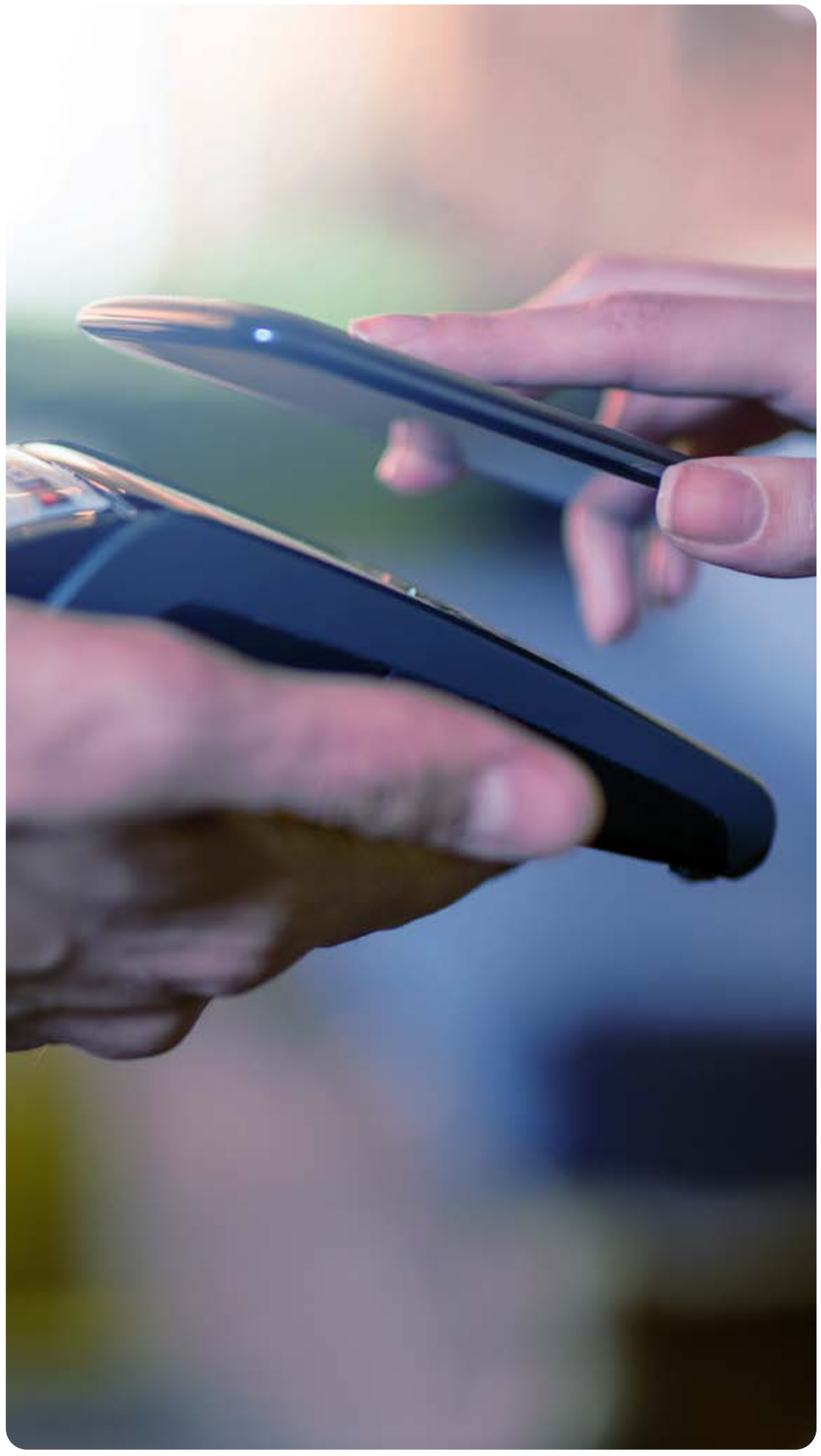
Elsewhere, U.S. banks should revisit P2P use cases. Services such as Venmo and Zelle have proven out demand, but they're not the ones best placed to perfect the business model. While these service providers continue to test strategies for monetizing their user base, their options are ultimately limited. Banks, on the other hand, have richer product portfolios and greater scale across which to spread the costs of serving account holders. And for most U.S. consumers, their bank is their most trusted financial institution—they would welcome a real-time P2P solution that gave them control of their money and the perceived extra layer of safety that comes from being a bank-operated service.

In contrast to the U.S., Canada's regulators and industry players agree that the best thing for consumers, businesses and the economy is to avoid the fragmentation of key payment systems. And they're working together to achieve it.

The regulator has approached the planned migration to the incoming Real-Time Rail system in a way that accommodates systems modernizations that truly take cost out of banks' operations. With the right preparation they can avoid rushed implementations that could otherwise give rise to unnecessary costs. The same is true for establishing ahead of time the added-value use cases offered by the switch to the data-rich ISO 20022 messaging format, particularly for corporate customers.

All told, Canada's banks have a once-in-a-generation opportunity to simplify and rationalize their payments infrastructure. Most will accelerate payments convergence into a single common platform, while also launching new services across their traditional retail and wholesale businesses that meet the needs of both. And the best have already started to modernize their systems along these lines.

Ultimately, in one form or another, significant payment changes are coming to both the U.S. and Canada, and banks and acquirers need to start making sustained efforts to get out ahead. That means developing payments modernization strategies and revenue models that leverage—rather than resist—real-time's strengths: lower fees and, if handled well, better and stickier customer experiences.



Relative newness to real-time fraud is a big opportunity to improve collaboration

Marc Trepanier, Principal Fraud Consultant, ACI Worldwide

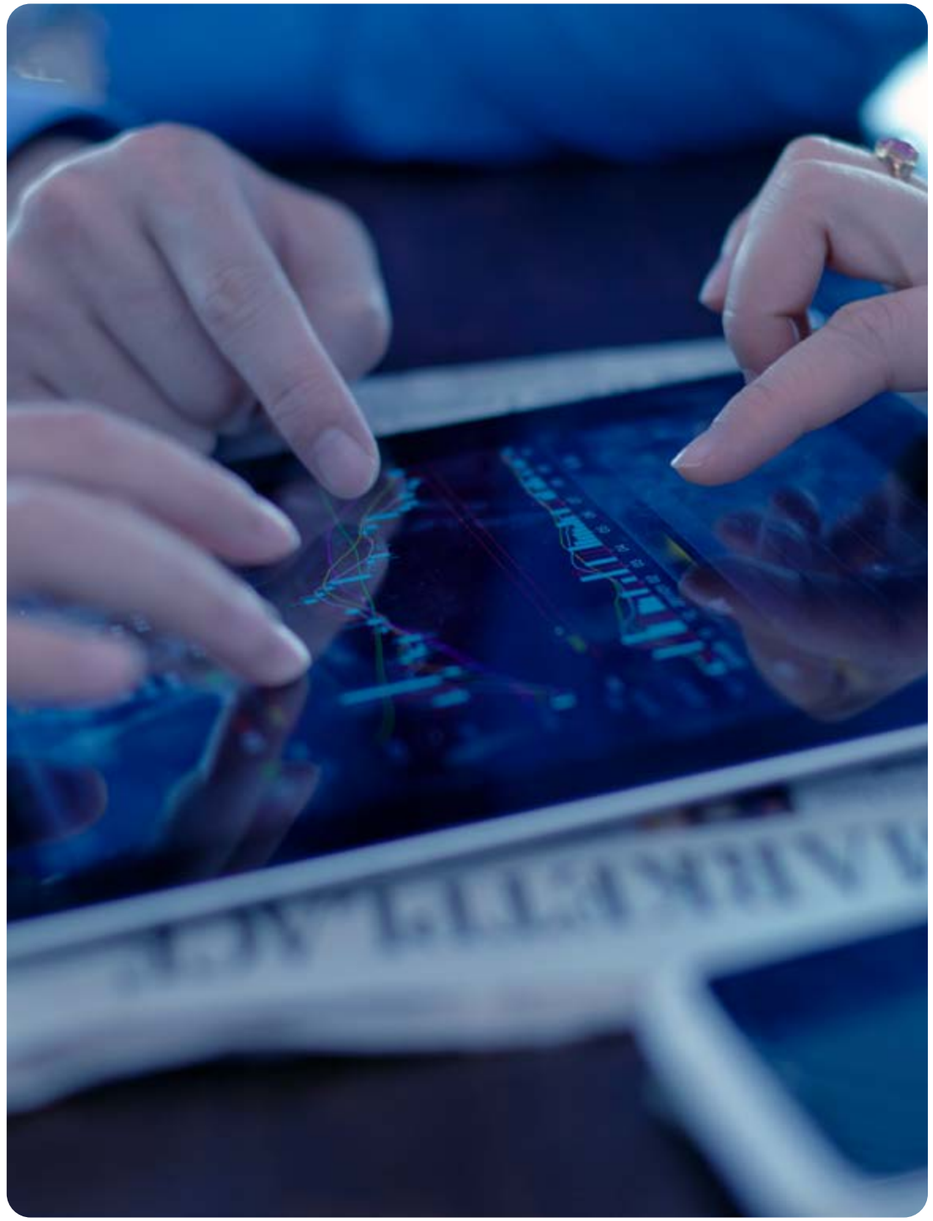
The U.S. and Canada are at different stages of their real-time payments development, but consistent themes are emerging across the two markets.

The most pressing concern is getting comfortable with protecting payments in a world where it is not practical to have analysts calling the shots. Acknowledging that real-time payments require real-time fraud detection quickly leads to conversations around machine learning-driven, contextualized decisioning.

In Canada in particular, the imminent migration of low- to mid-value digital payments to the Real-Time Rail scheme means there's an urgency to getting this protection in place. They know there is fraud in the existing channels, and they know that with real-time, high-value payments also coming down the road, it is going to become a more attractive target. In the U.S., how to approach this is part of a wider mix of decisions to be made as the country's financial institutions figure out what real-time means for them. But financial institutions in both markets will need flexible and accessible solutions that enable them to take control of their own machine learning strategy. Those solutions must also be part of a single, central fraud platform that accumulates a 360-degree profile of customers to build a rich knowledge base of the behaviors that are both usual and unusual for them.

The region's relative newness to aspects of real-time fraud detection presents some strong opportunities to leverage learnings from more mature markets, particularly when it comes to industry-level cooperation. Elsewhere, traditional methods requiring participants to pool their data in consortiums are being improved upon by solutions that create community models using anonymized fraud signals in federated learning models. By automatically eliminating data privacy issues, this accelerates information sharing and makes it more cost-effective.

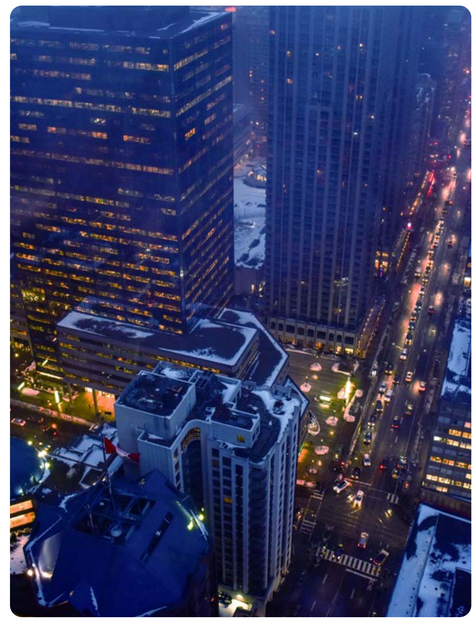
Finally, sitting above these technical and operational challenges is the question of fraud reporting. In the U.S., there are still decisions to be made as to whether real-time fraud reporting should be mandatory. Our view is that it absolutely should be. You can't manage what you don't report, and patchy reporting obstructs collaboration, leaving gaps in coverage in which the criminals will thrive.



Canada

Canadian real-time payment volumes strengthened further in 2020, recording 30% year-over-year growth. This strong growth rate is expected to continue through 2023, with rates thereafter leveling off through 2025. In our 2020 report, we noted that at 25% of adults using it, mobile wallet adoption was on the lower end of the global spectrum but had quadrupled since 2015. Mobile wallet adoption continued to grow strongly in 2020, most likely due to COVID-19 and the resulting shift away from paper-based payments.

COVID-19 had a significant impact on the Canadian economy and recovery is not expected until 2022. Consequently, during 2020 all payment methods saw a decline in volumes. According to research[1], cash is likely to see the greatest decline in usage in the future, while all contactless payments (cards, mobile wallet and real-time payments) should see swings in their favor.



ACI's Take

2021 will be a momentous year for payments modernization in Canada. In the high-value space, the new LYNX system will see its first two release phases, R1 and R2. While both still support MT messages, R2 will enable the cross-border use of ISO 20022 messages and support the move to full SWIFT MX messaging. Once all participants have moved to LYNX, the old LVTS system will be retired.

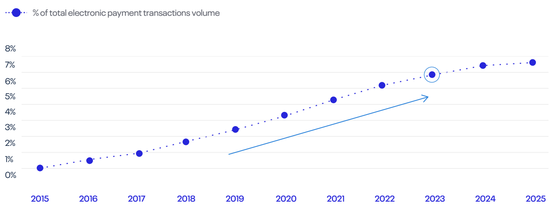
On the low-value real-time payments side, by the end of 2021 the new Interac Instant service will be at the pilot stage with its first participants. Interac Instant will replace the older e-Transfer service, bringing ISO 20022 data capabilities and faster response times to the market.

In 2020, Payments Canada will continue with its development of the new real-time clearing system (the "RTR") and has recently announced the selection of Interac to support this.

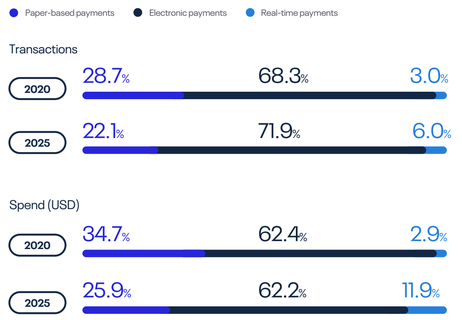
The renovation of the central payment systems has caused the greatest modernization of bank payment applications in a generation. Banks (and several bank processors) are moving to replace old payment systems, implementing payment hubs, and moving to ISO data payloads and modern API integration methods. One fortunate side-benefit of this is that when open banking finally makes its way to Canada, the financial institutions will have the modern payment systems to support it. As the banking and payment industries work to modernize their own solutions, they need to consider how they will use new technologies and capabilities to support new services that differentiate them in this new, real-time and open market. Payments Canada has already indicated that Request to Pay will be a fast-follow to the launch of the Real-Time Rail. As such, banks, processors and acquirers should be building their value propositions now for this and other new services.

Trends + Data

Real-Time Payments Volume and Its Share in Overall Non-Paper-Based Transactions, 2015-25f



Share of Volumes by Payments Instrument



Transactions

2020	2025f	F5 Yr CAGR
665M	1.53B	18.1%

Schemes

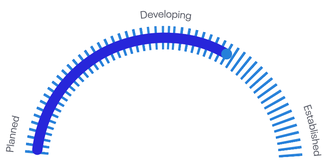
Canada has had a real-time payments scheme in place for nearly 20 years, yet real-time payment transaction volumes are still growing 30% year over year. With another scheme in development, the Canadian real-time payments market is poised for strong growth and adoption throughout the next decade.

Canada's current digital real-time money transfer platform is called Interac e-Transfer. It enables users to transfer money directly from one bank account to another and operates 24/7/365. Transactions are either settled in real time or near-real time (within a maximum of 30 minutes), with users able to make P2P, C2B, B2B and B2C transactions. Users can initiate payments through a participating financial institution's online or mobile banking application, and funds can be transferred by entering the recipient's email address or the mobile phone number linked to their bank account—and without having to provide any sensitive or personal financial information.

Although there is no specified limit for fund transfers, financial institutions set sending and receiving limits to control fraud risk. The service also enables cross-border money transfers through partnerships with money transfer operators Western Union (to over 200 countries) and Mastercard through the Mastercard Send platform (to 75 countries).

To further capitalize on real-time payments, Payments Canada is developing a new and advanced system known as Real-Time Rail (RTR), which is expected to go live in 2021. The system will also support API integration, enabling participants to offer value-added services through the platform.

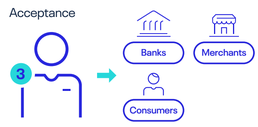
Key Stats



Market Development

With one scheme in place for nearly 20 years but still growing 30% year over year, and another scheme being developed, the Canadian real-time payments market is poised for strong growth and adoption in the next few years.

Acceptance



Total Participants

>250

Year of Real-Time Payments Launch

2002

Availability

365 24/7

Message Standard

XML

Real-Time Payment Types

Initiation/Authorization Methods

Mobile Wallet Trends

33

% of adults who have a mobile wallet and have used it in the past year (2020)

Payments Fraud Rate

14.1%

Index to global average **91**

Population who reported being a victim of fraud in the last 4 years

Top 3 Payment Fraud Types

% of fraud victims	Trend
19.2% Card details stolen online	↑
19.2% Card details stolen/skimmed in person	↓
13.5% Identity theft	↑

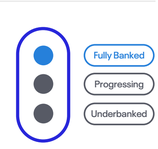
Population Banking Level

3.73

Number of debit, credit and charge cards per adult

151

Index to global average



History

2002
Launch of Interac Email Money Transfer.

December 2010
Interac Email Money Transfer is renamed Interac e-Transfer.

October 2017
Release of new features such as Auto-Deposit and Request Money.

February 2018
Interac Association and Acxsys Corporation merge to form Interac Corp.

May 2019
Interac partners with Mastercard to enable global money transfers.

February 2020
RBC launches the Interac e-Transfer: Bulk Request Money feature for its business customers.

August 2020
Bank of Canada designates Interac e-Transfer as a prominent payments system under the Payment Clearing and Settlement Act.

November 2020
Payments Canada selects Mastercard's Vocalink for settlement for forthcoming RTR scheme.

2021
RTR is expected to launch.

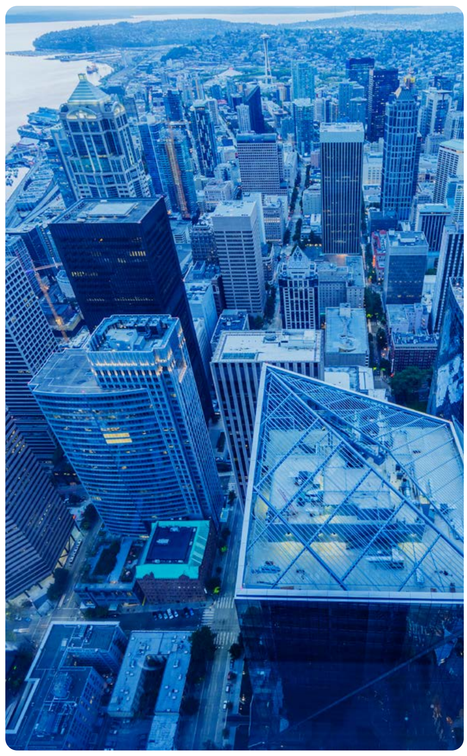
1 https://thepaypers.com/online-payments/consumer-payment-transactions-lowered-in-canada-due-to-covid-19--1244711

United States

Real-time payment schemes are relatively new to the U.S., where the rollout of a modern payments infrastructure faces several unique challenges, specifically a highly diverse financial landscape and consumer payment habits that are firmly established. Nevertheless, the U.S. has seen strong real-time payments adoption and growth since launch. Additional schemes like FedNow are likely to fuel further expansion in due course.

Increased adoption of real-time payments during 2020 helped boost volumes to a higher-than-forecast level. Influenced by the COVID-19 pandemic, the real-time payments share of all transactions doubled in 2020, although volumes are still small compared to other payment methods. The forecast for the five-year 2020-25 timeframe is for a CAGR of 43.4%, or 6.2B additional transactions.

In August, Federal Reserve governor Lael Brainard was reported in Fortune magazine as saying, "The rapid expenditure of COVID emergency relief payments highlighted the critical importance of having a resilient instant payments infrastructure with nationwide reach, especially for households and small businesses with cash flow constraints." Mobile wallet usage also grew significantly in 2020, again likely due to COVID-19.



ACI's Take

The events of 2020 underlined the need for real-time payments in the U.S. In 2021 and beyond, there will be more conversations on use cases, overlay services and digital payments, beginning with real-time payments.

Reviving the use of QR codes is coming into discussions, partially because of the COVID-19 impact, and ISO 20022 will of course continue to be part of the story—advancing systems to utilize the latest messaging standard and capitalizing on the advanced data that will be in the payments process.

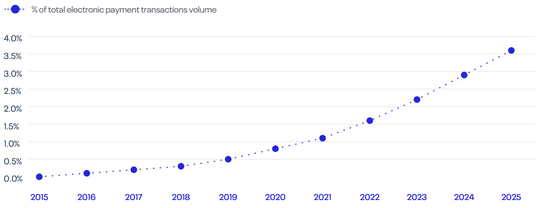
Ubiquity and interoperability discussions will develop from mere curiosity into more realistic conversations as FedNow releases more details on specifications and launches their pilot program. In addition, TCH's RTP collaborates with Zelle and will continue to show strong adoption traction through large merchants and corporates (e.g., PayChex) and small banks. The headline here will no longer be whether banks should implement RTP but rather how they can make the most of their RTP implementation.

Fraud prevention will continue to be a part of the conversation here, as well. Key questions include how best to use the advanced data to predict weak areas that are ripe for fraudulent activity, and how should the new Federal Reserve Fraud Classifier model be used to create a community against fraud protection, rather than institutions having to do it for themselves?

The speed at which consumers, businesses and governments switched to digital payment preferences in 2020 shows that the final grip of cash (and even checks) on the U.S. has been broken. There has never been a more opportune moment for banks to win customers with new value-added services that ride the real-time rails. Additionally, acquirers stand to win huge market share as merchants seek the best possible digital payment experiences for customers online and at the point of sale. Modern, rich data systems that support alternative and real-time payments are a must. The U.S. is no longer just playing catch up, it has become a digital payments powerhouse.

Trends + Data

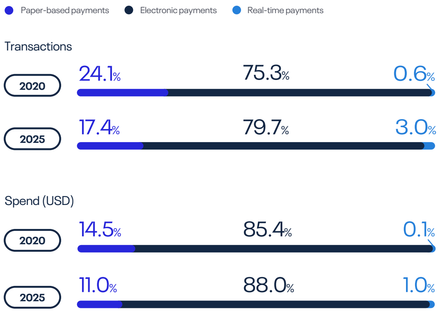
Real-Time Payments Volume and Its Share in Overall Non-Paper-Based Transactions, 2015-25f



Transactions

1.2B (2020) **7.4B** (2025f) **43.4%** (5 Yr CAGR)

Share of Volumes by Payments Instrument



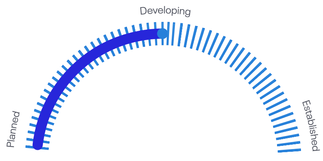
Schemes

The introduction of real-time payments to the U.S. market occurred later than in other culturally and technologically similar nations. But with two schemes live, and one more in pilot, the country is now set to see significant adoption.

Its first near-real-time payments service, **Zelle**, is offered by more than 750 financial institutions across the country. Zelle supports both individual and business accounts, and fund transfers can be made in a variety of ways including using the Zelle app, participating banks' or credit unions' mobile apps and/or banks' online banking services. Subsequently, The Clearing House (TCH) launched the Real-Time Payments (RTP) network, a 24/7/365 scheme that allows P2P, B2B, B2C, C2B, C2G and G2C payments, with a transfer limit of $100,000.

A third network, FedNow, is currently being piloted by the Federal Reserve and is expected to launch in 2023. FedNow will allow P2P, B2B, B2C, C2B and G2C payments. Its aim is to facilitate real-time payment services for banks of every size in the country, which will enable the establishment of a wider presence than is possible with the other available networks.

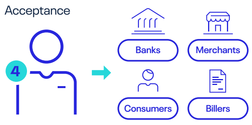
Key Stats



Market Development

With two schemes in place and another set to go live in a few years, growth of 64% year over year and adoption across banks and merchants, the U.S. is poised for continued advancement in real-time payments.

Acceptance



Total Participants

>750

Year of Real-Time Payments Launch

2017

Availability

365 24/7

Message Standard

ISO 20022

Real-Time Payment Types

Initiation/Authorization Methods

Mobile Wallet Trends

41%

% of adults who have a mobile wallet and have used it in the past year (2020)

Payments Fraud Rate

23%

Index to global average **148**

Population who reported being a victim of fraud in the last 4 years

Top 3 Payment Fraud Types

% of fraud victims	Trend
22.6% Card details stolen/skimmed in person	↓
20.1% Card details stolen online	↓
14.5% Identity theft	↑

Population Banking Level

4.83

Number of debit, credit and charge cards per adult

196

Index to global average

Fully Banked
Progressing
Underbanked

History

June 2007
Zelle goes live.

November 2017
Launch of RTP. The first real-time payments on the network are initiated between BNY Mellon and U.S. Bank.

January 2018
TCH forms a RTP Advisory Committee to obtain additional input on the operation of its new system.

August 2019
The Federal Reserve Board announces that the country's federal reserve banks will develop FedNow.

November 2019
TCH partners with Sherpa Technologies (an ACI Worldwide customer) to accelerate connecting to RTP for smaller banks and credit unions.

February 2020
TCH increases the transaction limit via RTP from $25,000 to $100,000.

October 2020
Federal Reserve announces the FedNow pilot program.

January 2021
FedNow pilot program launches with 110 participants.

2023
FedNow industry-wide launch is planned.

Asia

Regional Spotlight

COVID-19 curveballs unlikely to throw off payments modernization or unprecedented regional integration

Leslie Choo, Managing Director – Asia, ACI Worldwide

Asia is arguably one of the world's most advanced digital payment markets, and most governments and central infrastructures are already several years into strategic realignments around digital and real-time payments.

When the COVID-19 pandemic began to bite, an unintended but welcome consequence of these efforts was that the infrastructure already existed for payments to migrate to these schemes en masse and at a moment's notice. In the grand scheme of things, and relative to other regions, this represented very little change as far as payment habits were concerned. And for central infrastructure-led payments modernization strategies, it has been a case of sticking to the plan.

That's not to say the region has escaped the consequences of COVID-19 and its impact on society and business. Reduced economic activity due to the pandemic, which has particularly harmed small and medium businesses and the crucial hospitality and tourism sectors, will ultimately manifest itself in strained budgets for all businesses—payment players included.

But these players can ill afford to put their modernization projects on hold. It's more relevant than ever for them to drive new growth by quickly joining this new payments ecosystem, and improving their ability to innovate and transform, and at the same time reducing the cost of their infrastructure and operations. They must find ways to pursue these goals at the lowest possible cost and without compromising on implementation timelines. Hence, the sooner they start, the better.

Solutions to challenges such as these would ordinarily point to a new approach: the cloud. But the region's regulatory environment, technology infrastructure, knowledge and experience are, generally speaking, not yet ready. Instead, the best path for modernization lies in creating new applications and refactoring, over time, existing ones using cloud-ready, containerized and microservices-based architectures, while keeping them on premise for now. This will make for faster, lower-cost implementations and reduced management costs now, and will further reduce the future costs of doing business until the cloud is a more viable option.

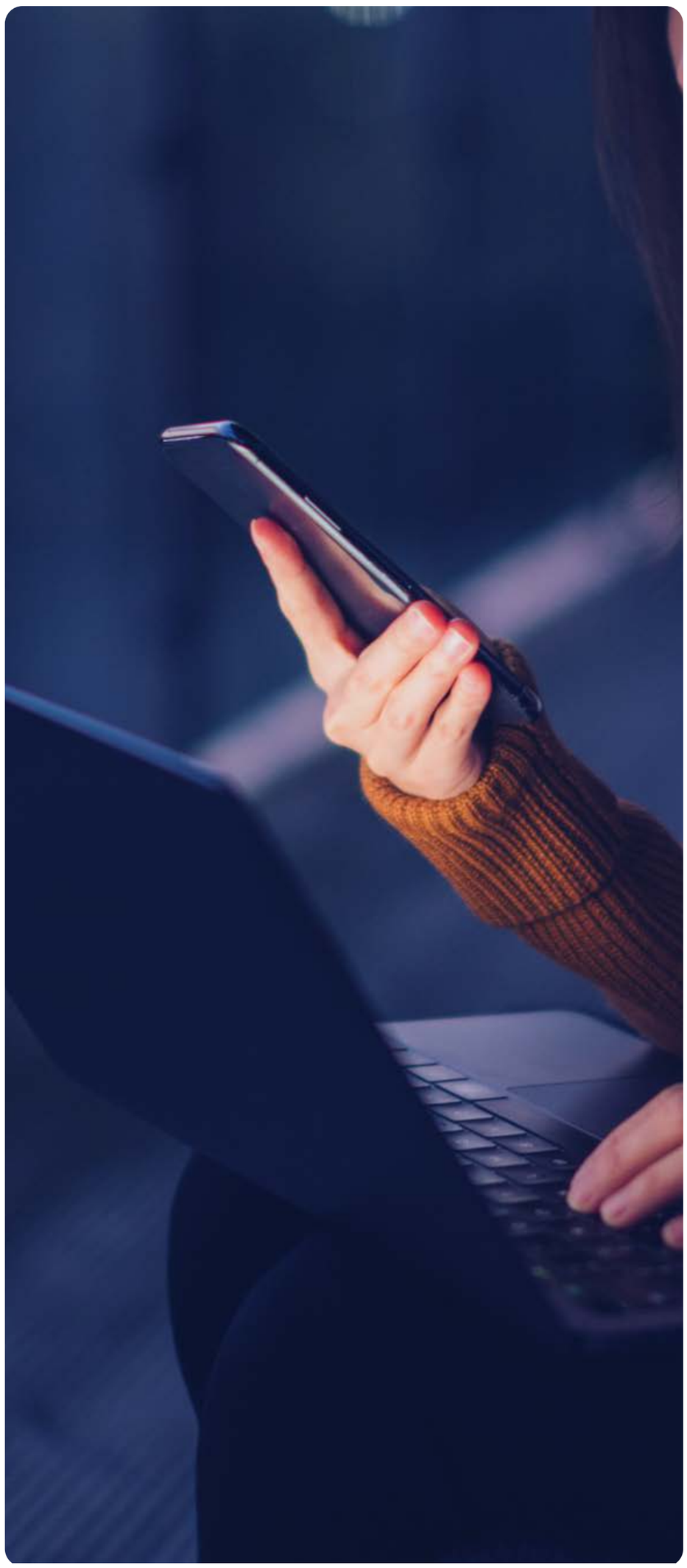
And this work will be especially vital for any financial institutions that want to ride the wave of the region's biggest, most disruptive development: the likely emergence of a cross-border, real-time payments ecosystem starting in Southeast Asia (SEA), supporting the vision of the Asian Payment Network (APN).

At first look, the Asian regional market looks too complex for this kind of activity to be successful. There is no single currency, no unified regulatory environment and no formal alignment on economic priorities. Yet, unencumbered by the legacy payment systems that can impede innovation in mature markets, SEA countries are ideally placed to leverage their robust domestic central payment infrastructures as the foundations for cross-border linkages, which are an important catalyst for growth and trade.

Initially, ongoing payment system modernizations, including wide and growing adoption of ISO 20022, will drive proliferating bilateral cross-border connections. Eventually, these links will coalesce into a larger payments network that allows all financial institutions to leverage the interconnectivity and consolidate their payment rails for real-time retail, corporate and cross-border payments, bypassing incumbent networks both domestically and regionally. Indeed, a number of bilateral MOUs (memorandums of understanding) have already been signed between domestic central infrastructures in SEA, as part of the push for greater collaboration.

And there's an even bigger picture emerging: seamless integration and harmonized connectivity with the major SEA markets. With a combined population of almost 680 million, this will become dramatically more appealing to the region's larger individual markets: China, Japan and South Korea.

This vision for a region-wide, seamless and interoperable payments ecosystem is within reach, and leading countries in the region are becoming more unified on their technology strategies—and the expert vendor partners that can deliver it. Overall, Asia is set to maintain its position out in front when it comes to real-time payments. And under the surface of this diverse and populous region is a payments juggernaut-in-waiting, one that could eventually come to connect a quarter of the world's population in real time.



No such thing as knowing too much when it comes to protecting customers from growing scam risks

Giselle Lindley, Principal Fraud Consultant, ACI Worldwide

Know Your Customer (KYC) is moving out of the confines of anti-money laundering (AML) efforts and closer to center stage, as Asian financial institutions contend with rising levels of payment scams aimed at vulnerable individuals.

In the time of COVID-19, the very definition of "vulnerable" is broader. With less access to their customary networks of family, friends and colleagues, even tech-savvy individuals can be exploited. And so for financial institutions, the needle is shrinking as the haystack grows: they are under pressure to use what they know about their customers—or should know—to identify and protect those who are being coerced or duped.

Providing fraud protection as a component of the customer experience in this way has hitherto not been as high a priority in the region compared to our Australian and New Zealand neighbors, ranking far behind AML precautions. Asian financial institutions have also tended to be more comfortable applying a hard line with liability when the customer authorizes a payment, albeit they may have been scammed. But the likelihood that the pandemic has normalized living online is changing this, and financial institutions are adopting a wider scope of fraud detection and analysis across all channels. As a result, discounting money laundering as the reason for an anomalous transaction no longer precludes its further investigation. In today's customer-centric environment, once anomalies are identified, they must be managed. Common strategies employed combine machine learning for data analysis and automated response or challenges with human interventions where necessary, especially in more sensitive cases.

But as in other regions, enabling real-time collaboration between financial institutions and other stakeholders in the shape of network intelligence is the market's next game-changer. Asian financial institutions have traditionally been better at sharing data within their institutions rather than outside of them, but they're missing an opportunity if they don't leverage current best practices around sharing fraud signals (not sensitive data) to create custom community models. This new approach enables participants to "hand select" the signals that augment their own intelligence and are a far cry from the outdated consortium model approach.

Similar to other markets, the region's mega merchants have become borderline financial institutions themselves now, with their own fraud detection systems that also harvest huge quantities of data. If their fraud signals were also made part of the wider community models, there would be an exponential increase in fraud detection rates, especially in identifying scams.

Combined with the valuable role central infrastructures organizations can play for network members as the hub for federated intelligence sharing—knowing your customer could soon take on a whole new meaning for Asian financial institutes.

China

Although China's real-time payments growth was not as aggressive as anticipated in 2020, future growth is still expected to be substantial. As with other highly mature markets, it seems much of the slowdown in growth can be attributed to the COVID-19 pandemic. Particularly in the first half of 2020, Internet Banking Payment System (IBPS) growth rates were not as buoyant as anticipated. But by the end of the year, as the worst of the domestic impacts of the pandemic appeared to have passed, the growth rate showed signs of recovery. Encouragingly for the future growth prospects of real-time payments in China, the number of institutions offering these payments saw growth in 2020.

Nevertheless, it should be acknowledged that there remains official support for the use of cash in China amid the acceleration in the use of digital payments. Towards the end of 2020, the government began urging businesses that currently reject cash to begin accepting it[1]. This is recognition of the fact that the country's digital transformation initiatives have come at a cost to some of the population who lack access to digital services, particularly the elderly.

ACI's Take

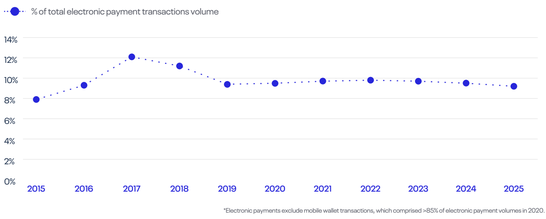
Digital payments have almost become a matter of habit in China, with strong consumer take-up driven by mobile wallet partnerships and government initiatives that have encouraged banks to get involved. Despite this, there is ample room for real-time payments growth and more to be done to bring the market to full maturity. The expected CAGR over five years is 13.5%, with 29.7B real-time payment transactions predicted for the year 2025, sending a strong message to banks in the country: China has great affinity for real-time payment services, but demand is high for more.

The opportunity is huge given the size of the population and the ingrained acceptance of digital payment mechanisms. And history tells us that the biggest winners will be those that move first and fastest. It's critical that banks, processors, acquirers and PSPs do more than simply ready themselves for an increase in volume. In a market that moves as quickly as China when it comes to technology, they must find areas of competitive differentiation—ones that respond directly to consumer and business needs—almost from day one.

The eyes of these players will be firmly on the progress of the country's newly developed digital payments system, DCEP (Digital Currency Electronic Payment), which is being trialed in Shenzhen, Suzhou, Chengdu and Xiong'an. In the future, DCEP will be a new payment method that allows near-real-time payments. However, there are limited use cases right now within retail environments. These need to be addressed if the system is to make a meaningful impact. Even though the DCEP trials are ongoing at the time of this writing, we fully expect real-time payment transactions to continue to grow as a result of its success.

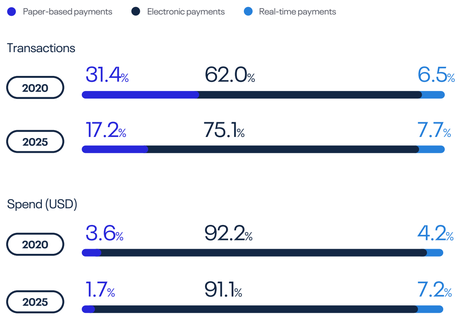
Trends + Data

Real-Time Payments Volume and Its Share in Overall Non-Paper-Based Transactions, 2015-25f*



*Electronic payments exclude mobile wallet transactions, which comprised >85% of electronic payment volumes in 2020.

Share of Volumes by Payments Instrument



Transactions

15.7B (2020) **29.7B** (2025f) **13.5%** (FS Yr CAGR)

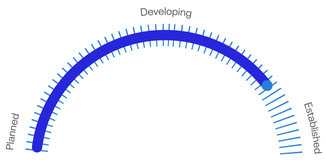
Schemes

The Chinese real-time payments market is currently very strong, with further expansion predicted over the coming years to bring it to full maturity. Unsurprisingly, given China's considerable population, real-time payment transactions in 2020 approached 16B. Yet even with the market's current exceptionally high volumes, the future growth of real-time payments in China is promising, with 12% growth year over year and a predicted five-year CAGR of 13.5%.

China's real-time payments scheme is IBPS, launched in 2010 by the People's Bank of China (PBC). IBPS offers two types of real-time payments (single instance and recurring), two initiation methods (bank account and/or mobile number) and currently has nearly 350 participants.

IBPS integrates the online banking operations of most of China's domestic and foreign banks, enabling customers to make online transactions in real time and to access real-time account information. On the bank side, it has direct and indirect participants, all of which are financial institutions. Direct participants must have RMB reserve accounts with PBC as well as direct access to the system. Indirect participants connect through partner banks which carry out fund transfers on their behalf. This type of indirect participation encompasses third-party payment companies like Alipay and WeChat Pay.

Key Stats



Market Development

With growth of 12.3% year over year and integration into the most popular mobile wallets, the Chinese real-time payments market has strong potential.

Year of Real-Time Payments Launch

2010

Availability

365 24/7

Message Standard

ISO 20022

Total Participants

~350

Mobile Wallet Trends

84%

% of adults who have a mobile wallet and have used it in the past year (2020)

Payments Fraud Rate

15.4%

Index to global average **99**

Population who report being a victim of fraud in the last 4 years

Top 3 Payment Fraud Types

% of fraud victims	Trend
21.3% Confidence trick	↓
14.4% Identity theft	↑
13.8% Other	↓

Population Banking Level

8.17

Number of debit, credit and charge cards per adult

331

Index to global average

Fully Banked
Progressing
Underbanked

History

August 2010
People's Bank of China introduces IBPS.

January 2011
ICBC Bank integrates the IBPS platform into its internet banking service.

2013
To promote electronic payments in rural areas, the central bank mandates banks in rural areas of Gansu Province to adopt IBPS.

December 2018
The total number of participants reaches 290.

February 2019
A mobile number feature is added to IBPS, enabling users to make money transfers by using a recipient's mobile number.

December 2019
The total number of participants reaches 346, including 213 direct and 133 indirect partners.

1 https://www.reuters.com/article/china-pboc-cash-idUSKBN28P0XW

Hong Kong

New Market

The major payment methods in Hong Kong remain Octopus (a reusable contactless stored value card) and credit cards, but real-time payments took off in spectacular fashion in 2020 and are expected to comprise over 10% of all electronic payments by 2025.

At its launch, the Faster Payment System (FPS), which supports HKD and RMB currency, was primarily utilized for C2B and P2P payments. But, as more participants have signed up, use cases for the system have expanded. By the start of 2019 (just three months post-launch), more than 2M consumers and businesses had signed up for the service, and later that year the average monthly volume of real-time payment transactions was around 3.6M. In 2020, that figure leapt to around 10M and continues to grow.

Contributing to this adoption growth is the high usage of mobile wallets, and their integration with FPS, QR code popularity and availability with FPS. It also helps that real-time payments are free of charge for consumers.

Businesses are also seeing the benefits of real-time payments and are especially enthusiastic about the possibilities of "just-in-time" payables and receivables management.

ACI's Take

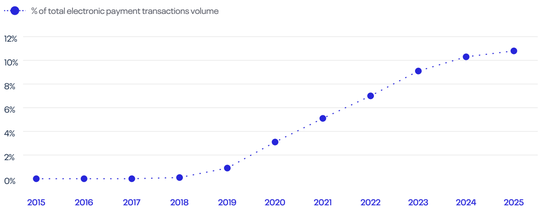
Hong Kong launched FPS in September 2018, but not all banks are currently connected because the Hong Kong Monetary Authority (HKMA) does not mandate any deadlines for participation. However, while it's still early days, the stunning levels of growth in the market have alerted all players, not just banks, to the opportunities around real-time payments. The experience of similar high-growth markets around the world shows that, as consumer expectations for real-time payments become entrenched and the market becomes crowded, merchants will look to acquirers that can combine favorable commercial terms with support for more payment types. This will exert pressure to innovate and provide added-value services all the way up the payments value chain. Thus, the primary opportunity for banks and processors continues to be in gaining the first-mover advantage, which will require flexible solutions that can support speed to market for innovations.

Developments to keep an eye on include HKMA's plans to expand FPS to the Greater Bay Area to improve fund transfers between Hong Kong and mainland China. This will open more opportunities in the Greater Bay Area in the future and the potential to tap into the huge mainland market. But it will also bring domestic players into closer competition with much larger and more mature mainland-based rivals. The ability to rapidly scale and differentiate to compete effectively will demand flexible, modern payment systems that support this.

It is also important for Hong Kong to adopt the success stories and the best practices from other schemes around the region (e.g., Malaysia) to harmonize the entire real-time payments ecosystem with higher adoption rates from financial institutions, consumers, merchant retailers, etc.

Trends + Data

Real-Time Payments Volume and Its Share in Overall Non-Paper-Based Transactions, 2015-25f



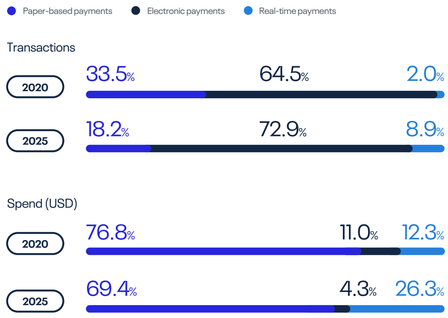
Transactions

138 M (2020)

957 M (2025f)

47.3% (FS Yr CAGR)

Share of Volumes by Payments Instrument



Schemes

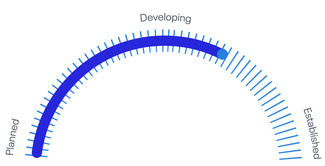
Although only launched in September 2018, real-time payments in Hong Kong have gotten off to a great start, with 214% year over year growth, a more than 3.1% share of digital payments in 2020 and continuing strong growth forecast at 47.3% CAGR over the next five years.

Launched by the HKMA, FPS is developed and operated by Hong Kong Interbank Clearing Limited. The scheme connects banks and PSPs, and enables instant fund transfers and payments 24/7/365 between users of banks and digital wallets.

Users can make payments via online and mobile banking, as well as through mobile payment applications of banks and PSPs.

FPS is designed to support HKD or RMB transfers to and from accounts, and enables P2P, C2B and B2B payments. It also allows users to pay government bills. Payment limits vary depending on the banks and PSPs. As of January 2021, there were 6.9M individuals registered as users of FPS[1].

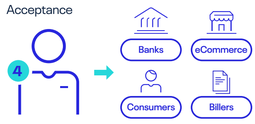
Key Stats



Market Development

Launched in 2018, with growth of 223% year over year, Hong Kong's real-time payments network already supports a large number of participants and has a large share of payment volumes, with strong future growth expected.

Acceptance



Total Participants

>65,000

Year of Real-Time Payments Launch

2018

Availability

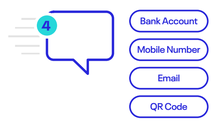
365 24/7

Message Standard

ISO 20022

Real-Time Payment Types

Initiation/Authorization Methods



Mobile Wallet Trends

85%

% of adults who have a mobile wallet and have used it in the past year (2020)

Payments Fraud Rate

9.3%

Index to global average **60**

Population who report being a victim of fraud in the last 4 years

Top 3 Payment Fraud Types

% of fraud victims	Trend
20.2% Card details stolen online	↑
14.1% Card lost or stolen	↑
13.1% Card details skimmed in person	↓

Population Banking Level

4.02

Number of debit, credit and charge cards per adult

163

Index to global average

History

1 https://www.mpaypass.com.cn/news/202101/21170039.html

Indonesia

The Indonesian market has many of the features that signal a high potential for real-time payments adoption. At the simplest level, its population of more than 260 million provides ample scale to drive exponential growth for successful solutions. Indeed, the level of cross-border payments activity between Indonesia and its neighbors—Malaysia, Thailand and Singapore—means it's relevant to note that their combined population exceeds that of Brazil and is not far behind the U.S.

Paper-based payments are also by far the most popular payment method (in terms of both transactions and spend), and payment card ownership is among the lowest in the world, with a 50 index to the global average. These are favorable conditions for rapid—and massive—real-time adoption, as seen in neighboring markets, and a scheme modeled on the region's best practices will be more than capable of unlocking this potential.

Additionally, mobile wallet usage, which was already extremely strong at 66% in 2019, now stands at 81%. That, coupled with the continuing heavy reliance on paper-based payments, sets things up for significant real-time payments adoption once the country's BI-FAST system goes live.

The COVID-19 pandemic has also helped to accelerate the country's transition away from cash. This process will, however, take many years, with Indonesia being one of the world's heaviest users of cash, owing in part to geographical factors that come with being an archipelago, which has historically made card network connectivity less practical.

The government has been trying to address this by pushing electronic payments, most notably with the GPN card scheme launched in 2017. However, the market is expected to leapfrog cards and go straight to mobile thanks to high smartphone penetration (Indonesia is the world's fourth largest smartphone market[1]) and the presence of several popular mobile wallet solutions, which have all converged on a single interoperable QR code standard. These solutions will almost certainly move to be part of the BI-FAST network once launched, providing a tremendous and near-instant boost for both overall financial inclusion and real-time payments penetration.

ACI's Take

Via its "2025 Vision" the Indonesian government has already made clear its ambition for the future of payments in the country. By reinforcing the integration of the national digital economy and finance, it aims to facilitate faster digital transformation within banking, and ensure interlinks between fintechs and banks. It also wants to establish a balance between innovation, consumer protection, integrity, stability and competition, while at the same time safeguarding its national interests as its cross-border economy grows. First-mover advantage will be key since early leaders in digital spaces—in everything from cloud services to eCommerce, and certainly in payments—often claim significant long-term market share.

To that end, the country's financial institutions should be advancing their own payments modernization journeys now to be ready for the inevitable shift to real-time payments. Banks, processors, acquirers and fintechs will all need a whole host of modern solutions to manage digital payment types and their ancillary services, such as fraud monitoring, digital identity management, and billing and liquidity management.

BI-FAST could play a significant part in enabling all of this, as other regions around the world have shown. The central bank, Bank Indonesia (BI), is currently soliciting information and solution propositions from interested vendors, but it must be noted that BI has very thorough procurement, evaluation and governance processes. BI expects the solution to be ISO 20022-native, with a central infrastructure or hub and participant connectors forming the entire nation's real-time ecosystem. As in other markets that are looking to adopt the latest messaging standard, the smart move for financial institutions is to be ready to take the best of what it offers—such as regulatory transparency, data integrity and improved cross-border settlement efficiency—to create value-added services for businesses and consumers. As we have seen in similar markets, such as Malaysia, proven solutions with pre-integration to the central infrastructure and its core services (such as fraud and digital overlays) will enable speed to market and allow banks to focus on developing the value-added services that leverage both the rich data and real-time payment rails.

