



10 predictions for the future of payments

**How will the payments industry
stay ahead of the time zone?**

#futureofpayments

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Forward



“The payments landscape has gone through a significant transformation in recent years. Technological advancements have led to step changes in innovation, with payments becoming faster, on both a local and global scale, easier and more convenient. Non-traditional players coming into the market from big tech firms to car manufacturers, are bringing new applications and innovation into the payments ecosystem with payments embedded in the real world economy like never before.

This has not gone unnoticed by the regulators who are now looking into how regulation needs to adapt to meet these changes. As business and customer needs evolve, it is clear that the global payments ecosystem must be agile and open to innovation without sacrificing the financial stability the infrastructure is built on.

Here we have gathered views from global payments experts as well as outlining our 10 predictions for the future of the payments industry.”



John Hallsworth

Partner, Open Banking Lead
KPMG in the UK



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#futureofpayments

How will the payments industry stay ahead of the time zone?

In the decade to 2030, the pace of transformation in the payments industry is set to accelerate. Non-traditional players continue to enter the market, from the global technology giants to car manufacturers and consumer goods companies, bringing new industries into payments. New technologies, such as distributed ledger tools, offer a completely different way to organise and manage payment systems, providing a route to real-time, cross-border payments worldwide – and even to new ways of thinking about how we store value. Change elsewhere in financial services, such as open banking, provides an opportunity to create new value from payment transactions, particularly by leveraging data.

Such developments have not gone unnoticed. Regulators are considering how supervision will need to adapt in the face of these changes. Nation-states need to think about payment systems moving beyond the control of traditional monetary authorities, threatening their ability to oversee payments – and even impacting their levers of economic policy.

These issues are fundamental and systemic and they are beginning to bite at a difficult moment. The world's payments infrastructure must increasingly be global in both reach and scale, and that requires collaboration between all parties. And in an era of mounting protectionism and nationalism, there can be no guarantees that collaboration will be forthcoming.

Against this backdrop, we talked to 11 industry leaders – spanning areas including banking, technology, the fintech sector and regulation – about how they view the future. We asked for their predictions of how the payments world will look in 2030 across five key pillars:

Five pillars



**Politics and
regulation**



Economics



Social



Technology



Operations

Our interviewees hold different opinions on many key areas. But on one issue they are unanimous: the change in payments has only just begun and those organisations that lack the agility to adapt at speed to the transformation to come, risk being left behind.



Politics and regulation: payments move centre-stage

- 1. Nation-states will launch their own digital currencies to retain control of economic policy**
- 2. Regulators will police payments processes rather than providers**

The growth of digital currencies has disturbing implications for sovereign states and central banks, which are at risk of losing sight of the financial flows passing through their economies – and of losing their ability to pursue their economic goals through monetary policy tools. As such, expect more countries to follow the lead of China in launching a state-controlled digital currency.

Each country doing so will assert its digital currency's supremacy over non-sovereign alternatives but will also compete with the currencies of other nations. And while countries will want to connect – to ensure their digital currencies are linked through seamless payment systems, for example – they will also recognise the potential of more dominant currencies to secure greater economic and political power on the global stage.

Still, co-operation will prove imperative. With so many new players emerging in payments, including many from beyond banking and even financial services, today's regulatory systems, constructed around scrutinising the activities of categories of institutions is increasingly unfit for purpose. Instead, a new multi-national approach to regulation, through which watchdogs police payments processes rather than individual providers, will emerge.

Building such a regime may not be straightforward as the post-financial consensus on financial regulation continues to splinter. Yet without such collaboration, payments will pose systemic risks that regulators are unable to monitor or mitigate, particularly as distributed ledger technologies become more established; maintaining visibility and traceability will be challenging. Equally, over-burdensome regulation, heightened by non-alignment, will threaten innovation.