As the country's central bank and regulator, BI has set a very aggressive timeline to standup the country's real-time payments ecosystem in the shortest time possible. Being a late adopter of real time payments in the region, BI has the advantage of leveraging the success stories from other countries, with best practices/approaches in order to deliver the world's best-in-class real-time payments solution for the country. With such tight timelines and strong regulatory mandates, financial institutions will need to ensure that they adopt a proven real-time payments solution—one with pre-integration to the central infrastructure and its core services—coupled with fraud prevention and control management that supports the current, as well as future, mandate services to be introduced by BI from time to time. This will truly modernize the financial institution's real-time payments infrastructure, instead of heavily customizing the existing back-office or core banking systems.

Schemes

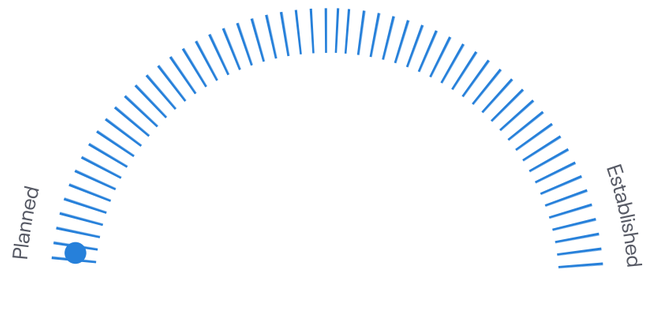
Indonesia is in the planning and development stages of launching its real-time payments system, with no set date for deployment. However, it has all the hallmarks of a country that could see huge adoption.

What we do know is that BI is planning to roll out a real-time payments system, known as BI-FAST, as part of Indonesia's 2025 Payment System Vision. BI-FAST will act as an infrastructure for faster interbank transfers as well as card-based payments. It will adopt real-time gross settlement mechanisms for settlement between banks and operate 24/7/365. Interestingly, and in contrast to other schemes in the region, responsibility for fraud monitoring will not be passed to banks and will instead be managed centrally.

Trends + Data

Share of Volumes by Payments Instrument

Key Stats



Year of Real-Time Payments Launch

2021

Mobile Wallet Trends

81

% of adults who have a mobile wallet and have used it in the past year (2020)

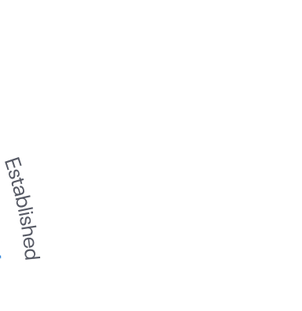
Population Banking Level

1.24

Number of debit, credit and charge cards per adult

50

Index to global average



1 https://www.statista.com/statistics/266729/smartphone-users-in-indonesia/

Japan

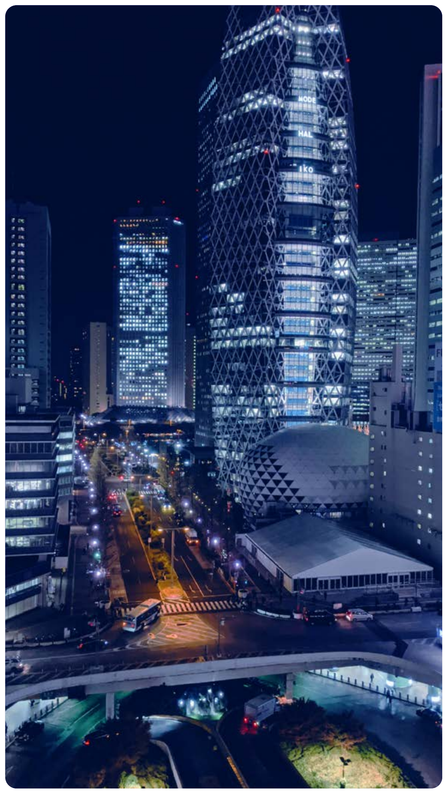
Japan's economy took a significant hit during the national COVID-19 lockdown from March through June 2020, before starting to recover in July. Household consumption of both goods and services declined throughout Q2 of that year but did see an uptick in Q3[1].

During this period, mobile wallet adoption increased significantly year over year in 2020, as consumers shifted away from paper-based payments and towards digital transactions.

In 2020, paper-based payment transactions were actually 1.2B lower than forecast in 2019. On the other hand, electronic payment volumes exceeded last year's forecasts by more than 1B transactions. And between 2020 and 2025, the total annual paper-based transactions will fall from 40B to 36B.

And yet cash payment volumes will still be 20x larger than real-time by 2025. Even with the country's planned modernization of its real-time scheme, real-time's share of electronic transactions is actually expected to decline from around 10% in 2020 to 8% through 2025. Japan is the only country in this report where this metric is forecast to decline.

Japan also exhibits the slowest cash decline of any market covered in this report. Clearly, even being in possession of the world's oldest real-time payments scheme is not enough to break the country's strong cultural attachment to cash. Even the COVID-19 pandemic had less of an impact in this regard than it has elsewhere, and the etiquette and behaviors that have grown up around cash look set to ensure it remains a major part of the payments landscape for many years to come.



ACI's Take

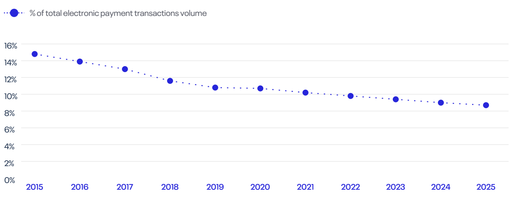
As noted last year, it was expected that Zengin Systems would open up to more non-bank players such as merchants, retailers and fintechs, giving them greater flexibility and expanded payment use cases. The Japanese bank's Payment Clearing Network, the system's operator, has realized the benefits of—and the need for—expansion, and recently announced it had established a task force to draw up plans for a next-generation payments system to support Japanese cashless payments, including QR code payments, P2P and fintech applications. This focus on overlay services and expansion of real-time services by non-bank participants follows the trends we see elsewhere in Asia.

Like many early adopters of real-time payments, Japan now looks set to modernize its central infrastructure and core services to continue to drive value for its citizens and economy, and to overcome the country's surprisingly strong—for a high-tech society—attachment to cash.

Banks in the region should pay close attention to the task force's progress, as well as government policy announcements, to ensure they are modernizing their own systems to take advantage of the opportunities presented by Japan's real-time payments expansion. Banks should seek out the experience of consultancy partners with proven expertise in real-time payments that can offer insights into global best practices. This will be critical as they shape new systems and modernize existing ones. They should also be prepared for the fact that modernization of payment infrastructures is often a catalyst for bank-wide modernization of consumer and corporate payment systems, creating impetus for convergence of legacy systems into efficient payment hubs.

Trends + Data

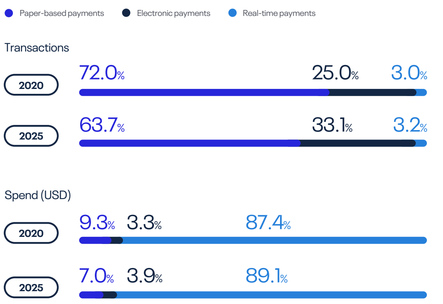
Real-Time Payments Volume and Its Share in Overall Non-Paper-Based Transactions, 2015-25f

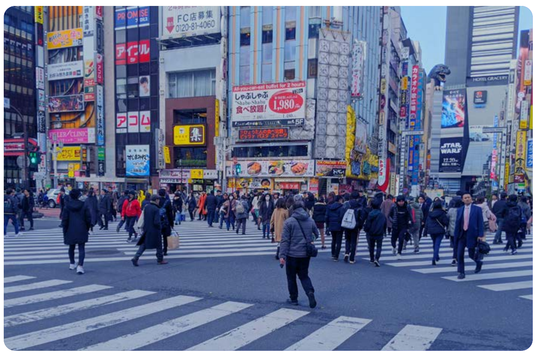


Transactions

1.7B (2020) **1.8B** (2025f) **1.4%** (F5 Yr CAGR)

Share of Volumes by Payments Instrument





Schemes

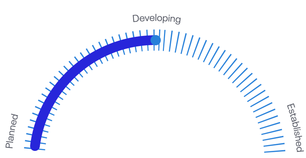
Although Japan has one of the world's longest-established real-time payment systems, it remains—perhaps surprisingly—very much a developing landscape.

Launched in 1973, the Zengin System is Japan's interbank domestic fund transfer system. It performs a crucial role in Japan's payments infrastructure as it is responsible for processing fund transfers between partner financial institutions. The system has gone through numerous updates over the years to reflect the changing needs of domestic consumers and the evolving business payments environment.

The latest such update, the seventh-generation Zengin System, launched in November 2019. It incorporates features such as enhanced capacity and processing performance, as well as improved safety and reliability. A prior upgrade to the system in October 2018 incorporated real-time payments support and increased the availability of the system to a 24/7/365 basis for transfers with a value of less than JPY100m ($0.9M).

Only financial institutions can participate in the Zengin System, and all deposit-taking banks currently do so. End users can initiate fund transfers through participating banks and can make P2P, C2B, B2B, B2C and G2P payments. However, there is a growing movement in the country to open the Zengin system to fintechs to increase innovation and competition in the market. A taskforce has been set up to explore this further.

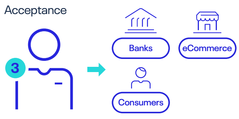
Key Stats



Market Development

Though the Japanese real-time payments market is one of the oldest in the world, compared to capabilities in other markets, Japan still has a lot of room to develop and grow functionality.

Acceptance



Total Participants

~1,200

Year of Real-Time Payments Launch

1973

Availability

365 24/7

Message Standard

ISO 20022

Real-Time Payment Types

Initiation/Authorization Methods

Mobile Wallet Trends

48

% of adults who have a mobile wallet and have used it in the past year (2020)

Payments Fraud Rate

2.7%

Index to global average **17**

Population who report being a victim of fraud in the last 4 years

Top 3 Payment Fraud Types

% of fraud victims	Trend
25.8% Card details stolen online	↑
19.4% Other	↓
16.1% Identity theft	↑

Population Banking Level

7.14

Number of debit, credit and charge cards per adult

289

Index to global average

History

April 1973 — The Zengin System launches.

February 1979 — Zengin System upgrades to second generation.

April 1982 — Foreign banks operating in Japan are permitted to participate in the Zengin System.

November 1987 — Third-generation system upgrade.

November 1995 — Fourth-generation system upgrade.

November 2003 — Fifth-generation system upgrade.

October 2010 — System operations are transferred to ZenginNet.

November 2011 — Sixth-generation system upgrade.

October 2018 — 24/7 support is added to the system.

November 2019 — Seventh-generation system upgrade.

1 https://www.bis.org/review/r201228a.pdf

Malaysia

Though a relative newcomer to real-time payments, several factors meant Malaysia's scheme was always likely to be a success. One key enabler was the diversity of segments ready to accept real-time payments from the scheme's earliest days. Additionally, mobile wallet adoption was and is booming, growing especially vigorously in 2020 due to COVID-19. With real-time payments integration into mobile wallets and QR code payments, we are likely to see continued accelerated adoption. Consequently, growth in digital payments are forecast to continue exponentially for at least the next half decade and possibly beyond—with real-time's share of the electronic payments forecast to grow from 1.9% in 2020 to 16.5% by 2025.

In response to the pandemic, a number of programs have been instituted that are accelerating the shift to digital payments. Bank Negara Malaysia (BNM)—Malaysia's central bank—waived interchange fees on debit cards for payment of government services through the end of 2020. And in June, Hong Leong Bank launched a campaign to provide merchants with mobile POS terminals at a lower cost, including waiving installation and rental fees, as well as service charges.

ACI's Take

From day one, Malaysia's centrally driven mandate to make all banks ISO 20022-compliant on a unified connector/gateway has been instrumental in driving up transaction volumes, achieving accelerated time to revenue compared to other payment schemes. This was made possible through collaboration with ACI Worldwide on the right solution to quickly onboard the participants. Overall, the scheme is yet another success story to add to the list of nationally driven initiatives to migrate societies away from cash.

The PayNet RPP real-time payments ecosystem is the latest in ASEAN and has the fastest implementation and fastest bank adoption, with all member banks (more than 40) already live under first-phase implementation. The pace of adoption in the market has surprised even the optimists, and it's clear that real-time payments acceptance will become table stakes in the next few years in line with consumer expectations. All market players with an eye on future business growth must therefore be developing a differentiated real-time payments offering if they haven't already. PayNet's mandate to standardize the gateway/connector has served to harmonize the entire nation's payments infrastructure.

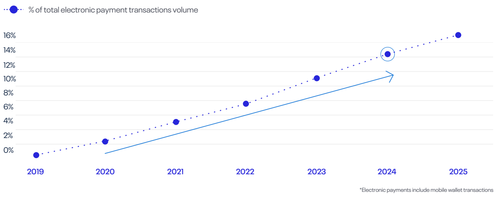
In some market segments, this rapid adoption of real-time payments will place traditional revenue streams at risk, such as acquirers' debit transaction and interchange fees. These organizations must be proactive in modernizing their solutions and infrastructure to expand into higher-value services.

Indeed, in any market poised for rapid growth in the way that Malaysia is, banks, processors, acquirers and PSPs should all be turning their attention to achieving competitive differentiation in order to protect margins.

The PayNet RPP central infrastructure hub project's second phase pilot went live towards the end of 2020 and will see more innovative value-added services introduced that will drive faster adoption by non-bank participants, such as merchant retailers and eWallet players. Aside from further expansion of QR code payments, Malaysia will soon embrace a new secure messaging service in the form of Request to Pay. This will overlay their existing payments infrastructure to provide control, flexibility and transparency of bill payments. Malaysia is also in the process of adding a consent management platform for debits, credit transfer capabilities, eKYC digital ID compatibility and real-time debit capabilities, as well as cross-border payment with ASEAN real-time payment schemes such as PromptPay and NETS. Access to all of the above will be via APIs. These developments show that real-time payments provide a platform for continuous innovation, and participants in these ecosystems must be able to move at the market pace. Modernized payment solutions, particularly around the convergence of consumer and corporate payments with the expansion of ISO 20022 standards, and ongoing mandates support for the industry aligning to regulatory deadlines, are critical investments to remaining competitive.

Trends + Data

Real-Time Payments Volume and Its Share in Overall Non-Paper-Based Transactions, 2019-25f*

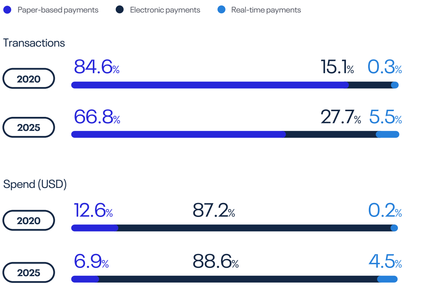


*Electronic payments include mobile wallet transactions

Transactions

68.7M (2020) **1.45B** (2025f) **83.9%** (5 Yr CAGR)

Share of Volumes by Payments Instrument



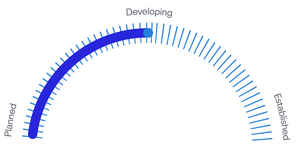
Schemes

Although it is less than two years old, Malaysia's real-time payments network grew 864% in 2020 compared to 2019, and already boasts a robust infrastructure and numerous supporting bank, PSP and merchant payments. It is on track for yet further aggressive growth in the future. An updated version, DuitNow 2.0, has been announced and a pilot, with some additional features, was expected by the end of 2020.

DuitNow was launched in 2018 by the national payments network and central infrastructure provider, Payments Network Malaysia (PayNet), in collaboration with ACI Worldwide. The network enables users to send money instantly, 24/7/365, and without registration—although users must register to receive payments. Registration simply requires linking an ID to the user's bank or eMoney account. Transfers can be made using a recipient's mobile phone number or an ID number, such as their national identity card number or a business registration number. Since July 2019, users can also make in-store payments with DuitNow QR, available from any participating banks, merchants or eWallets.

The maximum limit per transaction is MYR50,000 ($12,223) for consumers and MYR10m ($2.4M) for businesses. There are no fees when sending or receiving payments of up to MYR5,000 ($1,222), and a minimal fee of MYR0.50 ($0.12) for transactions exceeding this limit.

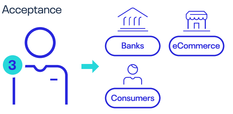
Key Stats



Market Development

Launched in only 2018, and with year over year growth of >800%, Malaysia's real-time payments network already supports banks, PSP and merchant payments, as well as a variety of payment types and initiation methods and is slated for aggressive future growth.

Acceptance



Total Participants

>40

Year of Real-Time Payments Launch

2018

Availability

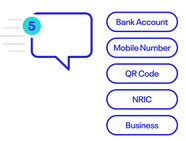
365 24/7

Message Standard

ISO 20022

Real-Time Payment Types

Initiation/Authorization Methods



Mobile Wallet Trends

83%

% of adults who have a mobile wallet and have used it in the past year (2020)

Payments Fraud Rate

Index to global average **130**

Population who report being a victim of fraud in the last 4 years

Top 3 Payment Fraud Types

% of fraud victims	Trend
24% Confidence trick	↑
14.5% Other	→
10.9% Card details stolen/skimmed in person	↓

Population Banking Level

History

July 2019
DuitNow QR was launched.

November 2019
More new ecosystem partners such as eWallet providers adopt DuitNow QR code payments service.

June 2020
HSBC partners with PayNet to enable DuitNow QR payments at the KPJ Healthcare hospital chain.

January 2021
DuitNow QR Ecosystem unifies with one QR, many payment choices.

December 2018
PayNet and ACI Worldwide launch DuitNow.

October 2019
Milestone hit: 7.5 million users have registered for DuitNow.

November 2019
Fave, a digital merchant platform provider, integrates DuitNow QR in its Fave Biz platform.

December 2020
DuitNow releases on pilot Request-to-Pay, Consent Management and Real-Time Debit services on the RPP platform.

Philippines

New Country

Although paper-based payments hold a high market share in the Philippines, strong growth for digital payments is expected over the next five years through 2025, at a CAGR of 48.1%. The Central Bank of the Philippines hopes to increase the digital share of all payments to 50% by 2023, and COVID-19 will likely fuel the transition from paper-based to digital payments as it has in other similar markets. Real-time payments look set to be the main beneficiary here. Their share of all electronic payments grew more than 400% between 2019 and 2020 and is on target to take a majority share of electronic payment transactions by 2022. Since the launch of InstaPay in 2018, the number of transactions using real-time payments has been growing rapidly and is expected to take a 32% share of the digital payments market by volume in the Philippines by 2025.

Mobile wallets have also seen accelerated adoption during the COVID-19 pandemic, with one of the country's most popular mobile wallets reporting that it now has 20M registered users[1].

ACI's Take

Our conversations on the ground support the data: domestically, the Philippines' real-time payments market has started fast and continues to go from strength to strength. Adoption has been high as the distributed and digital-savvy population has embraced the benefits of real-time P2P transfers and QR code-enabled in-store payments.

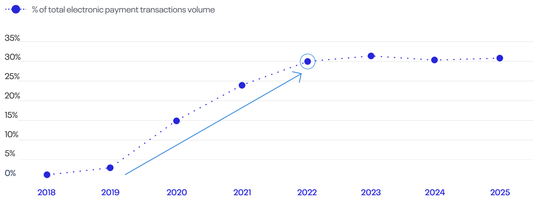
The size of the business opportunity has not historically been perceived large enough to draw in international players and investment—the country is at the lower end of the scale for GDP per capita[2] in the ASEAN region. This has led to an element of self-sufficiency in the market that has its advantages and disadvantages. But as one of the few nations with a population exceeding 100 million, the potential market is large if payment players can meet the needs of the customers. Participating banks have done an excellent job of addressing domestic use cases, and there is also a burgeoning, vibrant fintech scene (albeit one made up mostly of small domestic players).

Among the drawbacks is the fact that the scheme's implementation has not always leveraged best practices around simplified and standardized connectivity seen in many of its regional neighbors, such as Malaysia and Singapore. The result is inconsistencies in the way some banks connect to the real-time payment rails and the messaging formats used. This can make it difficult for new entrants to access the system and has held back the country's integration with regional cross-border payment initiatives.

To improve matters, interventions from the national regulator and central infrastructures are required, ideally with mandates geared towards standardizing connectivity and harmonizing payments messaging. This will enable the Philippines to play a more active role in the region's payments modernization and allow domestic players to better leverage the market's scale to increase efficiency and lower costs. This would also make for more favorable conditions to nurture the nation's fintechs toward further innovation and growth.

Trends + Data

Real-Time Payments Volume and Its Share in Overall Non-Paper-Based Transactions, 2018-25f



Transactions

242M (2020)

1.7B (2025f)

48.1% (5 Yr CAGR)

Share of Volumes by Payments Instrument

Schemes

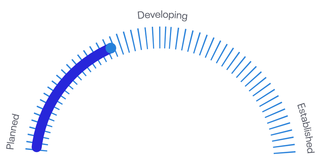
The Philippines launched its real-time payments scheme in April 2018 and is already seeing excellent adoption rates and year-over-year growth of 608%, propelling accelerated adoption of digital payments and corresponding de-emphasis on paper-based payments.

InstaPay is an interbank fund transfer service launched by the Bangko Sentral ng Pilipinas (BSP) under the National Retail Payment System. The service operates 24/7/365 and facilitates instant fund transfers between accounts at participating banks and financial institutions in the Philippines. InstaPay transactions are settled via the BSP's real-time gross settlement system, PhilPaSS.

Currently the scheme only supports Philippine peso transfers between accounts held in the Philippines. The service is available to individuals, businesses and government agencies if they hold savings or current/eMoney accounts at participating banks. InstaPay enables P2P, C2B, C2G, B2C, B2B, B2G, G2C, G2B and G2G payments via various channels, including internet banking and mobile banking apps, as well as eMoney issuers.

In November 2019, the central bank launched the national QR code standard, QR Ph, enabling merchants to accept digital payments through InstaPay.

Key Stats



Market Development

Despite only being two years old, real-time payments in the Philippines are already seeing rapid adoption, with growth of 608% year over year.

Year of Real-Time Payments Launch

2018

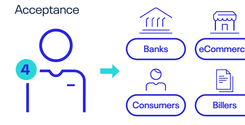
Availability

365 24/7

Message Standard

ISO 20022

Acceptance



Total Participants

~50

Real-Time Payment Types

Initiation/Authorization Methods

Mobile Wallet Trends

68%

% of adults who have a mobile wallet and have used it in the past year (2020)

Payments Fraud Rate

15.2%

Index to global average **98**

Population who report being a victim of fraud in the last 4 years

Top 3 Payment Fraud Types

% of fraud victims

21.1%
Digital wallet account hacked

15.8%
Card details skimmed in person

11.8%
Card details stolen online

Population Banking Level

1.13
Number of debit, credit and charge cards per adult

46
Index to global average

History

April 2018
BSP launches InstaPay.

April 2019
BancNet, the clearing switch operator, partners with Mastercard's Vocalink to enhance InstaPay's capabilities.

November 2019
Launch of QR Ph.

June 2020
Monthly transactions via InstaPay exceed PHP100B ($2B) for the first time.

1 https://www.electronicpaymentsinternational.com/news/covid-19-impact-digital-payments-philippines/
2 GDP per capita data are according to TradingNomics's Quarter 3-2020 data (via https://en.wikipedia.org/wiki/List_of_ASEAN_countries_by_GDP)

Republic of Korea

In last year's report, we observed that the Republic of Korea has a relatively well-utilized and popular real-time payments scheme, with a 9% share of transactions as of 2019. However, the scheme seems to be used more often for high-value transactions rather than day-to-day consumer transactions. Paper-based payments currently boast high transaction volumes within the market, providing ample opportunity for real-time payments to make further gains. But the forecasts expect just single-digit growth through 2025, at 6.9% CAGR.

Unlocking stronger growth depends on a number of changes and innovations in the market. These include integrating real-time payment capabilities into mobile wallets, which at over 60% adoption are exceedingly popular in the market. This popularity picked up in 2020, most likely due to COVID-19, and adoption is anticipated to grow over the next five years at a CAGR of more than 20%. Real-time payments integration could well push that figure far higher.

There also needs to be a greater investment in educating consumers about the benefits of real-time payments. South Koreans remain heavily reliant on payment cards, with adults having 6.60 cards each on average. These citizens would need a compelling reason to switch from cards, and convenience would likely provide that justification. That could be achieved by growing the real-time payments network to support additional initiation methods and payment types. Given the strong market share of electronic payments (46.8% of transactions), this might see real-time payments experience an almost vertical take off.

ACI's Take

The South Korean government is actively engaged in innovative deregulation to accelerate digital transformation and lower payment costs for consumers, while also increasing the range of available services.

Fintech companies are competing with banks and card companies by providing simple payment services directly on their mobile platforms. Social media platform giants such as Kakao and Naver are leading digital transformation in the financial industry, offering payments, lending, insurance and stock trading services on their mobile platforms, too.

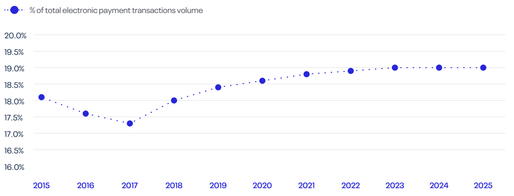
In such a competitive ecosystem, consumers who value convenience and price can change PSPs at any time, so legacy financial institutions must re-engineer existing services from the perspective of consumers and develop new businesses and products through increased convergence. Since open banking launched in 2019, banks have had an opportunity to transform themselves into payment service platforms, creating new customer value by collaborating with tech companies via the sharing of core payment processing capabilities.

In addition, the emergence of the Regional Comprehensive Economic Partnership (RCEP) free trade agreement is expected to accelerate cross-border payments among ASEAN, Pacific and North Asian countries. Banks and intermediaries, as well as fintechs, are continually investing in expanding cross-border connectivity. To disintermediate legacy global scheme networks, investments in directly connecting national switches are gathering pace, as they pursue interoperability of alternate payment methods across countries.

Major ASEAN countries, like Malaysia, Singapore and Thailand, have launched real-time payments and transformed the countries' payments landscape. Coupled with Indonesia being the latest scheme initiated by Bank Indonesia, Korea can leverage the regional success stories, use cases and digital real-time payment services to transform the country's payments ecosystem. If KFTC can join the bandwagon of real-time payments with central infrastructure hub and standard bank connectivity with a proven solution, it would benefit Korea domestically and regionally to eventually connect to the other ASEAN real-time payment schemes for cross-border interoperability.

Trends + Data

Real-Time Payments Volume and Its Share in Overall Non-Paper-Based Transactions, 2015-25f



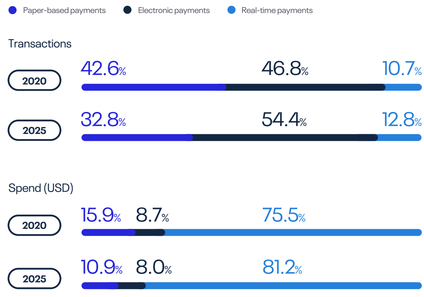
Transactions

6.0B (2020)

8.4B (2025f)

6.9% (FS Yr CAGR)

Share of Volumes by Payments Instrument



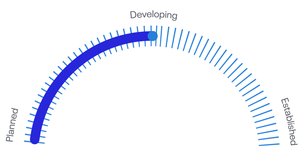
Schemes

The Republic of Korea was an early innovator in real-time payments, with one of the longest-running schemes in the world. Yet despite this long history, Korea's real-time landscape continues to develop.

Korea's CD/ATM network dates back to 1988. Operated by Korea Financial Telecommunications & Clearings Institute (KFTC), it has provided near-real-time payments since its inception, and near-24/7 operations (00:05–23:55) since 2007. Transactions on the network are typically processed within one to two seconds. In prior iterations of the network, it could only be accessed via physical channels such as bank branches and ATMs. However, the scope of participants has expanded and protocols have been standardized, allowing end users to access CD/ATM via mobile phone authentication since 2007.

Korea also has the Electronic Banking System (EBS), sometimes known as HOFINET. EBS is a domestic retail payments system that processes customers' fund transfers and cash withdrawals in real time. It operates 24/7/365, and users are only required to provide the recipient's bank account number. The solution is available to both individuals and corporate customers. Designed to overcome accessibility limitations of the CD/ATM network, EBS can be accessed via internet and mobile banking, mobile wallets and physical channels, such as ATMs and bank branches.

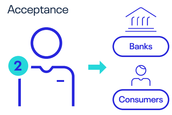
Key Stats



Market Development

One of the earliest innovators in the real-time payments market, South Korea has two schemes in place and has seen growth of 4.4% year over year.

Acceptance



Total Participants

All Domestic Banks

Year of Real-Time Payments Launch

1988

Availability

365 24/7

Message Standard

Proprietary

Real-Time Payment Types

Initiation/Authorization Methods

Mobile Wallet Trends

% of adults who have a mobile wallet and have used it in the past year (2020)

Payments Fraud Rate

Index to global average **32**

Population who report being a victim of fraud in the last 4 years

Top 3 Payment Fraud Types

% of fraud victims	Trend
32% Confidence trick	↑
20% Other	
16% Card lost or stolen	

Population Banking Level

Number of debit, credit and charge cards per adult

267

Index to global average

History

2001 launch of EBS/HOFINET.

2016 Bank of Korea links BOK-Wire+ with EBS/HOFINET.

1988 Launch of CD/ATM network.

2007 CD/ATM network is made accessible on a 24/7 basis.

November 2020 The number of participants in EBS stands at 24.

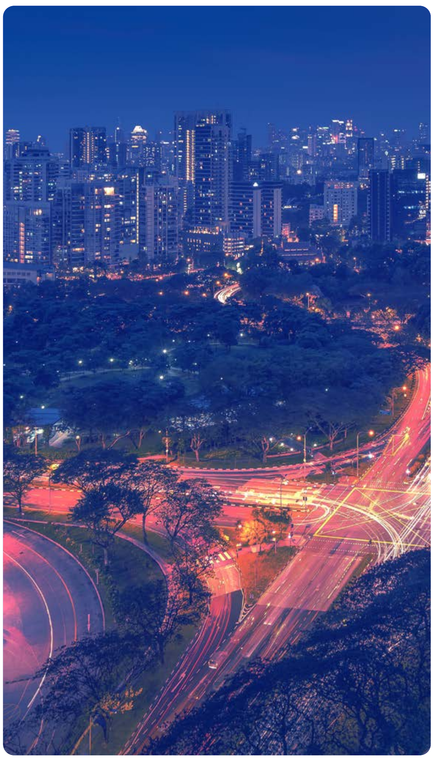
Singapore

Singapore's citizens are highly reliant on debit, credit and charge cards, with an average of 4.07 cards per adult[1]. They're also keen adopters of contactless payments. This can often be a barrier to real-time payments adoption, as consumers have little motivation to change, but Singaporeans appear open to adopting new technology and changing their payment behaviors.

Singapore experienced rapid real-time payments growth in the period from 2017 to 2020, and in 2020 growth reached an unanticipated 48%, most likely due to COVID-19-driven switching to digital payments at the expense of paper-based transactions. Over the next five years, the country is expected to add around 250M additional transactions, recording a five-year CAGR of 23.2%.

Mobile wallet adoption and usage more than quadrupled between 2014 and 2019, and increased significantly in 2020, again likely driven by COVID-19. In a similar vein, one local bank reported a 220% increase in PayNow transactions in the first 10 months of 2020. QR payment transactions also jumped 272%[1] compared to the year before. Meanwhile, over-the-counter and ATM cash deposits and withdrawals fell by more than 30% between March and November 2020.

Integration of real-time payments within mobile wallets will further propel growth for both, and the move away from paper-based payments due to COVID-19 will only drive yet more adoption. With both consumers and corporates benefitting from access to many different initiation and authorization methods, real-time payments is both readily available and extremely convenient.



ACI's Take

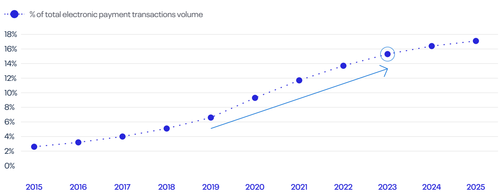
Among Singapore's highly digitally savvy population of only 5.7 million, the low-value consumer side of real-time payments is reaching a state of steady organic growth, as is to be expected with well developed real-time and digital payment ecosystems.

As such, it is business use cases that appear set to propel the next wave of explosive real-time growth, and corporates of all sizes are expected to benefit. The primary reason for this is that, as part of the country's ongoing payments modernization, all corporate payments will soon be required to align with the ISO 20022 messaging format.

There will be far-reaching consequences arising from this simple change. Once the migration is complete, it would be logical for banks to eventually leverage ISO 20022 for all their payment requirements to lower costs and drive innovation for local and cross-border payments. Furthermore, this will ultimately evolve to a situation where the region's banks can create their own informal international transfers network. By leveraging the new messaging format, they can develop alternative systems and networks for both domestic and regional real-time payments. Therefore, the bigger picture in Singapore is the convergence of high-value and consumer payments onto the same infrastructure. This threatens the business models of some established players while creating opportunities to drive efficiencies and therefore costs savings for banks. To capitalize, banks should prioritize sourcing solutions from trusted partners that can help them create a single payments hub onto which they can migrate most of, if not all, their payments traffic.

Trends + Data

Real-Time Payments Volume and Its Share in Overall Non-Paper-Based Transactions, 2015-25f



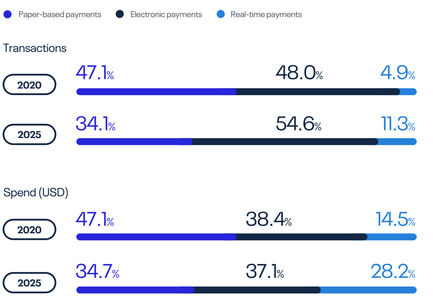
Transactions

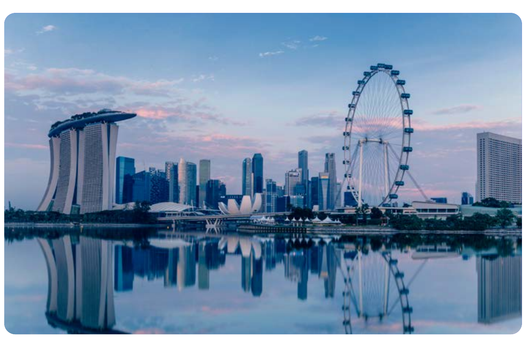
138M (2020)

393M (2025f)

23.2% (5 Yr CAGR)

Share of Volumes by Payments Instrument





Schemes

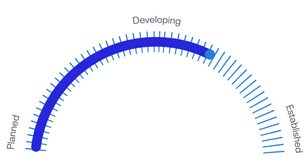
With two established real-time payment schemes in place, a wide range of initiation/authorization methods and 48% year-over-year growth, Singapore is well on its way to becoming an established market for real-time payments.

Fast and Secure Transfers (FAST) was the first scheme, launched in 2014. FAST enables retail and corporate customers of participating banks to transfer funds 24/7/365 and it can be accessed via banks' internet banking services. It has a maximum transaction limit of S$200,000.

Singapore's second scheme, PayNow, launched in 2017. It is a P2P real-time fund transfer service built on the FAST infrastructure and allows users to transfer funds from one bank account to another using a mobile number or national ID card number. Transaction limits are consistent with FAST. As of 2018, businesses have access to PayNow Corporate, which empowers businesses to pay and receive funds in domestic currencies.

In February 2021, PayNow launched its first integrations with non-bank financial institutions, enabling users to leverage the real-time scheme to top up their GrabPay, Liquid Pay and Singtel Dash eWallets directly from their bank accounts, and transfer funds between these eWallets.

Key Stats



Market Development

With two schemes in place, growth of 48.4% year over year and adoption across banks, merchants and billers, Singapore is quickly becoming an established real-time payments market.

Year of Real-Time Payments Launch

2014

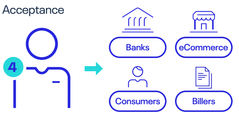
Availability

365 24/7

Message Standard

ISO 20022

Acceptance

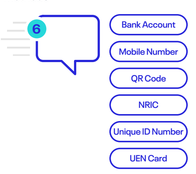


Total Participants

28 Banks

Real-Time Payment Types

Initiation/Authorization Methods



Mobile Wallet Trends

71%

% of adults who have a mobile wallet and have used it in the past year (2020)

Payments Fraud Rate

14.8%

Index to global average **95**

Population who report being a victim of fraud in the last 4 years

Top 3 Payment Fraud Types

% of fraud victims	Trend
21.6% Card details stolen online	↓
14.8% Bank account hacked	↑
13.6% Identity theft	↑

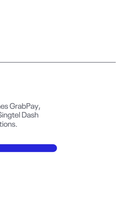
Population Banking Level

4.07

Number of debit, credit and charge cards per adult

165

Index to global average



History

May 2015 Transaction limit for FAST is enhanced to S$50,000 from S$10,000.

February 2018 Transaction limit for FAST is further raised to $200,000.

March 2020 EMQ, a global financial settlement network, joins the FAST system.

February 2021 PayNow launches GrabPay, Liquid Pay and Singtel Dash eWallet integrations.

March 2014 Launch of FAST by the ABS.

July 2017 Launch of PayNow.

August 2018 Launch of PayNow Corporate.

November 2019 PayNow adopts Singapore QR code standard.

1 https://www.straitstimes.com/business/banking/covid-19-is-a-game-changer-for-digital-payments

Taiwan

New Market

Taiwan's real-time payment schemes have a long history, but their share of electronic payments is nevertheless anticipated to continue to grow through 2025 at a five-year CAGR of 8.1%. Although the population has some of the highest card ownership rates globally (often a limiting factor for real-time payments growth), this is counteracted by similarly high mobile wallet adoption rates. Paper-based payment volumes are also still on the high side.

In 2020, real-time payments' share of digital payments experienced a more aggressive swing, likely influenced by the global COVID-19 pandemic.

Government mandates during COVID-19 are anticipated to further accelerate the shift to digital payments. As GlobalData reported in December 2020: "To provide relief to cardholders, the government urged banks to offer deferrals on loan installments and reduce interest rates. In response, major banks including Citibank, HSBC, Hua Nan Bank and Land Bank of Taiwan have cut interest rates on credit card balances. Banks are also offering deferrals on credit card bill payments. The government launched a 'triple stimulus voucher' program offering cash back to customers on credit card purchases."

ACI's Take

Cash and credit cards remain the most-used payment methods in Taiwan, with cash preferred for low-value transactions. The government is pushing to accelerate the growth of digital payments at the expense of cash, but Taiwan's relatively small merchant base is proving reluctant to accept digital payments due to the transaction fees. We expect this trend to continue until the government promotes digital payments with more attractive offers, such as 0% interchange fees. Given the government's track record, acquirers who depend on these fees should consider any intervention along these lines as a case of if and not when. That means responding accordingly with the development of higher-value services that both drive new revenue and deepen merchant loyalty.

In 2021, we anticipate more eWallets will be launched, but with credit cards still stored/bundled in the wallets for payment purposes. As an example, the 7-ELEVEN OPEN POINT App[1] wallet can be bundled with credit cards. Another emerging trend is for digital-only banks, three of which will have launched by early 2021. We expect more digital payment initiatives to be driven by these banks. Meanwhile traditional banks are also launching sub-brands offering digital-only banking, which will create more opportunities for digital payments in Taiwan.

This kind of highly digitalized ecosystem and similarly digital-friendly population traditionally signals that real-time payment solutions can experience high growth if they can break through by offering a more convenient alternative to cards. To make such a breakthrough and steal an early lead in the market, interested players should be focusing their efforts on creating one or two headline use cases that speak directly to consumers' needs.

Interestingly, Taiwan's existing B2B interbank real-time system, Financial XML, operates on the legacy XML messaging format. However, SWIFT is the leading method for cross-border payments and SWIFT has held firm on its migration deadline to ISO 20022. It seems that there is a strong opportunity for banks to begin their ISO 20022 payments hub journey with the luxury of relatively low time pressure. While still continuing to support the existing real-time payments scheme, they can prepare their systems to deliver value-added services across both their consumer payments and acquiring business. These new services will undoubtedly be based in the rich-data standard of ISO 20022 to provide future interoperability with regional schemes such as the Asia Payment Network, as well as global initiatives like SWIFT gpi Inst.

Trends + Data

Real-Time Payments Volume and Its Share in Overall Non-Paper-Based Transactions, 2015-25f

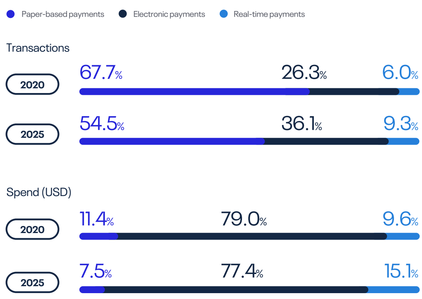
Transactions

326M (2020)

482M (2025f)

8.1% (FS Yr CAGR)

Share of Volumes by Payments Instrument



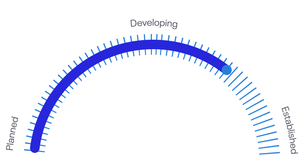
Schemes

In 1987, Taiwan was one of the earliest countries to launch a real-time payments scheme, and it added a second in 2003. Despite its established history, real-time payments still experienced double-digit volume growth in 2020 (11%), and moderate growth is expected to continue over the next five years at a CAGR of 8.1%.

Its first scheme, the Interbank ATM funds transfer system, allows customers to conduct various transactions in real time at ATMs and via online banking (commonly referred to as "web ATM" in Taiwan). The system allows users to perform inter-bank cash withdrawals, fund transfers, payments and balance inquiries 24/7/365. The system supports all the major card schemes, including Visa, Mastercard, JCB, UnionPay, Cirrus and Plus. In September 2020, a mobile-number-based fund transfer service was launched, allowing customers to make transfers using their phones. In order to use the service, customers are required to link their mobile number with their bank account.

Taiwan's second real-time payments scheme, Financial XML, launched in May 2003 and is a sub-system under the Financial Information Service Company (FISC) that facilitates interbank fund transfers between businesses in real time. The service is available for corporate account holders and supports B2B payments. Customers can initiate a variety of payment types online, including single, bulk, batch and scheduled payments, using the Financial XML services provided by their financial institutions.

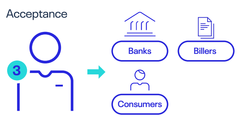
Key Stats



Market Development

With two schemes in place, growth of 11% year over year and strong adoption among banks and billers, Taiwan is quickly becoming an established real-time payments market.

Acceptance



Total Participants

95

Year of Real-Time Payments Launch

1987

Availability

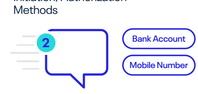
365 / 24/7

Message Standard

XML

Real-Time Payment Types

Initiation/Authorization Methods



Mobile Wallet Trends

62%

% of adults who have a mobile wallet and have used it in the past year (2020)

Payments Fraud Rate

7.6%

Index to global average **49**

Population who report being a victim of fraud in the last 4 years

Top 3 Payment Fraud Types

% of fraud victims	Trend
26.2% Confidence trick	↑
19.1% Other	↓
14.3% Card details stolen online	→

Population Banking Level

8.13

Number of debit, credit and charge cards per adult

330

Index to global average

History

1 https://www.pilotfish.digital/portfolio/7-eleven-open-point-app/

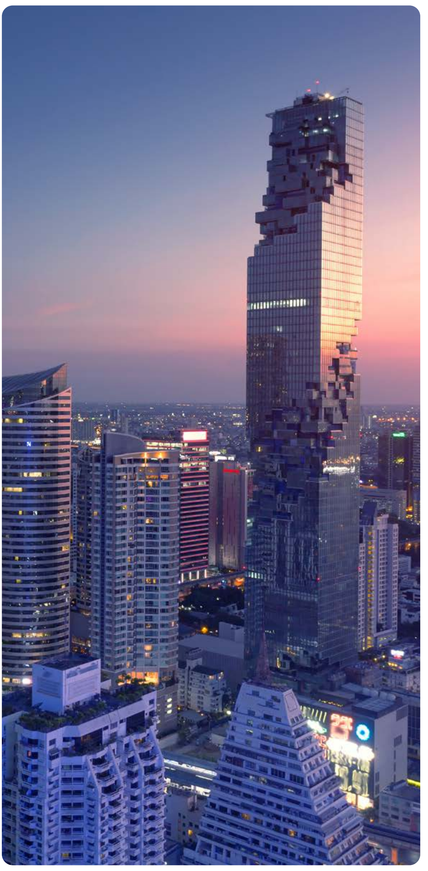
Thailand

The Thai market possesses all the key ingredients for explosive real-time payments growth: high levels of mobile wallet adoption (with real-time payments integration), low usage rates for payment cards and a history of heavy reliance on paper-based payments. Crucially, it also has a well-planned real-time payments scheme that is connected to all segments and offers both a variety of initiation methods and several payment types.

This combination of factors has contributed to high growth rates since 2016, with further growth anticipated for at least the first half of the next decade. Between 2020 and 2025, we expect real-time transaction volumes to increase by over 15B—a five-year CAGR of 32%.

While there will likely also be growth in other areas of electronic payments, it is real-time payments that are anticipated to most significantly cannibalize paper-based payments. For example, in 2020 paper-based payments as a share of all payments declined by 4%, equivalent to almost 1B fewer transactions than forecast in 2019. In 2020, paper-based payments as a share of all payments declined by 8% from 2019, the equivalent to almost 1B fewer transactions than in 2019. Mobile wallet adoption/usage also increased significantly year over year, an increase believed to have been driven by COVID-19.

Going forward, paper-based payments are anticipated to continue their significant transactional decline, losing 25% of volume share in 2020 to 2025, as real-time payments' share increases to achieve parity with cash/checks. In the same time period, the value of real-time payments is expected to surpass that of the latter's share of paper-based payments.



ACI's Take

Thailand's market is something of a perfect storm for real-time payments adoption. This is evidenced by the speed at which Thai consumers have taken to digital overlay services such as PromptPay, which leverages an alias database to enable P2P, P2C and C2B payments via email, phone or ID number. This is a successful first-wave result for the Thai government's Financial Services Master Plan for payments modernization.

In February 2021, the Bank of Thailand and National ITMX successfully launched a next-generation bulk payments platform on the new messaging standard, ISO 20022, leveraging ACI Worldwide solutions, the onset of which will revolutionize the business payments landscape in Thailand. This paves the way for PromptPay and BAHTNET to follow suit.

As BOT and ITMX are unable to mandate banks on adoption or timelines, this has given some breathing space for the banks. Some banks have started exploring ISO 20022 infrastructure, but others are still lagging behind in their system or solution readiness. The lessons from other markets that have adopted the new messaging format are clear: financial institutions must be ready early to turn these new standards into benefits for customers, such as regulatory transparency, data integrity and improved cross-border settlement efficiency. It can be difficult for laggards to close the gap on rivals that make the first move with differentiated services.

Thailand is part of the cross-border ASEAN real-time payments scheme, Asia Payment Network (APN). As we are already seeing with schemes like P27 in the Nordics, improving the speed, efficiency and cost of cross-border payments will have a multitude of benefits, particularly in corporate and merchant payments. Financial institutions in the region should continue to monitor developing opportunities here.

The success of ITMX's bulk payment on ISO 20022 infrastructure will accelerate the country's ongoing adoption of ISO 20022, from business payments to consumer payments and wholesale payments. As Thailand is one of the key economies of ASEAN member countries, ITMX and the member banks in Thailand are on the transformation journey to modernize the country's real-time payments ecosystem. The success of Malaysia's RPP, with high adoption rates from member banks and consumers, as well as the ease of managing mandates governed by PayNet and the central bank, has further provided the references and approaches for Thailand to adopt the best practices for a successful migration from legacy platform into modern ISO 20022 infrastructure.

Trends + Data

Real-Time Payments Volume and Its Share in Overall Non-Paper-Based Transactions, 2015-25f

Transactions

5.2B (2020)

21B (2025f)

32% (FS Yr CAGR)

Share of Volumes by Payments Instrument

Paper-based payments · Electronic payments · Real-time payments

Transactions

2020	69.4%	15.2%	15.4%
2025	43.9%	13.0%	43.1%

Spend (USD)

2020	34.2%	51.5%	14.2%
2025	20.0%	42.3%	37.7%

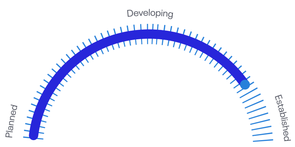
Schemes

Real-time payments in Thailand have experienced phenomenal year-over-year growth of more than 100%, driven heavily by the Bank of Thailand's effort to promote financial inclusion by leveraging real-time payments to deliver a range of financial benefits to citizens.

Thailand's real-time payments system, PromptPay, was launched in 2016 by the central bank as part of its National e-Payment initiative. First designed to deliver government welfare disbursements, it has expanded rapidly among individuals and businesses. Though currently using the ISO 8583 messaging standard, an upgrade to ISO 20022 is currently underway and planned to launch in 2022.

The service can be used across a variety of channels, including ATMs, bank counters, mobile banking, internet banking and other payment apps. It requires users to link their bank account with a mobile number, email address, eWallet ID or national ID number, after which they can conduct immediate fund transfers and make payments at merchants, with the security of not needing to divulge their bank account details. There is no limit to the number of daily fund transfers that can be made via PromptPay, and the upper limits for maximum per transaction values and total daily values are set by each bank. By the end of 2019, there were nearly 50 million registered PromptPay users.

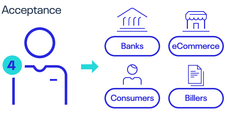
Key Stats



Market Development

With growth of 104% year over year, forecasts of continued aggressive growth, and adoption across banks, merchants and billers, Thailand is an established market with continued development.

Acceptance



Total Participants

>5 Million

Year of Real-Time Payments Launch

2016

Availability

365 · 24/7

Message Standard

ISO 8583

Real-Time Payment Types

Initiation/Authorization Methods

Mobile Wallet Trends

84%

% of adults who have a mobile wallet and have used it in the past year (2020)

Payments Fraud Rate

20%

Index to global average **129**

Population who report being a victim of fraud in the last 4 years

Top 3 Payment Fraud Types

% of fraud victims

19% Confidence trick

14% Other

13% Digital wallet account hacked

Population Banking Level

1.65

Number of debit, credit and charge cards per adult

67

Index to global average

History

January 2017 Commercial launch of PromptPay for P2P payments.

August 2017 Addition of the ability to link to any eWallet.

December 2017 Support for Thai standardized QR code is released.

July 2018 Introduction of the e-Donation service.

April 2020 Deutsche Bank launches PromptPay services for its customers.

December 2016 Launch of PromptPay, initially supporting tax refunds and social welfare distribution.

March 2017 Introduction of businesses' funds transfer and receipt.

November 2017 Release of cross-bank bill payments functionality.

March 2018 Introduction of PayAlert and Request to Pay services.

July 2019 Launch of MyPrompt QR.

Europe

Regional Spotlight

The next frontier of real-time payments maturity leads to the next wave of innovation

Nick Craig, Head of Europe, ACI Worldwide

The COVID-19 pandemic has driven incredible change across the European payments industry. Consumer adoption of digital services across industries jumped from 81% to 94% in just a few months in 2020. This is a rise that would have taken two to three years at pre-pandemic growth rates[1]. We've also seen the acceleration of cashless payments across markets where cash has historically been dominant and an acceleration of eCommerce as consumer behavior adjusts to the new reality. But the pandemic's societal disruption has left local economies on an insecure footing. This is driving banks, merchants and intermediaries across the payments ecosystem to respond rapidly, accelerating and reprioritizing their shift to digital to protect current revenue streams, and searching for new ones through a fully digitized customer experience.

Payments and account services have long been at the core of a banks offering to customers, generating one-third of European banks' total revenues[2], and represent an important source of customer interaction and opportunity. The maturing real-time payments adoption across Europe represents a significant opportunity to use the real-time infrastructure to accelerate and innovate around digitized customer experiences[3].

This maturity means we are now seeing the promise of the next generation of real-time payment schemes and convergence is high on the agenda. The U.K.'s Faster Payments continues to grow with over 2.8B transactions seen in 2020. The incoming New Payment Architecture (NPA) promises a step change for the U.K. payments industry, bringing greater openness and choice while remaining interoperable with payment services around the globe. Meanwhile, the announcement of the European Payments Initiative provides significant promise in the creation of a card scheme, digital wallet and P2P real-time payments system with full pan-EU interoperability. In the Nordic region, P27 is forging forward with its vision to make cross-border payments as easy as sending a text message while aligning its standards with the European Payments landscape.

Through these next-generation schemes, openness, reachability, interconnectivity and value-added services are key ingredients to success. As an example, from November 2021, all EU central infrastructures will have full interoperability through TIPS as a common settlement layer. Value-added services are becoming commonplace with the successful adoption of Request to Pay schemes and confirmation of payee. All of which highlight the importance of taking a holistic approach with a focus on customer experience and the fundamentals of easy, reliable and secure payments. Additionally, by embracing both open banking and leveraging real-time capabilities in processing and messaging, the financial industry has the means to harness its customer interactions and data to compete with big tech and fintech.

This holy grail of a fully digitized customer experience at scale means convergence between the card rails and digital. This promises to drive significant volumes to real-time payments and a wide range of innovative customer propositions. This vision is challenging the conventional thinking and will force a move out of siloed systems which have historically driven inefficiencies, inflexibility and inconsistent experiences across payments. With the maturity of instant payments we now, for the first time in history, have the means to make this vision a reality.

As we look forward, it is easy to predict the continued growth of real-time payments in Europe. But this is merely the foundation for the next frontier, which is to leverage the real-time payments infrastructure to capture the tremendous amount of added value the market is craving. These broad opportunities range from IT simplification and customer centricity to all-new revenue-generating services. Fintechs, big tech and niche players have all focused time and energy on these kinds of use cases. Now it is time for the banks and intermediaries to do the same, but at a European scale, leveraging customer relationships and data to a greater effect. Those players that can take control of their innovation while having the agility to respond holistically and rapidly are likely best placed to win.

1 Europe Digital Migration during Covid 19
https://www.mckinsey.com/business-functions/mckinsey-digital/our-insights/europes-digital-migration-during-covid-19-getting-past-the-broad-trends-and-averages

2 The future of European payments: Strategic choices for banks
https://www.mckinsey.com/industries/financial-services/our-insights/the-future-of-european-payments-strategic-choices-for-banks

3 McKinsey The Future of European Payments Nov 2020
https://www.mckinsey.com/industries/financial-services/our-insights/the-future-of-european-payments-strategic-choices-for-banks

Payments Fraud Viewpoint

Real-time payments expand the scope of fraud as well as its speed

Jay Floyd, Principal Fraud Consultant, ACI Worldwide

Europe's rates of card fraud versus real-time payments fraud were roughly on par as recently as a couple of years ago, but today, "non-plastic" fraud is rising far faster. The nature of this fraud, with its emphasis on scams and confidence tricks, presents various headaches for the regions financial institutions.

Among the scams targeting individuals, Authorized Push Payment (APP) fraud continues to be a huge problem. The corporate equivalent is CEO fraud, where criminals impersonate senior management to dupe employees into authorizing transactions. And money launderers consistently target university students to create networks of mule accounts. All these are difficult for financial institutions to detect without the technology and processes that help them interpret and respond to individual customer behaviors, beyond simply securing payment processes. And yet, difficult or not, failure to protect customers can result in heavy reputational damage, or even large fines from regulatory bodies, as many European financial institutions know too well.

At the same time, the scope of fraud that financial institutions are expected to keep on top of is growing larger all the time. Real-time payment scams are only the tip of a fraud iceberg that features a variety of financial crimes, from money laundering to transactions that subvert international sanctions regimes. Additionally, regional and domestic open banking initiatives create a new set of fraud vectors to consider around accounts, identity and payments.

To strengthen their detection capabilities, financial institutions need to integrate their payment screening solutions with other partner technologies that can provide valuable external data elements to enrich transaction scoring. Device intelligence providers, for example, that flag suspicious or bad IP addresses along with devices. Providers that consolidate and format hundreds of global sanctions records and politically-exposed persons (PEPs). Biometrics technologies that identify customers based on how they hold their smartphones or use a keyboard and mouse. All support a complete macro and micro view of individual customers and the ecosystems they exist within.

A factor working in favor of European financial institutions is that the region's relatively compact footprint is home to a variety of real-time payment schemes, each at different stages of maturity. So, while there's a similar disparity between how aware different countries are of the scams that are out there, financial institutions don't have to look too far for examples of best practice.

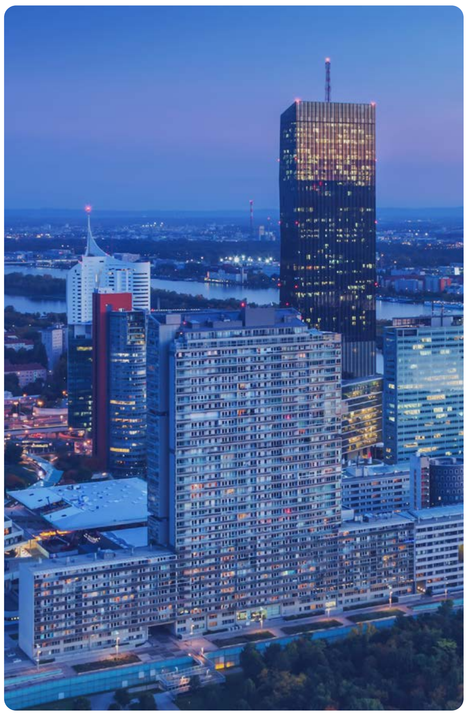
Austria

New Country

The conditions for real-time payments adoption in Austria are fairly favorable. Paper-based payments still comprise a significant share of transactions and there is only a moderate reliance on payment cards. As such, by 2025 real-time payments are forecast to account for more than 15% of electronic transactions and the number of real-time payments overall are predicted to balloon from 73M transactions in 2020 to 534M by 2025.

It is very likely that the COVID-19 pandemic will further drive electronic payments growth, due to the common perception that cash is a vector for the virus. There is clear evidence that this is encouraging Austrians to reconsider cash as a payment method. A recent report noted that: "Even if renowned institutions—for example, the European Central Bank—did not assume that the virus could likely be spread by using cash, 72%[1] of Austrians believe it makes more sense to pay with a card or via a smartphone."

This behavior change is unlikely to reverse significantly. In fact, as post-pandemic market conditions become clearer over the coming months and years, real-time payments adoption could go on to comfortably outperform the current forecasts.



ACI's Take

Austria has demonstrated a proactive approach to real-time payments and was among the first countries to embrace SCT Inst in November 2017. Although initially slow to leverage the system, 91%[2] of Austrian institutions had signed up to the scheme by the end of 2020. Austria now has the second-highest number of PSPs in Europe (433[2]) registered to the scheme—trailing only Germany (1,284).

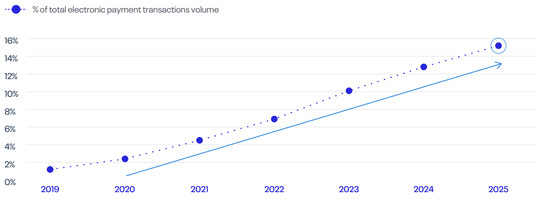
The exponential growth in real-time payments adoption seen to date in Austria is to be expected in newer markets, which start from a low base. And if it continues to follow patterns seen throughout the world, growth will eventually plateau as real-time payments exhaust its quickest wins. After being briefly disturbed by the newcomer, the country's payments ecosystem will settle back into an equilibrium.

In smaller addressable markets such as Austria, we often see banks collaborating to enable real-time payments with shared infrastructure that limits the total cost of ownership. While this is a good way of ensuring reachability and helping to drive demand in the market, as volumes for each institution grow, they will want to consider their autonomy to innovate. Shared infrastructure can limit the ability of banks to differentiate competitively with their real-time services, and institutions should consider how they best evolve their connectivity, processing and value-added service capabilities to remain competitive.

Experience elsewhere also tells us that banks, acquirers and issuers can kickstart further growth cycles by leveraging the real-time rails to differentiate via digital overlay services and non-financial transactions. That includes real-time balance and liquidity management services, fraud prevention and strong customer authentication (SCA), as well as leveling-up bill paying capabilities. Expanding the available initiation/authorization methods and recipient identifiers, beyond just bank account number, are similarly reliable catalysts for further adoption.

Trends + Data

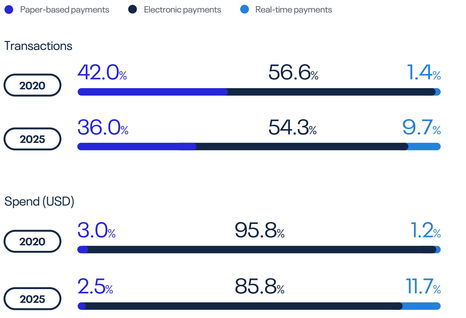
Real-Time Payments Volume and Its Share in Overall Non-Paper-Based Transactions, 2019-25f



Transactions

73M (2020) **534M** (2025f) **48.7%** (5 Yr CAGR)

Share of Volumes by Payments Instrument



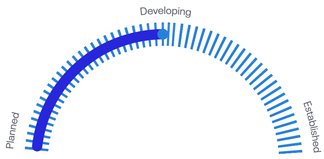
Schemes

Though Austria launched SCT Inst, a pan-European scheme that provides real-time payment capabilities for banks, PSPs, billers and merchant payments in 2017, it was not until 2019 that the country's first bank started offering the service. Since 2019, the scheme has seen strong adoption, with year-over-year growth of nearly 100%, with five-year forecasts anticipating continued robust performance at a CAGR of 48.7%.

All SCT Inst transactions are processed by clearing and settlement mechanisms, including TIPS and RT1, both of which are available to banks in Austria.

SCT Inst enables customers to transfer money to accounts at participating banks in the payments network, for both individual and business transactions. SCT Inst can also be accessed across different channels, such as online and mobile banking, to enable P2P, C2B, B2C and B2B payments directly between accounts. Funds are settled in near-real time, with recipient banks in Austria required to credit amounts to customers within 10 seconds. Historically, the transaction limit in Austria was €15,000 ($16,841) per transaction; however, in July 2020 the limit increased to €100,000 ($112,270).

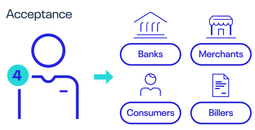
Key Stats



Market Development

Launched in 2017, with year-over-year growth of 95.2%, Austria's real-time payments network already supports banks, PSPs, billers and merchant payments, and has seen strong adoption thus far, setting the stage for strong forecasts in future growth.

Acceptance



Total Participants

433

Year of Real-Time Payments Launch

2017

Availability

365 24/7

Message Standard

ISO 20022

Real-Time Payment Types

Initiation/Authorization Methods

Mobile Wallet Trends

% of adults who have a mobile wallet and have used it in the past year (2020)
* https://www.capitalontap.com/en/blog/posts/the-rise-of-digital-wallets/

Population Banking Level

1.93
Number of debit, credit and charge cards per adult

78
Index to global average

History

December 2014
The ERPB invites the EPC to develop a pan-European real-time payments system.

November 2015
EPC presents its proposal to the ERPB.

November 2016
The EPC publishes SCT Inst rulebook.

November 2017
Implementation of SCT Inst in selected markets, including Austria.

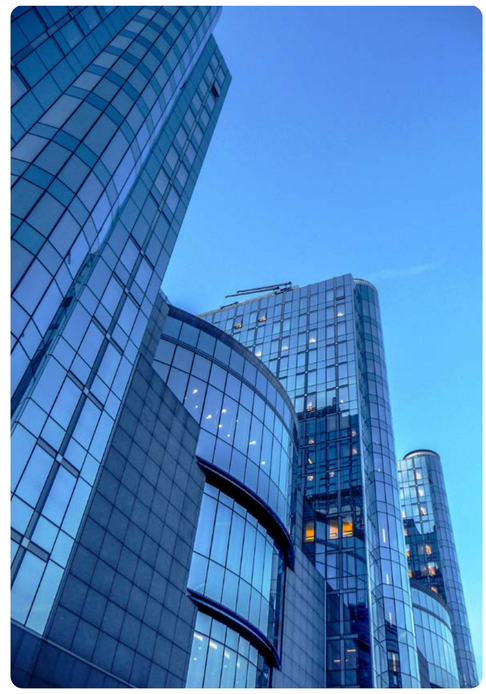
July 2020
Limit increases from €15,000 to €100,000.

1 https://investinaustria.at/en/blog/2020/07/cashless-payments-continue-to-increase.php
2 https://www.ecb.europa.eu/paym/groups/erpb/shared/pdf/14th-ERPB-meeting/Status_update_on_the_SCT_Inst_scheme.pdf?cbec7731aa9f25fdc11a649ab133ee1a

Belgium

It may be among the most recent countries to adopt SCT Inst, but usage of real-time payments is catching on fast in Belgium and growth is expected to be strong in the coming years. It is anticipated that real-time payments will comprise around 12% of digital payments, and nearly 19% by 2025. Most growth will likely come from the cannibalization of paper-based payments. As of 2020, these paper-based payments represented around one-third of all transaction volumes, but less than 1% of transaction values.
This suggests these transactions are day-to-day, low-value consumer payments, making them the ideal base use case for consumers to substitute real-time payments and spike volumes further.

Mobile wallet usage has grown slightly year on year (up 5%), likely due to COVID-19. It is also likely that during 2020, COVID-19 had a slightly negative impact on the adoption of real-time payments due to the implementation of lockdowns very shortly after SCT Inst was introduced. However, this means that we can expect growth to accelerate in 2021—if COVID-19 restrictions are eventually eased as anticipated.



ACI's Take

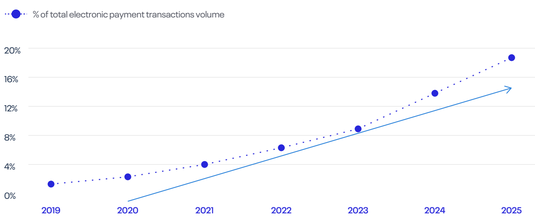
As part of the European Union, Belgium continues to address the balance between the PSD2 regulatory mandate for real-time payments with the need to create demand among its ecosystem participants. The launch of real-time payment capabilities within a single clearing and settlement mechanism (STET) to connect to both pan-European real-time systems (EBA RT1 and ECB TIPS) has increased reachability, lowered the cost of entry and accelerated speed to market for participants. STET also enables the ecosystem beyond banks, bringing real-time payments to merchants and fintechs.

Strong growth is already indicated within current market conditions, but as open banking takes off in Europe under PSD2 and new payment initiation methods appear, the upward trend could accelerate rapidly. Belgian banks' support for the European Payments Initiative adds further weight to this positive outlook.

Thus, Belgium is a textbook case of leveraging new regulations and systems to drive widespread availability of real-time payments, and in turn create the impetus for innovations that increase consumer, merchant and corporate interest. As the banking and payments industry works to modernize its own solutions to make the necessary operational improvements to be ready for increased volumes, it must also consider how these updated technologies and capabilities can support new and differentiated services, in what will soon be a vibrant and open real-time market.

Trends + Data

Real-Time Payments Volume and Its Share in Overall Non-Paper-Based Transactions, 2019-25f



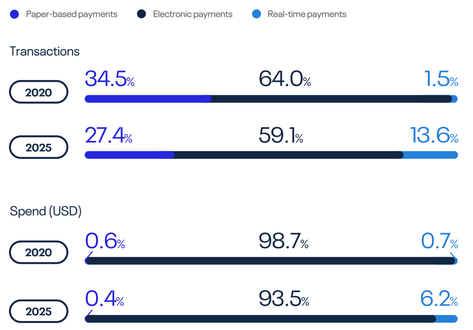
Transactions

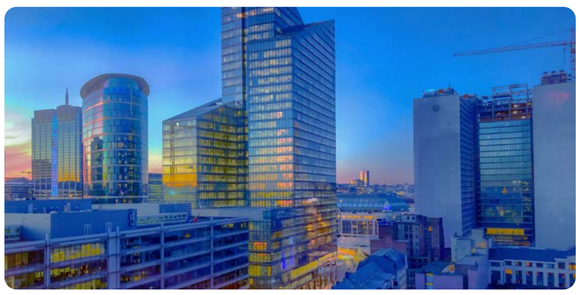
108M (2020)

1.1B (2025f)

58.8% (F5 Yr CAGR)

Share of Volumes by Payments Instrument





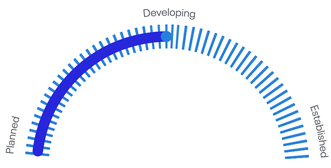
Schemes

In 2019, Belgium launched SCT Inst, a pan-European scheme that provides real-time capabilities for banks, PSPs, billers and merchant payments. The scheme has seen strong adoption thus far, setting the stage for forecasts of robust future growth.

Real-time payments within Belgium are processed by the Center for Exchange and Clearing (CEC), the Belgian automated interbank payments system for retail payments. In 2013, the CEC moved to a new payments platform, developed and managed by STET, that is one of the largest clearing and settlement systems in Europe.

SCT Inst enables customers to transfer money to accounts at participating banks in the payments network, for both individual and business transactions. SCT Inst can also be accessed across different channels, such as online and mobile banking, to enable P2P, C2B, B2C and B2B payments directly between accounts. Funds are settled in near-real time, with recipient banks in Belgium required to credit amounts to customers within five seconds. There are no standard transaction limits set in Belgium for its domestic infrastructure (IP CSM) and banks are allowed to set their own limits under this system.

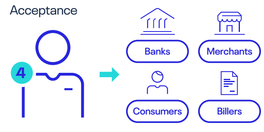
Key Stats



Market Development

Launched in 2019, and with 81.1% growth year over year, Belgium's real-time payments network already supports banks, PSPs, billers and merchant payments, and has seen strong adoption thus far, setting the stage for strong forecasts in future growth.

Acceptance



Total Participants

22 Banks

Year of Real-Time Payments Launch

2019

Availability

365 24/7

Message Standard

ISO 20022

Real-Time Payment Types

Initiation/Authorization Methods

Mobile Wallet Trends

31%

% of adults who have a mobile wallet and have used it in the past year (2020)

Payments Fraud Rate

Index to global average **72**

Population who reported being a victim of fraud in the last 4 years

Top 3 Payment Fraud Types

% of fraud victims	Trend
17.9% Card details stolen/skimmed in person	↑
17.9% Other	↓
16.1% Card details stolen online	↓

Population Banking Level

2.69

Number of debit, credit and charge cards per adult

109

Index to global average

History

July 2017
CEC signs an agreement with STET to develop real-time payments in Belgium.

March 2019
Formal launch of SCT Inst in Belgium.

July 2020
SCT Inst international transaction limit increases from €15,000 to €100,000.

January 2016
The Belgian Financial Sector Federation (Febelfin) formally starts the initiative to launch real-time payments in Belgium.

November 2018
The SCT Inst launches in the testing phase.

October 2019
Milestone—44.5 million real-time payments were made between March and October 2019.

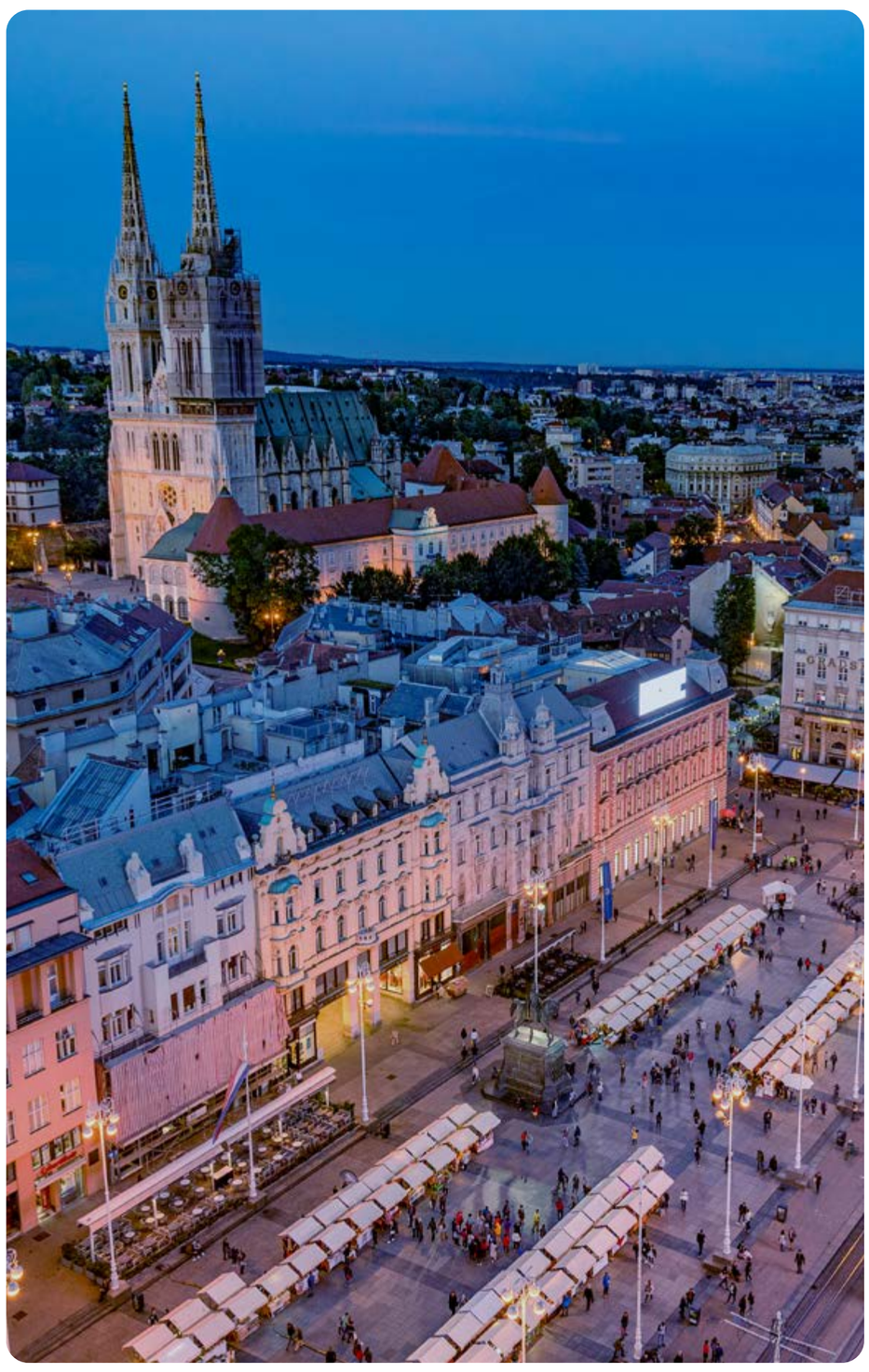
Croatia

New Country

Although Croatia only launched the NKSInst real-time payments scheme in October 2020, forecasts point to strong adoption over the next five years.

The combination of a high level of cash transactions and widespread adoption of mobile wallets is a significant contributing factor here. Between 2020 and 2025, real-time transactions are anticipated to grow at a five-year CAGR of 374.4%—from less than 0.1M in 2020 to 130M in 2025, by which time they are expected to amount to over 10% of all electronic payments.

The COVID-19 pandemic is also expected to be a major factor in this growth. A recent survey of Croatians' attitudes towards payment methods reported "an increase in mobile and contactless payments, which are regarded as the safest for health in the circumstances of the pandemic." [1]



ACI's Take

Croatia might be a small market by European standards, but it remains in a strong position for real-time adoption. It has a large banking sector relative to its size, with a dozen or so major banks that are all well positioned to connect to the national real-time payments scheme. It also has an outward looking economy and citizenry that will benefit from the planned-for closer integration with European payment schemes.

The limited initial launch of Croatia's NKSInst national real-time payments scheme allows customers to instantly transfer local currency when both the originator and beneficiary hold accounts at one of three domestic banks.

But three things mark out NKSInst's wider potential.

First, it is operated by Fina, which has partnerships with the country's central infrastructure and many banks and businesses. The scheme's reach can be rapidly expanded at almost any time.

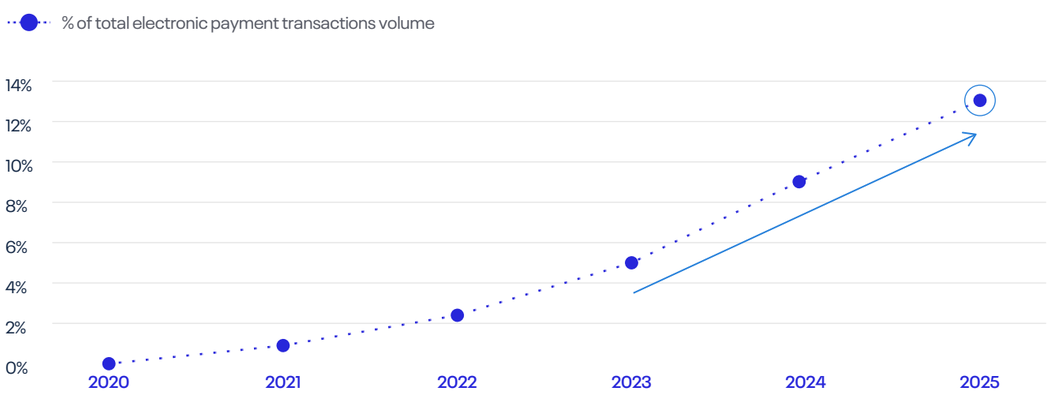
Second, NKSInst is based on the SCT Inst standard. In the future, with only small tweaks and some adjustments to the country's related batch-based NKS Euro system, it will be reachable from other European countries. That will provide an improved interface with the Eurozone for the many Croatians that either do business there or have friends and family living there. This is on the roadmap once the system has been more widely rolled out and embedded into the national ecosystem.

Finally, the system features a proxy lookup service that enables the use of phone numbers and email addresses to initiate payments. Experience in other markets shows us that the convenience factor of this kind of overlay service is instrumental in accelerating adoption.

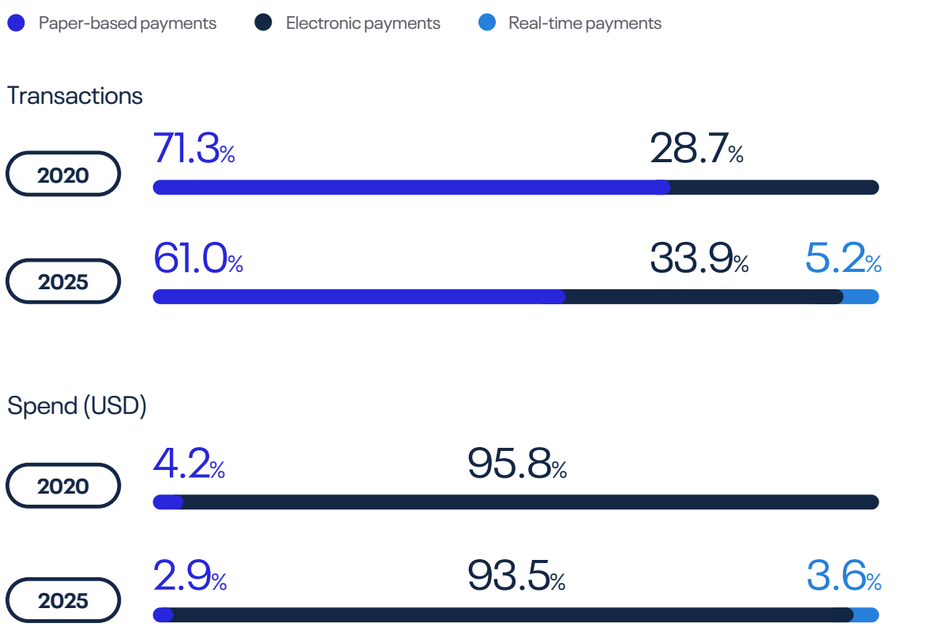
All of the country's banks will eventually connect to the NKSInst system. Therefore, their technology roadmaps should already feature strategic solution modernizations that enable them to diversify their digital payment offerings to grow and deepen customer relationships. That includes support for non-financial transactions such as balance inquiries, payment initiation requests and Request to Pay, which all tend to grow quickly in early maturity markets and those with strong alias capabilities.

Trends + Data

Real-Time Payments Volume and Its Share in Overall Non-Paper-Based Transactions, 2020-25f

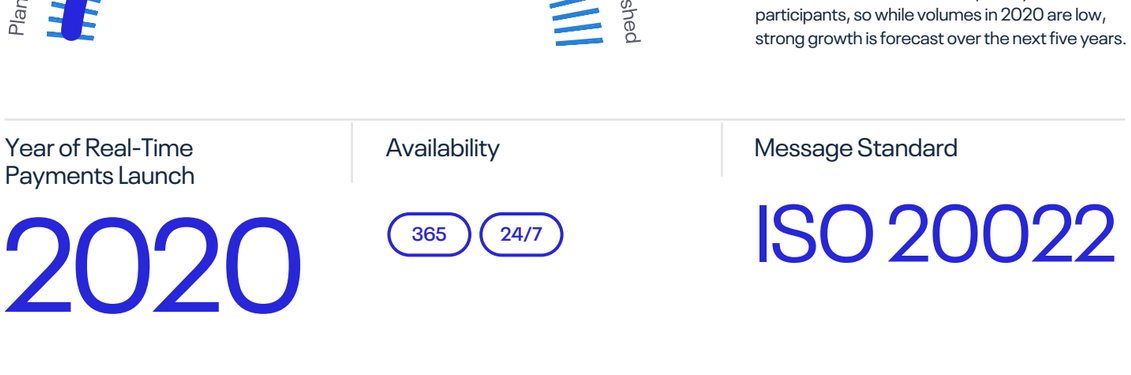


Share of Volumes by Payments Instrument



Transactions

0.05M (2020) **130M** (2025f) **374.4%** (F5 Yr CAGR)



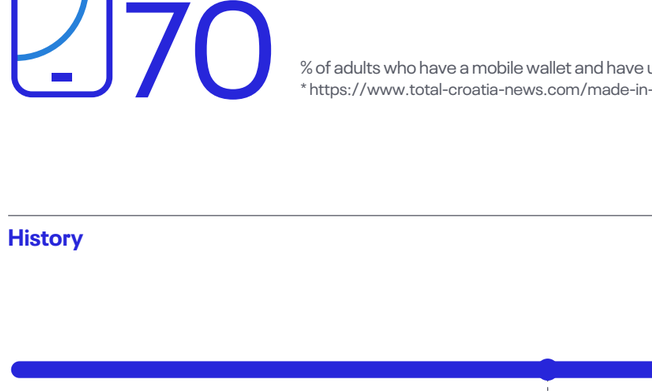
Schemes

Croatia's real-time payments system launched in early 2020 with robust capability but limited participants. While volumes in 2020 are low, a strong CAGR of 374.4% is forecast over the next five years.

NKSInst is a real-time payments scheme developed by the Croatian Financial Agency—Fina—which launched on October 29, 2020. NKSInst, is aligned with European SCT Inst standards, but is not part of the SCT Inst scheme as Croatia has its own currency (the Kuna) and SCT Inst is built for the Euro.

The scheme operates 24/7/365 and settles funds in near-real time, with recipient banks required to credit amounts to their customers no more than 10 seconds after a payment is received. NKSInst supports both individual and business transactions and enables P2P, C2B, B2C and B2B payments directly between accounts. The current limit allowed by NKSInst is HRK100,000 ($15,089) per transaction.

Key Stats



Market Development

Croatia's real-time payments system launched in October 2020 with robust capability but limited participants, so while volumes in 2020 are low, strong growth is forecast over the next five years.

Year of Real-Time Payments Launch

2020

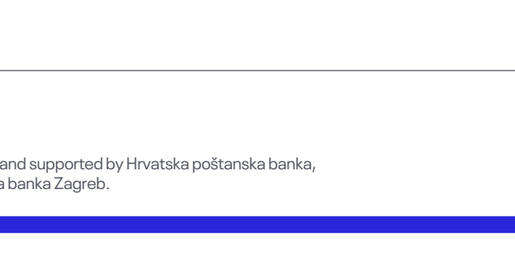
Availability

365 24/7

Message Standard

ISO 20022

Acceptance



Total Participants

3

Real-Time Payment Types

Initiation/Authorization Methods

Mobile Wallet Trends

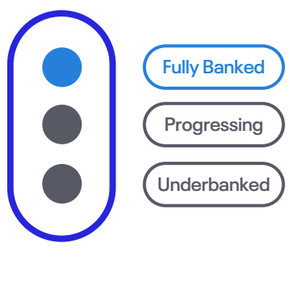
% of adults who have a mobile wallet and have used it in the past year (2020)
* https://www.total-croatia-news.com/made-in-croatia/44824-aircash

Population Banking Level

Number of debit, credit and charge cards per adult

115

Index to global average



History

October 2020
NKSInst is launched by Fina and supported by Hrvatska poštanska banka, Partner banka and Privredna banka Zagreb.

February 2020
NKSInst receives authorization from the central bank.

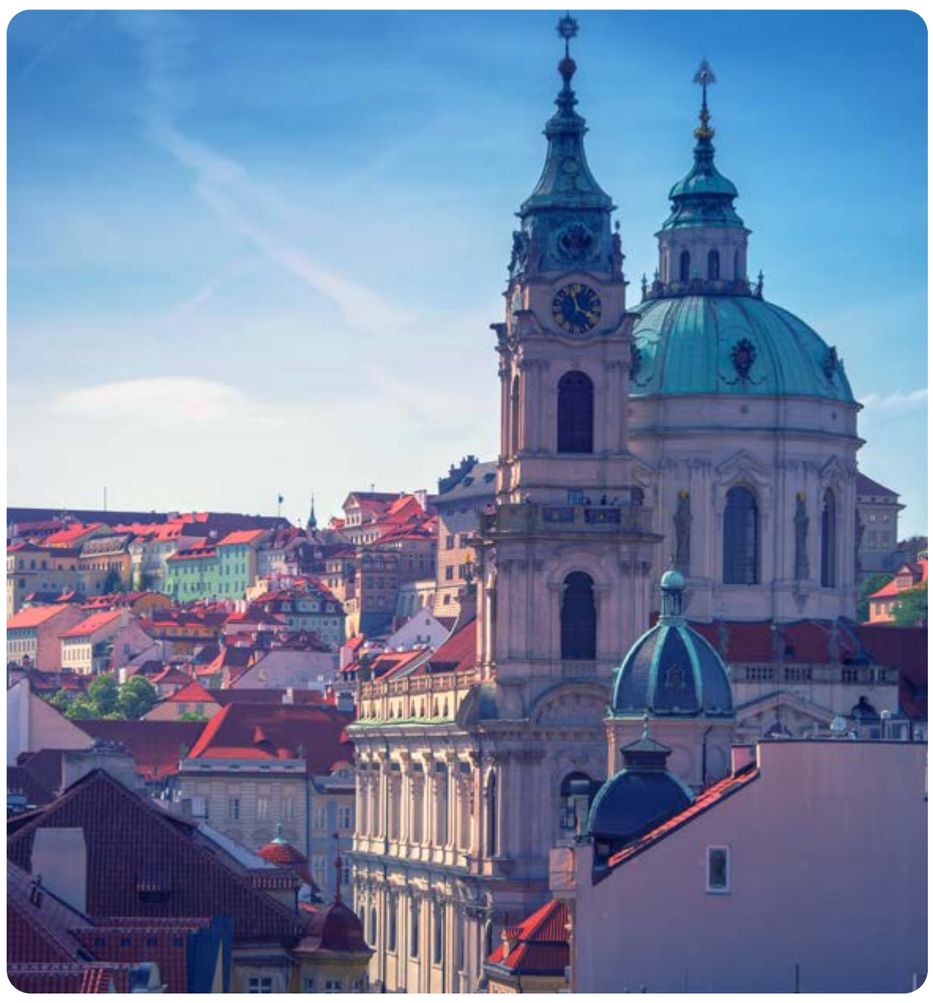
1 https://www.croatiaweek.com/contactless-and-mobile-payments-increasingly-popular-in-croatia/

Czech Republic

New Country

With a low reliance on payment cards at present, and moderate levels of cash usage, the Czech Republic shows all the signs of recording strong real-time payments growth in the future. We have already seen volume increases approaching 400% in 2020 and by 2025, real-time's share of digital transactions is expected to exceed 13%.

In the short term, CERTIS adoption may be hindered by the limited number of participants, payment types and initiation/authorization methods. However, if the scheme evolves to offer additional functionality, the uptake could well be even greater than current forecasts.



ACI's Take

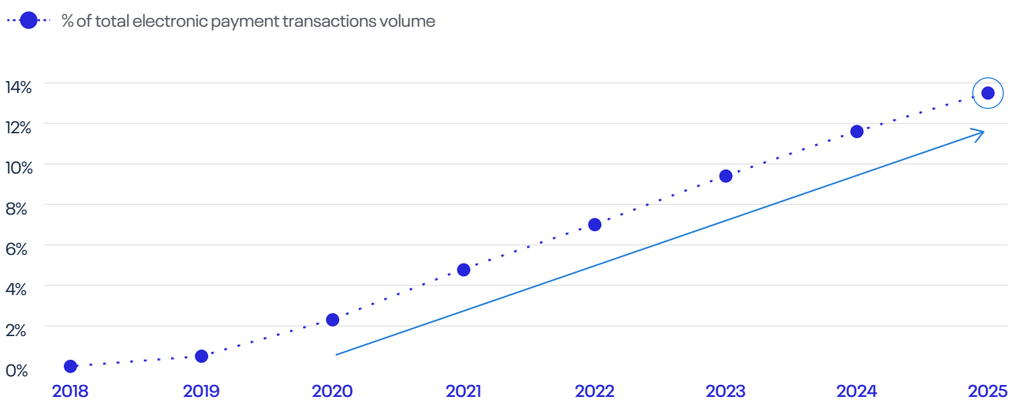
Consumers' real-time requirements feel well served by the basics offered by the CERTIS real-time scheme in terms of its current participants, payment limits and hours of operation; 12 of the country's largest banks, CZK 400,000 and 24/7/365, respectively. The receiving-only mandate creates challenges in terms of driving usage and perhaps suggests that the country's institutions are more interested in clearing and settling real-time transactions from elsewhere in the region. Interestingly, the combination of single instance payments and bank account initiation is very similar to the beginning of the U.K. real-time journey, where one-off bill payment was the use case that sparked adoption and future innovation.

CERTIS' relative immaturity as a scheme means several exciting—and potentially lucrative—opportunities remain on the table for financial institutions that are agile and proactive enough to pivot and then accelerate their payments modernization journeys. For example, with the right strategic investments in payment gateway solutions that support more than simple receiving connectivity, market players can accelerate their delivery of new services and grab market share from slower moving competitors. The first-mover advantage is not to be underestimated.

At the same time, by understanding—and even pre-empting—the current system's all-but-inevitable interoperability with other EU schemes, financial institutions can stake an early claim on that slice of the market in this progressive and outward-looking economy.

Trends + Data

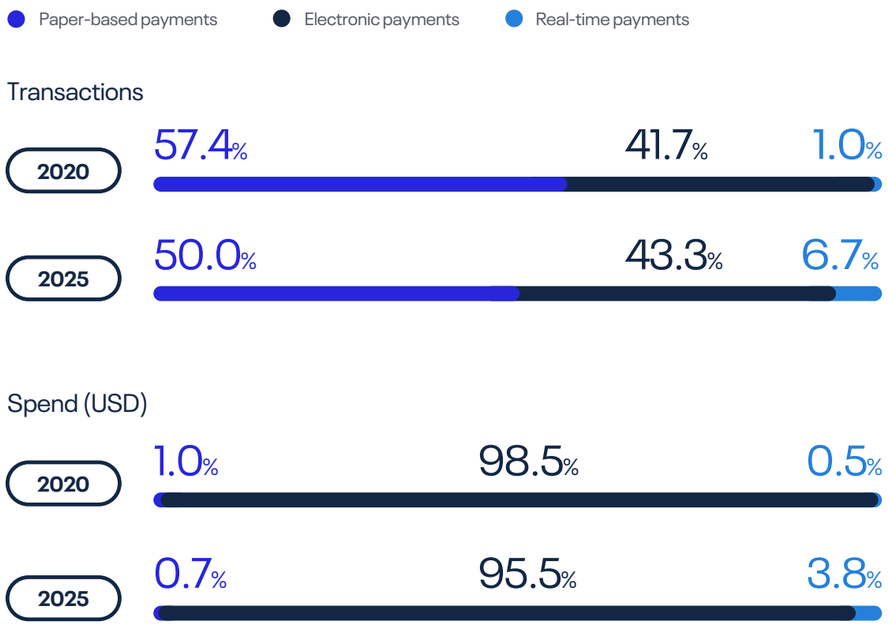
Real-Time Payments Volume and Its Share in Overall Non-Paper-Based Transactions, 2018-25f



Transactions

49M (2020) 368M (2025f) 49.8% (F5 Yr CAGR)

Share of Volumes by Payments Instrument



Schemes

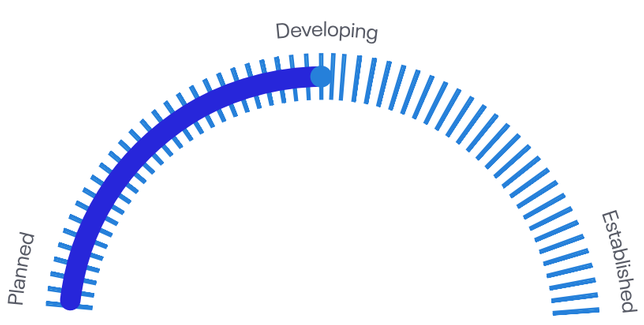
At a little over two years old, the Czech Republic's real-time payments scheme is still in its nascent stages of adoption, but to date it has recorded strong year-on-year growth of 397%. Future growth of nearly 50% is expected to continue each year through to 2025.

The Czech Express Real-Time Interbank Gross Settlement (CERTIS), launched on November 1, 2018, is the country's real-time gross settlement (RTGS) system, operating 24/7/365 by the Czech National Bank.

In order to provide faster payments, the central bank extended the CERTIS payments system to provide real-time fund transfers.

The service only supports Czech koruna transfers between accounts held in the Czech Republic, with funds settled within 10 seconds. The scheme currently supports P2P, C2B and B2B transactions via internet and mobile banking channels using bank account numbers, with a per transaction maximum of CZK400,000 ($17,663) allowed.

Key Stats



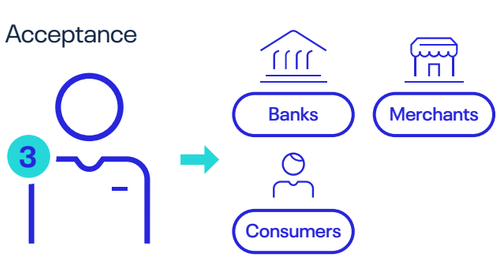
Market Development

At only two years old, the Czech real-time payments scheme is still in its nascent stage, though it showed strong year-over-year growth of 397%.

Year of Real-Time Payments Launch: 2018

Availability: 365 24/7

Message Standard: Proprietary



Total Participants: 11 Banks/ Financial Institutions

Real-Time Payment Types: 1 Single Instance

Initiation/Authorization Methods: 1 Bank Account

Mobile Wallet Trends: 27% — % of adults who have a mobile wallet and have used it in the past year (2020)

Payments Fraud Rate: 10.2% — Index to global average **66**

Population who reported being a victim of fraud in the last 4 years

Top 3 Payment Fraud Types (% of fraud victims)

- 21.6% Other
- 15.7% Card details stolen online
- 13.7% Don't remember

Population Banking Level

1.47 Number of debit, credit and charge cards per adult

60 Index to global average

Fully Banked / Progressing / Underbanked

History

November 2018
CERTIS real-time payments service launches.

February 2019
Česká spořitelna and Air Bank are the first two banks to launch the real-time payments service for their customers.

December 2019
The number of real-time payments surpasses four million in the month.

Denmark

It is almost seven years since Denmark first adopted real-time payments, so it is no surprise that transactions have almost entirely subsumed paper-based. In such a mature market, the rapid growth noted in last year's report, particularly between 2017 and 2018, was unlikely to continue at the same rate, and this proved to be the case. COVID-19 and the ensuing lockdown also contributed to the slowdown. However, we anticipate that growth will return again from 2021 through 2025, with a five-year CAGR of 14.9%. Indeed, strong growth is projected for the next decade.

The planned launch of the P27 Nordic Payments initiative in 2021 is likely to drive further expansion, as will greater real-time payments acceptance by merchants and billers in the region.

Interestingly, the population's reliance on payment cards is less pronounced than in other countries, but mobile wallets are very popular. The MobilePay mobile wallet is the most commonly used phone app compared to all other mobile applications in all categories. This appetite for mobile wallets suggests other offerings with real-time payments integration should see similar traction.

ACI's Take

Denmark typifies the quirks of the Nordics region compared to other markets and regions around the world.

Elsewhere, payments modernization is first and foremost an opportunity to be first to market and claim the highest share of new opportunities. In Denmark and the rest of the Nordics, competing schemes and services often find themselves collaborating in the interest of minimizing infrastructure costs; since banks are closely exposed to the whole value chain, they tend to drive this. Thus, the market's players regularly come together to collaborate on the principles and fundamentals of a system or service, before then going away to compete on features and prices.

Denmark is poised for a further cycle of this kind of innovation. Real-time payments have taken hold and account for one in 10 electronic payments. And electronic payments, including real-time, account for 82.4% of all transactions. This belies the fact that payment players have managed to make it easier to pay without necessarily increasing consumer spending; the nation's acquirers, in particular, are leaving opportunities and revenue on the table.

As large merchant acquirers have discovered elsewhere, they must remain vigilant against falling into playing a utility role in the payments network. Differentiating in a market where real-time payments are happening and growing means innovating to add value for merchants, such as with microcredit at point of sale or "buy now, pay later" and installment capabilities driven by big data and AI.