How the economics of payments will change

3. The payments value chain will be built on data

4. We will reach an international consensus on data privacy

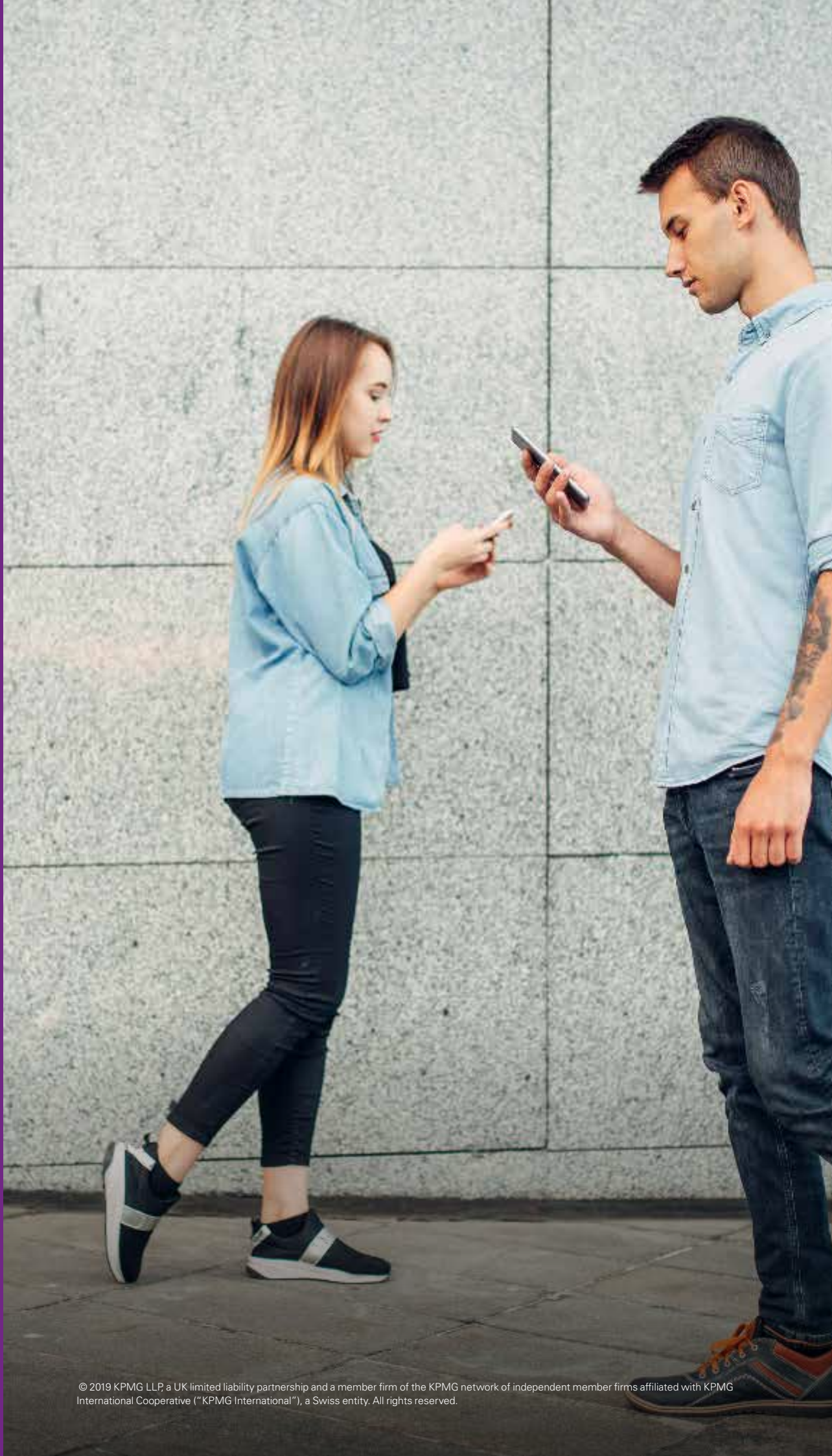
In a new world of open banking and APIs, the greatest value exchange taking place on payment systems will be found in transactional data rather than the transactions themselves. Such data will unlock a huge variety of new opportunities, from combatting fraud to sophisticated financial planning for consumers, with corporate customers benefitting too. Those organisations with the ability to use this data to best effect will secure competitive advantage; this will mean data analytics tools and artificial intelligence (AI) become the most important technologies in the payments sector; skills in these areas will be at a premium.