As in neighboring markets with similar challenges and opportunities, Danish financial institutions should be asking themselves: are we leveraging our technology and data in a holistic way that benefits the whole business? This has not always been a strength for organizations in the region, where their outward tech-savviness masks a dependence on the same traditional organizational structures seen the world over. Thus, payments modernization priorities for the region need to be mapped out with an eye on delivering value beyond the direct lines of business they will serve.

Trends + Data

Real-Time Payments Volume and Its Share in Overall Non-Paper-Based Transactions, 2015-25f

Transactions

417M (2020)

833M (2025f)

14.9% (5 Yr CAGR)

Share of Volumes by Payments Instrument

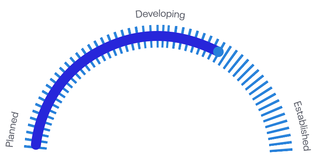
Schemes

As it stands, Denmark has a robust real-time payments infrastructure, used widely by individuals and businesses alike for fund transfers and payments. Straksclearing, also known as Express Transfers or RealTime 24/7, was launched in 2014 and is owned by the Danish Bankers Association and operated by Nets. It enables users to make P2P, C2B and B2B payments, although to offer real-time payments, banks must participate in Straksclearing, as well as in the central bank's payments system Kronos. They must also hold a primary account and a settlement account with Straksclearing.

The system offers an Open API, enabling participants to build new services by integrating with the platform. The maximum limit for fund transfers is DKK500,000 ($75,126) and transfers are settled within 10 seconds. Regarding fees, consumers can transact through mobile apps for free, though certain banks may charge a small fee for online payments. Businesses are also charged a fee for using this system. In addition to banks, mobile payments provider MobilePay (owned by Danske Bank) also participates in the system. MobilePay enables users to make P2P transfers to Danish bank accounts using a mobile number associated with a current account.

These factors have contributed to both strong historical and anticipated future growth, and the Danish real-time payments market could grow even further with planned integration into the pan-European SCT Inst. The launch of P27 throughout the Nordic region will likely drive adoption even further.

Key Stats



Market Development

Danish real-time payments market growth slowed year over year to 5%, but acceleration is anticipated over the next five years, driven by pending launches of SCT Inst and P27.

Year of Real-Time Payments Launch

2014

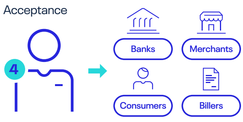
Availability

365 | 24/7

Message Standard

ISO 20022

Acceptance



Total Participants

~75

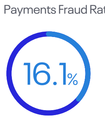
Real-Time Payment Types

Initiation/Authorization Methods

Mobile Wallet Trends

% of adults who have a mobile wallet and have used it in the past year (2020)

Payments Fraud Rate



Index to global average **103**

Population who reported being a victim of fraud in the last 4 years

Top 3 Payment Fraud Types

% of fraud victims	Trend
23.5% Card details stolen online	↓
17.7% Other	↓
15.3% Bank account hacked	↑

Population Banking Level

Number of debit, credit and charge cards per adult

History

September 2013
Launch of project for developing real-time payments.

November 2014
Launch of Straksclearing.

February 2015
Online and in-store payments function released.

October 2017
MobilePay is turned into an independent business unit, separate from its founder, Danske Bank.

August 2020
MobilePay expands to Greenland.

2021
P27 is expected to launch in the wider Nordic region.

Finland

As it stands, Finland has a lower-than-average index to global card ownership rates. Most notably, it still has a higher reliance on paper-based payments than its Nordic neighbors. In 2020, these payments comprised almost a quarter of Finland's total transactions. This can be seen as a predictor of aggressive real-time payments adoption in the future, given the experience of more established markets, where real-time has tended to draw volume from paper payments and not digital.

While growth in real-time payments in 2020 was slower than anticipated, it is expected to accelerate from 2021 through 2025, when it is forecast to account for 11.8% of all digital transactions. A combination of factors will drive this growth, including a period of catch-up against both the previously mentioned slow adoption/usage and the economic impact of the country's COVID-19 lockdown.

Continuing to look ahead, Finland's current infrastructure also bodes well for high real-time payments adoption. Its two schemes offer the capabilities to use real-time payments in a number of ways, from consumers to corporates. Finland is also part of the P27 Nordic Payments initiative, which aims to provide an integrated, cross-border payments system for the region.

ACI's Take

Being the region's only Euro-based economy makes Finland's position in the Nordics unique. For example, its place in the SCT Inst scheme gave it a head start on real-time payments. And it makes P27 of vital importance for the country, which will be better able to leverage its position as a route for bypassing high cross-border fees to and from the Eurozone, and restrictive foreign exchange rates. This will bring welcome outside investment from an economic point of view, and from a technical and practical one, Finland will also be well placed to take a lead in multi-currency digital overlay services and mobile solutions.

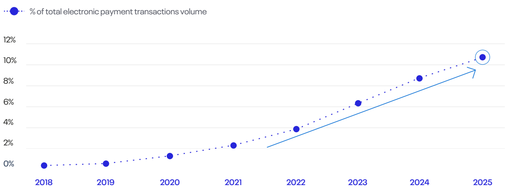
It's also an opportunity for Finland to position itself as the gateway for intelligence sharing regarding fraud trends and emerging risks between the region and other European institutions. This would overcome the relatively insular view of fraud taken in the Nordics and provide Finnish financial institutions with a clear source of differentiation above and beyond the handling of payments.

Nevertheless, it is trade within the Nordic region that matters most to Finland. The region's economies are heavily integrated already, but the delay on achieving the same situation with payments means it's more complicated for Finnish consumers and businesses to make payments to Sweden than to Germany[1]. Once this is ironed out, corporates in particular will leap at the opportunity to simplify their processes to take advantage of real-time payments, through new approaches to processing receivables, e-Invoicing and request to pay.

Before that, however, the slight delays in P27's rollout offer Finland's banks an opportunity to refocus and accelerate their modernization efforts to create the agility needed to drive new innovations. Operationally, they must also begin scaling up systems to meet higher volumes of digital and real-time payments and the non-financial transactions that accompany them. The country's globally renowned technology and services industry will be an advantage here and—as reported last year—Finland remains primed to experience impressive success with real-time payments in the coming years.

Trends + Data

Real-Time Payments Volume and Its Share in Overall Non-Paper-Based Transactions, 2018-25f



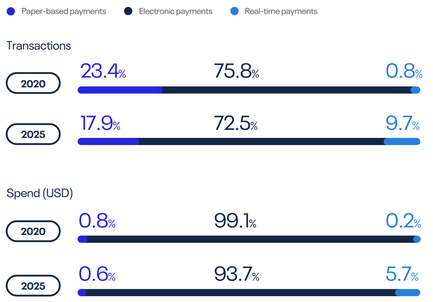
Transactions

34M (2020)

499M (2025f)

71.4% (5 Yr CAGR)

Share of Volumes by Payments Instrument



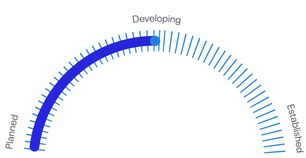
Schemes

Having only launched in 2017, Finland's real-time payments market is still developing. But with growth of nearly 170% compared to last year, and an aggressive future five-year CAGR of 71.4% predicted, Finland will soon become a more established market. This will be powered by its two real-time payment schemes and the availability of varied payment types/initiation methods.

Siirto, a mobile real-time payments solution launched in 2017, settles payments in real time and enables users to make P2P fund transfers by using the recipient's mobile number. Alternatively, users can pay in-store and online using their mobile number or by scanning a QR code. The solution has over 1.1M users (around 20% of the population), and there's even a Siirto payroll service, enabling users to pay salaries via the app. Transaction limits vary by bank.

Since 2018, SCT Inst, the pan-European instant credit transfer scheme, has also been present in Finland. The system enables P2P, C2B, B2C and B2B payments directly between accounts via different channels, such as online and mobile banking. It supports both individual and business transactions, and settles funds in near-real time, with recipient banks required to credit amounts to their customers no more than 10 seconds after a payment is received. There are no upper limits for transfers between Finnish banks, however, participation is currently quite limited.

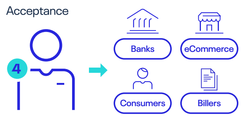
Key Stats



Market Development

Launched in 2017, and with year-over-year growth of 167.5%, Finland already has two real-time payment networks supporting banks, PSPs, billers and merchants, as well as a variety of payment types and initiation methods, and is slated for aggressive future growth.

Acceptance



Total Participants

6 Banks

Year of Real-Time Payments Launch

2017

Availability

365 24/7

Message Standard

ISO 20022

Real-Time Payment Types

Initiation/Authorization Methods

Mobile Wallet Trends

21%

% of adults who have a mobile wallet and have used it in the past year (2020)

Payments Fraud Rate

5.2%

Index to global average **34**

Population who report being a victim of fraud in the last 4 years

Top 3 Payment Fraud Types

% of fraud victims

30.8%
Card details stolen online

26.9%
Confidence trick

11.5%
Identity theft

Population Banking Level

2.34

Number of debit, credit and charge cards per adult

95

Index to global average

History

November 2016
Automatia announces it will launch a real-time payments service by spring 2017.

March 2017
Siirto launches.

October 2017
Siirto launches online payment services.

December 2017
Siirto launches donations functionality.

January 2018
Siirto launches payroll services.

May 2018
Siirto launches a QR code-based payments service for use in taxis and other merchants.

June 2018
Nordea Bank introduces SCT Inst in Finland.

February 2019
Siirto launches bill payment services.

November 2020
Siirto user base crosses over 1.1 million.

2021
P27 is expected to launch in the wider Nordic region.

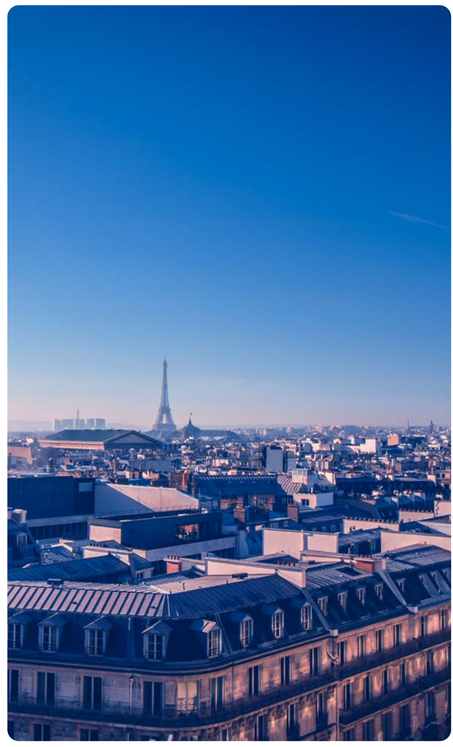
1 https://nordicpayments.eu/op-financial-group-p27-a-very-good-initiative-for-finland/

France

In last year's report, we noted that while France connected to the pan-European SCT Inst scheme later than its neighbors, the country is ripe for strong adoption of real-time payments. This is due to the combination of a diversity of segments accepting real-time payments and a relatively low ownership rate for payment cards among adults. These conditions still prevail, and accordingly, we anticipate real-time payments to remain on a strong growth trajectory for at least the next five years.

As is true in other SCT Inst countries, the limited payment initiation methods continue to make usage more cumbersome than it could be, but forthcoming enhancements to the user experience will improve the situation. Meanwhile, mobile wallet adoption remains low but grew 10% in 2020, likely due to the impact of COVID-19 and the decline in paper-based payments.

According to one survey[1], by May 2020, 28% of French consumers had used a digital payment for the first time in-store. Long term, 64% of French adults who used digital payments for the first time during the pandemic plan to continue using them in the future.



ACI's Take

Similar to 2020, while the enabling of real-time payments by France's financial institutions has lagged behind that of some of their European counterparts, we should not underestimate the potential for growth here. Thanks to PSD2, France is subject to the same regulatory mandate as the rest of Europe, but a number of key indicators of real-time success are much stronger than in neighboring countries.

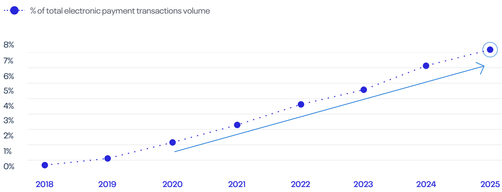
The number of traditional payment instruments per person may be relatively low, but this indicates a lack of acceptable choice for consumers. On the other hand, the COVID-19-driven adoption of mobile wallets shows a digital-savvy population that is open-minded to new payment solutions. Integrating real-time payments into these services could be the key to unlocking real-time's potential in France. More extensive merchant connectivity to the STET clearing and settlement mechanism will also create a digital ecosystem ready to take advantage of real-time payments. Furthermore, French banks are strongly supporting the EPI initiative, and we can expect to see a significant volume increase as France begins accepting EPI-based transactions.

With ample room to grow (there's still a significant volume of paper-based payments from which to chip away market share) and a digital-friendly population, there are big rewards to claim for payment players—especially PSPs and acquirers—that can bring differentiated solutions to market. Indeed, the loyalty of their own merchant customers may soon depend on it as they feel the squeeze from consumers that expect support for more varied payment options.

And for any incumbent issuers and large institutions that are yet to modernize their consumer payment solutions, the case continues to grow for them to act fast to replace legacy technology with modern, flexible solutions to retain customers in this developing real-time payments ecosystem.

Trends + Data

Real-Time Payments Volume and Its Share in Overall Non-Paper-Based Transactions, 2018-25f



Transactions

455M (2020)

2.4B (2025f)

39.2% (F5 Yr CAGR)

Share of Volumes by Payments Instrument

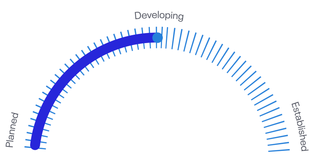
Schemes

After adopting SCT Inst in 2018, France has seen phenomenal growth in real-time payments—up 211% year over year—and this only looks set to continue, with a predicted 53.7% future five-year CAGR.

SCT Inst, based on SEPA credit transfers, operates 24/7/365. Groupe BPCE was the first financial institution to introduce SCT Inst in France in July 2018. The platform enables customers to transfer money to accounts at participating banks in the network. SCT Inst supports both individual and business transactions, facilitating P2P, C2B, B2C and B2B payments directly between accounts through different channels, including online and mobile banking.

Funds are settled in near-real time, with recipient banks required to credit amounts to their customers no more than 10 seconds after a payment is received. A maximum of €15,000 ($16,841) per transaction was allowed initially, but this was later increased to €100,000 ($112,270), effective from July 1, 2020. All major banks in the country are participants, along with many others. SCT Inst transactions are processed by CSMs primarily through STET with connections to TIPS and RT1.

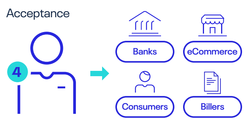
Key Stats



Market Development

Launched in 2018, and with growth of 92.3% year over year, France's real-time payments network already supports banks, PSPs, billers and merchants, and is expected to experience strong future growth.

Acceptance



Total Participants

~125

Year of Real-Time Payments Launch

2018

Availability

365 24/7

Message Standard

ISO 20022

Real-Time Payment Types

Initiation/Authorization Methods

Mobile Wallet Trends

33%

% of adults who have a mobile wallet and have used it in the past year (2020)

Payments Fraud Rate

12.6%

Index to global average **81**

Population who report being a victim of fraud in the last 4 years

Top 3 Payment Fraud Types

% of fraud victims	Trend
32.5% Card details stolen online	↓
16.7% Card details stolen/skimmed in person	↑
15.9% Bank account hacked	↑

Population Banking Level

1.65

Number of debit, credit and charge cards per adult

67

Index to global average

History

November 2015
EPC presents its proposal to the ERPB.

November 2017
Implementation of SCT Inst in selected markets.

July 2020
Transaction limit increases from €15,000 to €100,000.

December 2014
The Euro Retail Payments Board (ERPB) invites the EPC to develop a pan-European real-time payments system.

November 2016
The EPC publishes SCT Inst rulebook.

July 2018
Groupe BPCE introduces SCT Inst in France.

1 https://www.forrester.com/report/Forrester+Infographic+The+Impact+Of+COVID19+On+Payments+In+France/-/E-RES161978

Germany

In 2020, we remarked that out of the various countries instituting SCT Inst, Germany has perhaps the greatest potential for real-time payments adoption and growth. This is due to the combination of heavy reliance on paper-based payments and lower ownership of payment cards, which offers an excellent opportunity for real-time payments cannibalization of cash and checks.

A year on and Germany is among the payment markets most impacted by COVID-19, so much so that according to one survey[1], "since the onset of the coronavirus pandemic, cash payments have, for the first time, been actively discouraged in Germany." The same survey observed that COVID-19 " has probably changed German payments behavior faster than any single technology ever has."

Mobile wallet adoption increased by almost 10% in 2020. By 2025, one in 10 digital transactions is forecast to be via real-time payments, and in the five-year forecast for 2020-25, Germany is now set for a reduction of almost 3.5B paper-based transactions. This represents a larger-than-anticipated decline that can likely be attributed in large part to the global pandemic. If these shifts in payment methods stick post-pandemic, there will be plenty of further room for real-time payments growth.

ACI's Take

Germany's real-time payments implementation remains relatively fragmented, yet the market continues to provide clear signals that it expects real-time to become the new normal.

For example, by the end of 2020 most German banks were connected to EBA RT1 and/or ECB TIPS, and in May of that year Germany had Europe's largest number of registered PSPs (1,284). Indeed, we expect that German banks will move their SEPA bulk processing operation to SCT Inst in the next couple of years, boosting TIPS transactions significantly.

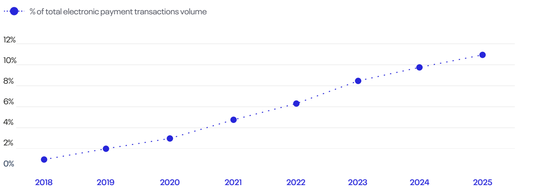
A second initiative will increase the volume of TIPS transactions further in the next couple of years: the emergence of EPI, the new EU payments scheme of which Germany is one of the five lead countries.

In response to these developments, German consumers and businesses have proven to be highly discerning with new payment options and responsive to innovations with clear benefits and use cases. With that in mind, merchants are particularly focused on the cost and payment guarantee benefits of real-time payments, and the largest merchants continue to test the waters with their customer base. The opportunity is there to bring these merchants into the real-time payments value chain by collaborating with them on added-value solutions that meet their needs and those of their customers, creating a virtuous cycle of deepening loyalty for all parties: banks, acquirers and merchants alike.

The overall picture is one in which financial institutions and fintechs need to double down on their preparations for the rise in digital transaction volumes and the rigors of real-time processing. Banks need to act fast to replace legacy technology with modernized consumer payment solutions. And all players will need modern solutions to manage ancillary services such as fraud prevention, digital identity management, and billing and liquidity management. Increasingly, German players should look to insource these solutions to take control of their own destiny and create the capability to rapidly respond to anticipated customer demand to grow market share. They can no longer be beholden to the delivery timeline of outsourced providers.

Trends + Data

Real-Time Payments Volume and Its Share in Overall Non-Paper-Based Transactions, 2018-25f



Transactions

818M 2020

3.3B 2025f

31.8% FS Yr CAGR

Share of Volumes by Payments Instrument

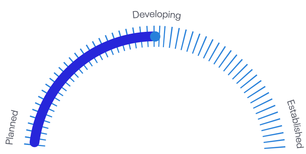
Schemes

In 2017, Germany was one of the first countries to adopt the pan-European scheme SCT Inst and usage has been significant ever since, with transaction growth volume of 218% year over year. Since launch, real-time payments are already hugely popular with even more potential (see Key Stats).

In Germany, as elsewhere in Europe, SCT Inst enables customers to transfer money to accounts at participating banks in the payments network. It supports both individual and business transactions and enables P2P, C2B, B2C and B2B payments directly between accounts via various channels, such as online and mobile banking. Initially there was a maximum transaction limit of €15,000 ($16,841), but this was increased to €100,000 ($112,270) in July 2020.

As of November 2020, there are over 1,250 participants connected to the SCT Inst scheme in Germany—including all major banks. All SCT Inst transactions are processed by clearing and settlement mechanisms (CSMs) including TIPS and RT1, both of which are available to banks in Germany.

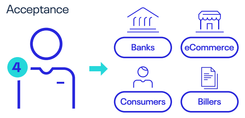
Key Stats



Market Development

Launched in 2017, and with growth of 86.8% year over year, Germany's real-time payments network already supports a large number of banks, billers and merchants, plus PSPs, and is expected to experience strong future growth.

Acceptance



Total Participants

>1,250

Year of Real-Time Payments Launch

2017

Availability

365 24/7

Message Standard

ISO 20022

Real-Time Payment Types

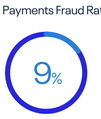
Initiation/Authorization Methods

Mobile Wallet Trends

29

% of adults who have a mobile wallet and have used it in the past year (2020)

Payments Fraud Rate



Index to global average **58**

Population who report being a victim of fraud in the last 4 years

Top 3 Payment Fraud Types

% of fraud victims		Trend
17.8%	Card details stolen online	↓
17.8%	Other	↓
15.6%	Card details stolen/skimmed in person	↓

Population Banking Level

2.30

Number of debit, credit and charge cards per adult

93

Index to global average

History

1 https://www.bbc.com/worklife/article/20200520-will-coronavirus-change-germans-love-of-cash

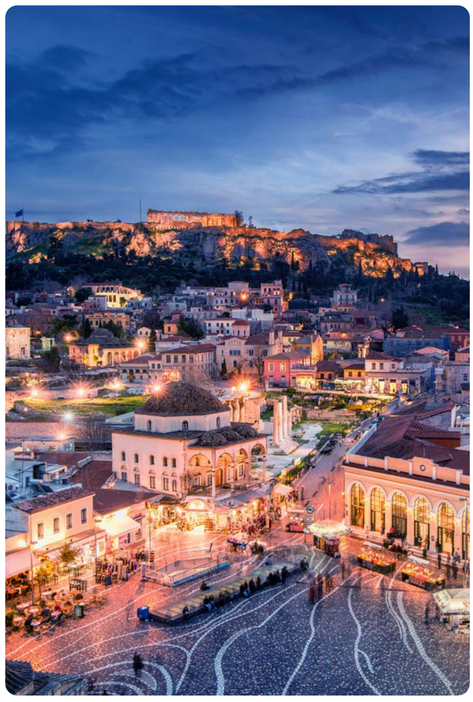
Greece

New Country

With a high reliance on paper-based payments (79.7% of volume in 2020), Greece is a fertile market for real-time payments growth. Transaction volumes are forecast to grow from 35M in 2020 to 231M in 2025, representing a five-year CAGR of 46.2%.

Much of this may be the result of more stick than carrot, however. The country's new conservative government is cracking down on cash payments, with recent legislation pushed through parliament empowering the tax authorities to impose hefty fines on anyone making payments solely in cash. Many Greeks are highly critical of the move, regarding it as yet another round of tax hikes just as the economy begins to pick up again.

In another anti-cash development from 2020, taxpayers are also required to provide evidence as to where and how they spent 30% of their annual income. Digital receipts on an array of expenses, ranging from shoes to school fees, must be submitted to the authorities as proof that income has been legitimately spent throughout the year. If the receipts submitted do not reach the 30% mark, a 22% penalty is imposed on the amount that falls short of the minimum threshold. The over-70s and the unemployed are exempt.



ACI's Take

The IRIS Online Payment solution, supported by DIAS (Greece's central switch and ACH), enables fund transfers of up to €12,500 between the main Greek banks within 15 minutes during working hours, which up until recently has seemed to be enough to meet domestic requirements. The four systemic banks in Greece are also all participants in ECB RT1.

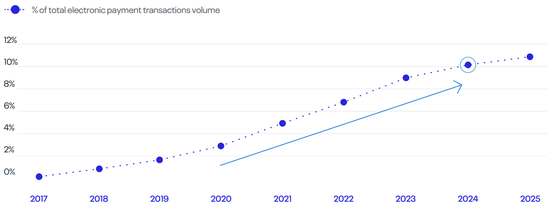
However, the expected alignment with SCT Inst will transform the real-time payments experience for consumers and businesses by slashing transfer times to less than 10 seconds, increasing operating hours to 24/7/365 and introducing a cross-border capability for the first time. PSPs will need to decide whether to sign up as receivers and/or originators, but every player in the country's payments ecosystem should prepare for a new round of increased competition driven by changes in customer expectations around what's possible for payments.

That means more than just higher speeds and lower costs. Once genuine real-time capabilities come into play, we can expect new market entrants—fintechs or providers of related digital overlay services—to put pressure on incumbents throughout the payments value chain to differentiate based on experience. And once real-time expectations for account-to-account transfers are established, anything less in other spheres of payments—such as retail or bill paying—will quickly begin to feel antiquated.

In short, Greece's financial institutions should consider themselves on notice: accelerate their payments modernization journeys to be ready for the inevitable tipping point in favor of digital and real-time payments.

Trends + Data

Real-Time Payments Volume and Its Share in Overall Non-Paper-Based Transactions, 2017-25f



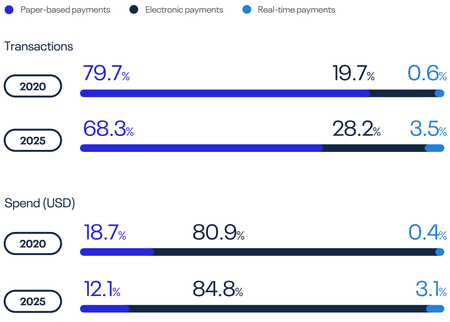
Transactions

35M (2020)

231M (2025f)

46.2% (5 Yr CAGR)

Share of Volumes by Payments Instrument



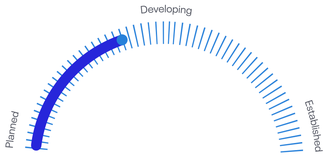
Schemes

Greece's IRIS system offers real-time payment schemes via online and mobile channels. Despite limited hours of operation (the service is only available between 8:00 AM and 4:15 PM on working days), the country's volume of real-time payments grew more than 120% year over year in 2020 and is forecast to experience continued aggressive growth over the next five years, with a CAGR of 46.2%.

IRIS Online Payment is an online payments service launched in May 2017 by members of the Hellenic Bank Association (HBA) that enables the immediate execution of interbank fund transfers. The internet banking systems of the partner banks are directly connected to this system, thereby enabling their customers to make transfers online using account numbers or IBANs. Payees receive funds within seconds of the sending bank initiating the transaction. The solution is expected to be aligned to all key features of the SCT Inst scheme.

Launched in June 2017 by members of the HBA, IRIS Mobile Payment is a similar real-time payments system. Funds can be transferred by entering the recipient's email address or mobile phone number linked to their bank account or company VAT number, without having to provide any personal financial information. This service operates on a 24/7/365 and facilitates P2P and C2B payments of up to €500 ($561) per day. There is no restriction on the number of transactions.

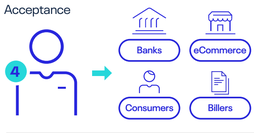
Key Stats



Market Development

Despite limited hours of operation, the Greek real-time payments market has grown 120.7% year over year and is anticipated to continue to grow over the next five years.

Acceptance



Total Participants

5 Banks/ Financial Institutions

Year of Real-Time Payments Launch

2017

Availability

Limited

Message Standard

Proprietary

Real-Time Payment Types

Initiation/Authorization Methods

Mobile Wallet Trends

4*

% of adults who have a mobile wallet and have used it in the past year (2020)
* Source: World Bank

Population Banking Level

1.95

Number of debit, credit and charge cards per adult

79

Index to global average

History

June 2017
Launch of IRIS Mobile Payment service.

May 2017
HBA member banks roll out the IRIS Online Payment scheme.

November 2020
There are five participants in IRIS Online Payment and four in IRIS Mobile Payment.

Hungary

New Country

Hungary presents a strong market for real-time payments adoption and we expect significant growth over the next five years. In just the first year of Azonnali fizetési rendszer (AFR), real-time's share of all electronic transaction volumes reached almost 6% and is anticipated to rise to 10% as soon as 2022.

Fueling real-time payments adoption are Hungary's high levels of cash usage and low reliance on payment cards. Growth will be further driven by wide acceptance of a variety of payment types and new initiation/authorization methods.

COVID-19 has impacted Hungarian attitudes towards cash[1], indicating additional room for cannibalization by electronic payments, including real-time. A survey by Statista in June 2020 found that 16%[1] of respondents reported using less cash due to COVID-19, while 22%[2] indicated that they are using less cash because they have substituted digital payments. The Hungarian Banking Association also reported that by the end of July 2020, the digitally active population rate had grown 12%[3] above trend—the equivalent of between three and four years of growth.

ACI's Take

AFR, also known as HCT Inst, serves the market well with its requirement that all payments under HUF 10M must execute in five seconds, 24/7/365. The scheme is also highly accessible and flexible, featuring aliases as secondary account identifiers and Request to Pay functionality, for example.

In many ways, the market has taken a lead over other parts of Europe with its added-value digital overlay offerings. Request to Pay is already widely supported by Hungarian banks and further launches are set for 2021.

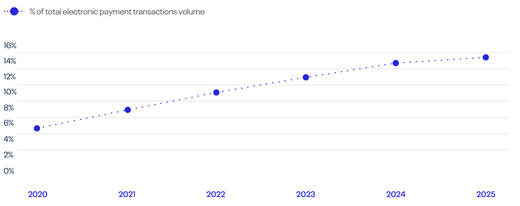
This is due in part to a governmental and regulatory environment that is a proactive booster of digital payments. Among the latest interventions from the Ministry of Finance is a mandate that all brick-and-mortar stores must accept electronic payments from January 1, 2021, whether cards or real-time payments.

In response, many retail banks were quick to come out with offerings to support merchants and acquiring businesses and have benefitted handsomely from this enforced surge in demand. Other governments around the world have also selected the retail environment as the lever with which to pry people and businesses away from cash usage. And in many of these markets, the forces of competition have quickly come to exert downward pressure on traditional acquiring and issuing revenue models that rely on interchange fees. Where that happens, those offering real-time services can capitalize to win market share based on higher performance and lower fees. As such, those with the most to lose—the biggest customer bases generating the largest revenues—should be the first to move because disruption will hit them hardest.

Finally, reports from the market appear to indicate that regulators are also eying mandates around centralizing the management of digital overlay services on the nation's real-time rails and PSD2-enabled infrastructure. This will reveal new challenges and opportunities around interoperability that the central infrastructure has so far not needed to address. It also reinforces the need for Hungary's banks to invest in strategic real-time solutions that can support a range of digital overlay services, as well as growing transaction volumes.

Trends + Data

Real-Time Payments Volume and Its Share in Overall Non-Paper-Based Transactions, 2020-25f



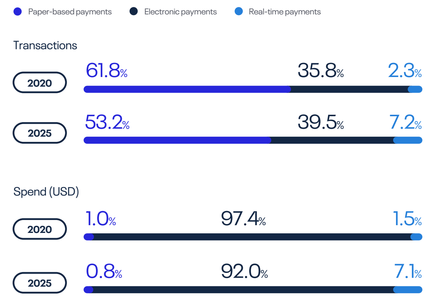
Transactions

89M (2020)

286B (2025f)

26.3% (FS Yr CAGR)

Share of Volumes by Payments Instrument



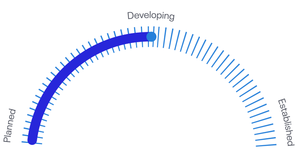
Schemes

Though Hungary's real-time payments scheme is less than a year old at the time of writing (having launched in March 2020), it has made a strong start with broad adoption and functionality. A respectable CAGR of 26.3% in terms of transaction volumes is expected through 2025.

Azonnali fizetési rendszer (AFR) is a domestic instant credit transfer scheme launched by the central bank of Hungary, Magyar Nemzeti Bank (MNB). The scheme is operated by the clearing house GIRO Zrt, along with 35 PSPs. The new real-time payments solution is aligned with the European SCT Inst standards, but is not part of the SCT Inst network, as it processes Hungarian currency and not the Euro.

AFR does not charge fees, operates 24/7/365 and settles funds in near-real time, with recipient banks required to credit amounts to their customers no more than five seconds after a payment is received. AFR is available to both retail and corporate customers enabling P2P, C2B and B2B payments directly between accounts. It also allows users to make fund transfers using secondary IDs such as a recipient's mobile phone number, email ID or tax identification number. However, users can only assign one secondary ID to each account[3].

Key Stats



Market Development

Hungary's real-time payments scheme launched very recently in March 2020 is off to a strong start, with broad adoption and functionality. As such, future growth is expected to be strong.

Year of Real-Time Payments Launch

2020

Availability

365 24/7

Message Standard

ISO 20022

Acceptance

Total Participants

All Domestic Banks

Real-Time Payment Types

Initiation/Authorization Methods

Mobile Wallet Trends

% of adults who have a mobile wallet and have used it in the past year (2020)

Payments Fraud Rate

Index to global average **81**

Population who report being a victim of fraud in the last 4 years

Top 3 Payment Fraud Types

% of fraud victims

30.9% Card details stolen online

19.1% Other

14.7% Digital wallet account hacked

Population Banking Level

Number of debit, credit and charge cards per adult

49

Index to global average

Fully Banked
Progressing
Underbanked

History

September 2020
AFR starts allowing bulk transfers.

March 2020
MNB launches AFR.

1 GIRO, Secondary Account ID Rules of Procedure, 2018
2 https://www.statista.com/statistics/1126937/hungary-covid-19-impact-on-cash-usage/
3 The Hungarian Banking Association, Digitization proposals, news and results, 2020

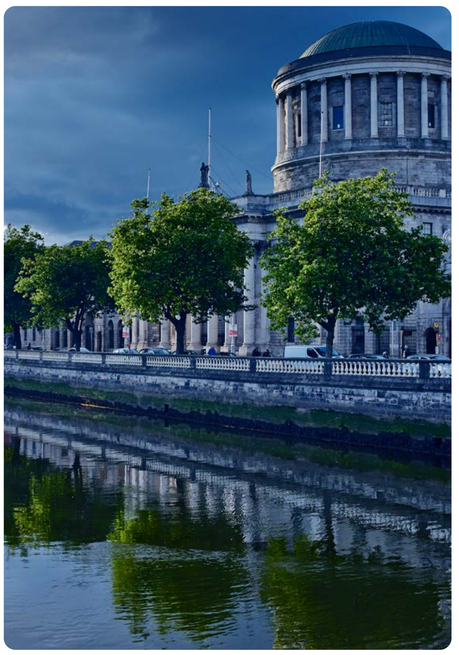
Ireland

New Country

COVID-19 has significantly impacted spending patterns in Ireland, according to data published by the central bank. This data showed card spending down by almost one-third and ATM withdrawal amounts down 57% on the first week of March 2020.[1]

In a study published just prior to lockdown (in February 2020), Ireland ranked 10th in the EU for digital transactions per capita. In the same study, 43% of respondents[2] indicated that they believe cash is "on the way out" in the country.

If these trends hold, real-time payments will have significant room for growth within Ireland when introduced at the domestic level. And this finally looks to be underway, with leading banks, including AIB and the Bank of Ireland (under the national trade association's coordination), having joined forces to work on a mobile-initiated payments system. Dubbed "Project Pegasus," the scheme will run on SEPA Instant rails.



ACI's Take

Despite initial public enthusiasm for real-time at the inception of EBA RT1, not all of Ireland's banks have successfully gone live with Eurozone real-time payments to date, and the country does not have a domestic real-time scheme or infrastructure. Given Ireland's currency is the euro, it would make sense for both domestic and cross-border real-time payments to piggy-back on existing clearing and settlement infrastructures already in place—EBA RT1 and ECB TIPS, for example—rather than stand-up a separate new infrastructure.

Currently, Project Pegasus is the driving force for doing exactly this, using the SEPA Instant rails, and plans for the project have been winding their way through regulatory red-tape since March 2020. Among the latest developments is the creation of a joint venture—Synch Payments[3]—to oversee the creation of a multi-bank payments app that will enable Irish users to send and make payments in real time.

The project is in response to the in-roads made by fintech challengers into the banks' shares of card payments and account-to-account transfers in Ireland. This situation is or has been played out across Europe, so the banks involved don't have to look far for inspiration and examples to follow.[4]

It is recommended that the project's players continue to seek consultancy from proven experts in real-time payments who can offer insights into global best practices based on experience gained working in other nations on similar projects. This will be critical as they shape new systems and modernize existing ones. As the project develops, they need to consider how they will use these new technologies and capabilities to support new services that differentiate them from the fintechs, to both retain current customers and start to win back any lost market share.

Trends + Data

Share of Volumes by Payments Instrument

Paper-based payments Electronic payments

Transactions

2020	43.0%	57.0%
2025	34.0%	66.0%

Spend (USD)

2020	3.0%	97.0%
2025	2.0%	98.0%

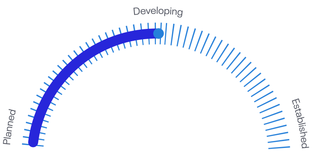
Schemes

Although real-time payments have not been launched at the country level in Ireland, a few banks offer this service via SCT Inst, the pan-European instant credit transfer scheme, which is primarily used for cross-border transfers.

SCT Inst has been offered by a few banks and PSPs in Ireland since March 2020. The scheme operates 24/7/365 and enables customers to transfer money to accounts at participating banks in the payments network. It supports both individual and business transactions, and facilitates P2P, C2B, B2C and B2B payments directly between accounts via various channels, such as online and mobile banking.

Funds are settled nearly instantaneously, with recipient banks in the country required to credit amounts to customers within five seconds. From March 2020, HSBC has allowed its customers to both send and receive funds using SCT Inst from Ireland and SEPA countries (having previously only been allowed to receive funds). In August 2020, Revolut joined them, announcing that customers in Ireland can use the SCT Inst service to send and receive funds across Europe. The scheme is also available to corporate customers of Barclays Bank and users of prepaid cards from PFS Card Services Ireland, owned by EML Payments.

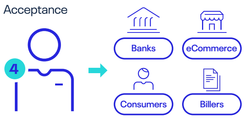
Key Stats



Market Development

Ireland launched SCT Inst in 2020, but rollout has been slow, and customers can only use the scheme for cross-border transfers. Once the scheme is available for use nationally, growth is anticipated to be strong.

Acceptance



Total Participants

4 Banks

Year of Real-Time Payments Launch

2020

Availability

365 24/7

Message Standard

ISO 20022

Real-Time Payment Types

Initiation/Authorization Methods

Mobile Wallet Trends

% of adults who have a mobile wallet and have used it in the past year (2020)

Payments Fraud Rate

Index to global average **92**

Population who report being a victim of fraud in the last 4 years

Top 3 Payment Fraud Types

% of fraud victims	Trend
24.2% Card details stolen/skimmed in person	↓
21.6% Card details stolen online	↓
15.0% Bank account hacked	↑

Population Banking Level

Number of debit, credit and charge cards per adult

82

Index to global average

History

November 2015
EPC presented its proposal to the ERPB.

December 2014
The ERPB invited the EPC to develop a pan-European real-time payments system.

November 2016
The EPC published the SCT Inst rulebook.

November 2017
Implementation of SCT Inst in selected markets (not Ireland).

March 2020
HSBC allowed its customers to send funds using SCT Inst.

July 2020
Limit increases from €15,000 to €100,000.

August 2020
Revolut launches SCT Inst for its customers in Ireland.

1 https://www.centralbank.ie/statistics/statistical-publications/behind-the-data/how-has-the-covid-19-pandemic-affected-daily-spending-patterns
2 https://www.irishtimes.com/news/consumer/cashless-world-will-we-be-richer-or-poorer-for-it-1.4192721
3 https://www.thetimes.co.uk/article/aib-bank-of-ireland-and-other-lenders-band-together-to-rival-apple-pay-9hxgxrm5l
4 https://www.irishtimes.com/business/financial-services/irish-banks-club-together-with-new-digital-service-to-counter-revolut-threat-1.4455772

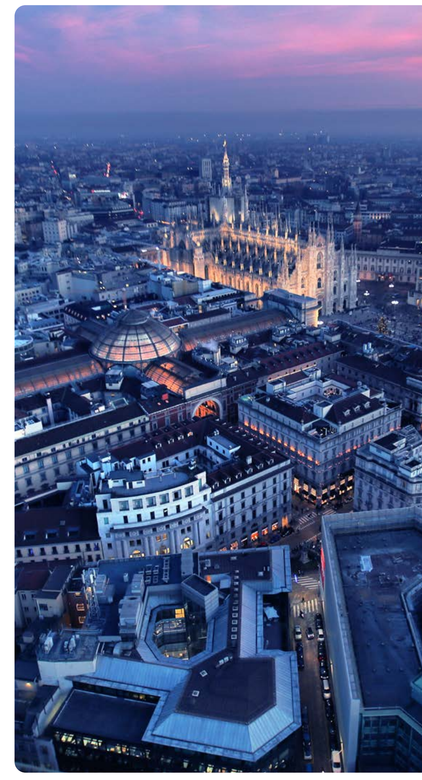
Italy

New Country

A high level of paper-based payments, moderate reliance on payment cards and strong mobile wallet adoption make Italy a strong prospect for continued real-time payments growth over the next five years.

The shift to digital payments has accelerated as a result of the COVID-19 pandemic, during which Italy's economy took a significant hit, particularly in Q2 of 2020. Total payment volumes are anticipated to be down for the year as a result. However, rates of cash usage are declining far faster than digital payments because many consumers are concerned over the risks of virus transmission through cash.

In July 2020, the Italian government announced tax breaks to support this transition from cash usage to digital payments. The tax decree states that "merchants are entitled to a tax credit equal to 30%[1] of the commissions charged for transactions carried out by end consumers with electronic payment means, in particular, based on payment cards (debit, credit or prepaid) and other traceable electronic payment instruments, including postal orders and checks."



ACI's Take

The adoption of electronic payments in Italy, a country with a historically high use of cash—is gradually accelerating, helped by government initiatives and changing customer preferences. As of today, almost half of the PSPs that are currently subscribed to the mandatory SEPA scheme (SCT) have also moved to adopt real-time payments, and significant growth in volumes are expected as digital and real-time payments use cases expand.

In addition, the domestic payments scheme (Bancomat Pay) is embracing the new digital era, focusing on real-time, account-to-account-based payments. This initiative might have implications for the upcoming wider EPI project, as the scheme's member banks have already invested significantly in the domestic scheme's digitalization and evolution.

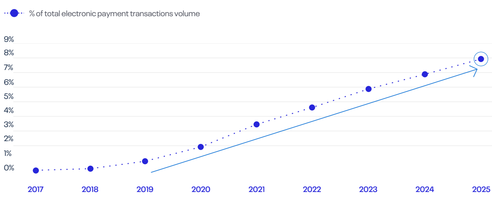
Any of Italy's payment players unsure of the business case for providing a real-time offering should consider that, overall, the outlook for real-time payments in Italy is very positive. Use cases are expanding, helped by the higher €100,000 maximum transaction value in place since July 2020. Volumes are also growing, the commercial model is stabilizing toward acceptable pricing of real-time transactions and consumers' attitudes toward digital payments are being reinforced thanks to the evolution of the domestic scheme.

Based on our experience in other markets, these are all signs that Italy is primed for high growth in real-time payments. Banks, processors, acquirers and PSPs should both prepare for the increase in volume while prioritizing competitive differentiation on new services and solutions. The first mover in digital spaces often claims significant long-term market share, so Italy's financial institutions and related service providers must advance their payments modernization journeys now to prepare for the inevitable shift to real-time payments. That will require solutions to manage new digital payment types and their ancillary services, such as fraud monitoring, digital identity management, and billing and liquidity management.

In short, now is the time for Italy's payment players to identify ways to diversify their digital payment offerings to grow and deepen customer relationships. This is perhaps even more important when the COVID-19 pandemic has given rise to so much uncertainty around other aspects of the market and economy.

Trends + Data

Real-Time Payments Volume and Its Share in Overall Non-Paper-Based Transactions, 2017-25f



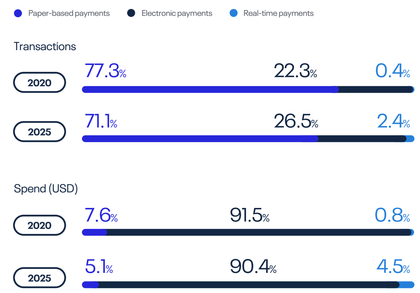
Transactions

111M (2020)

634M (2025f)

41.7% (FS Yr CAGR)

Share of Volumes by Payments Instrument



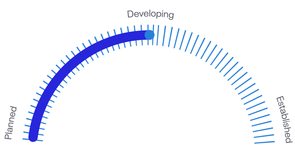
Schemes

Italy was among the first countries to adopt the pan-European scheme SCT Inst, which launched in 2017 with banks including Banca Sella Group, Intesa Sanpaolo and UniCredit as early adopters. Usage has been growing ever since, with transaction growth of 154% year over year. Anticipated future growth is in the mid-double digits.

In Italy, as with other participating countries, SCT Inst enables customers to transfer money to accounts at participating banks in the payments network. It supports both individual and business transactions and enables P2P, C2B, B2C and B2B payments directly between accounts via various channels, such as online and mobile banking. In July 2020, the original transaction limit of €15,000 ($16,841) was increased to €100,000 ($112,270).

As of November 2020, there were a total of 256 participants connected to the scheme within Italy, including all major banks. All SCT Inst transactions are processed by clearing and settlement mechanisms, including TIPS and RT1, both of which are available to banks in Italy.

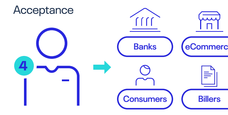
Key Stats



Market Development

Launched in 2017, and with growth of 154% year over year, Italy's real-time payments network already supports a large number of banks, billers and merchants, plus PSPs, and is expected to experience strong future growth.

Acceptance



Total Participants

>250

Year of Real-Time Payments Launch

2017

Availability

365 24/7

Message Standard

ISO 20022

Real-Time Payment Types

Initiation/Authorization Methods

Mobile Wallet Trends

% of adults who have a mobile wallet and have used it in the past year (2020)

Payments Fraud Rate

Index to global average **54**

Population who report being a victim of fraud in the last 4 years

Top 3 Payment Fraud Types

% of fraud victims	Trend
22.6% Confidence trick	↑
20.2% Card details skimmed in person	↑
14.3% Other	↑

Population Banking Level

History

November 2015
EPC presents its proposal to the ERPB.

December 2014
The ERPB invites the EPC to develop a pan-European real-time payments system.

November 2016
The EPC publishes SCT Inst rulebook.

November 2017
Implementation of SCT Inst in selected markets, including Italy.

July 2020
The transactional limit increases from €15,000 to €100,000.

1 https://www.agendadigitale.eu/cittadinanza-digitale/pagamenti-digitali/pagamenti-elettronici-30-di-sconto-sulle-commissioni-ai-negozianti-ecco-come/

Netherlands

As the SCT Inst network's newest member, the Netherlands has taken to real-time payments quickly and enthusiastically. Adoption and volumes were stronger in their first year than originally anticipated, and based on these high rates of early adoption, growth is anticipated to be stronger still over the next five years. The strongest growth is expected through 2022 and healthy, albeit slower, growth thereafter.

Real-time payments are predicted to make up one in four electronic payment transactions by 2023, and to comprise almost double the share of paper-based payments by 2025. The five-year CAGR is expected to be 30.8%.

Mobile wallet adoption/usage is also growing significantly, at a rate of 10% year over year.

Growth in both the number and type of companies offering and accepting payments via the SCT Inst network will underpin future adoption, driving incremental use cases for real-time payments and resulting in increased consumer interest. Additional growth drivers for activation exist within the Netherlands, such as the introduction of additional initiation/authorization methods for enhanced convenience, and the opportunity for fintechs to introduce integrations that make the user experience more seamless and increase the stickiness of real-time payments.

ACI's Take

The interesting feature of real-time payments in the Netherlands is that it has indeed become "the new normal."

The next step we expect to see in the market is batch real-time payments, where, for example, traditional salary payments received as batches will be processed as either batches and/or single messages in real time. By doing so, Dutch banks can decommission legacy batch systems and achieve welcome cost savings. The obvious forward-looking steps are to replace the current batch-oriented direct debit solutions with real-time direct debit processing. This will further simplify banks' applications and IT landscapes to not only achieve further cost reductions but also reduce risk and increase availability and customer centricity.

On a macro level, due to COVID-19 we see similar reactions as elsewhere in Europe: an initial dip that has now turned into a continued and significant increase in digital payments, be it eCommerce, contactless and QR-code payments, or refund payments and cashback at POS.

The Dutch population is well known for its digital payment preferences and readiness to adopt new services that meet its needs. Therefore, there remains plenty of growth opportunity for payment players who can identify those unmet needs. The growth in mobile wallet adoption provides a route to market to place any new services in the hands of customers, accelerating time to market and ultimately ROI.

Trends + Data

Real-Time Payments Volume and Its Share in Overall Non-Paper-Based Transactions, 2018-25f

Transactions

906M (2020) **3.5B** (2025f) **30.8%** (FS Yr CAGR)

Share of Volumes by Payments Instrument

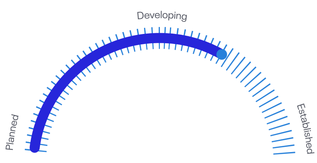
Schemes

As the most recent European market to adopt SCT Inst, the Netherlands has established a strong foundation for real-time payments usage to grow aggressively in the next five years.

SCT Inst, the pan-European instant credit transfer scheme, has been offered in the Netherlands since May 2019. The scheme operates 24/7/365 and enables customers to transfer money to accounts at participating banks in the payments network. It supports both individual and business transactions, and facilitates P2P, C2B, B2C and B2B payments directly between accounts via various channels, such as online and mobile banking.

Funds are settled nearly instantaneously, with recipient banks in the country required to credit amounts to customers within five seconds. There are no standard transaction limits set in the Netherlands and banks are allowed to set their own limits; however, the SCT Inst limit was upgraded in July 2020 to €100,000 ($112,270) and applies to cross-border transactions. As of November 2020, there were a total of nine participants in the Netherlands, and all major Dutch banks support the scheme. All SCT Inst transactions are processed by CSMs primarily through Equens/Atos Worldline, with connections to TIPS and RT1. Both of these systems are available to banks in the Netherlands.

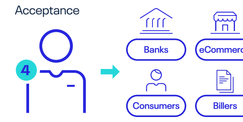
Key Stats



Market Development

Usage of SCT Inst in the Netherlands surpassed growth projections in both 2019 and 2020, with the latter up 125% versus last year. Aggressive growth is expected over the next five years.

Acceptance



Total Participants

9 Banks

Year of Real-Time Payments Launch

2019

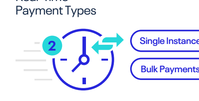
Availability

365 24/7

Message Standard

ISO 20022

Real-Time Payment Types



Initiation/Authorization Methods

Mobile Wallet Trends

29%

% of adults who have a mobile wallet and have used it in the past year (2020)

Payments Fraud Rate

Index to global average **45**

Population who report being a victim of fraud in the last 4 years

Top 2 Payment Fraud Types

% of fraud victims	Trend
23.7% Confidence trick	↑
23.7% Other	↓

Population Banking Level

2.49

Number of debit, credit and charge cards per adult

101

Index to global average

History

May 2015
The Dutch Payments Association announces the 2019 launch of real-time payments in the Netherlands.

July 2018
End-to-end testing of SCT Inst commences.

May 2019
SCT Inst goes live in the Netherlands.

September 2019
Seven major banks complete the rollout of real-time payments.

July 2020
The transaction limit increases from €15,000 to €100,000.

Norway

We observed in our 2020 report that Norway did not seem the most likely market for widespread real-time payments adoption, with a fully-banked population and limited paper-based transactions. The country, however, is receptive to payment innovations, and so 2020 did indeed see further growth of 72% year over year. However, these rates are likely to level off from 2021 onwards—while still remaining steady and strong—as real-time payments come to comprise more than 10% of digital payment transactions by 2023. Mobile wallet adoption and usage has continued to grow year over year as well.

As in other countries, COVID-19 has had a direct impact on cash usage. A study by Norges Bank indicated that under 4% of transactions early in the pandemic were made using cash and forecast that 2020 would see cash comprise just over 3% of all transactions. Alternative payments saw sharp increases during COVID-19, including contactless and mobile payments. According to Norway's central bank, three out of four card payments are now contactless.

The increased adoption rates of alternative payments provide a good reason to believe real-time payment volumes could accelerate further than currently anticipated, especially considering real-time payments' integration with mobile wallets.

ACI's Take

Norwegian corporates have typically made Sweden their primary target country of expansion, but the complexity of managing payments between these countries has always been cumbersome and costly.

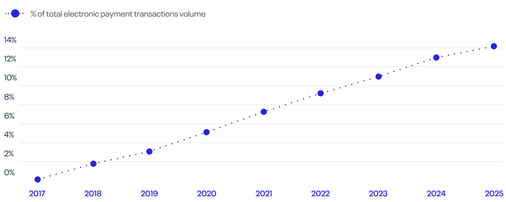
As the P27 Nordics Payments initiative continues to take shape—albeit a little slower than many had hoped—Norway's decision to take a step back from the cross-border payments scheme is a curious one. Until then, it had been expected that Norway's payment players would soon be focusing on new P27-enabled B2B and B2C services via digital overlays—likely focused on eBilling and fraud, as expected in other Nordic markets. These would complement Norway's fully banked and progressive consumers and improve the cross-border payments experience.

Noises have been made that Norway will rejoin the initiative later, but they will inevitably miss out on opportunities to influence crucial development decisions in the direction of their consumers' and businesses' unique needs. Only time will tell in that regard, so while they remain "a little on the outside"[1] according to P27's CEO, the country's financial institutions should double down on the agile operational transformations that many have undergone to focus their resources on domestic real-time payments innovation and differentiation.

In terms of where that innovation might come from, Norwegian consumers are solid if unspectacular adopters of mobile wallets. But the COVID-19 pandemic has provided a boost. Acquirers can help their merchant partners capitalize on this momentum by expanding their support for alternative real-time payment methods to liberate merchants from irksome interchange fees and provide consumers with more choice. In the longer term, this will increase the scope of payments modernization roadmaps to more ambitious digital overlay services such as Request to Pay.

Trends + Data

Real-Time Payments Volume and Its Share in Overall Non-Paper-Based Transactions, 2017-25f



Transactions

211M (2020)

737M (2025f)

28.4% (5 Yr CAGR)

Share of Volumes by Payments Instrument

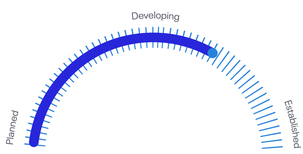
Schemes

With two schemes in place and P27 and SCT Inst on the horizon, growth of 72% year over year, and adoption across banks, merchants and billers, Norway is a fast-developing real-time payments market.

Its first system, Straksbetalinger, was launched by a consortium of banks in 2013 to enable real-time bank transfers between participating banks in Norwegian krone. Norges Bank, banking and finance infrastructure company Bits, and other Norwegian banks rolled out an updated version called Straks 2.0, and from May 2020, Norwegian banks and retail payment solutions such as Vipps started using this new infrastructure for real-time payments, which enable P2P, C2B and B2B transactions.

Mobile payments app Vipps—launched by DNB Bank in May 2015—is also widely used for mobile real-time payments in Norway. Vipps enables users to make P2P payments, as well as online, in-store and bill payments using a linked mobile number—although transfers can only be made between Vipps users. Users can fund their payments using their bank account or a debit/credit card, but to receive a payment, users must link their bank account with Vipps.

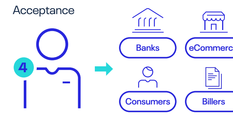
Key Stats



Market Development

With two schemes in place plus two more coming as soon as 2021, growth of 72% year over year, and adoption across banks, merchants and billers, Norway is a fast-developing real-time payments market.

Acceptance



Total Participants

>50,000

Year of Real-Time Payments Launch

2013

Availability

365 24/7

Message Standard

ISO 20022

Real-Time Payment Types

Initiation/Authorization Methods

Mobile Wallet Trends

32%

% of adults who have a mobile wallet and have used it in the past year (2020)

Payments Fraud Rate

12.7%

Index to global average **82**

Population who report being a victim of fraud in the last 4 years

Top 3 Payment Fraud Types

% of fraud victims	Trend
22.1% Card details stolen or skimmed in person	↓
14.7% Confidence trick	↑
14.7% Bank account hack	↑

Population Banking Level

3.28

Number of debit, credit and charge cards per adult

133

Index to global average

History

1 https://www.finextra.com/newsarticle/36822/from-hypotheticals-to-reality-p27-cogs-are-well-and-truly-turning

Poland

New Country

Poland's low reliance on payment cards, combined with high mobile wallet adoption rates and moderate cash usage, leaves considerable space for real-time payments growth in the country. The strongest growth is anticipated to take place between 2020 and 2025.

During COVID-19, Polish consumers have shifted transactional behavior away from cash, resulting in a 41%[1] reduction in cash usage during the pandemic. Digital payments are benefitting from this decline, with real-time payments exhibiting the strongest year-over-year growth at 71% (though from a low base), while payment cards and mobile wallets experienced relatively modest growth of 20 to 30%.

ACI's Take

Poland has a pioneering history with real-time payments, being the second country in Europe to roll out a scheme after the U.K. with the launch of Express Elixir in 2012. The scheme is processed by KIR (the national ACH) and there has been significant growth in the volume of transactions year over year. In 2018, there were approximately 21M transactions annually. Today there are 66M and the forecast is for at least 346M by 2025. But this is just a fraction of what's possible in a country where over half of transactions today are paper-based compared to 0.3% for real-time payments—fully nine years after real-time first became available in the country.

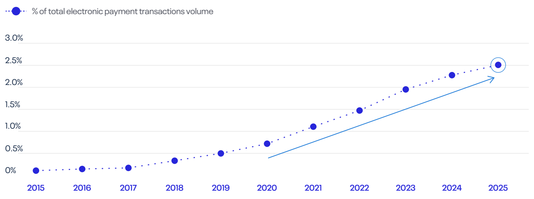
Despite the high prevalence of paper-based payments, resistance to digitalization among the population is not the issue here. The BLIK mobile transaction system has 10M users—that's a quarter of the population—and mobile wallet usage sits at 55%. Electronic payments already represent 47.6% of transactions and an enormous 99.2% of total spend in the country. And yet, real-time's share of electronic transactions sits at 0.7% today and is expected to reach only 2.5% by 2025.

This appears to indicate that real-time payments have an identity issue in Poland. Without clear and differentiated use cases, consumers and businesses have little motivation to favor real-time payments over more established electronic payments. This lack of demand, in turn, provides similarly scant motivation for the market's payment players to disrupt the status quo.

Yet with an established national real-time infrastructure, a strongly digital-friendly population and a high level of paper-based payments from which to divert volume, the opportunity is there for major wins for banks, PSPs and acquirers with the courage to shake off the current inertia. One avenue for doing so might be to strike high-profile partnerships with the country's biggest merchants. Retail use cases have been shown in other markets to be critical to kickstarting the journey toward mass real-time payments adoption and could be just the vehicle to enable real-time payments to cut through into the consumer consciousness. The same is true of differentiated peer-to-peer and account-to-account real-time fund transfer offerings. Once consumers become accustomed to transferring money between each other in real time, it won't be long before they come to question why the same shouldn't also be true of receiving their salaries, making loan repayments, or paying bills and taxes.

Trends + Data

Real-Time Payments Volume and Its Share in Overall Non-Paper-Based Transactions, 2015-25f



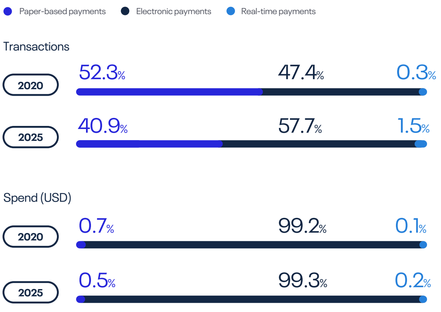
Transactions

66M (2020)

354M (2025f)

39.4% (F5 Yr CAGR)

Share of Volumes by Payments Instrument



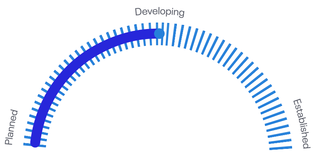
Schemes

Poland was one of the earliest adopters of real-time payments in Europe and has two systems in place, both launched in 2012. Growth of real-time payments has been slow but accelerated recently with year-over-year growth of 71% and strong future forecasts of 39.4% over the next five years.

The Express Elixir real-time payments scheme was launched in June 2012 by Krajowa Izba Rozliczeniowa, Poland's payments clearing system. The scheme enables instant transfer of funds between bank accounts 24/7/365 and is available for use by both individuals and businesses. Transfers can be initiated via either a bank account number or by mobile number, the latter of which is available to users of BLIK, a mobile payments solution offered by Polish banks as an additional service within their mobile banking apps. BLIK enables users to conduct payment transactions using a mobile phone, including P2P transfers, cash withdrawals and deposits at ATMs, and online and in-store payments. In addition to fund transfers, Express Elixir also allows utility bill payments and repayments of loan installments and credit card bills.

BlueCash, the second real-time payments platform in Poland, was launched in November 2012 by the Blue Media company. Similar to Express Elixir, it also operates 24/7/365, is available to both individuals and businesses, and allows users to make fund transfers between bank accounts, pay their bills, pay for purchases and make loan repayments. The main difference between Express Elixir and BlueCash is that the former only allows transfers between accounts of participating banks, whereas with BlueCash, either the sender or the receiver must be a user of the platform.

Key Stats



Market Development

Poland's real-time payment schemes launched in 2012 and have a large number of participants. With growth of 71% year over year, Poland has a lot of runway for future growth.

Year of Real-Time Payments Launch

2012

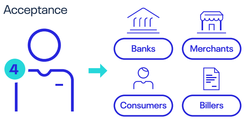
Availability

365 24/7

Message Standard

ISO 20022

Acceptance



Total Participants

>100

Real-Time Payment Types

Initiation/Authorization Methods

Mobile Wallet Trends

55%

% of adults who have a mobile wallet and have used it in the past year (2020)

Payments Fraud Rate

8.2%

Index to global average **53**

Population who reported being a victim of fraud in the last 4 years

Top 3 Payment Fraud Types

% of fraud victims	Trend
22.2% Other	↓
20.0% Card lost or stolen	↑
17.8% Card details stolen online	↑

Population Banking Level

1.35

Number of debit, credit and charge cards per adult

55

Index to global average

History

June 2012
Launch of Express Elixir.

November 2012
Launch of BlueCash by the Blue Media Company.

September 2015
Introduction of mobile P2P payments in Express Elixir.

March 2017
National Bank of Poland becomes a participant of Express Elixir.

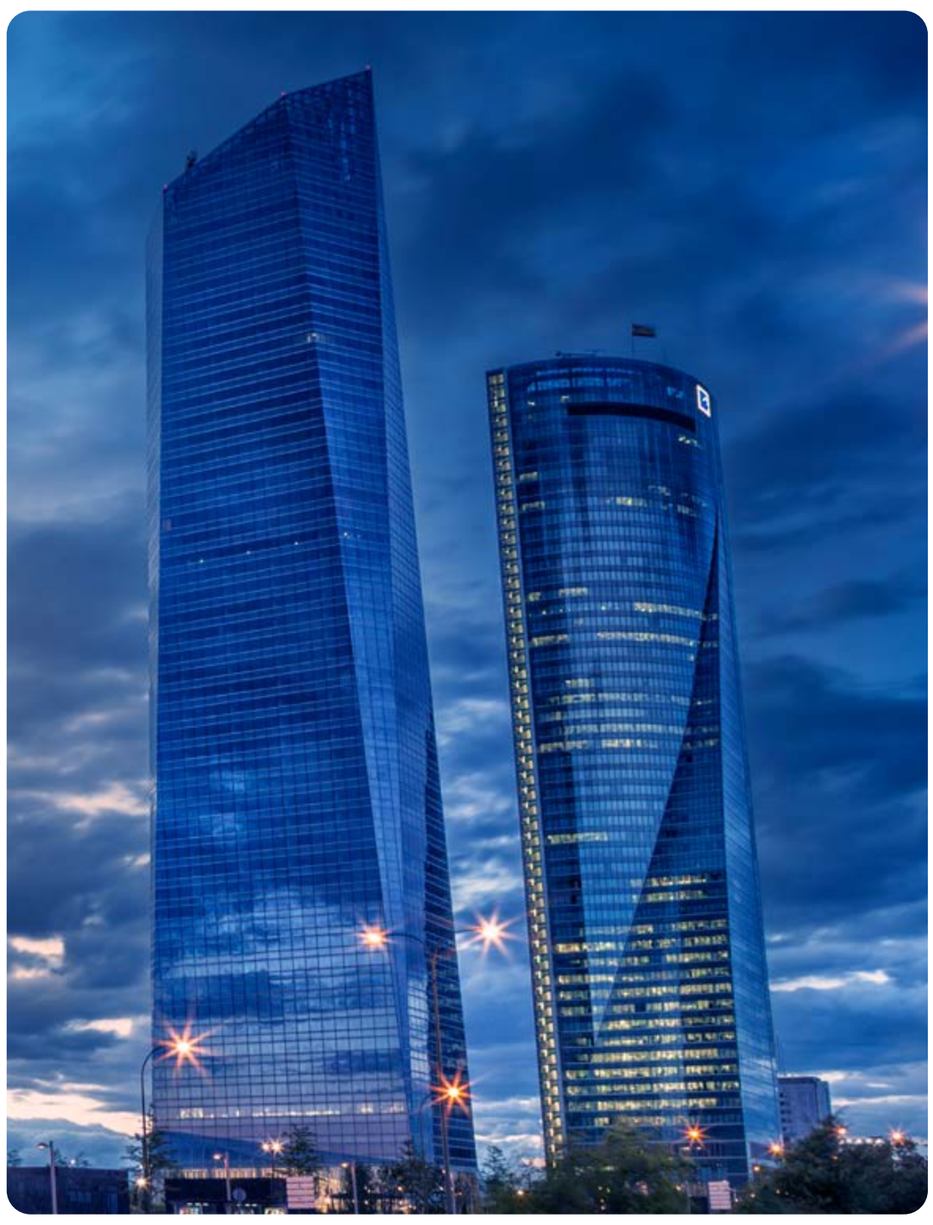
1 https://www.statista.com/statistics/1175271/poland-frequency-change-of-using-payment-methods-during-covid-19/

Spain

Spain's real-time payments growth was very strong in 2020, attaining a year-over-year increase of 137%. Meanwhile, the five-year forecast is for a CAGR of 43.4%.

As with so many countries, Spain's economy has been impacted by COVID-19, but it has felt the effects of reduced spending more than others. Specifically, in 2020 paper-based payments declined at a faster rate than electronic payments and faster than we expected, shedding more than 500M transactions. In contrast, real-time payment transactions actually grew in 2020 and are expected to account for 4.5% of all payments by 2025 (up from 0.8% in 2020).

COVID-19 is also impacting future forecasts, with a faster-than-forecast transition to digital payments overall now anticipated over the next five years.



ACI's Take

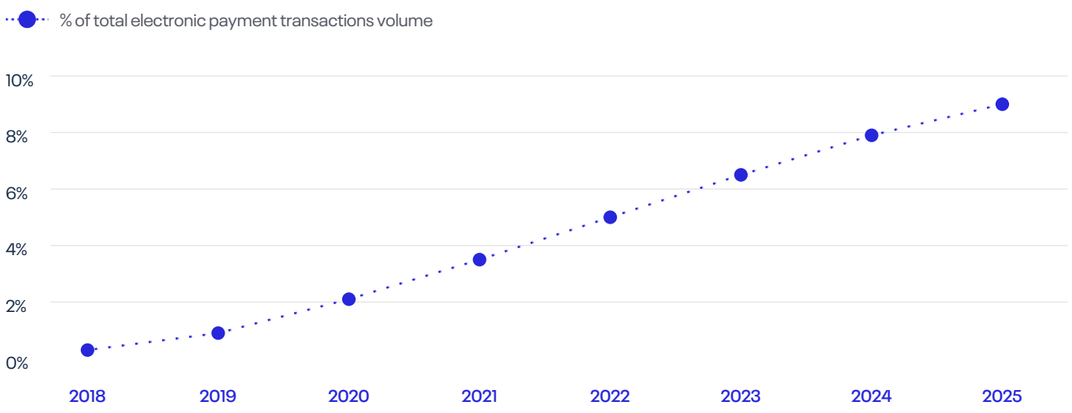
Spain's historically high appetite for digital payments continues to provide ample slipstream for real-time payments to follow in. As of today, 14 of the largest banks in Spain are connected to Iberpay and RT1 and/or TIPS. With an average of more than 500K transactions per day, the deployment of real-time payments in Spain has been an unequivocal success.

With more than 14M active users and over 9,500 online merchants[1], Bizum is by far the most popular eWallet in the country. It currently supports account-to-account payments across 29 banks. Moving forward, we can expect the integration of real-time payments with Bizum, which will significantly boost the number of use cases and consequently transactions will increase, too. This shift in volume is something that banks should be preparing themselves to handle now, but incumbent issuers and acquirers should also be alert to the impact this will have on wider consumer/merchant expectations. For those financial institutions yet to modernize their retail payment solutions, urgency is building for them to replace legacy technology to retain customers in what will be a newer, faster payments ecosystem. Agility will be key. They should consider the cloud to support the need for speed of change, alongside modern scripting-based technology that negates the need for hard code changes.

Looking slightly further ahead, the next step in the development of Spain's real-time payments infrastructure will be the adoption of the EPI scheme. And with PSD2 imminently coming into force, we may soon see the consolidation of Spain's notoriously fragmented payments landscape into one resembling a true national payments ecosystem—one that can more effectively interact with European-wide initiatives.

Trends + Data

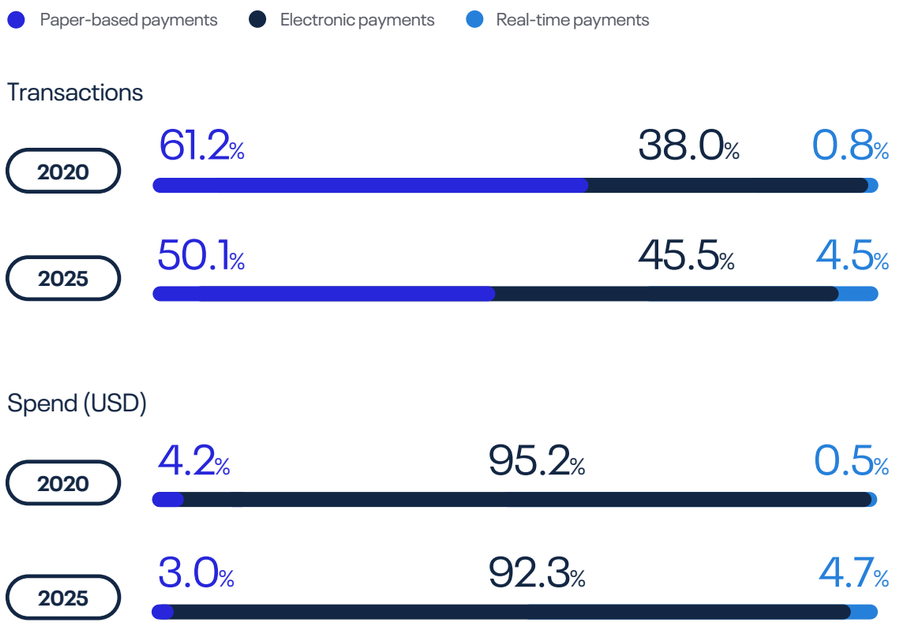
Real-Time Payments Volume and Its Share in Overall Non-Paper-Based Transactions, 2018-25f



Transactions

189M (2020) 1.15B (2025f) 43.4% (F5 Yr CAGR)

Share of Volumes by Payments Instrument



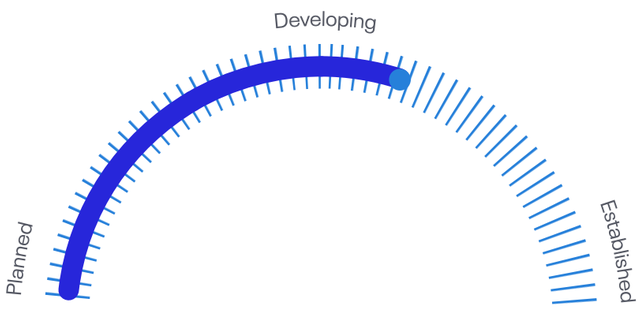
Schemes

With two schemes in place and growth of 137% year over year, plus adoption across banks, merchants and billers, Spain is a fast-developing real-time payments market.

Spain has offered SCT Inst since its launch in 2017, enabling customers to transfer money to accounts at participating banks in the payments network and facilitating P2P, C2B, B2C and B2B payments directly between accounts via various channels, such as online and mobile banking. SCT Inst transactions in Spain are processed by Iberpay, the local CSM.

Even before the launch of SCT Inst, the Spanish market utilized Bizum—a mobile payments solution that facilitates real-time payments. Launched in October 2016, Bizum is supported by 26 banks and operates 24/7/365. The solution enables transactions directly between accounts using a recipient's linked mobile phone number and is accessed through the Bizum integration within banks' apps. It allows users to conduct P2P and online transactions instantly, with plans to launch in-store support in the near future. All transactions made are settled within five seconds, and there's a per-transaction limit of €1,000 ($1,123). To use the solution, a user needs a bank account with any participating bank, as well as a mobile number.

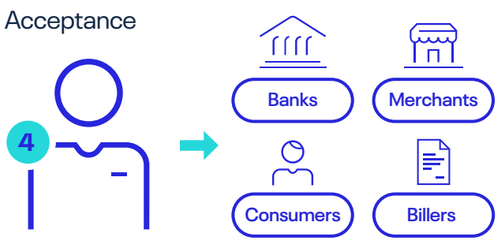
Key Stats



Market Development

With two schemes in place and growth of 137% year over year, plus broad adoption across banks, merchants and billers, Spain is a fast-developing real-time payments market.

Acceptance



Total Participants

>7,000

Year of Real-Time Payments Launch

2016

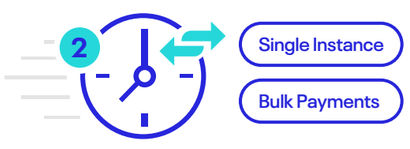
Availability

365 24/7

Message Standard

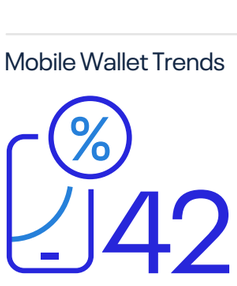
ISO 20022

Real-Time Payment Types



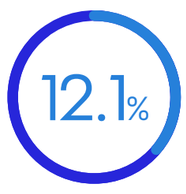
Initiation/Authorization Methods

Mobile Wallet Trends



% of adults who have a mobile wallet and have used it in the past year (2020)

Payments Fraud Rate



Index to global average **78**

Population who reported being a victim of fraud in the last 4 years

Top 3 Payment Fraud Types

% of fraud victims		Trend
21.5%	Card details stolen online	↓
14.9%	Card details stolen/skimmed in person	↓
13.2%	Identity theft	↑

Population Banking Level

2.29

Number of debit, credit and charge cards per adult

93

Index to global average

History

November 2016
The EPC publishes SCT Inst rulebook.

July 2020
Limit increases from €15,000 to €100,000.

October 2016
Launch of Bizum.

November 2017
Implementation of SCT Inst in selected markets, including Spain.

October 2020
Bizum's user base reaches 12 million.

1 https://bizum.es/en/ Look for "Bizum in figures"

Sweden

In 2021, over 11% of digital transactions in Sweden will be a real-time payment (up from 9% in 2020) and growth is expected to continue over the next five years.

Sweden has been impacted by COVID-19, with consumers moving away from cash just as they have in many other countries. Notably, the Swedish government seems to be concerned that its citizens did not incur debt during the pandemic and in July 2020, the Swedish Parliament approved an amendment to the Swedish Payment Services Act (2010:751)[1]. The new provision requires PSPs to ensure that their online merchants operating in Sweden prioritize debit payment options over credit-based payment options at checkout. These measures are to make sure that consumers don't automatically use credit payment options without considering debit options as well; the customer must now actively choose to use a credit-based payments option.

As more customers consciously choose how to pay, debit will not be the only option as bank transfers (such as real-time payments) will be a primary option offered at checkout.

ACI's Take

Sweden is the glue that connects the Nordic region's payments ecosystem, adding its larger relative size to the collective weight of the four markets. This has enabled the group to leverage their combined scale to punch above their weight in terms of digital payments innovation and adoption.

In a region-wide market of 27M people—the 27 in P27—there is little scope to pursue niche lines of business. Thus, market forces are constantly pushing the region towards consolidation and cooperation to drive efficiency to the benefit, generally, of all players. But being a market where optimization matters as much as differentiation has its drawbacks when it comes to payments modernization.

As reported last year, Sweden being in possession of the richest digital ecosystem of any of its neighbors means it has the greatest need for infrastructure simplification. This is made harder, however, by the near-continuous merger and acquisition activity for which the Nordics is famous. As this activity churns away, payments modernization roadmaps are naturally lengthened and regularly repositioned in line with changeable priorities. Focus is hard to maintain.

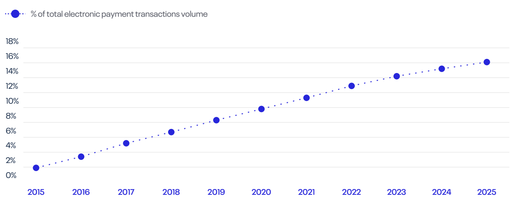
P27 promised to deliver much of this infrastructure simplification. And 2020's acquisition of Bankgirot, Sweden's only clearing house for mass payments, by P27 Nordic Payments Platform was "a landmark step in plans to create a single clearing and settlement platform across the Nordic region."[2] Yet, progress has slowed on this much heralded cross-border payments initiative and Norway has seemingly taken a step back. As the senior partner and with the most to gain from the project, Sweden will now need to pick up more of the slack to drive it through to completion.

Against this backdrop, acquirers in Sweden—and the Nordics region, generally—should take this opportunity to rethink their approach. The operational resources released by market consolidation and the development of P27 must be repurposed towards innovation and the development of genuine sources of differentiation. The lesson from merchant acquirers in other markets is that it's easy to slip into becoming viewed as a utility. Higher value use cases, such as offering data-driven credit, loans or installment plans at the point of sale, would be one way to guard against that.

To make that shift, these businesses should be asking themselves: are we doing all we can to leverage the technology and the data we have across the business to help the *whole business*? This has not always been a strength for Swedish organizations, where their outward tech-savviness belies a dependence on the same traditional organizational structures seen the world over.

Trends + Data

Real-Time Payments Volume and Its Share in Overall Non-Paper-Based Transactions, 2015-25f



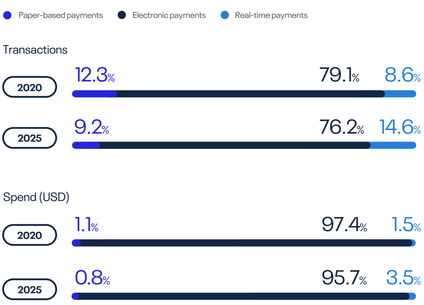
Transactions

633M (2020)

1.3B (2025f)

15.7% (FS Yr CAGR)

Share of Volumes by Payments Instrument



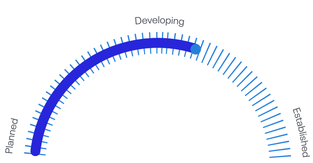
Schemes

With one scheme in place and another pending, growth of 21% year over year and adoption across banks and merchants, Sweden is a developing real-time payments market with high growth potential—and, as with all the Nordics, P27 should accelerate this even further.

Its current real-time payments platform, BIR, enables users to make direct transfers between bank accounts in real time. Launched by Bankgirot, the Swedish payments clearing system, and operating 24/7/365, it provides transaction settlement within 15 seconds for both P2P and C2B payments.

BIR offers an open infrastructure through APIs, enabling banks and non-bank payment providers access to utilize the platform and build new services by integrating with the network. Swish was the first payments app to be integrated in this way in December 2012. The app enables users to make P2P and C2B transfers using a mobile number associated with their current account.

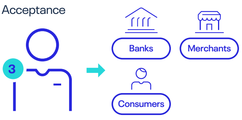
Key Stats



Market Development

With one scheme in place and another coming in 2021, growth of 21% year over year and adoption across banks and merchants, Sweden is a developing market with high growth potential.

Acceptance



Total Participants

12 Banks

Year of Real-Time Payments Launch

2012

Availability

365 24/7

Message Standard

ISO 20022

Real-Time Payment Types

Initiation/Authorization Methods

Mobile Wallet Trends

46

% of adults who have a mobile wallet and have used it in the past year (2020)

Payments Fraud Rate

Index to global average **81**

Population who reported being a victim of fraud in the last 4 years

Top 3 Payment Fraud Types

% of fraud victims		Trend
25.4%	Card details stolen online	↑
19.1%	Card details stolen /skimmed in person	↓
12.7%	Bank account hacked	↑

Population Banking Level

History

1 https://news.cardnotpresent.com/news/did-sweden-just-set-the-next-big-trend-in-e-commerce-payments
2 https://www.finextra.com/newsarticle/36699/p27-acquires-bankgirot-the-swedish-mass-payment-clearing-house-behind-swish

Switzerland

New Country

Growth of real-time payments in Switzerland is anticipated to accelerate from 2021 onward, to comprise 12% of electronic transactions by 2023. As of October 2020, 43% of Swiss adults were registered to use TWINT. This high adoption rate is the main basis for predictions of strong future growth for real-time payments.

As seen in other markets, real-time payments have gained traction during the COVID-19 pandemic. Transactions are up 76% year over year, while the total value of real-time payments and the overall user base have also grown.

According to the Swiss Journal of Economics and Statistics, cash usage is declining[1] and digital payments usage is rising as a result of COVID-19, both due to fears over virus transmission as well as a shift to eCommerce shopping. A study by Geneva University Hospital[2] concluded that the flu virus can stay on cash for up to two weeks, likely fueling fear in Switzerland that COVID-19 will behave the same way and that cash is therefore risky.

ACI's Take

The closest thing Switzerland has to a national real-time payments scheme is the TWINT mobile payments application. Yet the system only offers a real-time-like experience. The semi-autonomous joint venture between several domestic banks requires participants to put aside a minimum level of capital in order to fund transfers in advance of the batch processing that still happens overnight.

Nevertheless, TWINT's 3M active users have propelled it to the position of de-facto national P2P payments and digital wallet solution.

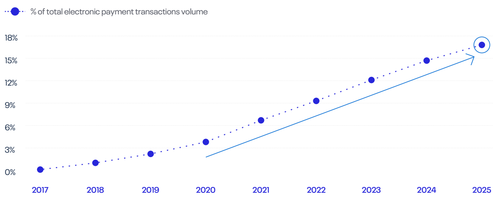
However, liquidity is the order of the day for many banks, so TWINT's capital requirements mean the majority have not signed up. They feel able to sit this one out because SIX Payments, the central infrastructure, has a genuine real-time payments solution in the offing. SIX's timeline is aggressive, having witnessed the popularity of TWINT and feeling the pressure to help businesses improve cash flow and liquidity. The tendering process for a technology partner is almost concluded and the scheme is expected to go live in early 2023.

SIX Payments' scheme will be optional, but participation levels are expected to quickly reach a critical mass, whereby to be on the outside will mean being out of synch with the market. First, TWINT has proven the market's appetite and the new system's enhanced experience will have no trouble cutting through. Second, the scheme's inclusion of a digital overlay layer (which will be mandatory) that processes all electronic payments in real time means there are similarities with PayNet Malaysia's recent launch of the hugely successful RPP Platform. That scheme demonstrated how building in flexibility and openness from day one accelerates the development of added-value services, which in turn accelerates adoption. And finally, connectivity to all major European schemes is also on the roadmap, providing those banks that do sign up with the opportunity to transact cheaply and easily across borders.

Ultimately, Switzerland's world-leading banks will soon have access to a world-leading real-time payments system—at the fraction of the cost of building their own systems. It will be crucial for banks to prepare their own systems to manage the requirements of real-time: fraud management, liquidity management and real-time balance inquiries. Payments modernization projects should be accelerated to match the timelines of SIX Payments' central infrastructure.

Trends + Data

Real-Time Payments Volume and Its Share in Overall Non-Paper-Based Transactions, 2017-25f



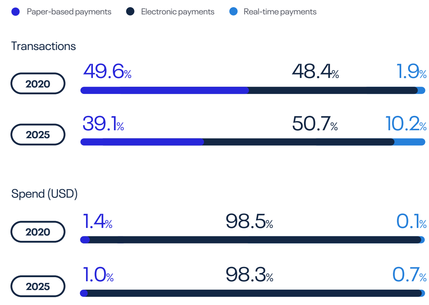
Transactions

106M (2020)

589M (2025f)

41.0% (FS Yr CAGR)

Share of Volumes by Payments Instrument



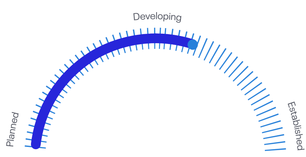
Schemes

Launched in 2016, and with growth of 76% year over year, Switzerland's real-time payments network counts a variety of participants and is slated for strong future growth at 41% CAGR over the next five years.

Jointly developed by PostFinance and Paymit, and launched in September 2016, TWINT is a mobile-based real-time payments scheme that allows users to make fund transfers and payments for a variety of use cases. UBS and Zürcher Kantonalbank were the first to introduce the TWINT app to their customers. TWINT is owned by Banque Cantonale Vaudoise (BCV), Credit Suisse, PostFinance, Raiffeisen, UBS, Zürcher Kantonalbank, SIX and Worldline.

TWINT enables a wide range of free-of-charge transactions including P2P and C2B (to merchants and billers), as well as payments at vending machines via a payments terminal, QR code or TWINT beacon. Though there is only one initiation method (bank account), TWINT is offered via an app which is linked directly to the customer's bank account and it enables a variety of payment methods including real-time payments and payment cards. Those who do not have an account with a participating bank can use the prepaid TWINT app with the "top-up credit" function, as can individuals 12 years or older. Currently, 75 banks/financial institutions offer TWINT to their customers and more than 150,000 businesses accept TWINT (as of October 2020). It is also accepted at 200,000 parking locations throughout Switzerland.

Key Stats



Market Development

Launched in 2016, and with growth of 76% year over year, Switzerland's real-time payments network counts a variety of participants and is slated for strong future growth.

Acceptance

Total Participants

>150,000

Year of Real-Time Payments Launch

2016

Availability

365 / 24/7

Message Standard

ISO 20022

Real-Time Payment Types

Initiation/Authorization Methods

Mobile Wallet Trends

48*

% of adults who have a mobile wallet and have used it in the past year (2020)
*https://www.moneyland.ch/en/swiss-payments-survey-2021

Population Banking Level

2.62

Number of debit, credit and charge cards per adult

106

Index to global average

Fully Banked
Progressing
Underbanked

History

April 2017
TWINT launches commercially.

July 2020
Bills with Swiss QR codes can be paid with TWINT.

September 2016
TWINT merges with Paymit, receiving permission from the Swiss Competition Commission (ComCo).

May 2018
Worldline acquires a 20% stake in TWINT.

October 2020
TWINT registers three million users.

1 https://ejes.springeropen.com/articles/10.1186/s41937-020-00061-x
2 https://www.swissinfo.ch/eng/pandemic-effect_covid-strains-swiss-love-affair-with-cash/45793712

Turkey

New Country

Turkey is a real-time payments market with strong potential for future growth, thanks to its high volume of paper-based payments and strong adoption of mobile wallets. However, right now growth could best be described as ticking along. Today, real-time payments are 10.3% of all electronic payments, which themselves are 34.2% of all payments (compared to paper-based's 65.8% share). By 2025, real-time's share of electronic payments will have crept up only slightly to 11.2%.

Though Retail Payments System (RPS) is marketed as a low-value payments scheme, real-time payments through the scheme actually account for 89% of the value of all payments in Turkey. This indicates that it is in fact mostly used for traditional credit transfers (wire transfers, for example).

If RPS is being used primarily for wire transfers, the new FAST scheme should be able to carve out an even bigger share of the real-time payments market than its originators might have expected. Additionally, its introduction still promises to add functionality to the existing real-time system, which will likely fuel adoption and volumes even more aggressively than current forecasts indicate. For example, support for three new initiation/authorization methods across both RPS and FAST will drastically improve accessibility and customers' experiences.

ACI's Take

Turkey's genuine real-time payments journey starts here, with the launch of FAST finally filling many of the gaps that limited the utility of RPS, such as its non-instant fund transfers and limited hours of operation.

Its success remains to be seen but there are plenty of market conditions working in its favor. Turkey is a market where the government has taken an active role in payments transformation through, for example, nationalizing aspects of the ecosystem to drive growth and adoption. The launch of the Troy payments card scheme springs to mind.

In a market where the government can impose systems from the top down, we would expect to see adoption accelerate rapidly, as we have in similar markets. Once FAST has scaled up from its initial launch state, there is the potential for the government to mandate its use in certain scenarios to force through growth and adoption. That said, the system's success is likely to be limited to domestic transactions for the foreseeable future.

Another factor in the market's favor, and a reason the government is so invested in the success of real-time payments, is that Turkey remains a fairly cash-heavy market. There's a distinct lack of credit in the system, particularly after 2018's consumer credit crisis.

The make up of FAST demonstrates that Turkey has been taking notes from other schemes around the world. By making QR codes an early feature of its roadmap, they're thinking ahead to cover the in-store angle—a crucial gateway to mass adoption. And, more generally, FAST has been built as a system that can do anything—P2P, in-store, bill paying and more—right from the start, rather than simply a fast bank-to-bank system on which additional functionality will be overlaid later.

When a system can do so much from day one, adoption can be expected to soar compared to systems whose functionality has grown organically.

Overall, while the system is in phase one of its launch, banks and financial institutions should take the opportunity to begin advancing their payments modernization roadmaps. There's a high volume of real-time payments coming down the pipe that is going to exert pressure throughout the system; from retail switches and clearing and settling infrastructure, to payments risk management strategies.

Trends + Data

Real-Time Payments Volume and Its Share in Overall Non-Paper-Based Transactions, 2015-25f

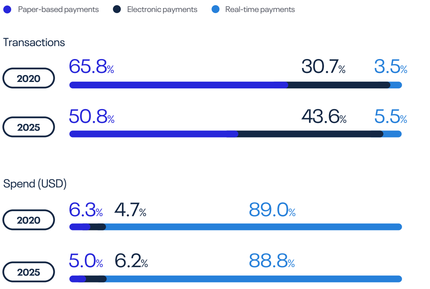
Transactions

791M (2020)

1.38B (2025f)

11.8% (FS Yr-over-Yr)

Share of Volumes by Payments Instrument



Schemes

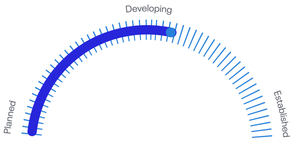
With one scheme in place since 2012, and a more advanced scheme launched in January 2021, Turkey may well see an aggressive uptake of real-time payments in the next five years, on top of the year-over-year growth of 12% it has already experienced.

Turkey's original scheme, Retail Payment System (RPS), is a low-value system. Launched in December 2012 and operated by the Central Bank of the Republic of Turkey (CBRT), it supports transfers in Turkish lira between accounts held in Turkey. Initially, RPS was part of the RTGS Electronic Fund Transfer (EFT) system for domestic funds transfers. While RPS was split from the EFT system to settle low-value retail transactions exclusively, the EFT system continues to facilitate high-value urgent transfers. Fund transfers via RPS are limited to business hours, and RPS does not operate on weekends or holidays.

It supports P2P, C2B and B2B payments, as well as enabling rental payments, salary payments and credit card payments.

To overcome the limitations of RBS, CBRT launched Instant and Continuous Transfer of Funds (FAST) in January 2021. At the time of writing, the system has been rolled out with an initial spend/transfer limit of TRY 50 while its operators monitor initial usage. The plan is to gradually increase this limit to TRY 1000. FAST operates 24/7/365 and will offer a variety of new functions. For example, under the adjacent Easy Addressing System, three new initiation/authorization methods are supported: mobile number, registered national ID number and email address. QR code initiation is also expected to be made available in the future. The service is available to both individuals and businesses and, pre-launch, 21 banks had already integrated with the system (as of November 2020).

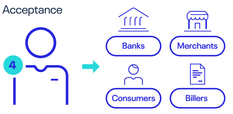
Key Stats



Market Development

With one scheme in place since 2012, and a more advanced one launched in January 2021, Turkey may see aggressive growth in the next five years, on top of the year-over-year growth of 12% it has already experienced.

Acceptance



Total Participants

>50

Year of Real-Time Payments Launch

2012

Availability

Business Days

Business Hours

Message Standard

Proprietary

Real-Time Payment Types

Initiation/Authorization Methods

Mobile Wallet Trends

63%

% of adults who have a mobile wallet and have used it in the past year (2020)

Payments Fraud Rate

10.4%

Index to global average **67**

Population who reported being a victim of fraud in the last 4 years

Top 2 Payment Fraud Types

% of fraud victims	Trend
17.5% Digital wallet account hacked	↑
15.8% Card details stolen online	↓

Population Banking Level

3.73

Number of debit, credit and charge cards per adult

151

Index to global average

Fully Banked

Progressing

Underbanked

History

April 1992
CBRT launches EFT payments.

December 2012
RPS is launched by splitting the existing EFT system.

March 2020
CBRT reduces the cap on transaction fees for fund transfers.

November 2020
CBRT announces the launch of the FAST system.

December 2020
Expected pilot run of the FAST system.

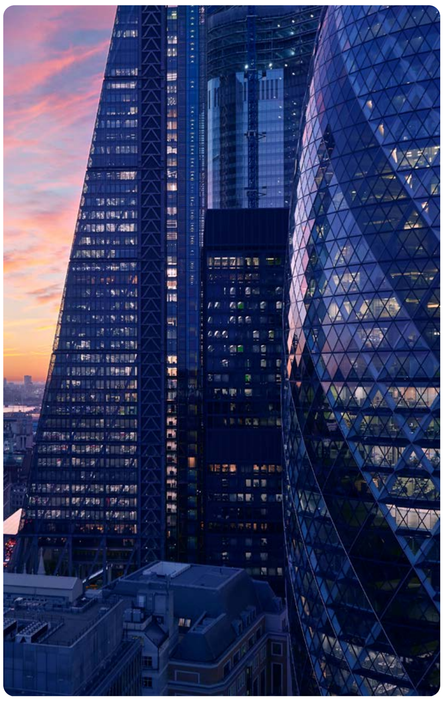
January 2021
FAST goes live.

United Kingdom

Although real-time payments have been available in the U.K. since 2008, growth is anticipated to accelerate in the coming years through 2023 before leveling off again through 2025, attaining a five-year CAGR of 11.6%.

Mobile wallet usage grew again in 2020, up 10% year over year, likely due to COVID-19-related fears around cash usage. The decline in paper-based payments was greatest, but the U.K. has seen declines across all payment methods due to economic contraction as a result of the pandemic. However, the decline of cash is merely an acceleration of years-long trends in that direction[1].

The U.K.'s New Payments Architecture (NPA) will enter its build-and-test phase in 2021, with full rollout planned over the next decade. NPA will replace FPS and include an upgrade to ISO 20022. The benefits of moving to this new standard include richer data, greater transparency and frictionless activity for participants and end users—it should also reduce friction and increase the speed of cross-border transfers.



ACI's Take

The U.K. continues to be one of the world's leading markets for payments modernization, showing continued impressive growth in cards and real-time payments. COVID-19 has only reinforced the cashless and contactless society. The transaction limit was raised from £30 to £45 during 2020 and at the time of writing, a further increase to £100 was expected. This has created a need for enhanced customer experience and remote mobile payment capabilities—it will be interesting to see the direction in which this nudges innovation in what is already a highly creative payments market.

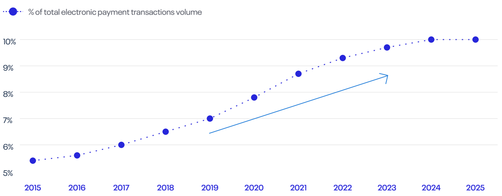
Consumers and businesses are now accustomed to having multiple payment choices in a strong debit and account-to-account market. With open banking maturity on the increase and digital overlay services gaining ground, such as the "soft" launch of Request to Pay backed by PSR principles, the U.K. continues to enhance its payments modernization project. Competition for new services is about to pick up and all current Faster Payments participants should be taking the opportunity now to identify how NPA and related infrastructure updates can help them to differentiate and increase margins.

In a market where speed of transfer has been mere table stakes for years, that means two things. First, development of digital overlay services must accelerate to ensure the customer experience continues to improve at an acceptable pace. And second, from an operational point of view, financial institutions must explore more seriously the benefits of deploying their payments infrastructure in the cloud to drive efficiency, agility and to take costs out of day-to-day management and future upgrades.

U.K. banks should not underestimate the impact of the shift to ISO 20022. The corporate side of many institutions have been tackling this payments modernization project for some time in order to meet high-value and cross-border payments scheme mandates. Consumer payment providers and lines of business must now follow that same thought process, figuring out how to strategically implement the new standard within their own systems in order to benefit from the new rich data. Expect to see market-leading banks accelerating their payment hub projects and consolidating the migration to ISO 20022 under their digital transformation projects to include both payments and data.