Fundamentally, data has the potential to transform the payments industry value chain. For example, corporate customers will increasingly value the insights unlocked by payment data and consumers keen to pay less for payments will be able to do so by agreeing to share more of their data.

However, to achieve these goals it will be crucial to establish greater international consistency on data protection and privacy laws. Debates over what standards should apply on a global scale, who should control data and how the rules are enforced, will have to be conducted in the wider context of the debate around protectionism and free trade, particularly given the power of the technology giants of the US and China. But reaching agreement on data privacy will be a vital step towards unlocking its value.







Towards a social network

- 5. Almost every global citizen will have their own biometrically-enabled digital ID**
- 6. Payments technology will drive down financial exclusion**
- 7. The social experience will converge with payments technology**

The inconsistent application of digital identity today means that in some countries, people are able to transact freely and easily while in others, where it is harder to verify identities and assets, there is much greater friction in the payments system. These barriers will diminish as nation-states and payment providers work together to establish internationally agreed digital identity standards, increasingly leveraging biometrics, including facial recognition, fingerprints and implants.

This will also enable the payments industry to continue leading the fight against financial exclusion, with developed economies learning from the successes already achieved through mobile channels in many emerging markets. For those individuals – and small enterprises - who currently struggle to access payments and financial services more broadly, a digital identity will represent a golden key, unlocking services from benefits payments to banking, and enabling them to establish credit histories and financial footprints possibly for the first time.

Meanwhile, social media represents another area where Western markets will learn from their emerging economy counterparts; the convergence of social media and payment services, already firmly established in China, will spread internationally. This will create new opportunities for payment providers and their customers – for example, for merchants to engage with individual consumers at scale through such networks.

The technology of tomorrow

8. Distributed ledger technologies will underpin a globally-connected, high-speed payments network

9. Real-time payments will become the norm, even for cross-border transactions

Distributed ledger technologies have the potential to be the primary means through which we deliver the payments system of the future. Cloud computing and API tools will link blockchains to create cross-border, high-speed networks: an 'internet of value' through which payments flow unhindered, just as information currently flows around the worldwide web. An increasing number of payments will be made via these blockchains, which will largely be operated by private sector organisations from the banking or near-banking sector.

Such a network has the potential to deliver more than just transactional services. For example, linking payments to the supply chain via distributed ledger technologies will transform supply chain management and tracking.

Nevertheless, the most visible consequence of the emergence of distributed ledger technologies as a key support for the global payments system will be that real-time payments become a standard commodity. As blockchains dissolve the borders between domestic settlement systems, payments will be instantaneous, even when they are cross-border. This will begin to have fundamental impacts: for example, making high-volume transfers of micro-payments – an atomisation of the payments system – economically viable; but it also means that banks will need to be able to manage their liquidity in real time, which remains a key challenge today.





An operating model built on partnership

10. Payments ecosystems will evolve from collaboration between new entrants and incumbents

While the disruptive potential of new entrants to payments is exciting – both small-scale fintechs with novel technologies and larger players ranging from the technology giants to consumer goods companies – these organisations will work in lockstep with incumbent providers. In the highly-regulated financial services market, where payments are a potential source of systemic risk, new entrants will need – and want – to work alongside banking partners.

Together, these organisations will create new payments ecosystems. The experience of emerging markets where new entrants have come together with incumbent providers and regulators to create new payments systems from scratch will be replicated on a global scale; without such collaboration, transformation will not be possible.

Different organisations will choose to play different roles within these ecosystems. Some may choose to work as frontline providers, establishing direct customer relationships and building brand, while others will focus on building and maintaining the payments infrastructure.