Trends + Data

Real-Time Payments Volume and Its Share in Overall Non-Paper-Based Transactions, 2015-25f



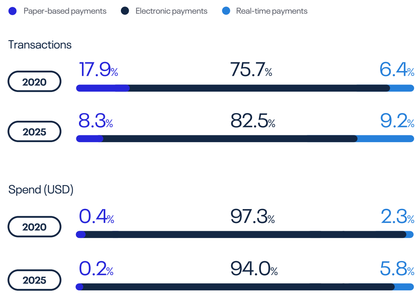
Transactions

2.8B (2020)

4.9B (2025f)

11.6% (5 Yr CAGR)

Share of Volumes by Payments Instrument



Schemes

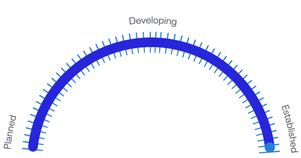
Since its launch in 2007, the U.K.'s real-time payments scheme, Faster Payment Service (FPS), has brought tremendous change to the market and paved the way for real-time payments development worldwide. Furthering its global innovation leadership, the U.K. is developing an advanced retail payments infrastructure currently known as New Payments Architecture (NPA). The stated goals of NPA are to increase accessibility and enable new services, encouraging competition to drive these innovations. Though FPS uses the ISO 8543 message standard, migration to ISO 20022 is currently underway.

FPS allows customers to make payments 24/7/365 via online, mobile and telephone banking, as well as at bank branches.

It can process four different types of payments with a maximum of £250,000 ($331,688), including direct corporate access that enables bulk transfers such as salary payments. Local mobile payment solutions including Paym and Pingit use the FPS infrastructure to allow their users to make real-time payments. Both solutions enable users to make real-time P2P transfers from their mobile phones using the recipient's mobile number instead of bank account number.

In general, FPS users will receive a confirmation reply to let them know whether their funds have been accepted or rejected by the receiver's bank within 15 seconds, but the payments can take up to two hours to take effect.

Key Stats



Market Development

With growth of 16% year over year and adoption across banks, merchants and billers, the U.K. is one of the most established real-time payments markets in the world.

Year of Real-Time Payments Launch

2008

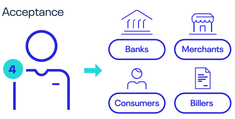
Availability

365 24/7

Message Standard

ISO 8583

Acceptance



Total Participants

33 Banks/ Financial Institutions

Real-Time Payment Types

Initiation/Authorization Methods

Mobile Wallet Trends

35

% of adults who have a mobile wallet and have used it in the past year (2020)

Payments Fraud Rate

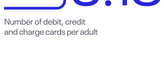
Index to global average **77**

Population who reported being a victim of fraud in the last 4 years

Top 3 Payment Fraud Types

% of fraud victims	Trend
20.6% Card details stolen/skimmed in person	→
17.5% Card details stolen online	↓
13.8% Identity theft	↑

Population Banking Level



Number of debit, credit and charge cards per adult

Index to global average

History

December 2014 100 million payments made in a single month.

May 2008 Launch of FPS.

July 2015 Milestone hit: five billion payments are processed as of this date.

November 2015 Transaction limit increases to £250,000.

August 2016 TransferWise becomes the first fintech to join the service.

December 2017 Eight new banks join FPS. Milestone hit: One billion single real-time payments are processed in 2017.

January 2018 Corporate bank BFC Bank joins FPS.

May 2020 Request to Pay, an overlay service, is launched to facilitate real-time bill payments.

1 https://www.bankofengland.co.uk/quarterly-bulletin/2020/2020-q4/cash-in-the-time-of-covid

Middle East, Africa and South Asia

Regional Spotlight

A dynamic payments region where fast is getting faster and growth shows no signs of slowing

Santosh Rao, VP Sales – MEASA, ACI Worldwide

This varied region features all the familiar real-time payment challenges—speed, scale and differentiation—but you won't have to look far before realizing that there is nowhere faster, nowhere bigger and nowhere more competitive.

Let's start with India, where the volumes involved in the world's largest payments landgrab have been pushed to dizzying new heights in 2020 by COVID-19 restrictions and the ongoing evolution of the country's infrastructure (these are covered in our India profile).

This can be seen in the way that UPI traffic rebounded from its initial lockdown dip in March and April. By June, it was setting new record highs in both monthly volumes and values. And by January 2021, it had added a billion more monthly transactions compared to the pre-pandemic highs of February 2020.

Growth is happening in every direction—volumes, value and average transactions per person—and the peaks keep getting higher. Scaling their infrastructure is therefore top of mind for every financial institution as pressure builds on core banking systems, whose designers never envisioned these kinds of volumes. This will certainly accelerate cloud adoption as more organizations are drawn to its flexible commercial models and inherent scalability.

Moving on to the Middle East, when COVID-19 hit, major moves were already afoot to drive the digitization of payments to meet consumer and business needs and expand financial inclusion. This provided a strong base-level readiness for the pandemic-driven acceleration that followed, and governments, regulators and financial institutions in the region all showed admirable agility to reprioritize their projects based on the COVID-19 impact.

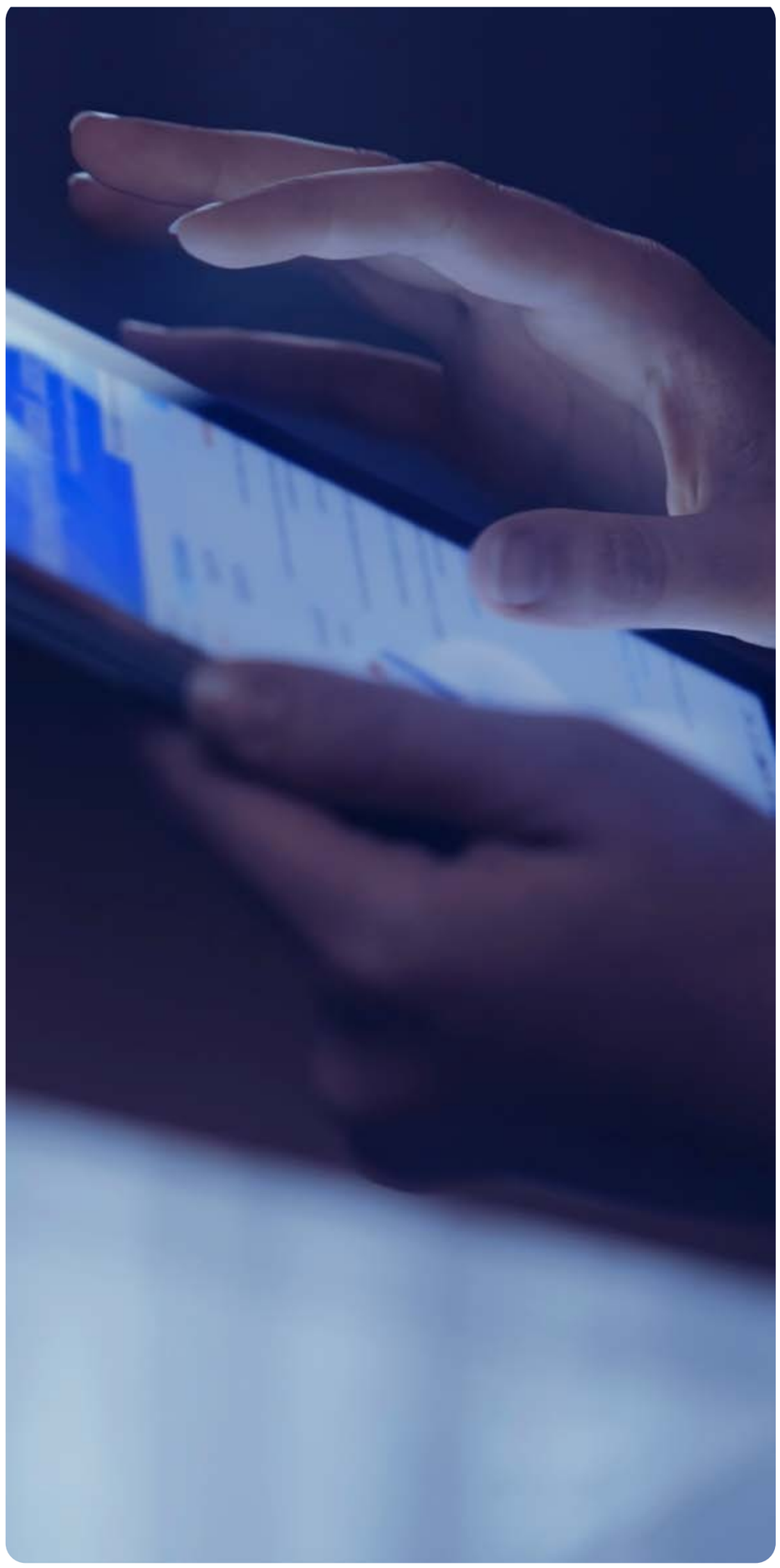
The pandemic meant financial institutions had to take some unusual steps to support customers—waiving interchange fees or allowing payments to be made on expired cards, for example—which opened financial institutions' eyes to the risks of the unexpected. This might have been an extreme event, but there is now greater appreciation for the importance of modernization roadmaps that pre-empt disruption by emphasizing agility and flexibility. This will be an advantage as the regulatory environment becomes more open to fintechs, for example.

Africa on the other hand is the birthplace of mobile payments, giving the market time to develop a competitive intensity not yet seen in most other markets. Via either acquisition or proprietary launches, every major bank has a mobile and digital solution. These essential offerings are at the forefront of the continent's financial services gold rush, in which regulators and businesses continue to chip away at cash usage and work to onboard significant unbanked populations. But the level of choice for users and the fact that once a customer chooses a bank they are very hard to pry away, makes for enormous pressure on banks to differentiate and add value beyond account deposits and mobile money.

Because innovations spread quickly through African markets, this is a continuous cycle. Payments modernization roadmaps in Africa tend to reflect this with a high level of technology-led agility. Indeed, the region's financial institutions have always been early adopters of the cloud, and the presence and continued investment of hyperscalers such as Microsoft are welcome commitments in the region.

Finally, cross-border payments connect the whole region and are the source of exciting innovations that are also driving growth. India's huge migrant population, living and working in the Middle East, have embraced real-time payment options. But perhaps most striking are the collaborations between the Kingdom of Saudi Arabia and the United Arab Emirates on cryptocurrency pilots, and the Arab Monetary Fund's launch of the Buna multicurrency cross-border payments platform.

Clearly, there is plenty to keep MEASA's payment players on their toes in 2021 and beyond, as they adjust to the impacts of a global pandemic on payments modernization roadmaps that were already subject to strong disruption.



The hard work is only just beginning for real-time fraud management in MEASA

Damon Madden, Principal Fraud Consultant, ACI Worldwide

The enormous growth in real-time payments in the MEASA region has caught many financial institutions by surprise when it comes to fraud prevention. In the case of the Middle East and Africa (things are more developed in South Asia, especially India), there's a growing awareness of the things that can go wrong, but so far, that is only just starting to translate into an understanding of the appropriate countermeasures.

What's most urgent is action to circumvent onboarding of false identities and Authorized Push Payment (APP) fraud, where financial institutions are getting to grips with the anomalies to look out for—common beneficiaries or multiple individuals sending money to a single account—these tend to signal high risk. Attacks on internet banking are also rising, but too often responses are not as precise as they could be. For example, it's not a proportionate response to SIM-swap fraud to effectively freeze internet banking and insist that customers register new payees by using an ATM or visiting a branch.

It's not sustainable either, at a time when demand for frictionless real-time payments, already strong across the region pre-COVID-19, has accelerated during the pandemic. In India, for example, UPI traffic has hit record highs in volumes and values every month since June 2020. Offering less friction means higher risk levels and a greater need for robust payments protection. This is especially important in regions where there is a stark division between the wealthy and the disadvantaged, for the latter falling prey to a scam would leave them in serious financial peril.

Looking ahead, priorities for fraud identification and prevention in the region should be around becoming more proactive to anticipate vulnerabilities that criminals may try to exploit. Strategies also need to become more founded on a multi-layered set of flexible tools covering a variety of eventualities, and on network intelligence. Just as criminals collaborate, so must financial institutions pool fraud-related intelligence by adopting a community approach so that if any member is targeted, the signals are shared and all are protected.

The cost of fraud is already high, and continued fragmentation in the financial community will only increase costs—both reputational and financial.

Egypt

New Country

Egypt presents a strong opportunity for real-time payments, with a lower rate of payment card penetration than any other country covered in this report, and an extremely heavy reliance on paper-based payments.

Cash's dominance will endure for years to come, but digital payments are gradually gaining traction. The volume of credit transfers has grown at a robust pace in recent years, more than tripling from less than 100M annually in 2015 to more than 300M in 2020. As such, a small but rising consumer preference for digital payments, coupled with the growth of credit transfers, hints at huge potential for the uptake and use of real-time payments in the future.

Nevertheless, 67% of the population remain unbanked and so adoption of a real-time payments scheme will be slow going while the great majority of the population can't participate. The Egyptian government has shown signs of intervening to improve financial inclusion, along a similar line taken in other countries such as India. It's early days but should that continue, real-time payments could also see similarly rapid adoption and high volumes.

Efforts by the Central Bank of Egypt in this regard have centered on creating a solid financial infrastructure with strong operational and regulatory frameworks, alongside expanding the bank's support and enablement of new technologies to enhance the ecosystem's digital channels[1]. Examples include the 123 debit card scheme and shared cash network that was introduced to enable citizens to withdraw cash from any ATM, regardless of who they bank with. Mobile payment regulations have also been created to offer direction on everything from microfinancing and cardless ATMs, to one-to-many and bill payments.

ACI's Take

Cash is so deeply rooted in the societal and cultural fabric of Egypt that it has been common for government employees to go door to door to collect cash payments for gas and electricity bills. And the demographic distribution of the 110 million population has a high demand for micro-payments that are also conducted in cash.

Clearly, transformation will take years to develop.

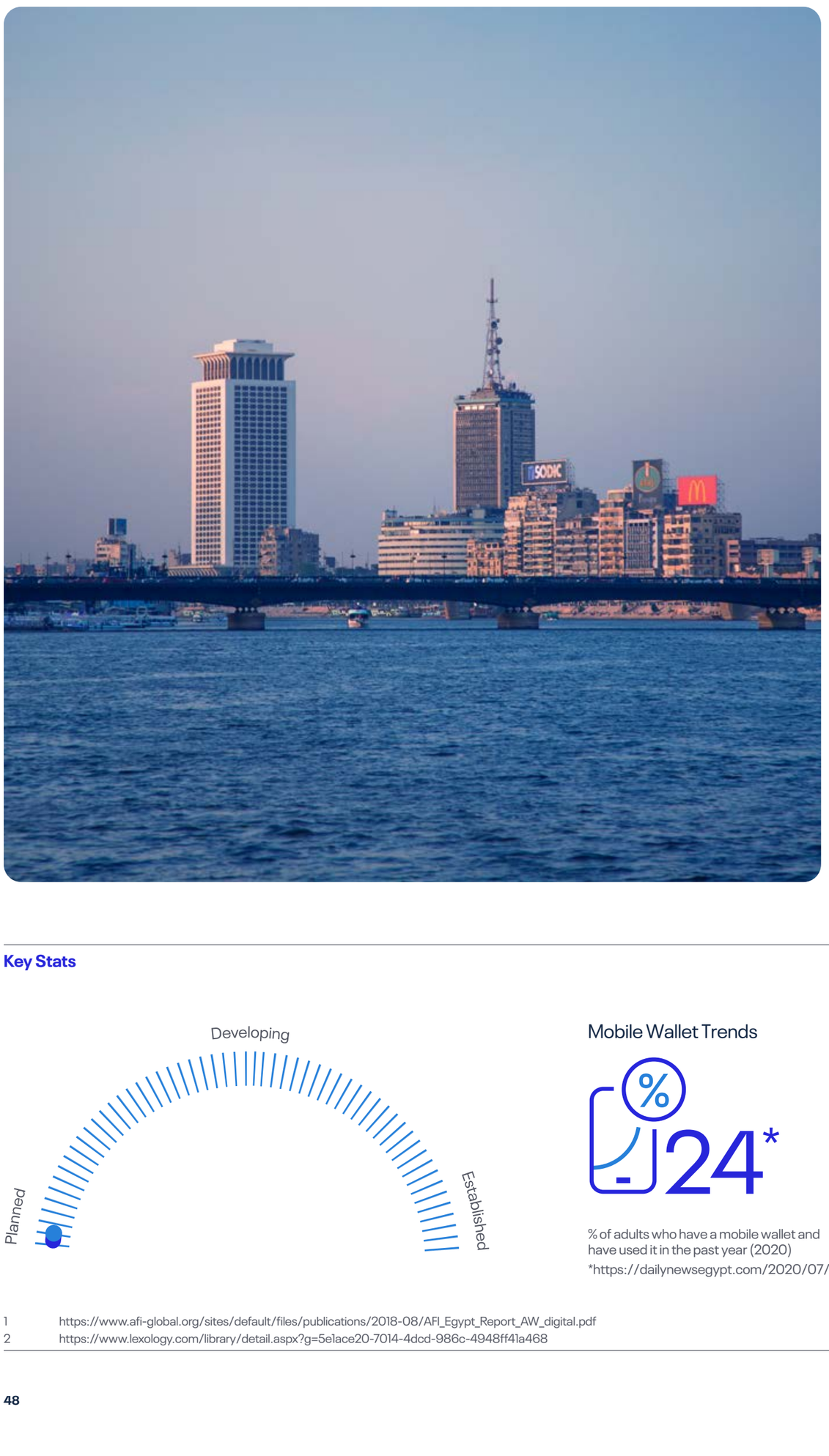
However, financial inclusion initiatives, the need to connect remote areas and slowly deepening digital penetration are fostering change. Significantly, regulatory frameworks are also changing, meaning the country's financial institutions must brace themselves for a busy round of mandated payments modernization.

The new Central Bank and Banking Sector Law No. 194 of 2020 is intended to boost financial inclusion along with setting the framework for a reduction in cash usage. The new law augments wider digital transformation trends influencing Egypt's financial sector, by introducing various new technological expectations for the industry. These include digital finance, digital settlement of checks, eMoney, cryptocurrency, fintech and regtech. Oversight for these developments will sit under the new National Council for Payments (NCP), "constituted by virtue of a presidential decree for the purpose of reducing the usage of paper money and supporting and encouraging the usage of digital means and channels as an alternative payments method.[2]" The NCP is chaired by the president himself, showing the degree to which financial inclusion is being taken seriously.

The Financial Regulatory Authority has also recently launched a Digital Financial Inclusion 2021 initiative to move towards a cashless payment system by increasing the use of digital payment tools in non-banking financial transactions, especially among micro-enterprises in Egypt. The electronic payments sector has also witnessed many developments recently, the most important of which are the launch of the national payments scheme, Meeza, the Non-Cash Payment Law, the FinTech Regulatory Sandbox and the eCollection of government payments.

Private players are also making significant moves to enhance Egypt's digital payments ecosystem and accelerate adoption. Fawry, an ePayments platform, is collaborating with Visa to increase the use of point-of-sale terminals and QR payment solutions. Carticard has partnered with Mastercard to boost digital transactions and distribute loans through Mastercard prepaid cards.

The key takeaway for Egypt's banks is that digital payments are coming soon, and they need to prepare their systems for a rapid increase in the number of accounts, payment instruments and transaction volumes. Egypt has an advantage in that its banks can leapfrog legacy issues that other markets encountered and implement real-time ready consumer payment hubs that are flexible enough to evolve with these exciting market changes.



Trends + Data

Share of Volumes by Payments Instrument

Paper-based payments Electronic payments

Transactions

	Paper-based payments	Electronic payments
2020	76.0%	24.0%
2025	63.0%	37.0%

Spend (USD)

	Paper-based payments	Electronic payments
2020	62.0%	38.0%
2025	51.0%	49.0%

Schemes

Egypt is currently developing a real-time payments system that will allow for instant fund transfers between bank accounts within Egypt.

The system will also support transfers in foreign currencies among Egyptian banks, including the U.S. dollar.

These plans are a result of government law No. 18 of 2019, which aims to make fund transfers and paying for products and services faster and more convenient for citizens. The Egyptian government is also encouraging fintech activity through their Egypt 2030 vision, which has a mission to create sustainable development, as well as to broaden financial inclusion.

Key Stats

Mobile Wallet Trends

24*

% of adults who have a mobile wallet and have used it in the past year (2020)

*https://dailynewsegypt.com/2020/07/04/egypt-sees-13-5m-mobile-wallets-end

Population Banking Level

0.39

Number of debit, credit and charge cards per adult

16

Index to global average

Fully Banked
Progressing
Underbanked

1 https://www.afi-global.org/sites/default/files/publications/2018-08/AFI_Egypt_Report_AW_digital.pdf
2 https://www.lexology.com/library/detail.aspx?g=5e1ace20-7014-4dcd-986c-4948ff41a468

India

Real-time payments have gained significant traction since 2014, spurred on by the government's payments modernization initiatives to provide financial inclusion to the unbanked and empower digital payments transformation by moving to a less cash-reliant economy. In 2014, the government issued unique biometric identification numbers to 99% of adults, enabling the opening of no-minimum-balance bank accounts. In 2016, the government demonetized 86% of the cash in circulation, compelling the shift to electronic payments and motivating citizens to open bank accounts. As a result, by 2017, 80% of Indian adults reported having a bank account, up from just 53% in 2014.

Mobile wallet usage has also grown significantly, with adoption among adults up nearly threefold in the past five years. Mobile wallets now play an important part in the payments ecosystem, and with UPI integration in some of the most popular wallets, they are another factor fueling real-time payments growth in India.

While the COVID-19 pandemic meant that India saw a decline in real-time payment volumes from March through May 2020—with April during lockdown seeing the least activity—volumes bounced back significantly in June to exceed February's transaction volumes. Massive year-over-year growth is forecast for the five-year period 2020-25 (up more than 60B transactions), driven by UPI and specifically due to mobile payments/overlay services, a reduction in cash usage and digital transformation acceleration. The COVID-19 pandemic has, of course, had an impact, as concerns over handling cash have prompted significant behavior change in favor of digital payments.

At the end of 2020, PayPal's Xoom announced integration with UPI, which will enable cross-border transfers/remittances from non-residential Indians (NRIs) and persons of Indian origin (PIOs) in the U.S., Canada and Europe. This integration will likely expand UPI transaction volumes even more than currently forecast.

ACI's Take

Reserve Bank of India (RBI) recently opened the country's real-time gross settlement (RTGS) system up to 24/7/365 real-time processing of payments. NPCI International is also making efforts to ramp up inbound remittances in the country while enabling cross-border acceptance for UPI in ASEAN and Middle Eastern markets with high Indian ex-pat populations. This presents a substantial business case, as real-time credits into customer accounts will certainly boost confidence in the larger ecosystem. All players can ride this wave with their own innovative value-add services and overlays, knowing that the demand is there to provide an accelerated time to revenue.

Furthermore, India's payments ecosystem has bounced back from any COVID-19 lockdown disruptions in roaring style, with the number of UPI transactions reaching a record monthly high of 2.3B in January 2021[1] (almost 1B higher than the pre-lockdown record set in February 2020).

The upward trend in payment volumes, even during the peak of the pandemic, can largely be attributed to the multitude of real-time payment use cases, such as one-time mandates, recurring payments, Request to Pay, social or peer-to-peer payments, and so on. Consumers have also shifted from cash to contact-based and contactless payment methods, with people choosing real-time payments over cards for essentials and utilities on eCommerce channels.

This will only increase as the RBI plans to create "new umbrella entities" (NUEs) to maintain competition in retail payments by preventing the market from concentrating into the hands of a few providers (a current risk with the way NPCI is set up today). With large banks, telecom providers and technology providers fighting it out to be an NUE, we can expect more innovative payment use cases and products being brought into the market.

Finally, India provides a lesson for other markets on how a vibrant and open ecosystem can set the stage for the private sector to drive innovation—lowering risks and costs for central infrastructure owners. Fintechs have stepped up to drive the adoption of digital payment methods across customer and merchant touchpoints using Open APIs that enable customized financial services on various digital platforms. From basic banking services, such as account creation and fund transfers, to digital lending and alternative credit, banks and fintechs have created a collaborative ecosystem for providing differentiated offerings to end consumers and merchants. In response, all major banks have launched open banking platforms and have granted sandbox access to various fintechs so they can register, access the APIs and innovate for the consumers and merchants who are now increasingly choosing to use fintech platforms over banks' in-house channels.

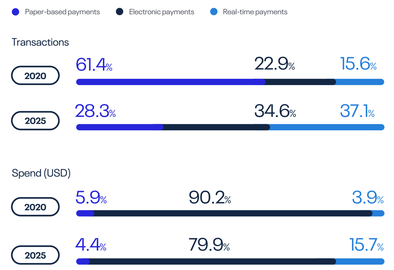
Trends + Data

Real-Time Payments Volume and Its Share in Overall Non-Paper-Based Transactions, 2015-25f

Transactions

25.5B (2020) 85.7B (2025f) 27.5% (5 Yr CAGR)

Share of Volumes by Payments Instrument



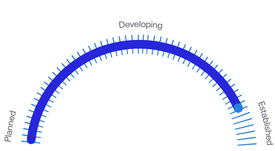
Schemes

India's real-time payments infrastructure enables users to transfer funds and make payments instantly, using either the Immediate Payment Service (IMPS) or the Unified Payments Interface (UPI), both of which were launched by the National Payments Corporation of India (NPCI).

IMPS was the first of India's real-time payments interbank electronic fund transfer systems. It launched in 2010 and operates around the clock. Supported by 611 banks and PSPs, IMPS enables fund transfers via various channels, including online and mobile banking, ATM, SMS, branch and USSD (*99#). Funds can be transferred using a recipient's bank account number and the Indian Financial System Code (IFSC), or their mobile number and mobile banking ID (MMID).

UPI launched in April 2016 and is built on top of the IMPS infrastructure. UPI integrates multiple bank accounts into a single mobile app, allowing for 24/7/365 instant money transfers initiated via mobile. It is supported by nearly 190 banks and PSPs, and offers additional benefits over IMPS, such as simplified P2P and merchant payments using mobile numbers or QR codes, and faster payments authentication. Although the second player in the market, UPI has seen extraordinary adoption, perhaps due to the incremental benefits and user experience enhancements it offers. In 2018, UPI transaction volumes surpassed those of IMPS and in 2020, UPI processed almost eight times the number of IMPS transactions.

Key Stats



Market Development

With two schemes in place, growth of 115% year over year and adoption across banks, merchants and billers, India is an established market with continued development.

Acceptance

Total Participants

>600

Year of Real-Time Payments Launch

2010

Availability

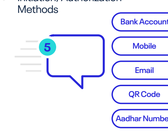
365 24/7

Message Standard

ISO 8583

Real-Time Payment Types

Initiation/Authorization Methods



Mobile Wallet Trends

% of adults who have a mobile wallet and have used it in the past year (2020)

Payments Fraud Rate

Index to global average **275**

Population who reported being a victim of fraud in the last 4 years

Top 3 Payment Fraud Types

% of fraud victims	Trend
20.1% Card details stolen/skimmed in person	↓
18.0% Identity theft	↑
14.3% Card lost or stolen	↑

Population Banking Level

History

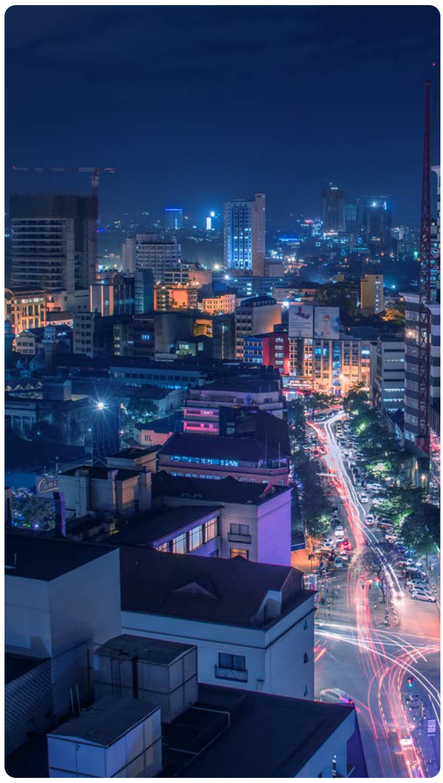
1 https://www.npci.org.in/what-we-do/upi/product-statistics

Kenya

Kenya's real-time payments scheme is on a significant upward growth trajectory, but volumes are still very small. In 2020, paper-based payments comprised nearly 90% of transaction volumes and over half of all spend. The biggest factor impacting real-time payments usage is Kenya's significantly unbanked population: just 41% of adults had a bank account as of 2019[1].

That does not mean that a large proportion of Kenyan adults are financially excluded. That same year, 83%[1] reported having access to financial services. The main source of financial inclusion are the extraordinarily popular mobile money apps, which operate in much the same way as mobile wallets but do not require a bank account or payment card for usage. M-Pesa is the market leader for mobile money in Kenya. Recently, Safaricom, Kenya's biggest telecom provider, waived fees from March to June for M-Pesa to encourage the use of mobile payments to help prevent the spread of COVID-19. The company announced that all P2P transactions under 1,000 Kenyan Shillings (around $10) would be free for three months. With 32 million customers, that gave roughly 60% of the country's population free access to mobile money.

The prevalence of mobile money continued throughout 2020, with real-time payment volumes still comprising a very small share of electronic payments. Lower-than-forecast volumes were recorded for real-time payments in 2019/2020, but growth is expected to accelerate starting in 2021 and continuing through 2025, with a five-year CAGR of 55.8%.



ACI's Take

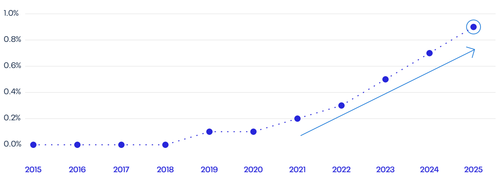
The Kenyan payments landscape has changed dramatically as digital payments acceptance in the country has soared in the five years since the launch of various new products resulting from industry collaborations. The introduction of government-to-person (G2P) payments to enable mobile payments for public services was a particular game-changer.

The market is dominated by M-Pesa, which has 20.5M customers—out of a population of 53M—and a network of 176,000 agents. This means Kenya has one of the world's highest rates of mobile money adoption. Meanwhile, SWIFT gpi, Visa Direct and Mastercard Send are popular providers of secure global payments. And banks are also establishing agent networks to expand financial inclusion by getting closer to customers in the neighborhoods in which they work and live.

Careful balancing of regulation, oversight and encouragement for innovation has helped bring Kenya to its current state. However, the country's dominant fintechs and mobile money/payment firms—and those that wish to claim some of their market share—are soon to come in for increased regulation that they must factor into their payments modernization strategies. The Central Bank of Kenya's latest policy document outlines proposals that look set to change the way fintechs and mobile payment firms operate. The anticipated release of the National Integrated Identity Management System (NIIMS) "will provide a key impetus to further deepen the adoption, safety and robustness of digital payments," according to the report. As we have seen with many successful digital payment markets, digital identity linked to payments helps drive further use cases, as well as form a framework from which to hang innovative propositions that bring digital payments ubiquity to a market. Both established and new players will need to consider how they will leverage this digital identity to underpin payment propositions. Alias-based payments beyond mobile phone numbers is an obvious use case, but the market is ripe for many more.

Trends + Data

Real-Time Payments Volume and Its Share in Overall Non-Paper-Based Transactions, 2015-25f



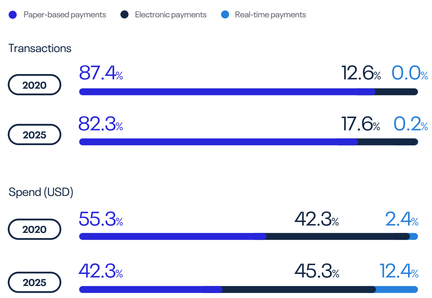
Transactions

2.6M (2020)

24.1M (2025f)

55.8% (5 Yr CAGR)

Share of Volumes by Payments Instrument



Schemes

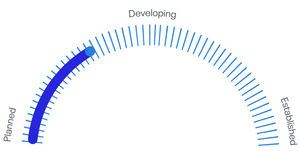
Kenya's PesaLink real-time payments scheme is still relatively new and finding its feet within the country's wider payments ecosystem. Still, growth in 2020 has been strong at 70% year over year. However, this high rate of growth is coming from a small base, with real-time's potential volume limited by a high unbanked population.

PesaLink is a real-time interbank money transfer solution operating 24/7/365. It was launched by the Kenya Bankers Association (KBA) in February 2017 and is managed by Integrated Payment Services Limited, a fully owned subsidiary of KBA. As of November 2020, there were over three million registered accounts on PesaLink.

PesaLink enables customers to instantly transfer funds from one bank account to another via various channels, including online and mobile banking, ATMs, bank branches, USSD and agency banking. Funds can be transferred using a recipient's bank account number, mobile number, credit card or debit card. Available for both individuals and businesses, it enables P2P, C2B, B2B, C2G and B2G transfers, including bill payments and payments for goods and services.

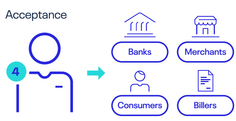
It also facilitates transfers in foreign currencies including euros, U.S. dollars and British pounds. Users can transfer values from a minimum of KES10 ($0.10) to a maximum of KES999,999 ($9,866).

Key Stats



Market Development

Kenya's scheme is still relatively new but growing 70% year over year, though the real-time payments market's volume is hindered by a high unbanked population and prominent usage of mobile money apps.



Total Participants

30 Banks/ Financial Institutions

Year of Real-Time Payments Launch

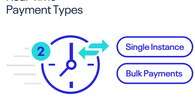
2017

Availability

365 24/7

Message Standard

ISO 8583



Mobile Wallet Trends

99%*

% of adults who have a mobile wallet and have used it in the past year (2020)
*http://www.connectingafrica.com/author.asp?section_id=761&doc_id=762180

Population Banking Level

0.72

Number of debit, credit and charge cards per adult

29

Index to global average

History

February 2017
PesaLink launches, initially supported by 22 banks.

September 2019
Milestone hit: A total value of KES220B ($2.2B) in transactions has been processed since PesaLink launch.

June 2015
KBA initiates the real-time payments project.

October 2018
PesaLink integrates with eCitizen, a government services portal, to enable real-time payments for government services.

March 2020
Transaction charges are temporarily waived for 90 days.

1 https://www.reuters.com/article/kenya-banking-idUSL8N2IL2HK

Nigeria

Nigeria's real-time payment capabilities have gained strong traction since its launch in 2011 and comprised 72.6% of all electronic payments in 2020. However, from a transaction volume perspective, cash remains the most popular payment method, particularly favored for routine, inexpensive payments.

Real-time payments adoption and usage are hindered by a large unbanked population, with 56% of Nigerians unbanked as of 2020. To address this gap in financial inclusion, the Central Bank of Nigeria (CBN) has undertaken a payments modernization initiative to launch payment service banks (PSBs), which make basic banking services available to the unbanked population, thus reducing cash dependence. As one of the basic banking services offered is cash deposits, cash in circulation is anticipated to decrease, driving a shift toward electronic payments. Given this initiative, there are good reasons to be optimistic about the future of real-time payments in Nigeria.

Real-time payment volumes in Nigeria spiked in 2020, rising to claim over 70% of digital payment transactions. This is likely due to COVID-19, which accelerated digital transformation to draw volume away from the nation's high share of paper-based payments. Specifically in 2020, paper-based payments declined compared to the original forecast, while digital payments—including real-time—grew by nearly 1B transactions. That represents 45% growth. Although the current messaging standard is XML, NIBSS is planning on migrating payment systems to ISO 20022 in the future. COVID-19 is also impacting future forecasts, with real-time payments expected to continue to grow through 2022 before leveling off or declining after 2023, as payment cards capture additional share of transactional volume. Card payments are forecast to grow slightly faster than real-time payments. Nevertheless, we expect an accelerated transition to digital payments overall during the next five years and real-time volumes are expected to reach 7.7B by 2025.

ACI's Take

Nigeria has traditionally been more of a cash-transaction economy, but the pandemic has forced many to put aside concerns over the safety of online transactions and make greater use of digital banking and payments. However, lack of access to services, especially in rural areas, issues around affordability and poor user experience have all contributed to frustration with digital banking services across the consumer spectrum. The nation's payment players—both traditional banks and new market entrants—are on notice: young affluent, digitally savvy individuals expect higher speeds and greater simplicity from their financial service providers.

Payment solutions currently represent around 15% of banking revenue pools[1] in the country and continue to grow. The SME segment is relatively underserved, but a few players are starting to gain significant traction, which has presented opportunities for several digital banks and fintechs. Payments-focused solutions have been surging ahead, augmented by the central bank's financial inclusion drive and favorable regulatory policies. These include revised know-your-customer requirements for lower-tier accounts and incentives to accelerate development of agent networks across the country.

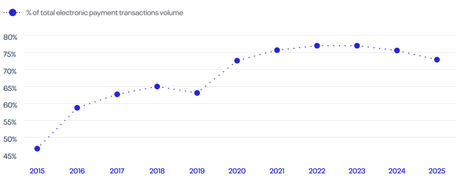
Government regulators, such as the CBN, have also acted swiftly during the COVID-19 crisis to promote digital financial services. For example, they have collaborated with banks and non-bank payment players to restructure transaction fees and transaction limits to encourage digital payments. They have also relaxed regulations to allow easier access to digital payment tools, such as allowing the use of a bank verification number (BVN) or registered phone number to open digital accounts. And they have embraced digital payments for the payment of welfare grants, while reviewing capital and currency controls to strike a better balance between protecting the economy and creating access to hard currency in order to stimulate economic activity.

Additionally, increased fintech activity is advancing the Nigeria eCommerce industry and fueling the growth of the digital economy by, for example, bringing to market B2C marketplace tools such as payments integration on social media platforms.

Nigeria's banks and payment players need to be prepared not only for rapid growth in digital payment transaction volumes but also to begin to deliver differentiated services in a diverse market. The shift of NIBSS to ISO 20022 will support banks seeking to do this, as the richer data standard can be leveraged for a range of value propositions. Additionally, an ISO-native, domestic real-time scheme opens up interoperability with cross-border services such as SWIFT gpi Inst, as well as regional initiatives in the future, such as the East African Payment System (EAPS). ISO 20022 is the common language of global payments, so banks should modernize their systems now to continue to participate in the global economy.

Trends + Data

Real-Time Payments Volume and Its Share in Overall Non-Paper-Based Transactions, 2015-25f



Transactions

1.9B (2020)

7.7B (2025f)

32.2% (5 Yr CAGR)

Share of Volumes by Payments Instrument

Paper-based payments · Electronic payments · Real-time payments

Transactions

2020	88.3%	3.2%	8.5%
2025	63.3%	10.0%	26.7%

Spend (USD)

2020	13.6%	44.7%	41.7%
2025	5.9%	35.1%	59.0%

Schemes

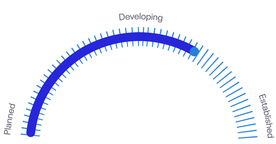
Of all the African countries in this report, Nigeria has the most developed real-time payments scheme. Launched in 2011, NIBSS Instant Payments (NIP) has experienced strong adoption compared to other electronic payment types, despite providing a limited number of payment types and initiation methods (one for each).

NIP is an interbank account-to-account system that allows users to make transfers 24/7/365 via internet and mobile banking, bank branches, kiosks, mobile USSD, POS terminals and ATMs. NIP supports P2P, B2B, C2B and B2C payments, and is available for both retail and corporate customers with maximum daily transaction limits set at NGN 5M ($13,810) for individuals and NGN 10M ($27,620) for corporates.

E-BillsPay, an account number-based, online and real-time credit transfer service, is another offering from NIP that leverages the core platform to enable consumers to pay their utility bills, government fees, penalties, airtime and subscriptions.

NIP also offers mCASH to facilitate low-value retail payments. This service also leverages NIP's core infrastructure to enable users to make payments to merchants instantly via USSD functionality on their phone. Customers simply dial *402*merchant code*amount# to make payments. The maximum transfer limit per day is NGN 50,000 ($138). mCash is supported by 19 banks and four telecom operators.

Key Stats



Market Development

With a scheme in place since 2011, growth of 67% year over year, broad adoption and high share of electronic payment volumes, Nigeria is a fast developing real-time payments market.

Acceptance

Total Participants

All Domestic Banks

Year of Real-Time Payments Launch

2011

Availability

365 24/7

Message Standard

XML

Real-Time Payment Types

Initiation/Authorization Methods

Mobile Wallet Trends

68%

% of adults who have a mobile wallet and have used it in the past year (2020)

Payments Fraud Rate

26.1%

Index to global average **168**

Population who reported being a victim of fraud in the last 4 years

Top 3 Payment Fraud Types

% of fraud victims

26.6% Other

21.0% Confidence trick

18.2% Card lost or stolen

Population Banking Level

0.81

Number of debit, credit and charge cards per adult

33

Index to global average

History

December 2012
Launch of the E-BillsPay service.

October 2018
The CBN introduces a new regulation for NIP participants with regards to the delay or revoking of payments.

May 2020
eBills totaling NGN80.38 ($222M) are made in the month of May 2020.

July 2011
Launch of NIP by NIBSS.

August 2018
Relaunch of mCASH (initially launched in November 2016).

September 2019
NGN88.6B ($245M) in transactions is made via mCASH in one year ending September 2019.

September 2020
Payments worth NGN15.41 ($43B) are made via NIP in the month of September 2020.

1 https://www.mckinsey.com/featured-insights/middle-east-and-africa/harnessing-nigerias-fintech-potential

Oman

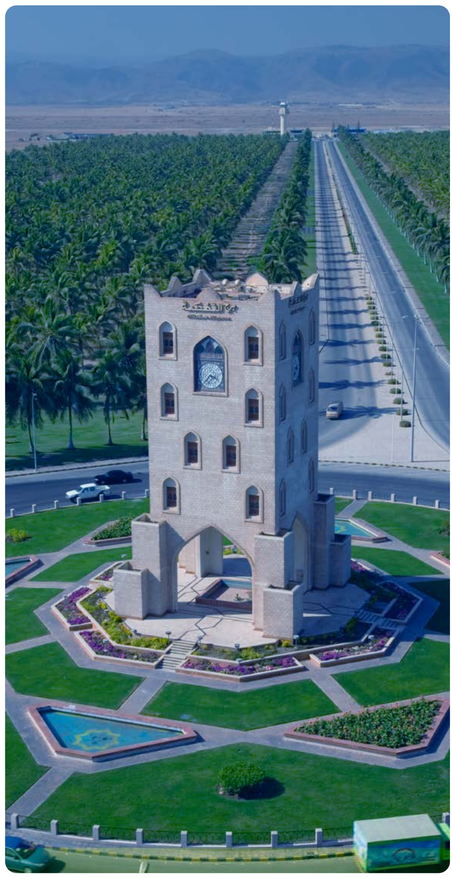
New Country

Oman is starting to see the benefits of its steady payments infrastructure improvements, driven by advancements in contactless and EMV payment modes and Sharia-compliant cards, alongside the government's push for digital payments. Consequently, it is expected to be on the cusp of its highest ever growth rates for real-time payments from 2021 to 2024—albeit from a very low base. This growth will continue through 2025, when real-time payments will comprise 44.6% of digital payment volumes.

While real-time payments are forecast to gain a high share of digital payments, paper-based payments still make up the bulk of transactions in Oman, standing at 92.9% in 2020.

Overall, Oman's real-time payments ecosystem today consists exclusively of P2P, mobile wallet-based solutions. This implementation utilizes just a fraction of the potential capabilities of the real-time rails.

Nevertheless, Oman has made a good start on its real-time journey. Indeed, even with this relatively limited implementation, there is still a lot of growth to come for real-time payments as government and Central Bank of Oman (CBO) mandates continue to broaden participation and expand functionality. These improvements will enhance the user experience to drive increased adoption, and ultimately help Oman to achieve its goal of increasing financial inclusion.



ACI's Take

Since Oman's largest bank, Bank Muscat, launched the country's first mobile wallet—bmWallet—in August 2017, competition has intensified as several institutions have introduced rival digital payment platforms. Bank Meethaq, the Islamic banking arm of Bank Muscat, launched Meethaq Wallet, and in 2020 Oman Air and BankDhofar partnered to launch an eCommerce payments gateway platform to enable customers to book their tickets online. Infibeam Avenues, through its CCAvenue Payment Gateway Service digital payments solution, has partnered with Bank Muscat to process online card transactions on its payment networks and boost the region's fast-growing eCommerce sector.

The next round of innovation in this vibrant and highly competitive ecosystem can be expected to focus further on digital overlay services that integrate payments more deeply with consumers' lives. In particular, consumers and businesses appear primed to respond well to Request to Pay services that reduce friction while maximizing control over their financial activity.

More general market developments to monitor include a collaboration between Sohar International and telecom operator Omantel. The eFloos mobile wallet allows customers to send and request money, and pay merchants using just a mobile number, thus avoiding physical transactions in the COVID-19 era.

The CBO is also further boosting the digital payments environment by introducing a mobile payments clearing system, MpClear, which is the first such scheme in the GCC region. MpClear provides interoperability and unified switching and clearing services among mobile wallets and banking services operated by various banks in the Sultanate.

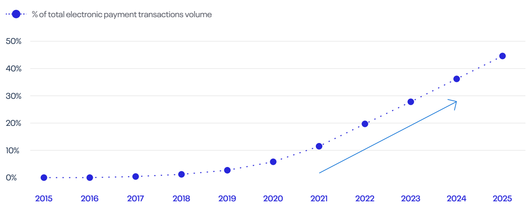
Additionally, Oman Arab Bank is collaborating with the Ministry of Heritage and Tourism to launch a new service through its digital channels that allows tourism-based entities, such as hotels and restaurants, to pay their tourism fees through the OAB Online App, online banking services and ATMs, in line with the national eGovernment strategy.

Finally, the COVID-19 pandemic has further boosted contactless payments, with many leading banks now offering contactless cards to their customers as an alternative to cash. In April 2020, Mastercard increased the contactless payments limit without a PIN from OMR20 ($52.02) to OMR30 ($78.02).

It is early days, but Oman is shaping up to be a great example of how a national focus on digitizing the population and economy can lead to payments innovation. However, in such a crowded market, banks need flexible and agile systems that support speed to market. Modernization of payment solutions to capitalize on the growth of digital payments will be essential.

Trends + Data

Real-Time Payments Volume and Its Share in Overall Non-Paper-Based Transactions, 2015-25f



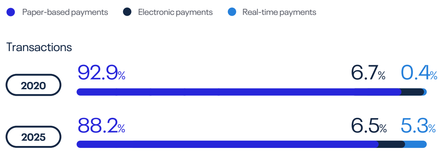
Transactions

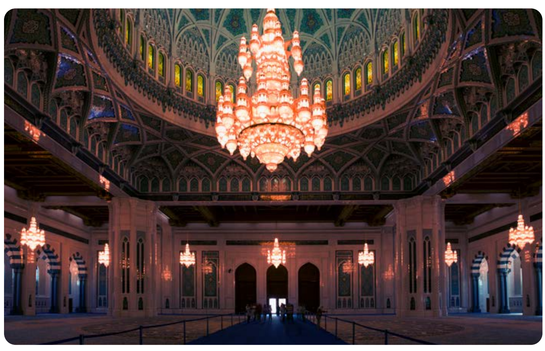
2M (2020)

22.3M (2025f)

61.7% (FS Yr CAGR)

Share of Volumes by Payments Instrument





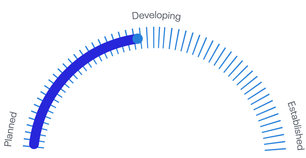
Schemes

Oman's real-time payments system was created to boost financial inclusion in the country. Transactional volume grew 124% year over year and strong growth is expected to continue over the next five years at a CAGR of 61.7%.

The Mobile Payments Clearing & Settlement System (MPCSS, also known as MPClear) is a mobile-based real-time payments system launched by the Central Bank of Oman (CBO) in July 2017. The platform operates 24/7/365 and enables interoperability between various mobile banking/wallet systems operated by banks and PSPs in the country, providing a simple and efficient payments process via mobile phones. The CBO requires all banks and PSPs to participate in the system.

Initially, MPCSS only supported fund transfers and payments using mobile numbers, but in September 2019 the central bank launched an upgraded version of the system with the capacity to support QR code-based payments. The central bank also plans to extend the system for use in eCommerce transactions. Currently, MPCSS supports a wide range of transactions, including P2P, C2B, C2G, B2C, B2B and G2C, although transaction limits vary by payer/recipient type: OMR300 ($780) for B2C transactions and OMR500 ($1,300) for all other types of transactions.

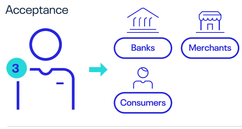
Key Stats



Market Development

Oman's real-time payments system was created to boost financial inclusion in the country. Volumes for transactions grew 124% year over year and strong growth is expected to continue over the next five years.