Ben Lindgreen

Head of Cyber Resilience

Pay.UK

One of the challenges for the payments industry is that as the pace of innovation develops, we will get a considerable number of new entrants of all sizes into the market that could impact financial stability. Some of these organisations will perhaps not have the same experience with the regulatory environment. As they become more important, that may change the perspective and add additional risk into the overall ecosystem, particularly if this results in traditional participants actually taking a riskier position in response to the inroads that the innovative players are making.

Within Pay.UK we're starting to develop the New Payments Architecture, a new model for the future development of the UK's shared retail payment infrastructure. Key elements within this are, that it's robust and resilient, and, that it helps facilitate and foster innovation. Pay.UK and a strategic partner producing and providing the core settlement layer, but then also facilitating the capability to foster innovation - the concept of services provided by the market.

For example, that could be overlay services that really help the end-user have a better payments experience. We're looking at elements such as Confirmation of Payee and Request to Pay; elements like these provide better information to enable customers to make informed decisions about who they're paying and speed that process up. With a single infrastructure, it will be seamless to the end-user. Whether they pay with a cheque, a direct debit, or online banking, it will still go through our robust system.

There will be a number of risks to overcome to implement a new retail payment system. Not least, the standard risk that you get from any large-scale IT infrastructure program with all its complexities. Look at the number of transactions that the system goes through on a daily basis; there is great complexity and the integrity of those payments are absolutely key.

The important thing is that it's a broader ecosystem. It's not just your traditional participants, the large banks and building societies that have to be able to operate in this market; it's ensuring that we foster innovation, that we enable new fintech providers and non-traditional players to access the system with the minimum amount of interruption and disruption while still maintaining security,

The key will be to consider it as an interconnected ecosystem. As we look at the New Payments Architecture, we're looking at a zonal model where at the centre is the clearing and settlement layer and then various services, some provided centrally, 'for the market' and others provided by third-party providers 'in the market'.

As we go further out into the wider market and we get into elements like overlay services, it's about providing clear standards, perhaps accreditation services, so that we know those entrants into the market are still aware of their responsibilities, including the security controls required. And like an ecosystem, we must share information to make sure that all participants are aware of what is good practice and that everyone can do their part to protect the ecosystem.

Established players will remain relevant but they need to spend time understanding the new entrants and the way the ecosystem is changing. There are a number of established players out there that have wholeheartedly embraced innovation. They're working with fintech organisations, in partnership or in some circumstances by buying their capabilities.

The important thing is trying to gain a thorough understanding of what the disruption will mean. The challenge will be for those established participants, who are nervous about embracing innovation, they may find that their customers prefer the tailored approach that new entrants bring to the market.

There should never be a trade-off between innovation and financial stability in the global payments ecosystem. Both are necessities.

Our customers today are asking for things to be faster, simpler, and definitely more secure. From a payments perspective, HSBC believes in digital-first. For example, if we innovate, we are going to make sure that customers don't have fields of data in an application that they never use. But we also believe in financial stability because there's so much more volume going through these rails and we want to be sure the systems are up at all times; we've put a lot of money into cybersecurity protection as well.

In terms of innovation, there's a real-time payments revolution going on in the industry today and I believe that in five to 10 years, it will be commonplace in every market in the world. What we're going to see is that there'll be very little difference between a domestic settlement system and a cross-border one, which adds lots of benefits to the customers and the community at large, such as the immediate availability of funds to beneficiaries.

Innovation normally brings disruption and new entrants - and the global payments ecosystem will be no different. However, I firmly believe it's an impetus for change. Let me give you an example: we were noticing that our consumers were using a social media payments platform from one of the digital giants, and we decided that we could do the same. In an 18-month timeframe, we created an app that makes it quicker and easier for people in Hong Kong to transfer money. PayMe allows people who download the app to send money to other users instantly and securely with just a few taps on their phone - irrespective of the bank they use. And in 2019, we launched PayMe for Business, which allows Hong Kong businesses to take payments from more than 1.7 million registered PayMe users instantly and securely. This innovation has led to several benefits - for

consumers, merchants, and HSBC in terms of customer retention and satisfaction.