Acceptance



Total Participants

All Domestic Banks and PSPs

Year of Real-Time Payments Launch

2017

Availability

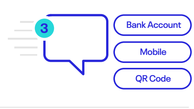
365 24/7

Message Standard

ISO 20022

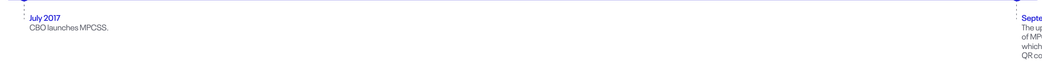
Real-Time Payment Types

Initiation/Authorization Methods



Population Banking Level

History



Saudi Arabia

With its "Vision 2030" plans, The Kingdom of Saudi Arabia (KSA) is planning a vast payments modernization program, including a shift away from cash and toward the evolution of a "digital-first" economy. The scope of this vision has been backed up by capable execution, and the impressive early strides made with cards, contactless and mobile payments augurs well for the country's future success. Furthermore, as a convenient alternative to traditional payment methods, real-time payments are likely to be an attractive option for KSA consumers.

Enabling convenience and transparency is already a priority for KSA's real-time payments infrastructure, and the inclusion of mobile phone initiation should help further lower the barriers to usage. A pilot was launched at the end of 2020 and, following the successful completion of trials, the digital transactions scheme will be activated with participating banks in February 2021. The new system is expected to contribute to the country's economic development by enabling speed and transparency in both corporate and retail payments.

ACI's Take

KSA enjoys one of the highest rates of internet and mobile penetration in the region. With the government's concerted efforts, the country is adopting online payments at pace and KSA's payment players need similarly ambitious payments modernization roadmaps to keep up. Key drivers here include a new eCommerce law designed to unlock KSA's potential as a major eCommerce hub in the region. The government also plans to augment financial industry development to significantly shift to digital transactions as a part of Vision 2030, with the aim of ensuring that non-cash makes up 70% of all transactions by 2030[1].

Through 2020 and COVID-19, the eCommerce supply chain, logistics and digital payment/fintech environments have experienced a significant and rapid growth. KSA consumers have switched to online shopping in a big way, and digital payment transactions jumped by 75% in 2020. Cash withdrawals from ATMs and other payment modes fell by 30% over the same period[2]. The eCommerce market in KSA is now estimated to be worth about $24 billion by 2026, according to ResearchAndMarkets.com[3]. A Mastercard study suggests that over 77% of KSA customers have spent more online since the onset of the pandemic[4]. Clearly, health concerns are accelerating the processes the government started around moving shoppers away from cash and towards touch-free and digital payment experiences.

The experiences of other markets indicate that as eCommerce develops in KSA, merchants will come to demand support for more and newer payment types from their acquiring partners to offer their customers as much choice as possible. This will have consequences throughout the payments value chain, so banks, processors and acquirers alike should be looking to develop enhanced value propositions now to maintain merchant loyalty.

As a result of government mandates around the use of digital payments in retail, the total number of POS operations in 2020 increased by over 75% to about 2.8 billion compared to 2019[2]. The value of operations amounted to around $94 billion, jumping by about 24% compared to 2019.

Whether consumers remain online or return to brick-and-mortar retailers, these high volumes will remain for the long term as the "new normal" of transformed consumer behavior takes hold and is cemented in place by the government's far-reaching payments strategy. As such, incumbent issuers and large financial institutions that are yet to modernize their retail payment solutions and switches should act fast to replace legacy technology to continue to provide a good experience for consumers and merchants. They should also take the opportunity to consider the cloud to keep pace with these changes, alongside modern scripting-based technology that negates the need for hard code changes.

Trends + Data

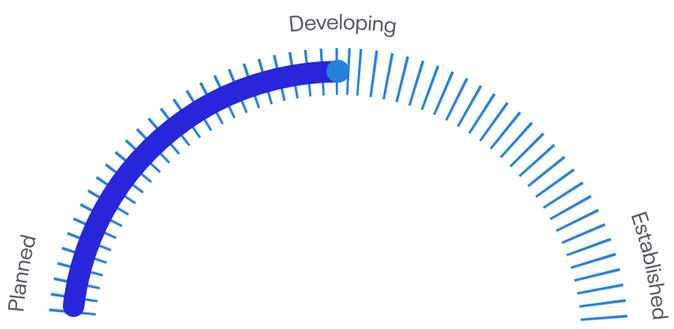
Share of Volumes by Payments Instrument

Schemes

At the time of writing, Saudi Arabia has just announced the launch of its first national real-time payments scheme in February 2021. The scheme's development is the work of a partnership between Saudi Payments and payment solution provider Vocalink (a Mastercard company). Saudi Payments is a fully owned subsidiary of the Saudi Arabian Monetary Authority.

The platform will support immediate interbank transfers and will be available to both retail and corporate customers. Consumers will be able to make P2P transfers through their smartphones without having to supply recipients' bank details.

Key Stats



Mobile Wallet Trends

% of adults who have a mobile wallet and have used it in the past year (2020)

Population Banking Level

Number of debit, credit and charge cards per adult

Index to global average

1 https://bankingblog.accenture.com/instant-payments-changing-the-middle-east-payments-landscape
2 https://www.arabnews.com/node/1788886/business-economy
3 https://www.globenewswire.com/news-release/2020/01/23/1974229/0/en/Saudi-Arabian-E-Commerce-Market-Report-2020-Historic-Forecast-Analysis-Through-2015-2026.html
4 https://www.arabnews.com/node/1777106/corporate-news

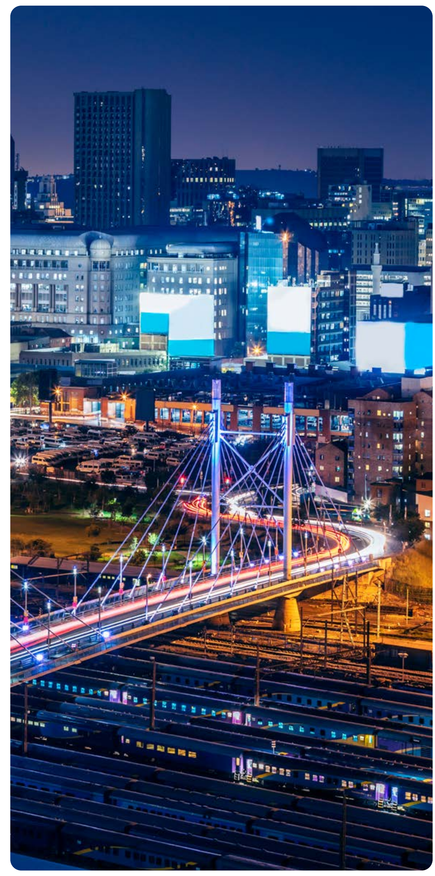
South Africa

Several factors have hindered real-time payments from reaching their full potential in South Africa, including high transaction fees charged by banks and limited customer awareness of the national RTC scheme and its benefits. So, despite being available for nearly 15 years, usage has only really started to take off in the past couple of years, with more aggressive growth forecast over the next five years.

During 2020, prompted in large part by the COVID-19 pandemic, the volume of paper-based payments declined more rapidly than previously forecast. The five-year outlook for paper-based payments in South Africa is also forecast to be less than last year as the consumer shift to digital payments intensifies through to 2025.

Both real-time payments and mobile wallet usage grew significantly year over year in 2020, and this is expected to continue than 2021 through 2025, when real-time is predicted to represent 5.8% of all electronic transactions. The five-year CAGR for real-time transactions overall is estimated at 41.7%.

These strong growth forecasts are backed up by historically high usage of paper-based payments and low ownership of payment cards—the combination of which adds up to a market that is primed for the convenient digital alternative offered by real-time payments.



ACI's Take

South Africa has been working toward continuous payments modernization for some time, as outlined by the South African Reserve Bank's (SARB's) Vision 25. There are more than 80M bank cards in circulation, augmented by about 17M South African Social Security Agency (SASSA) cards.

Digitalization of South Africa's payments segment, like other industries, has been accelerated by COVID-19 as consumers increasingly adopt digital, cashless and contactless payment methods for safety and convenience. Annual consumer spend in the retail industry has grown 600% from R2B 15 years ago to R14B in 2020, and about 68% of South Africans are now shopping online.

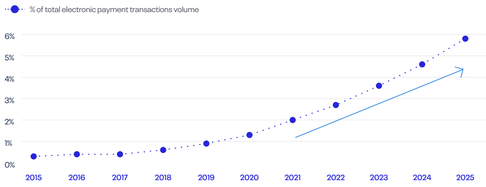
However, cash is still increasingly used in informal markets, where merchants avoid accepting electronic payments. Their reasons include perceived high costs of accepting mobile and digital payments, a lack of awareness about available solutions and their benefits, and the absence of formal banking facilities. The relatively high share of consumers (45%[1]) who receive their salary in cash compounds these challenges.

Without action to rein in the high fees currently inhibiting usage—at least for consumers—it will be difficult to capitalize on any latent opportunities to expand real-time payments adoption. RTC and any other new entrants to the market would also benefit strongly from increased consumer awareness and education. As more consumers adopt the method, growth within the payments ecosystem—particularly through the addition of billers and expansion of merchants—could make real-time one of the most used payment instruments in South Africa. Increased focus on targeting South Africa's unbanked population may also yield results in terms of increasing the proliferation of digital payments in the country.

The highest value opportunity in South Africa sits in capturing share from paper payments at the point of commerce between consumers and merchants. Solutions that support innovative digital payment propositions for both the consumer and the merchant are key. Small merchants will look to acquirers that can offer added value, such as automated reconciliation of their various payment types, as well as fast settlement cycles to support cash flow in small businesses under economic stress from the ongoing effects of the pandemic.

Trends + Data

Real-Time Payments Volume and Its Share in Overall Non-Paper-Based Transactions, 2015-25f



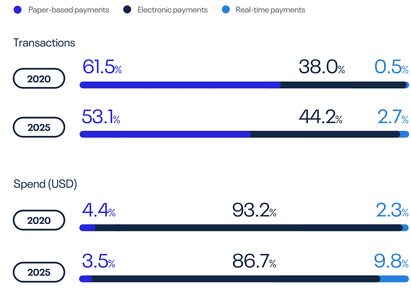
Transactions

71M (2020)

404M (2025f)

41.7% (5 Yr CAGR)

Share of Volumes by Payments Instrument



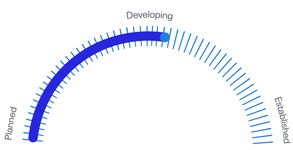
Schemes

South Africa's real-time payments, Real-Time Clearing (RTC), is an interbank system founded by Absa and Capitec in 2006, with Bankserv Africa as its service operator. It enables users to make credit transfers instantly and in real time, with payments credited to the beneficiary's account within 60 seconds.

RTC supports P2P, C2B, B2C and B2B payments, and is offered to both retail and corporate customers. Payments can be made online, via mobile and at bank branches. The system is offered by the majority of clearing banks and operates 24/7/365. There is a transaction limit of up to ZAR 5M ($347,577) per transaction during regular banking hours, but this drops to ZAR250,000 ($17,379) during non-banking hours, including weekends and public holidays.

Despite its 15-year presence in South Africa, the RTC network has recently experienced a surge in transaction volumes, up 44% year over year, with growth expected to continue over the next five years.

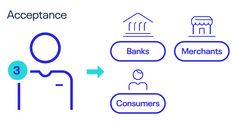
Key Stats



Market Development

Despite being in place for nearly 15 years, the RTC network has experienced continuing volume growth, up 44% year over year, and should see further acceleration over the next five years.

Acceptance



Total Participants

Majority of Clearing Banks

Year of Real-Time Payments Launch

2017

Availability

365 24/7

Message Standard

ISO 20022

Real-Time Payment Types

Initiation/Authorization Methods

Mobile Wallet Trends

45%

% of adults who have a mobile wallet and have used it in the past year (2020)

Payments Fraud Rate

Index to global average **151**

Population who reported being a victim of fraud in the last 4 years

Top 3 Payment Fraud Types

% of fraud victims	Trend
15.8% Card details stolen online	↑
15.8% Confidence trick	↑
15.0% Other	↓

Population Banking Level

1.37

Number of debit, credit and charge cards per adult

55

Index to global average

History

1 https://www2.deloitte.com/content/dam/Deloitte/za/Documents/risk/za-The-future-of-payments-in-South-Africa%20.pdf

United Arab Emirates

New Country

Though IPI is a new scheme, real-time payments have strong potential for considerable growth in the coming years due to the current heavy dependence on paper-based payments, moderate payment card reliance and strong adoption of mobile wallets. Indeed, the scheme is anticipated to surpass a 5% share of all digital payment transactions in just its fifth year (2024).

Growth in 2020 was more than 220% year over year, with a future five-year CAGR of 63.1% currently forecast. As in many other nations, COVID-19 has accelerated the transition from cash to digital payment methods in UAE, with surging eCommerce volumes a key contributor to this swing.

A number of companies, including Visa[1], are developing roadmaps to assist in the country's digital payments transformation. Objectives include increasing brick-and-mortar acceptance, accelerating the shift to eCommerce, collaborating with banks and merchants, delivering personalized solutions and educating end users about the benefits of real-time payments.

ACI's Take

An interesting dichotomy exists in the UAE's digital banking and payments landscape. UAE banks and government institutes have been playing a catalytic role in transforming the payments landscape in the region, largely with a revamp of the e-Dirham, the launch of Emirates Digital Wallet—which owns and operates the klip platform—and augmentation of the fintech ecosystem. Yet the proportion of cash in use in the UAE is still considerable. About 32% of the employed population (1.7 million individuals) are still unbanked, posing a major challenge in moving from cash to digital payment channels for transactions.

Nevertheless, the country's payment players are in an enviable position: the market exhibits all the key hallmarks for strong but untapped real-time demand, and it has a government that's in a hurry to accelerate change in that direction.

For example, Central Bank of the UAE has launched the National Payments Strategy to build safer, more cost-effective and more efficient payment systems across local and global transactions. The projection is to have five or six member banks participating in a live pilot, providing real-time payment services to the public, such as micro-payments, request to pay and other account-based payments. In 2020, the Abu Dhabi Digital Authority (ADDA) launched its digital payments platform, Abu Dhabi Pay, through its TAMM Government Services ecosystem, to allow digital payments for government services across various channels. And the recently-launched Unified Payments Network (UPN) enables all payment service providers and unbanked/under-banked merchants to conduct cashless transactions. Since over 99% of businesses in the UAE are micro-SMEs, UPN and other concerted efforts should accelerate financial inclusion.

The government's UAE Vision 2021 identifies digital commerce and cashless payments as a top priority. The Dubai government recently launched the Dubai Cashless Framework Report to enable all transactions in the Emirates through cashless platforms.

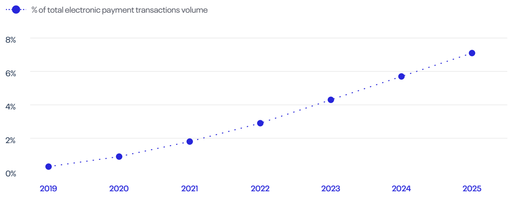
For easier local and cross-border payments, banks have made significant investments in streamlined processes, such as SWIFT gpi. First Abu Dhabi Bank (FAB) collaborated with Visa to roll out digital payments for business and consumers, while Mastercard has collaborated with RAK Bank, Mashreq Bank and Emirates NBD to provide digital wallets to UAE cardholders.

Fintechs are also playing a pivotal role. Amazon recently launched Amazon Payment Services to allow businesses to accept online payments, offer installments to customers and monitor payments performance in real time. UAE's Triple mobile wallet offers online and in-store payment services, including retail payments, salaries, remittances, airtime top-ups, mGovernment and bill payments. Monami Tech is offering digital payment solutions in collaboration with financial institutions and telco companies.

For banks and payment players operating in such a diverse and fast-paced environment, the key to success is implementing payment systems that drive down the total cost of ownership and shorten the time to revenue across all services. Flexible, agile payment hubs that can support real-time, cards, mobile, digital and ISO 20022 are essential to capturing market share as the market expands.

Trends + Data

Real-Time Payments Volume and Its Share in Overall Non-Paper-Based Transactions, 2019-25f



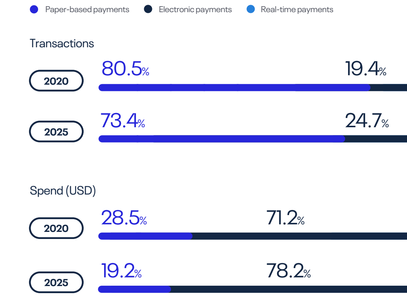
Transactions

6.1M (2020)

70.2M (2025f)

63.1% (5 Yr CAGR)

Share of Volumes by Payments Instrument



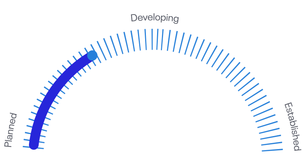
Schemes

The United Arab Emirates introduced real-time payments in mid-2019 and has seen growth of 221% year over year. Although still in its infancy, the scheme has strong potential for future growth, with a forecast future five-year CAGR of 63.1%.

Immediate Payment Instructions (IPI) is a real-time payments system launched by the Central Bank of the UAE. It enables instant transfers between bank accounts 24/7/365. The system was built on the existing UAE Funds Transfer System (UAEFTS) platform.

The service only supports transfers between United Arab Emirates dirham-denominated accounts held in the UAE, and currently enables P2P, C2B and B2B transactions via internet and mobile banking channels. IPI settles funds in near-real time, with recipient banks required to credit amounts to their customers no more than 60 seconds after a payment is received. A maximum of AED10,000 ($2,723) per transaction is allowed. As of October 2020, there were over 70 financial institutions participating in the system.

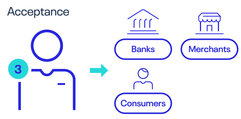
Key Stats



Market Development

The UAE launched real-time payments in mid-2019 and has seen growth of 221% year over year. Though still in its infancy, the scheme has strong potential for future growth.

Acceptance



Total Participants

70

Year of Real-Time Payments Launch

2019

Availability

365 / 24/7

Message Standard

ISO 20022

Real-Time Payment Types

Initiation/Authorization Methods

Mobile Wallet Trends

63%

% of adults who have a mobile wallet and have used it in the past year (2020)

Payments Fraud Rate

24.1%

Index to global average **155**

Population who reported being a victim of fraud in the last 4 years

Top 3 Payment Fraud Types

% of fraud victims	Trend
17.1% Confidence trick	→
15.5% Card details stolen online	↓
14.7% Card lost or stolen	↑

Population Banking Level

2.15

Number of debit, credit and charge cards per adult

87

Index to global average

History

June 2019
IPI is launched by the Central Bank of the UAE.

December 2019
1.9 million transactions worth AED4.7B ($1.3B) are made via IPI since its inception.

1 https://km.visamiddleeast.com/en_KM/visa-everywhere/blog/bdp/2020/05/05/cashless-in-the-1588653132303.html

Pacific

Regional Spotlight
Payments Fraud Viewpoint
Australia
New Zealand

Regional Spotlight

Major payment transformations are no longer decades in the making

Rob Willis, Head of Pacific Commercial, ACI Worldwide

2020 was a story of extreme acceleration for payment trends and modernization roadmaps in Australia and New Zealand.

The main driving force here has been, of course, the global COVID-19 pandemic. Long-term trends away from cash and towards digital payments ramped up, including Australian consumers moving to "Tap & Go" payments at the urging of their government. And both markets saw the same rapid pivots by merchants and consumers to online shopping as experienced in other markets with similarly well-established infrastructures.

The consequences of this period for both markets' real-time payment scenes are sure to be far reaching, though each country is at very different stages of development.

New Zealand's real-time payment explorations have been stop-start for several years, but when the pandemic hit, these efforts were in fact ramping up to keep pace with global developments. The way in which 2020 revealed the convenience and economic security advantages of real-time payments added further impetus to this work.

The size of the market means regulators and market players have had to be creative with their infrastructure strategy. They've sensibly taken the opportunity to consider the challenge in a decentralized way, and look to be constructing a point-to-point network between banks using open banking-like APIs.

In Australia, the shift to real-time payments has been well under way for some years now, and its maturing market and tech-friendly population drove a more than doubling of real-time's share of electronic payments between 2019 and 2020.

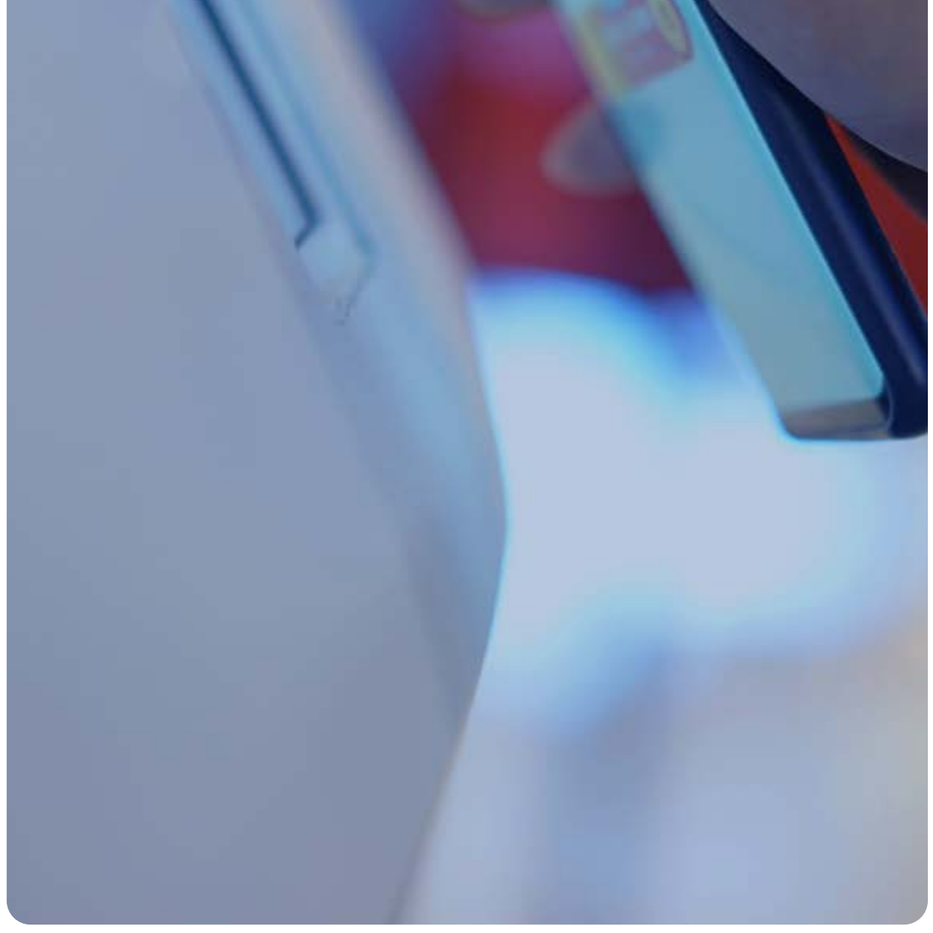
Given the speed with which cash is declining and businesses are moving online, it seems clear that future developments in the Australian market are going to focus on expanding real-time to high-value payments and additional corporate use cases. Regulators also expect the future to lie in real-time payments and are making moves to guarantee reliability and performance.

Ultimately, these conditions are translating into various payments modernization imperatives for players in each of the Pacific markets covered. For example, acquiring and issuing is fast becoming a highly competitive space. Here, differentiation depends on taking the usual mix of reliability and speed, and combining it with support for as many payment and initiation methods as possible—all wrapped up in extremely simple and intuitive user experiences.

These are in fact the consistent ingredients for real-time success that all financial institutions must contend with. Whether they're a bank or a processor, a fintech or an issuer, if their technology and infrastructure roadmaps don't feature solutions for delivering performance and value at scale, then they can't be considered fit for purpose based on the market's current direction. And that's before we even mention that financial institutions must continue to manage and maintain existing infrastructure and solutions for traditional payment methods, which will endure for years to come.

For this reason, cloud deployments continue to move up the agenda, and we expect organizations large and small to accelerate their plans in this direction after what has been—for some, at least—an over-extended period of due diligence. For larger banks, the cloud's appeal lies in moving to a more modern and agile infrastructure base that is also more attractive to technical talent. Smaller players are keen to remain lean and cost-efficient by switching their infrastructure costs to an operational expenditure model rather than a capital expenditure one.

This reflects another fact of life in Australia's and New Zealand's payments, also seen in other markets around the world: major payment transformations are no longer decades in the making. In a real-time payments world, infrastructure and services are in a near-constant state of change. This in turn means that financial institutions also need to prepare themselves to evolve more quickly and more often than they have ever needed to in the past.



Real-time collaboration on data sharing offers potential for major disruption of the fraud landscape

Giselle Lindley, Principal Fraud Consultant, ACI Worldwide

Australia is further along the real-time payments journey than New Zealand, but the accelerated shift for genuine payments into the digital space during the COVID-19 pandemic has resulted in both markets sharing similar fraud-related concerns.

Foremost among these is adjusting to the pressure of making real-time decisions on what to allow through and what to challenge to maximize protection while minimizing friction for genuine customers. Measures to reduce risk must coexist with the "Uber-ization" of payments, where the act of paying is increasingly embedded within—and therefore merely incidental to—the overall experience or service.

Protecting those same customers—and being proactive—is also of critical importance in the eyes of regulators, and those financial institutions that do it best have a competitive edge. This is important because fraud mostly shifted to the point of least resistance: the customer. In the wake of COVID-19, the socially-distanced lives that many now lead are fertile ground for fraudsters.

The more data financial institutions have, the better they can perform in this respect—and even more so if that data can drive collaboration without compromising security or compliance. In Australia and New Zealand, the long-standing tradition of collaboration is a real benefit and the region is on the verge of exciting developments here. For example, the prospect of combining machine learning—to do the heavy lifting of data analysis, detection optimization—and network intelligence—to enable real-time sharing of information between financial institutions—is very promising. Only sharing the data signals or red flags for risk, rather than any sensitive data that forms part of a risk score, and then enabling organizations to pick and choose the features that match their appetite for risk, is truly transformational versus the "one size fits most" approach offered by legacy consortium approaches.

Financial institutions have never had more access to game-changer insights. And this is a game-changer because in customer protection, availability of new data features is essential in defeating the fraudsters, and rich, real-time collaboration through shared network intelligence will enable working with more data signals than ever before.

Australia

Both real-time payment volumes and mobile wallet usage are growing significantly in Australia (up over 130% and 7% year over year, respectively), most likely due to the COVID-19 pandemic. As of October 2020, NPP reported that 45% of customers use the scheme at least once a week to send/receive payments.

With figures like that, it is unsurprising then that 2020 saw the highest growth rate for real-time payment volumes in recent years. However, although aggressive growth is anticipated to continue through 2023, it is expected to moderate from 2023 to 2025.

One factor with the potential to boost that growth is the planned launch of a Mandated Payments Service (MPS) capability, which will enable customers to authorize third parties to initiate payments from their bank accounts using the New Payments Platform (NPP). The service will allow for payments to be scheduled and/or recurring, such as for subscription services and a variety of merchant use cases (in-store, eCommerce and in-app). It is reasonable to expect that this injection of new use cases will do more than enhance the appeal of NPP—it will also expand the frames of reference for consumer expectations around what's possible with digital payment services.

ACI's Take

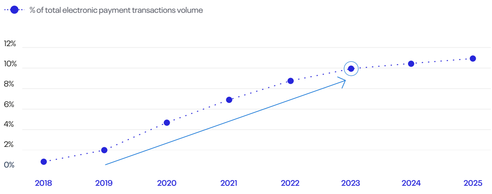
The COVID-19 pandemic has created a positive outlook for Australia's payments business. The adoption of digital payments has increased, and transaction volumes have risen considerably. This has necessitated acquirers accepting multiple channels of payments. This in turn will result in a decline in traditional debit and interchange sources of revenue, and a reduction in margins overall; forward-thinking acquirers should respond by modernizing their solutions to expand into higher-value services.

With digital payments on the rise and cash usage decreasing, businesses are experiencing renewed pressure to push for real-time payments in order to maximize their working capital and cash flow positions. In response, fintechs from inside and outside Australia are working to exploit this demand by leveraging alternate payment methods to perform real-time settlement. And it is expected businesses may soon explore the opportunity to use the country's domestic real-time rails to handle merchant payments and settlements. As this can only further increase NPP adoption across the country, all players in the payments market should be planning ways to differentiate their digital payment offerings with overlay services and additional functionality to win new customers and deepen relationships with existing ones.

Australia is also under the same global pressure to modernize high-value and cross-border payments with the ISO 20022 data standard. The SWIFT ISO 20022 migration program, and wider acceptance of NPP (which operates on ISO 20022), has spurred the growth of payments modernization across the financial services industry. Institutions are keen to leverage this convergence of standards to deliver benefits for both consumer and corporate customers. There is an increasing expectation that ISO 20022 will act as a forcing function for the consolidation of different types of payments and related systems. Should that be the case, financial institutions must be ready to translate these standards into added-value benefits: regulatory transparency, market efficiency and data integrity, and improved cross-border settlement efficiency in line with global standards.

Trends + Data

Real-Time Payments Volume and Its Share in Overall Non-Paper-Based Transactions, 2018-25f



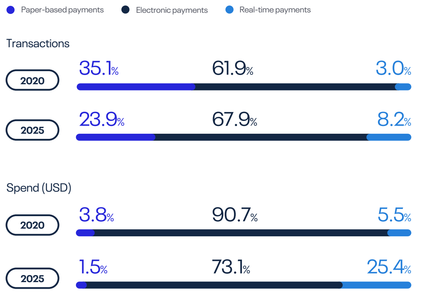
Transactions

639M (2020)

2.1B (2025f)

27.3% (FS Yr CAGR)

Share of Volumes by Payments Instrument



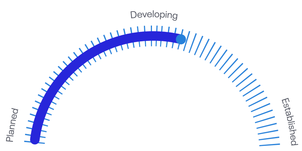
Schemes

While Australia's platform has only been in place since 2018, widespread consumer adoption has seen pronounced year-over-year growth of 132.4%, as banks and the government have moved to create a less cash-reliant country.

At present, there is one active real-time payments platform in Australia. New Payments Platform (NPP) was launched by the Reserve Bank of Australia and developed by SWIFT along with 13 members of the financial services industry. Today, over 100 banks, credit unions, building societies and fintechs use the platform to offer real-time payments and allow customers to link personal information to bank accounts to transfer funds using a system called PayID. As of November 2020, nearly 5.4 million PayIDs have been registered by customers, reflecting a 36% increase since the start of 2020. Currently, there are three initiation methods (bank account, mobile number and email), with a fourth (QR codes) planned to go live soon. Additional functionality is planned to roll out in 2021, including support for payroll, tax, superannuation and eInvoicing payments, for which NPP has published standards. International/cross-border, government and bulk payments are also on NPP's roadmap for 2021.

Despite its relative real-time payments infancy, Australia has already taken big steps toward continuous improvement in user experience. Osko is a digital overlay service that uses NPP to offer immediate P2P payments via the user's regular internet or mobile banking service, inputting 280-character messages with their payments (including emojis) as they transfer funds. As of November 2020, 70 financial institutions offer Osko to their customers. Innovations like these are expected to propel Australia further, with a healthy 26.9% five-year CAGR through 2025.

Key Stats



Market Development

Though only in place since 2018, trends are already strong with growth of 132.4% year over year and adoption across banks, merchants and billers. Australia's real-time payments usage and adoptions should grow tremendously in the coming years.

Acceptance

Total Participants

>100

Year of Real-Time Payments Launch

2018

Availability

365 24/7

Message Standard

ISO 20022

Real-Time Payment Types

Initiation/Authorization Methods

*Coming soon

Mobile Wallet Trends

30

% of adults who have a mobile wallet and have used it in the past year (2020)

Payments Fraud Rate

16%

Index to global average **103**

Population who report being a victim of fraud in the last 4 years

Top 3 Payment Fraud Types

% of fraud victims	Trend
23.8% Card details stolen online	↓
19.1% Card details stolen/skimmed in person	↓
14.3% Bank account hacked	↑

Population Banking Level

3.23

Number of debit, credit and charge cards per adult

131

Index to global average

History

November 2017
NPP goes live for employees of participating financial institutions.

February 2018
Commercial rollout of NPP and Osko payments.

June 2018
NPP receives a merit certificate for Infrastructure & Platforms Innovation of the Year at the 2019 New South Wales iAwards.

May 2019
A second version of NPP's API framework is introduced with new features for cancelling and returning payments.

June 2019
Launch of the NPP QR code standard.

December 2019
A third version of NPP's API framework is released with additional features for batch payments.

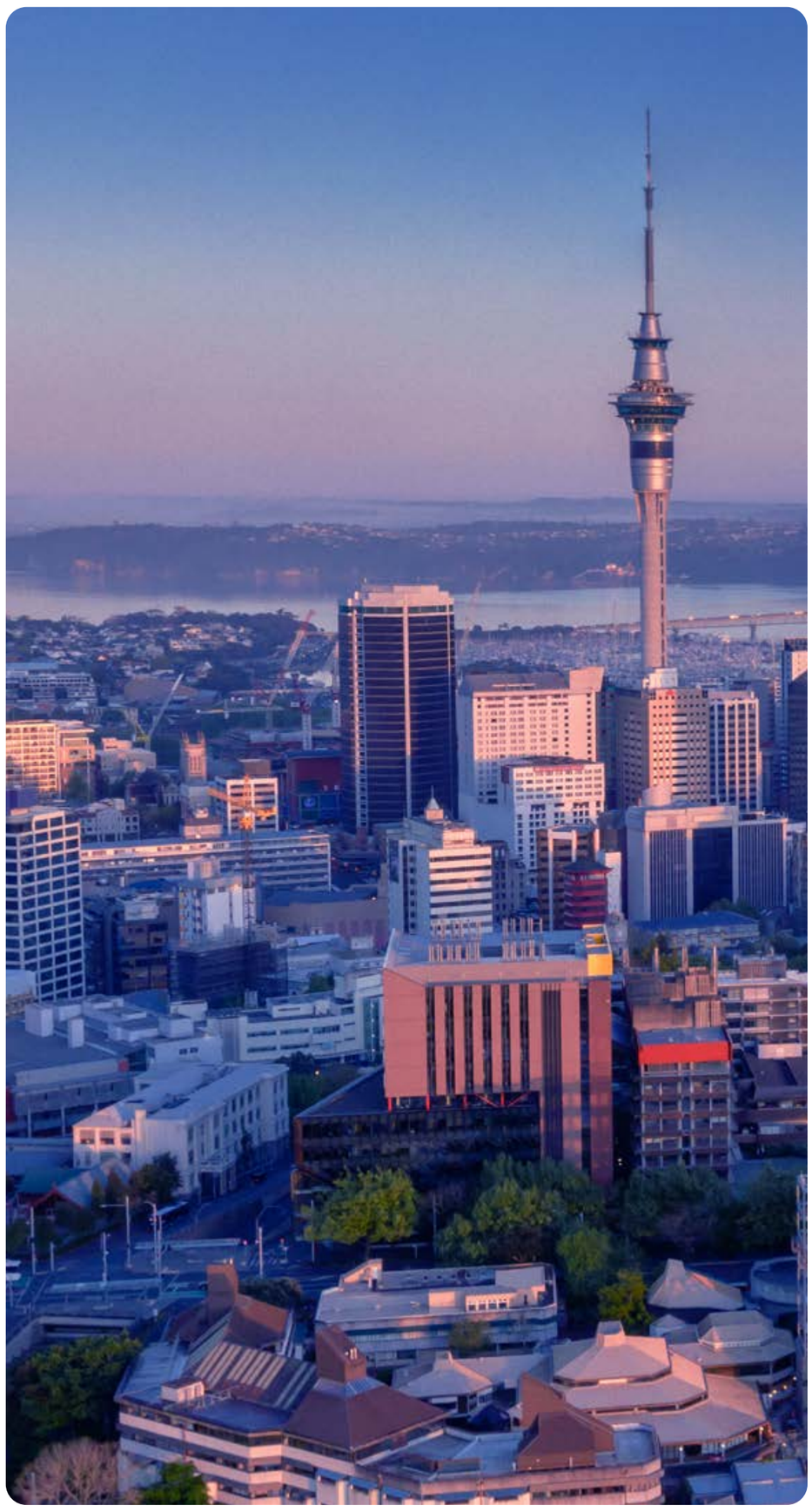
July 2020
Five million PayIDs registered.

New Zealand

Progress has been slow since last year's report and the payments landscape of New Zealand continues to be dominated by two payment types with combined volumes of over 80%: cash and cards.

Though this appears to leave little room for alternatives, it may actually accelerate the adoption of real-time payments, provided the country's long-promised scheme offers an advantageous user experience with broad acceptance throughout the ecosystem. While that is far from a given (see ACI's Take), the country's strong response to COVID-19 may begin to tilt consumers away from cash.

And yet, alternative payment methods such as mobile wallets have seen limited uptake; only 23% of adults used a mobile wallet in 2020. With a real-time payments launch date predicted to be agreed upon this year, New Zealand presents an interesting example of a market focused on evolving to a data-rich digital ecosystem, rather than solely implementing a real-time rail. The approach employed by Payments NZ is highly focused on the powerful combination of real-time and open banking.



ACI's Take

In theory, SBI provides the foundations for genuine real-time payments. But in the past, the business case has broken down when weighing the user experience uplift of reducing clearance times further (they're currently at around two hours) against the costs of implementing a real-time program in a country the size of New Zealand.

That looks set to change in the next 12–24 months, with real-time back on the agenda amid concerns that the country cannot be seen to be slipping behind the rest of the world. New avenues are being explored to take the costs out of such an implementation, such as with open banking APIs as opposed to being exclusively centrally driven.

However, there is currently no particular use case that stands out as a lighthouse scenario for real-time payments to aim at. Unlike other countries, bill payments drop into the SBI stream, so it will be hard to make specific in-roads there. And while some merchants have made noises about the benefits of real-time payments for working capital and cash flow benefits, and many consumers would love to have their salaries in their accounts the moment they're paid, neither represents a compelling use case for the ecosystem's players right now.

As other digital experiences become more prevalent, users will likely begin to question the relative slowness of the hour-long clearance times of SBI-based payments. And the proposed withdrawal of cheque services by big banks will provide some impetus for more digital adoption, if not real-time itself.

For those in a hurry to open things up, the most likely candidate for accelerating change is to introduce real-time payments into retail scenarios.

But for most, their state of readiness to make this happen is likely to be complicated—and questionable. Back-end infrastructure is relatively well prepared for this, having been heavily digital for decades, but that is not the case for the front end and joining the dots between identifying the merchant and consumer at the point of sale. If this can be addressed, merchants will be motivated to push hard for these services in pursuit of lower fees compared to contactless. And while acquirers will need to adapt their business models to account for this, they have been expecting a reduction in revenue earned through these fees thanks to other external factors, such as regulatory intervention seen in other markets.

Rather than resist or go slow, financial institutions should begin strategizing and testing around what real-time services might look like for them. By moving first and making a fast start, they will maximize their chances of claiming the largest share of the market for the longer term.

Trends + Data

Share of Volumes by Payments Instrument

Paper-based payments Electronic payments

Transactions

2020	44.0%	56.0%
2025	39.0%	61.0%

Spend (USD)

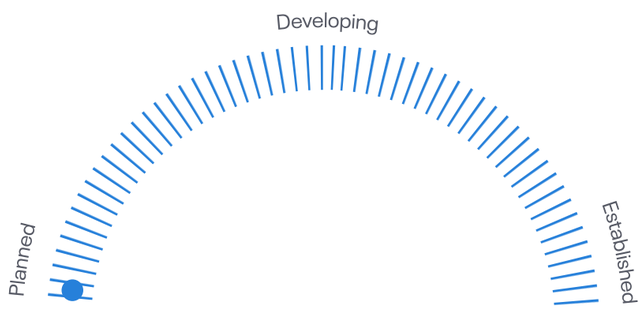
2020	2.0%	98.0%
2025	1.0%	99.0%

Schemes

New Zealand does not currently have a real-time payments system in place. However, the domestic industry body, Payments NZ, launched its "Speeding Up Workstream" in 2018 and has been evaluating with participants how best to implement a solution. Though the exact timing for the launch of real-time payments is unknown, the country will prove an interesting market given its moderate levels of paper-based payment volumes and its heavy reliance on cards.

Settlement Before Interchange's (SBI) transition to a 365 operating model has advanced since last year and is expected to be completed sometime around November 2021. But its hours of operation are not expected to cover 24 hours per day.

Key Stats



Mobile Wallet Trends

23

% of adults who have a mobile wallet and have used it in the past year (2020)

Population Banking Level

4.42

Number of debit, credit and charge cards per adult

179

Index to global average

Fully Banked
Progressing
Underbanked

Latin America

Regional Spotlight

Payment players on alert as reinvigorated regulators push digitization faster and further

Oscar Munoz, Head of Sales—Latin America, ACI Worldwide

Between the COVID-19 pandemic, increasingly fast-moving regulatory environments and disruptive new market entrants, payment businesses in Latin America must be prepared for maximum uncertainty. This includes everything from sudden surges in digital payment volumes beyond current projections to completely new lines of business and payment channels that haven't yet been imagined.

The companies that came out on top in 2020 were the ones that had both the ability to scale to meet unexpected demand and the flexibility to quickly and reliably onboard new channels and customers.

To illustrate this, look no further than Argentina, where the entire country suddenly descended on the ATM network to access government-issued pandemic relief funds. The system stood up, as did the digital wallets of the Colombian and Brazilian banks chosen to distribute their respective government's disbursements.

Unfortunately, COVID-19 also revealed significant weaknesses in the region's payments ecosystem. With most societies relying heavily on cash, there's little digital commerce infrastructure outside of the largest businesses and merchants. When forced to close or limit trading, small and medium merchants found it difficult or impossible to pivot to online sales and digital payments in the manner seen elsewhere in the world.

Frustratingly, the real-time rails that could've helped ease these pressures have largely been ready for years. But they've been chronically underutilized in the absence of strong regulatory mandates directing and governing their use. This was perhaps the biggest missed opportunity for payments transformation in 2020.

The signs are good that this will change going forward, however. To their credit, almost every national regulator, government and central infrastructure responded to the crisis by sweeping away bureaucracy to accelerate the launch or expansion of their digital and real-time payments projects. Argentina, Peru, Brazil and Honduras are examples that come to mind, the first three of which are profiled in the following pages.

With the inertia finally broken, every regulator's and central infrastructure' s agenda is now dominated by digitizing the economy further and faster than ever before. There's a renewed focus in the region on transformative applications such as Request to Pay, recurring payments, bill and tax paying, not to mention fintech-friendly open banking regulations. These new features and functions will certainly be accompanied by mandates designed to drive adoption.

Against this backdrop, Latin American financial institutions and payment players must ensure they have a payments modernization strategy that prioritizes flexibility and scalability. To be future-ready in this environment means being able to extend their reach by onboarding either their own new services or those of fintechs, and by quickly getting to market with new schemes and channels. It also means being able to cost-effectively scale with demand in order to protect service levels and margins. The cloud has become increasingly important in this regard, particularly for the region's acquirers as they look to reduce costs and increase margins in the face of greater competition and regulation.

Payments Fraud Viewpoint

Financial institutions are discovering that it pays to be prepared—and predictive—in the fight against fraud

Eduardo Andrade, Principal Fraud Consultant, ACI Worldwide

Everywhere you turn, Latin American regulators and central infrastructures are adding new real-time schemes, functions, features and openness to their payment ecosystems.

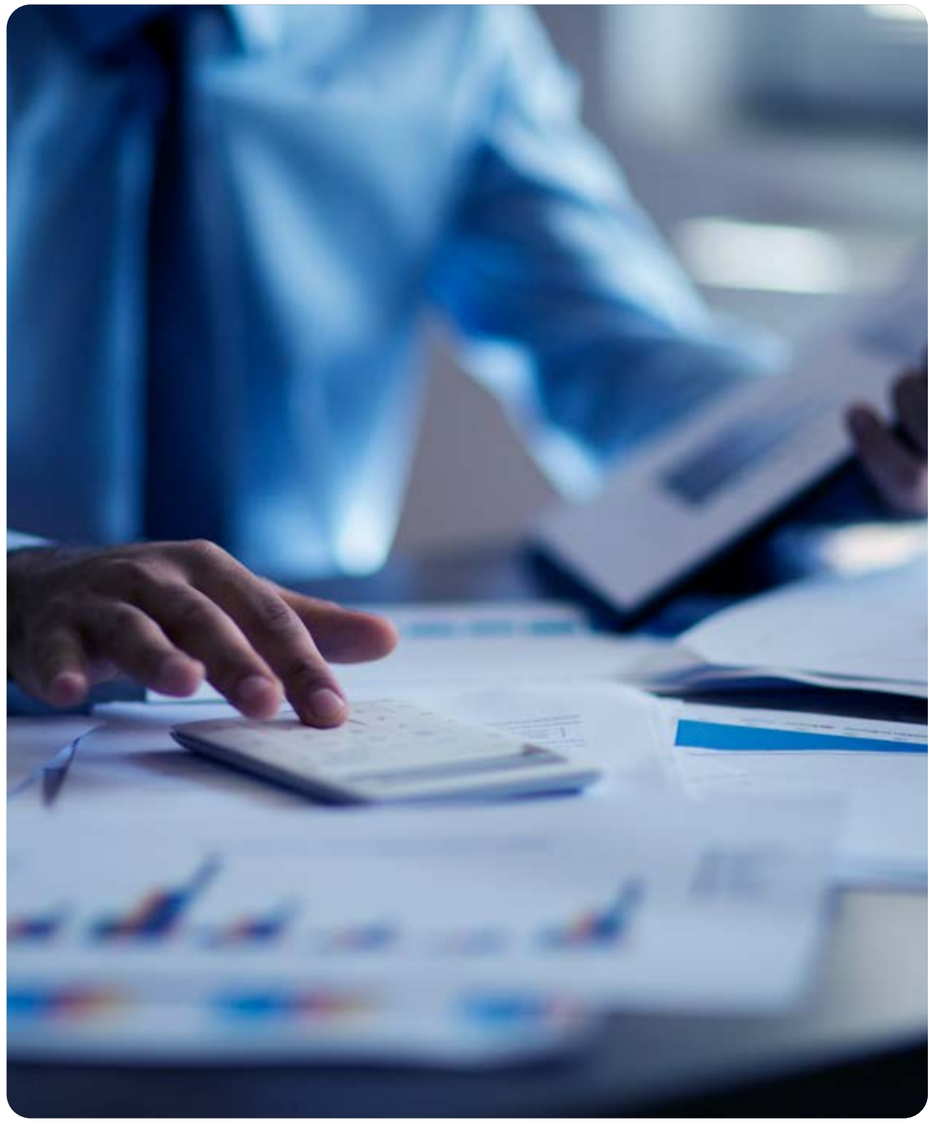
Many financial institutions are having to learn fast how to apply their experiences of fraud with traditional digital transactions—bank transfers and card payments, mostly—to the real-time world where funds move freely and fraud moves fast.

The most important discovery is that with new technologies, new schemes and new collaborations, it pays to be prepared to prevent fraud from day one. The one thing that can be relied upon even during these uncertain times: fraud starts the moment a new payment method, system or feature hits the market.

That doesn't mean creating an extensively documented fraud strategy upfront. It does mean having the right tooling in place to maximize visibility of risk right away. That tooling must also drive flexible and rapid strategy adjustments as new patterns emerge or existing ones evolve. Short reaction times and business independency from vendors and IT are key for success.

The good news is that financial institutions can leverage what they already know. Levels of account takeovers and stolen credentials remain stubbornly high in the region. Industry-standard practices around beneficiary reputation profiling are still among the strongest baseline fraud protections to have and the smartest ways to prioritize resource allocation.

The real challenge, however, is in applying these capabilities at the necessary speed and scale, because the growing diversity of payment types, soaring transaction volumes and their increasing speed means more data to monitor and less time to do it. A payments modernization roadmap that doesn't feature tools for building out, deploying and constantly adapting advanced predictive machine learning models will not be fit for purpose in today's fast-paced, 24/7 fight against fraud.



Argentina

New Country

Despite the data showing high numbers of bank accounts and cards in the market, cash remains the dominant payments medium in Argentina. Indeed, the country is among the region's lowest performers for average number of card transactions per year, per person. Its average of 20 is far behind leaders Uruguay, Chile and Venezuela.

The Central Bank of Argentina's (BCRA) recent implementation of Transferencias 3.0 is intended in large part to address this by adding further functionality to the country's nationally managed real-time payments scheme. This, combined with the planned transition to ISO 20022 by the end of 2021, is expected to accelerate growth in the volume of real-time transactions through to 2025, with a five-year CAGR of 58.9%.

Transferencias 3.0's standout features include[1]:

- **Interoperability: A standardized payments interface with an open architecture enables interoperability between all accounts (bank accounts and electronic wallets)**
- **Instant crediting: Merchants will receive automatic and irrevocable transfers of funds**
- **Lower costs: Hidden costs previously passed on to merchants for cash handling (transport, storage and security) are removed**
- **Competitiveness: Contactless services will become more competitive for retailers. Fees will still be charged by acquirers, but these will be capped at 0.8% of each transaction and transactions below a certain threshold (this is being defined at the time of writing) to incentivize merchant participation**
- **Flexibility: Transferencias 3.0 accepts payment cards, QR codes, national identity documents, payment requests and biometrics (e.g., digital fingerprints)**

ACI's Take

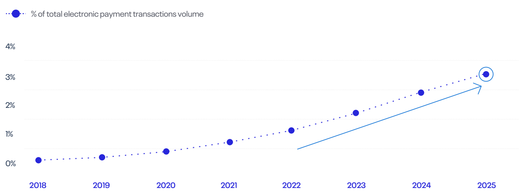
As the BCRA consultation and design process develops, it is becoming clear that the central bank sees merchants accepting real-time payments as a means to achieving its objective of reducing cash usage. This mirrors other markets in the region, such as Brazil. As the roadmap becomes more visible to the players concerned, the incumbent banks are seeking to enforce real-time payments on debit card purchases. Non-bank acquirers, however, are currently resisting this as they are considering how they will evolve their business models in light of new real-time payment regulations. The automatic migration of debit transactions to real-time rails would greatly impact their traditional revenue streams. Therefore, they must take advantage of this timeframe to modernize their solutions to expand into new high-value services that can counterbalance the shift away from traditional debit transaction and interchange fees.

Central infrastructures and networks should continue to seek consultancy from proven experts in real-time payments that can offer insights into the best practices being adopted globally. This knowledge should be leveraged to participate in the central bank's consultation process and to work with BCRA on the final shape of the new system for the benefit of their customers. Trusted and proven technological partners will also be essential to achieving speed to market with real-time payment implementations when the new rails are live.

The anticipated growth in transaction volumes and values reflects the success seen globally from national initiatives to migrate cash to digital by enabling direct merchant participation as a primary use case. Banks, processors, acquirers and PSPs in Argentina should be prepared for the rapid growth of transactions and new services. Competitive differentiation from day one will be essential in this fast-paced market.

Trends + Data

Real-Time Payments Volume and Its Share in Overall Non-Paper-Based Transactions, 2018-25f



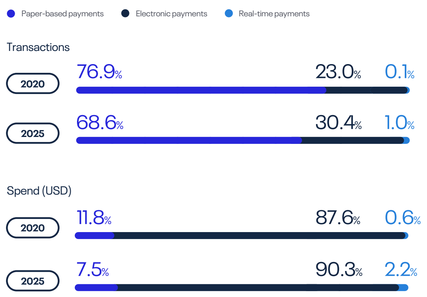
Transactions

118M (2020)

188M (2025f)

58.9% (FS Yr CAGR)

Share of Volumes by Payments Instrument



Schemes

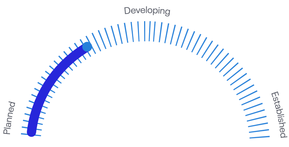
Argentina has two real-time payment schemes in place, but both are still developing and thus currently contribute a low share of transaction volumes. However, with growth of 145% year over year and strong future adoption, real-time payments have a lot of potential.

Argentina's first scheme, Pago Electrónico Inmediato (PEI), launched in 2016 and runs on the mobile payment platforms provided by ATM networks Banelco and Link. The system allows for real-time payments through three methods: mobile POS (mPOS) terminals, payment buttons and electronic wallets. PEI supports P2P and C2B payments, which are transferred and settled instantly.

DEBIN, the second scheme, launched in September 2017 and is an instant direct debit system that allows financial institutions to debit funds from customers' bank accounts to make payments (with prior authorization). It uses the mechanism of immediate transfers between accounts, with the prior request of the receiver and authorization of the payer. DEBIN offers different functionality from PEI, as it supports recurring payments as well as B2B transfers.

Both schemes are supported by all Argentine banks that offer internet or mobile banking services, and both operate 24/7/365. As of October 2020, a national QR code and new standardized payments interface were approved by the government and are anticipated to be implemented in the near future, which could result in the merger of DEBIN and PEI.

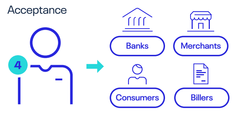
Key Stats



Market Development

Argentina's two schemes are still developing and contribute a low share of transactions. However, with growth of 145% year over year and strong future adoption, real-time payments have a lot of potential.

Acceptance



Total Participants

All Domestic Banks

Year of Real-Time Payments Launch

2016

Availability

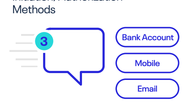
365 24/7

Message Standard

ISO 20022

Real-Time Payment Types

Initiation/Authorization Methods



Mobile Wallet Trends

59%

% of adults who have a mobile wallet and have used it in the past year (2020)

Payments Fraud Rate

15.9%

Index to global average **102**

Population who reported being a victim of fraud in the last 4 years

Top 3 Payment Fraud Types

% of fraud victims	Trend
19.8% Card details stolen online	↑
17.4% Confidence trick	↑
16.3% Identity theft	↑

Population Banking Level

3.77

Number of debit, credit and charge cards per adult

153

Index to global average

History

2016
PEI goes live.

September 2017
DEBIN launches with all banks enabling the service.

July 2019
Recurring payments are made available via DEBIN.

October 2020
National QR code and new standardized payments interface are approved by the government and are to be implemented this year, which could result in the merger of DEBIN and PEI.

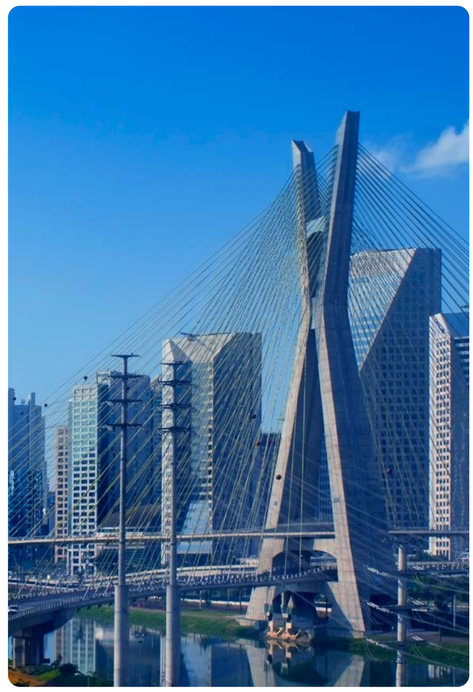
1 http://www.bcra.gob.ar/Noticias/Transferencias-3-0-i.asp

Brazil

Real-time payment volumes in 2020 grew at almost double the 2019 rate, surpassing 1B transactions. This strong growth is expected to continue through 2025, at a five-year CAGR of 25.3%.

The addition of the PIX real-time payments system has substantially enhanced the user experience, from introducing five new ways in which consumers can initiate payments to increasing the number of participants accepting real-time payments to more than 700. Both are significant factors in driving growth at a more rapid pace than seen in 2019. This galvanizing effect is expected to drive further and faster growth in the coming years, reflected in the relatively high CAGR noted earlier.

Reduced spending due to the COVID-19 pandemic has impacted the Brazilian economy more than most other countries. However, in 2020 paper-based payments declined at a faster rate than forecast compared to digital payments, while real-time payments grew. The pandemic is also impacting future forecasts to the extent that over the next five years, we anticipate an accelerated transition to digital payments. This is reflected in a decline of 36B paper payments compared to earlier forecasts.



ACI's Take

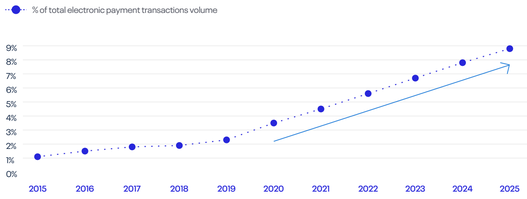
2020 was an exciting year for payments in Brazil. Responding to new BCB regulations for real-time payments[1], the acquiring industry is growing even faster than predicted, and many new players (including digital banks and fintechs) have entered this vibrant market. It is likely that these new players, some of which were traditional processors, see entering the acquiring business as a way to maintain growth and diversify revenues. In addition to those expanding into the segment, many sub-acquirers also plan to secure licenses and become acquirers in their own right. The marketplace is becoming more crowded, and acquirers will need to rapidly launch value-added services if they want to retain their merchant customers.

All acquirers will need to connect to PIX as a new payment method to offer to their merchants. But the autonomy to innovate will be essential to their ability to design and launch these revenue-generating services. Acquirers should look to run their own platforms to avoid being locked out of merchant segments by providers or delayed in developing new services by slow managed service providers.

As acquirers take stock of this new landscape, they may regard issuing as a potential new line of business to replace any revenue losses arising from increased competition. Incumbent issuers and large institutions yet to modernize their retail payment solutions and switches need to act fast to replace legacy technology—mainframes, in some cases—if they want to retain customers in their new payments ecosystem. Cloud-based deployments may support the need for speed alongside modern, scripting-based technologies that negate the need for hard-code changes.

Trends + Data

Real-Time Payments Volume and Its Share in Overall Non-Paper-Based Transactions, 2015-25f



Transactions

1.33B (2020)

4.1B (2025f)

25.3% (FS Yr CAGR)

Share of Volumes by Payments Instrument

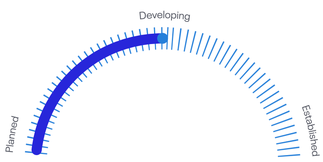
Schemes

With growth of 58% year over year and two schemes in place, the Brazilian real-time payments market is already experiencing tremendous expansion. This is anticipated to continue over the next five years.

Brazil's oldest scheme, **Sistema de Transferência de Fundos (SITRAF)**, is a "real-time-like" system that was launched in December 2002. SITRAF supports P2P and C2B payments, and payments can only be made via internet or mobile banking. From an operational standpoint, transactions are only processed during Brazilian banking hours (6:30 AM - 5:00 PM), with a targeted processing speed of less than one minute. In fact, 90% of payments are processed in 90 seconds.

In 2018, Banco Central do Brasil (BCB) announced the introduction of an upgraded ISO 20022 real-time payments service, named **PIX**, that went live on November 16, 2020. PIX offers 24/7/365 availability, with real-time clearing and settlement, and supports a wider range of payments: P2P, C2B, B2B, C2G, G2C, B2G and G2B. Users can send transfers through a variety of channels including mobile banking, internet banking, bank branches and ATM, by using a recipient's account number, PIX key (such as mobile number, social security number, tax ID or email) or by scanning a QR code.

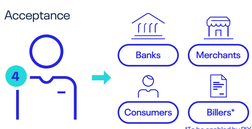
Key Stats



Market Development

With growth of 58% year over year, one scheme in place and a more advanced network set to launch by 2021, the Brazilian real-time payments market will see tremendous future expansion.

Acceptance



Total Participants

>700

Year of Real-Time Payments Launch

2002

Availability

365 24/7

Message Standard

ISO 20022

Real-Time Payment Types

Initiation/ Authorization Methods

- Bank Account
- Mobile
- Email
- QR Code
- Social Security #
- Tax ID

Mobile Wallet Trends

% of adults who have a mobile wallet and have used it in the past year (2020)

Payments Fraud Rate

Index to global average **113**

Population who reported being a victim of fraud in the last 4 years

Top 3 Payment Fraud Types

% of fraud victims	Trend
27.3% Card details stolen online	↑
14.2% Card details stolen/skimmed in person	↓
12.5% Cards lost or stolen	↑

Population Banking Level

Number of debit, credit and charge cards per adult

Index to global average

History

December 2002
SITRAF goes live.

December 2018
BCB announces guidelines for the new real-time payments service.

February 2020
PIX launches a pilot for initial trial and testing.

November 2020
Commercial launch of PIX for public use.

1 https://www.bcb.gov.br/en/financialstability/instantpayments

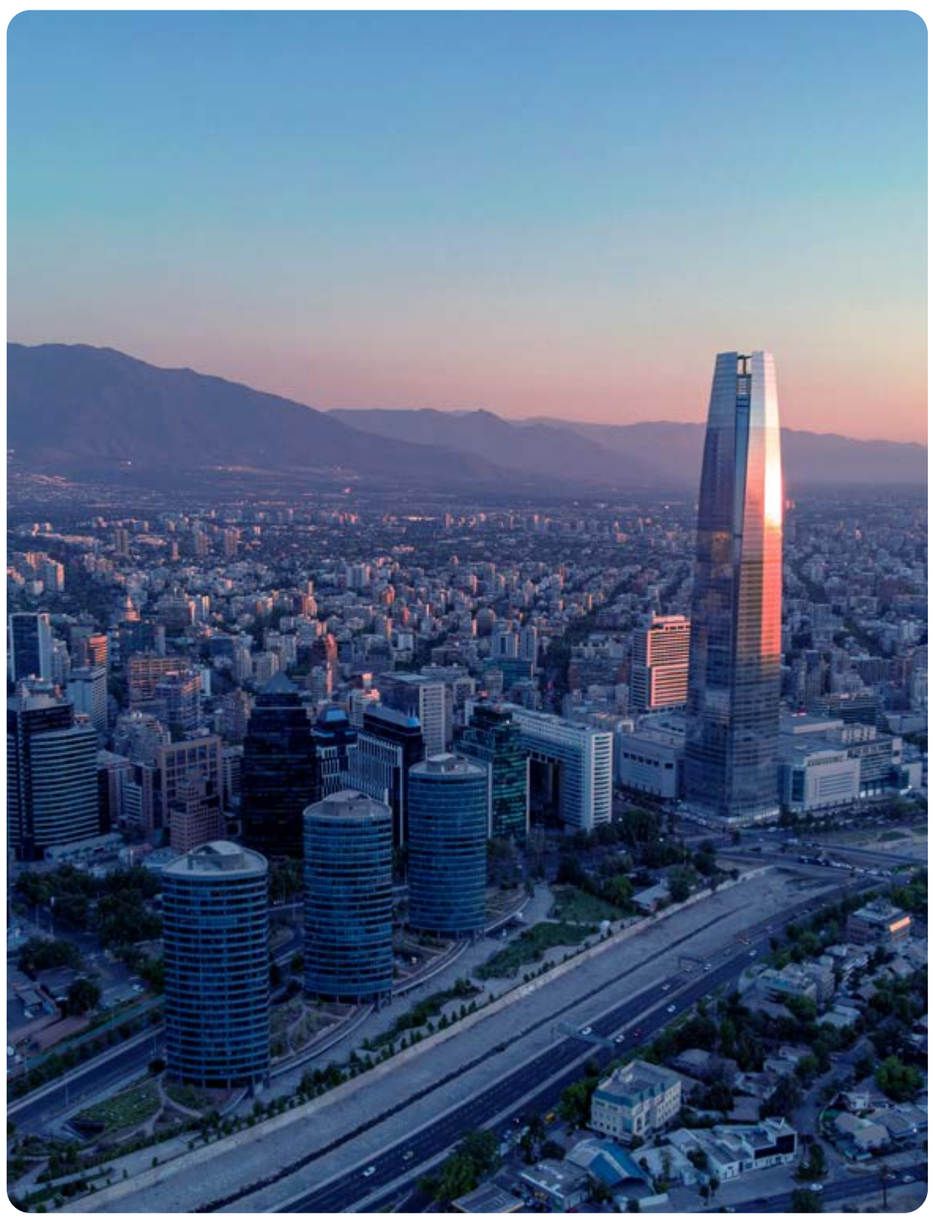
Chile

New Country

Mobile wallet adoption grew substantially in Chile in 2020, largely fueled by the COVID-19-inspired switch from paper-based payments. The latter declined faster than forecast while digital payments, including real-time payments, grew by more than 100M transactions.

COVID-19 has also forced revisions to previous real-time payments growth forecasts. The transition to digital payments is now expected to accelerate significantly over the next five years, with 2025 expected to record over 2.6B additional electronic transactions compared with 2020.

Although real-time payments are anticipated to continue their strong growth, its share of electronic payment transactions is predicted to dip slightly from 2022 onwards due to heavy payment card growth.



ACI's Take

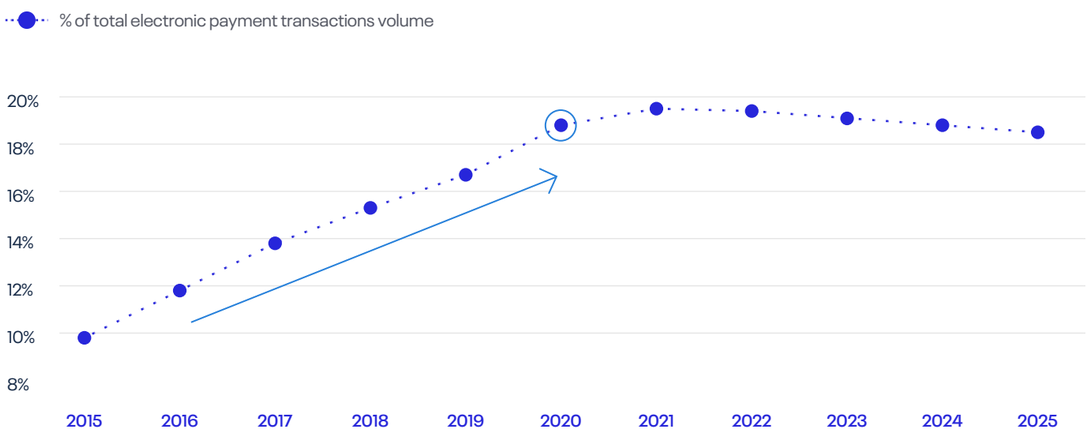
The fallout from the social crisis in Chile that began in October 2019 has proved more extensive than expected. Added to this, the COVID-19 pandemic has shifted financial institutions' priorities to other areas, and so improving real-time payment rails and services slipped off the agenda for 2020.

Yet there is clearly still room for real-time payments to grow in a country that is highly banked and possesses a long-established real-time payments network. Low fintech penetration, legacy ISO standards and a continued reliance on paper-based transactions all provide great opportunity for existing players to modernize their offerings and grow revenues. As and when the TEF rails are upgraded to modern standards such as ISO 20022, Chilean financial institutions must be ready to turn the standards into benefits, from better regulatory transparency, market efficiency and data integrity, to improved cross-border settlement efficiency in line with global standards. Tactical translation tools on legacy engines will be insufficient to deliver on the promise of ISO 20022.

As Chile's regional partners evolve in this space—think of PIX in Brazil and the CCE in Peru—Chile's financial institutions should pay close attention. It's clear that if Chile wants to experience the same real-time success as the regional frontrunners, the existing TEF rails require modernization to provide better customer experiences and real-time payments to merchants. Financial institutions should accelerate their payments modernization journeys to be ready for the inevitable shift to digital and real-time payments.

Trends + Data

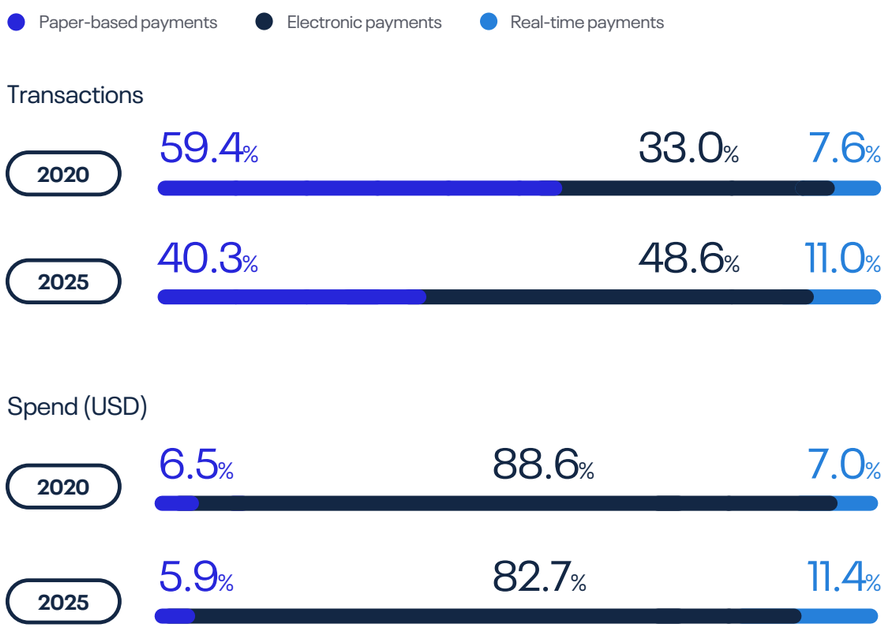
Real-Time Payments Volume and Its Share in Overall Non-Paper-Based Transactions, 2015-25f



Transactions

506M (2020) 988M (2025f) 14.3% (F5 Yr CAGR)

Share of Volumes by Payments Instrument



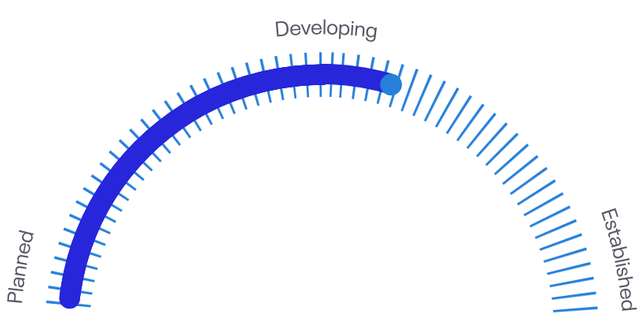
Schemes

Despite being a long-established real-time payments network, adoption continues to grow in Chile with incremental volume of 25% year over year and anticipated future growth standing at a CAGR of 14.3%.

Users in Chile can make real-time payments via Transferencias en Línea (TEF), a real-time payments system launched by Centro de Compensación Automatizado (CCA) in 2008. The system, built on a previous online payments service that dated from 2002, allows account-to-account bank transfers up to CLP 6.94m ($10,000 USD) per transaction between both individuals and businesses via online and mobile devices.

TEF settles funds in near-real time and operates 24/7/365, with recipient banks required to credit amounts to their customers within 10 seconds of a payment being received. Almost all banks in Chile participate in TEF and can access the service provided they are authorized by the Commission for the Financial Market to send and receive funds.

Key Stats



Market Development

Despite a long-established real-time payments network, adoption continues to grow in Chile with incremental volume of 25% year over year.

Year of Real-Time Payments Launch

2002

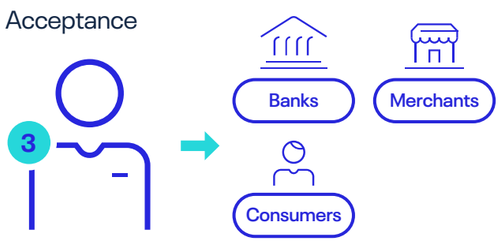
Availability

365 24/7

Message Standard

ISO 8583

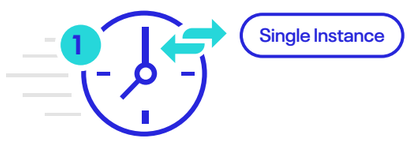
Acceptance



Total Participants

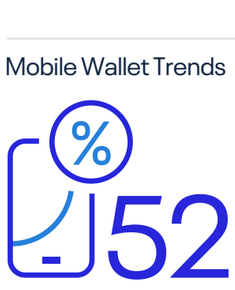
Majority of Banks

Real-Time Payment Types



Initiation/Authorization Methods

Mobile Wallet Trends



% of adults who have a mobile wallet and have used it in the past year (2020)

Payments Fraud Rate

Index to global average **125**

Population who reported being a victim of fraud in the last 4 years

Top 3 Payment Fraud Types

% of fraud victims

24.7% Card details stolen/skimmed in person

16.5% Card details stolen online

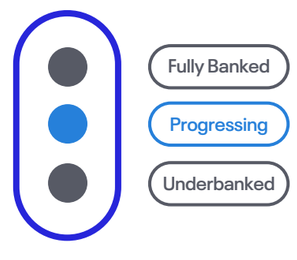
14.4% Bank account hacked

Population Banking Level

Number of debit, credit and charge cards per adult

99

Index to global average



History

2002 The government mandates CCA to eliminate float in the country's existing online payments system.

2008 TEF launches in response to the government's mandate.

2013 Introduction of a new feature enabling fund transfers via mobile devices.

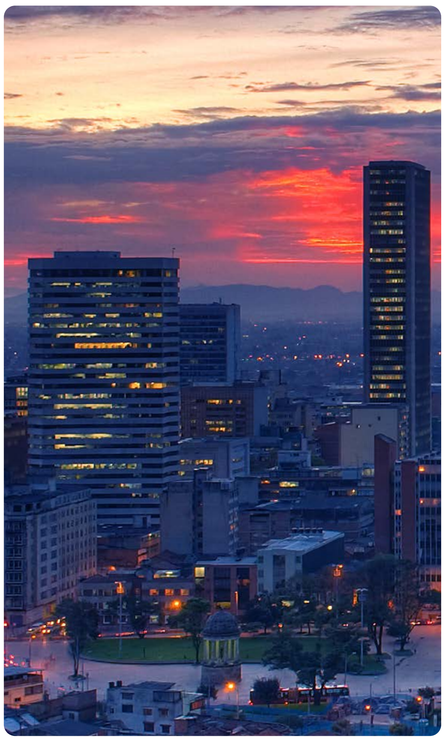
Colombia

Volumes on Colombia's real-time payments scheme were relatively small in 2020. For this to change in the next five years, the market will need to address the population's heavy reliance on paper-based payments (more than 90% by volume in 2020). This is due to the country's large unbanked population, which stood at 49.2% of Colombian adults in 2020—one of the largest such populations in South America. Often cited as a reason for this is the fact that many citizens are displaced and so lack the documentation needed to open a bank account, particularly a Cédula de ciudadanía (Colombia ID card). This is a wider issue that will not be easily or quickly resolved.

There is potential for fast growth in real-time payments usage, however. As noted, the country remains heavily reliant on paper-based transactions and card ownership is low—both factors that can lead to rapid real-time payments adoption. In addition, recent strong year-over-year growth in mobile wallet usage (reaching 53.8% in 2020 from 8.8% in 2017) indicates a willingness to adopt new payment types and potentially move away from cash. If this migration sticks and becomes habit, we could see a huge opportunity for real-time payments to cannibalize paper-based payments and accelerate growth in the future.

At the time of writing, 10 of the country's financial institutions offer real-time payments via the TransfiYa scheme (up from six in 2019). But as more banks and other types of companies are added to the scheme, and as the banked population grows and additional initiation methods and payment types emerge, real-time payments could drastically and rapidly transform Colombia's payments ecosystem.

Indeed, the planned addition of B2B and QR code payments indicates a strong belief in real-time payments' potential and should help to push adoption yet further.



ACI's Take

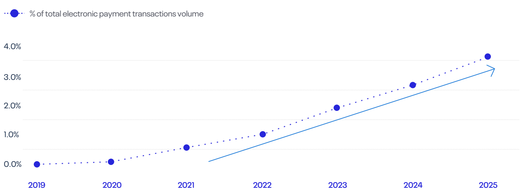
Banks and fintechs are among the nine financial institutions that work with TransfiYa, which, since launch, has achieved rapid adoption in Colombia. The challenge ahead is to make banks and financial institutions see the benefits of joining the scheme, which many have put off due to changes in regulations and fintechs' prioritization of their response to the COVID-19 pandemic.

Meanwhile, there has been a boom in the use of virtual wallets, with more than 15 such products in the market. These played an important role in the disbursement of emergency COVID subsidies granted by the government. On this evidence, and with such a highly digital population, real-time payments in Colombia should be rising faster than we have seen so far. The market needs to identify the use cases that solve the needs of its citizens and provide the business case for banks, PSPs and merchants. There are huge opportunities available for the first player that brings a truly differentiated real-time offering to market to grab market share.

The government is working on a new regulatory framework that authorizes digital onboarding and identity validation for citizens when joining real-time schemes, and which creates a regulatory sandbox where new business models can be easily and cost-effectively tested. The Financial Regulation Unit (URF) has also signed Decreto 222 de 2020, which seeks to open the market to new entrants and fintechs by updating and clarifying the definition of an acquirer (while formalizing their responsibilities). Future-thinking institutions should bring forward their payments modernization projects in order to capitalize on the way these developments support rapid time to market and a shorter time to revenue. Any solutions will clearly need to be able to support the convergence of cards and payments into a consumer payments hub.

Trends + Data

Real-Time Payments Volume and Its Share in Overall Non-Paper-Based Transactions, 2019-25f



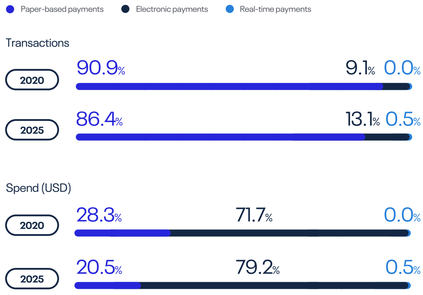
Transactions

1.3M (2020)

56M (2025f)

112.7% (F5 Yr CAGR)

Share of Volumes by Payments Instrument



Schemes

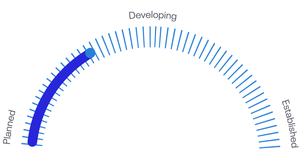
Colombia has strong potential for future real-time payments growth, with one scheme in place since 2019 and another in development. Its infrastructure enables users to make P2P fund transfers 24/7/365 with TransfiYa ("Transfers NOW"), a real-time payments solution launched by payment processing network ACH Colombia in September 2019. The system was developed in collaboration with Minka, a Bogota-based fintech.

The service is offered to individual customers who simply input the desired recipient's mobile number to make a payment. Users can access this platform through the participating banks' apps or through PSPs.

Funds are credited directly into the recipient's bank account; however, if the recipient does not have a bank account, they are required to open one within 24 hours to receive the funds. Users can transfer a maximum amount of COP250,000 ($76.00) per transaction and can make up to five transfers per day.

Though there are currently a limited number of banks and financial institutions participating, there are plans to onboard 27 banks in the country. In addition to P2P fund transfers, it can also be used for payments to merchants/businesses and ACH Colombia plans to add B2B and QR code payments going forward.

Key Stats



Market Development

With one scheme in place and another in development, Colombia has strong potential for future growth.

Acceptance

Total Participants

10 Financial Institutions

Year of Real-Time Payments Launch

2019

Availability

365 24/7

Message Standard

Unknown

Real-Time Payment Types

Initiation/Authorization Methods

Mobile Wallet Trends

54

% of adults who have a mobile wallet and have used it in the past year (2020)

Payments Fraud Rate

16.9%

Index to global average **109**

Population who reported being a victim of fraud in the last 4 years

Top 3 Payment Fraud Types

% of fraud victims

26.1% Identity theft

21.7% Confidence trick

15.2% Card lost or stolen

Population Banking Level

1.47

Number of debit, credit and charge cards per adult

60

Index to global average

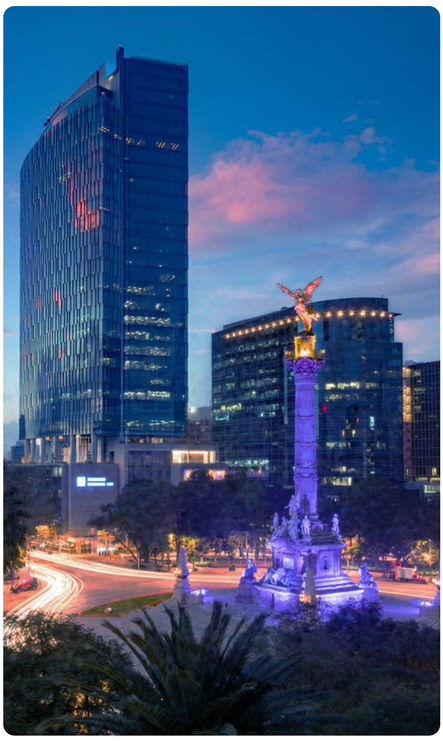
History

Mexico

Mexico has a long real-time payments history and there is extensive adoption across all types of companies. By 2016, one in 10 electronic payments was made via real-time payments, with this figure expected to reach one in five payments by 2022. Although the strongest growth was recorded between 2018 and 2019, steady increases are anticipated through 2022 followed by continued (albeit slower) growth until 2025, with a five-year CAGR of 12.4%. And, with more than 88% of transactions being paper-based in 2020, there is still scope for considerably more real-time payments adoption.

COVID-19 is impacting future forecasts, with an accelerated transition to digital payments anticipated over the next five years reflecting a decline in paper payments of almost 19B transactions compared to earlier forecasts. Interestingly, a central bank survey[1] found that during 2020, in response to the pandemic, 4% of the population were now using the SPEI real-time system versus 0.5% pre-pandemic. And almost 1% of the population are now using the CoDi system compared to minimal measurable usage previously.

Overall, the data shows that there are a lot of paper-based payments to displace for the mass market by volume, if not value. Real-time payments amount to 76.2% of the value of all payments, indicating that real-time payments growth to date has been concentrated among the more affluent sections of the population.



ACI's Take

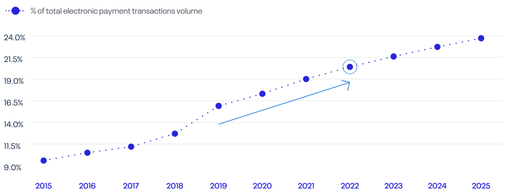
Of the Latin American countries, Mexico is among those hit hardest by the COVID pandemic, which has led many consumers to avoid leaving their homes even as retail businesses reopen. Recent data shows that the adoption of digital and online tools has been less robust in Mexico than in other Latin American countries and Mexico also has many unbanked consumers.

Nevertheless, the pandemic has highlighted that many consumers are happy to interact with financial institutions and businesses using mobile phones rather than traditional channels. Experience tells us that once users make that transition, it is highly unlikely that they will shift back to offline channels, and in fact, their interaction with newer channels will grow. Given Mexico's relatively advanced plans for open banking, financial institutions need to modernize their payment systems to manage growth in non-financial transactions from these new users and PSPs, such as balance inquiries, payment initiation requests and Request to Pay.

In 2020, bank transfers using real-time payments infrastructure were used for 16%[2] of all online payments and usage is projected to rise only slightly in 2021, to reach an 18.6%[2] share of the market. This indicates a clear need for use cases and value-added services that meet the needs of the market. Mexico has the foundational rails upon which to innovate. The payment players who bring value-added services for real-time to market first stand to gain market share rapidly. Mexico's payment players should follow the lead of their regional counterparts and consider how to bring merchants into the real-time payments value chain. To support this, banks, processors, acquirers and fintechs would need modern solutions to manage all digital payment types, including value-added services such as fraud detection, digital identity, billing and liquidity management.

Trends + Data

Real-Time Payments Volume and Its Share in Overall Non-Paper-Based Transactions, 2015-25f



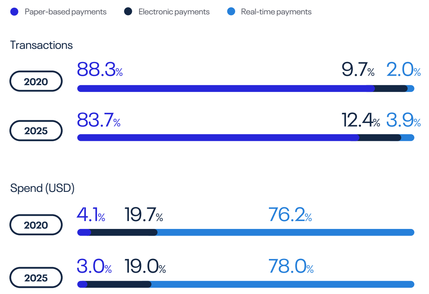
Transactions

942M (2020)

1.7B (2025f)

12.4% (5 Yr CAGR)

Share of Volumes by Payments Instrument



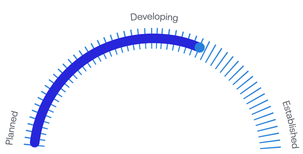
Schemes

With growth of 13% year over year, one scheme in place and a more advanced network set to launch by 2021, the Mexican real-time payments market will see tremendous future expansion in the coming years. Its current system, Sistema de Pagos Electrónicos Interbancarios (SPEI), launched in August 2004 and is a real-time EFT system that operates 24/7/365. Owned and operated by Banco de México, Mexico's central bank, it enables both low- and high-value P2P, C2B and B2B transfers.

SPEI settles funds in near-real time, with participant banks obliged to send customers' payment orders up to 30 seconds after an order is made, while recipient banks are required to credit payments within 30 seconds of receipt. The system enables fund transactions directly between accounts through a variety of different channels, including online banking, mobile banking and bank branches. All banks and non-bank financial entities regulated and supervised by Mexican financial authorities are eligible to participate in SPEI.

In September 2019, the Mexican Central Bank launched Cobro Digital (CoDi), a digital payments platform with processing by SPEI that allows individuals to buy and sell goods online and in-store without commissions or fees. This is part of ongoing plans to reduce reliance on cash while promoting financial inclusion.

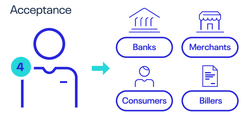
Key Stats



Market Development

Despite launching over 15 years ago, Mexico's real-time payments scheme is still growing in the double digits (+13% year over year). Growth is anticipated to be even stronger when Mexico launches its more advanced scheme.

Acceptance



Total Participants

>60,000

Year of Real-Time Payments Launch

2004

Availability

365 24/7

Message Standard

Proprietary

Real-Time Payment Types

Initiation/Authorization Methods

Mobile Wallet Trends

63

% of adults who have a mobile wallet and have used it in the past year (2020)

Payments Fraud Rate

24.4%

Index to global average **157**

Population who reported being a victim of fraud in the last 4 years

Top 3 Payment Fraud Types

% of fraud victims	Trend
22.2% Card details stolen/skimmed in person	↓
16.7% Card details stolen online	↑
15.1% Confidence trick	↑

Population Banking Level

1.85

Number of debit, credit and charge cards per adult

75

Index to global average

History

1 https://www.banxico.org.mx/billetes-y-monedas/estudios-e-indicadores/%7B0A02FA1C-9507-B9D2-AB2E-DC3F34651191%7D.pdf
2 https://www.banxico.org.mx/SieInternet/consultarDirectorioInternetAction.do?sector=21&accion=consultarCuadro&idCuadro=CF890&locale=en

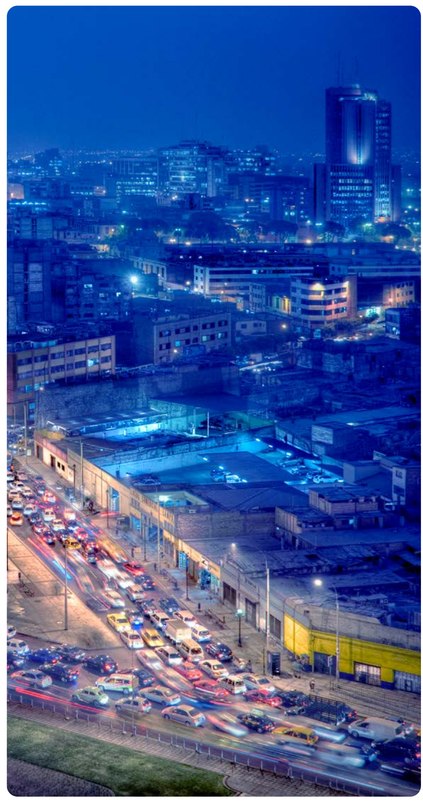
Peru

New Country

As noted, growth accelerated in 2020 and is expected to do so further between 2022 and 2025 to contribute to a five-year CAGR of 74.4%. Factors in favor of strong real-time payments adoption include high mobile wallet usage, paper-based payments' 96% share of all transactions and low reliance on payment cards.

Cash usage remains high in Peru, largely due to the high unbanked population and an inadequate banking infrastructure. Many consumers are unaware of the possibility of electronic payments, a situation exacerbated by many merchants not accepting payment cards. Despite these factors, according to a recent report from Cards International magazine, at 42.3 times per card per year, payment card frequency in Peru is much higher than Mexico (29.6), Argentina (28.4) and Colombia (28.8), though still well behind Brazil, Uruguay, Chile and Venezuela, among others. Debit cards account for 81.8% of cards in circulation, although despite relatively small usage levels, credit cards are preferred for payments[1].

The Peruvian government's response to COVID-19 will further fuel the transition away from cash to digital payments, since the first COVID-19 subsidy to citizens was remitted in a variety of ways, including via digital wallet. Future rounds of support are expected to continue to be distributed in the same way, thus increasing the population's comfort level with new payment methods.



ACI's Take

According to central bank statistics, usage of digital banking and digital channels has accelerated in Peru, largely due to different initiatives that have arrived on the Peruvian market as new ways to transfer money between banks and promote financial inclusion. Exciting recent developments in Peru show that the appetite for real-time services is strong among its citizens.

The new PLIN P2P scheme launched early in 2020 and reached more than half a million users in less than 60 days. PLIN offers immediate, free P2P transfers between Scotiabank, BBVA, Interbank, BanBif and other member banks' accounts using Visa Direct and Mastercard Send rails. The system is managed through mobile banking and the service is integrated into each bank's app.

BPC also launched Yape, an app that allows users to make transfers using their mobile number as an account alias.

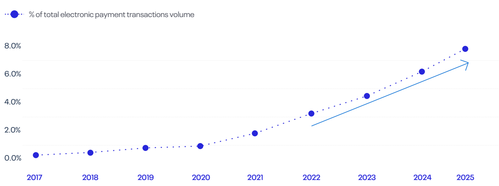
BIM is a nationwide electronic money project launched to achieve financial inclusion for the more than 10 million unbanked Peruvians. Here, financial institutions and telcos have joined forces to take on the big challenge of reducing the economy's reliance on cash.

All of these developments bring innovation to market that is driving adoption of real-time and digital payments. But there remains fragmentation, due to patchy or non-existent interoperability between services. There is a national initiative to capitalize on the successful but disparate mobile wallet market (BIM, YAPE, PLIN, TUNKI, LUKITA) in Peru and create interoperability between the services. The banks themselves are open to collaboration and continue to work on the terms. When this interoperability is achieved, it will completely change the ecosystem and create exciting opportunities for participants. Banks should be prepared to achieve this interoperability at a technical level, as well as for the increased transaction volumes this will drive.

CCE, the Peruvian clearing house, is partnering with Mastercard and ACI Worldwide to fully modernize its electronic payments infrastructure, enabling real-time payments based on ISO 20022 and streamlining financial institution participants' onboarding via APIs. This new development provides the catalyst for ubiquitous real-time payments in Peru. All existing services and participants should be planning how they will diversify their digital payment offerings to grow their customer relationships, including extending beyond P2P use cases to support merchant payments and more.

Trends + Data

Real-Time Payments Volume and Its Share in Overall Non-Paper-Based Transactions, 2017-25f



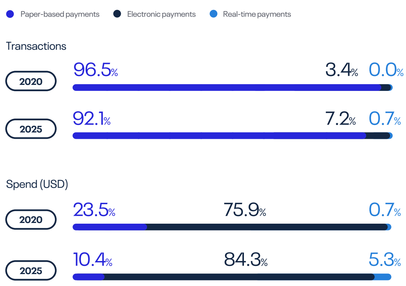
Transactions

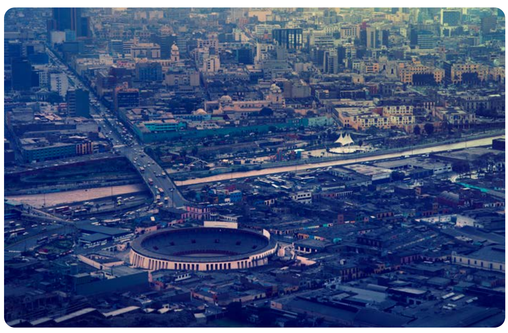
12M (2020)

187M (2025f)

74.4% FS Yr-over

Share of Volumes by Payments Instrument





Schemes

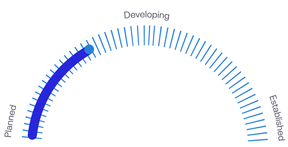
Peru's real-time payments scheme is still relatively new, having launched in 2016, but it is growing at 130% year over year. However, real-time payment volumes are hindered by a high unbanked population coupled with prominent usage of mobile money apps. Despite these challenges, Peru is forecast to see strong growth over the next five years, with a CAGR of 74.4%.

The real-time payments scheme—Immediate Interbank Transfers (IIT)—was launched in 2016 by Cámara de Compensación Electrónica (CCE), also known as the Electronic Clearing House. The system has operated 24/7 since December 2020.

Transfers can be performed using internet or mobile banking and are processed in real time, with recipient banks required to credit amounts to their customers no more than 30 seconds after a payment is received. The system enables P2P and B2B payments directly between accounts and can also be used to pay credit card bills. A maximum of PEN30,000 ($10,000) per transaction is allowed. Currently, 18 banks offer the IIT service, including BanBif, Banco Falabella, BBVA, BCP, Caja Arequipa, Citibank, Interbank and Scotiabank.

March 2020 saw the launch of PLIN, a mobile P2P initiative powered by Visa Direct (via Visa's acquisition of Yellow Pepper[2]) and available from three of the country's five biggest banks. It offers free instant transfers between accounts held at participating banks, with the service integrated in each bank's respective mobile app.

Key Stats



Market Development

Peru's scheme is still relatively new but growing 130% year over year. Yet the real-time payments market's volume is hindered by a high unbanked population and prominent usage of mobile money apps.

Acceptance

Total Participants

18 Banks/ Financial Institutions

Year of Real-Time Payments Launch

2016

Availability

Business days

Business hours

Message Standard

Proprietary

Real-Time Payment Types

Initiation/Authorization Methods

Mobile Wallet Trends

45

% of adults who have a mobile wallet and have used it in the past year (2020)

Payments Fraud Rate

19.2%

Index to global average 124

Population who reported being a victim of fraud in the last 4 years

Top 3 Payment Fraud Types

% of fraud victims

17.5% Card lost or stolen

15.5% Card details stolen online

15.5% Confidence trick

Population Banking Level

1.42

Number of debit, credit and charge cards per adult

57

Index to global average

History

1 GlobalData data (via Cards International, January 2021)

2 https://www.businesswire.com/news/home/20200527005225/en/Peruvian-Banks-BBVA-Interbank-and-Scotiabank-Launch-PLIN-Using-YellowPepper%E2%80%99s-Real-Time-Payment-Platform

Glossary

Real-Time Payments

Real-time payments, also known as instant payments, faster payments and immediate payments.
Key features include:

- Immediate availability of funds to the beneficiary of the transaction
- Irrevocability, meaning once a payment has been made, the sender cannot deauthorize the transfer
- Confirmation of funds via real-time balance. Once a payment is authorized, the sender's account balance reflects the deduction instantaneously
- While settlement timing may vary by scheme, it is often completed within a matter of seconds
- Newer real-time systems are often based on ISO 20022, the de facto real-time standard

Digital Overlay Services

Digital overlay services have appeared in global markets, particularly where we see high levels of real-time payments adoption. These ancillary services often ride the real-time payment rails and are flexible, nimble drivers of innovation. They enable many kinds of alternative payment methods. The front-end touchpoint for consumers, merchants or corporate customers is a digital overlay service, as it's about connecting real-time payments to a purchasing experience, billing scenario or accounts payable process. Google Pay, WhatsApp Pay, Amazon Pay, Paytm and Walmart PhonePe are all examples of real-life overlay services.

Request to Pay (R2P)

Request for Payment/Request to Pay can be both a digital overlay service used by an end user to request or make a payment, as well as a core functionality of a central infrastructure (usually a real-time payments central infrastructure) that provides the R2P transaction flows and rules to play by in the R2P network. R2P has use cases across P2P, M2C and B2B scenarios, where real-time payments must be integrated into a seamless workflow or interaction.

Central/National Infrastructure, Payments Network

A centralized system for a payments network, including for real-time payments. Referred to as a scheme, system or platform depending on locale and providing a framework and/or rulebook for payments messaging and processing as well as digital overlay services. From a central infrastructure point of view, R2P is either a capability within the real-time central infrastructure itself or a closely related offering by the same central infrastructure provider. In some markets the central infrastructure has powers to fine participants for missed SLAs, set variable fees for participants and mandate centralized fraud reporting.

Clearing and Settlement Mechanisms (CSM)

CI	Central Infrastructure
SCT Inst	SEPA Instant Credit Transfer
TIPS	TARGET Instant Payment Settlement, pan-European single currency real-time payments system launched by the European Central Bank (ECB)
RT1	Pan-European single currency real-time payments system launched by EBA Clearing
USSD	Unstructured Supplementary Service Data
EFT	Electronic Funds Transfer

Payment Dynamics

P2P	Person to Person or Peer to Peer
G2C	Government to Consumer
B2C	Business to Consumer
C2B	Consumer to Business
C2G	Consumer to Government
B2B	Business to Business
B2G	Business to Government
G2B	Government to Business
C2M	Consumer to Merchant
M2C	Merchant to Consumer

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About ACI Worldwide

ACI Worldwide is a global software company that provides mission-critical real-time payment solutions to corporations. Customers use our proven, scalable and secure solutions to process and manage digital payments, enable omni-commerce payments, present and process bill payments, and manage fraud and risk. We combine our global footprint with local presence to drive the real-time digital transformation of payments and commerce.

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