In this new world, it is hard to predict who are going to be the leading players but there will be quite a number. We're going to have at least three types of competition: the fintechs, where my feeling is that they're going to be in a particular component, part of the payment, but not in all aspects of the value chain. We'll have existing technology companies, and emerging consumer goods businesses that decide to expand into the payment field; and importantly, we'll have the traditional banks. The large banks have been in the business for some time. If you take HSBC, we're 154 years in this business - it's in our best interest to continue to expand and evolve. We are an end-to-end player, and we frequently partner with fintechs who are unable to replicate the whole end-to-end offering.

Banks such as HSBC along with the regulators, also have an obligation not just to make sure that payments are safe and sound, but adapt to the latest technology and societal changes, always looking to the next frontier. Looking forward, I believe as a larger player we can provide customers with valuable insights from their data so they can intelligently run and grow their business. For example, a corporate treasurer may have more money sitting in their accounts than they realise; we can let them know that they can invest those funds to get higher yield and improve their earnings per share. There might be issues such as fraud, where corporates will be able to uncover a problem because we tell them payments are coming in from a jurisdiction they have never transacted with before. Or a customer might have forgotten something very simple such as send a payment to a supplier; we see that anomaly because normally, every two weeks, they make those payments so we can alert them.

Data insights are definitely the next frontier for payments.



Diane S. Reyes

Global Head of Liquidity and Cash Management,

HSBC



Kay Swinburne

Vice Chair of Financial Services

KPMG in the UK

As new players enter the payments market, you have to question whether or not what has been taken for granted in terms of financial stability really should be taken for granted going forward. And I think because the central banks are at the heart of the intermediation of the payment systems around the world, you're going to start to see central banks flex their muscles. As people try to disintermediate them, they're going to try and exert even more power into that system, so they don't lose the ability to control their own monetary policies.

But as you have competing monetary policies in different regions around the world, you wonder who's going to win in the end. One hopes the consumer does, and that the consumer is at the heart of every piece of legislation, and every framework that's put in place. But sometimes, I do wonder whether that's going to be the case.

There are other tensions too. If technology companies start playing that bigger role in the payments system, rather than the traditional banks, will that change the way people think about their data protection? Certainly, there's a lot of cynicism, particularly among certain European politicians, about US tech giants controlling everything that happens. And I think that cynicism will translate into a level of protectionism within the legislative framework.

Data is at the heart of all of this, and there are going to be some fairly big struggles between different regions as to who controls that data, who enforces the rules, and whose rules they enforce. We're seeing a lot of scepticism about what happens to data in certain regions. Is your data safe? If you're a European customer, is it safe in different jurisdictions around the world? And that's the question people are asking more than the financial stability question, which seems to be much more of a given these days.

More fundamentally, it's almost as if we're going full circle back to the old bartering system in payments right now: you have something I need and I'm therefore going to find a way of giving you something in return for it, whether it's a formal currency or a token. I don't think it's going to matter much to the consumer, provided they have a level of protection.

However, it will matter to the legislators, it will matter to the regulators, and it will matter to the central banks, who feel that this is an element of loss of control. But disintermediation, provided it benefits the consumer and has a level of consumer protection embedded in it, shouldn't be a threat. It should be regarded as an opportunity to make the economy work more efficiently.

It will be important to make sure that everybody applies the rules fairly. And so commercial banks shouldn't be at a disadvantage to any of those new providers. They shouldn't be held to a higher level of accountability than those providing a new service offering. That will mean that innovation is allowed to happen. Regulators can facilitate those new entrants, provided they deliver the service at the highest level possible, and that consumers are at the heart of the proposition.

I am convinced there will be a healthy ecosystem between the traditional players, the traditional banks, the traditional payment systems, the card payment systems and the new technologies that are coming along. And I think the combination of all of them is a healthy thing, and we'll end up finding out which ones work best because the consumer, ultimately, is going to make that choice. They're going to vote with either their card, their phone, or some other method that we haven't thought of yet to make those payments.

At the beginning of time when people tried to transfer money or were trying to barter, they were largely in an environment where they trusted their counterparty; they knew who they were dealing with. What's happening now in the global context is that we have to digitally engage with communities, with merchants and billers, and with people that we don't necessarily know in an environment where we don't always have trust.

Many of the issues are around dispute management and fraud management. How do we create an environment where people can transact within trusted communities and with counterparties, they don't know?

In order to be able to do that, enhancing data within the payment system is critical. It enables things like credit scoring at the point of sale; it enables digital identity to be carried through the payment system. It enables AI to assess the payment for indications of fraud.

Then there is the issue around financial inclusion. How do we reach out? How do we engage those people in society who don't currently have access to the right types of financial products and services, and who are not able to engage in the economy in a way that is beneficial for them?

In some cases it will be small things like, how do people receive disbursements such as Social Security benefits in a much more efficient way? Those types of benefits and a transaction history that go along with it enables someone to build up a history and a pattern over time; that person can then get access to their credit history and potentially borrow money.

It comes back to who has the data and what we allow. Each jurisdiction tends to take a different view on that, and it's a massive challenge. Our responsibility is to run the operation and provide services to people that respect their privacy. And we have to take a stand and do what we believe is right, both for the individual and for the company, within legislative boundaries.

At present, we have an environment where an inconsistent application of digital identity means that in some countries people can transact very freely and easily. But others don't have any kind of identity or any way of proving and verifying who they are so they can't currently participate in the digital economy.

Digital identity and the ability to be recognised and to recognise your assets is an immense enabler that will enable billions of people to participate properly in the economy.

So, in conclusion, I believe that digital identity is the golden key to so many problems. If we could solve the digital identity challenges we have at the moment, we would reduce a huge amount of friction and create the ability for people to transact in a much more transparent way.



Liz Oakes

Executive Vice President, Strategy and
Operations Excellence, Product and Innovation

Mastercard



Marcus Treacher

Senior Vice President for Customer Success,

Ripple

The nature of cross-border payments is going to change considerably. They will become far smaller in value and much higher in volume. What's happening to payments is similar to what happened to the telecoms industry a few years back, where cross-border phone calls moved from being rare things to today's world where mobile phones stream all kinds of information, chats and exchanges instantly between people all over the world.

At Ripple, we talk in terms of the atomization of payments. This will transform value movement between companies, people and governing organisations worldwide. Today, because cross-border payment is very difficult, it's one of the breakpoints in the global economy. It's very hard to make a payment flow cross-border, smoothly, simply, on time.

Because of that, cross-border payments today are made in large amounts of money, requiring pre-planning and very close management. That creates a world where value is moving very slowly, and not keeping pace with the evolving needs of people, corporations, ecosystems and machines, which are moving into a much more high-speed, interconnected world.

A whole new way of thinking about how an ecosystem can work becomes possible when you reconfigure payment networks using distributed ledger technology so they can exchange value in tiny amounts, in a microsecond, with absolute clarity and certainty. Anybody in the world can participate, boosting financial inclusion and as the Internet of Things comes into play you also have unattended devices communicating with each other, becoming economic actors.

We call this the Internet for Value. The internet has already brought us instant information, which we all use and value so much, and has transformed our lives. If we could also now create an Internet for Value that runs along similar lines, together that would transform the flow of money worldwide, and really turbocharge the global economy.

You do that by standardising: standardising the movement of money between ledgers. And you do that by embracing new technologies such as cloud, such as blockchain, connecting to wallets, mobile phones and machines worldwide.

As payment flows become faster and easier cross-border, payment companies and banks will be able to offer very high speed, very low value, but very high-volume movements of payments. And that means people working and living in countries around the world and businesses can pay for, and get paid for, small units of work.

Another opportunity for the industry is to solve the issue of liquidity in the world's payment systems. Companies and banks have to maintain trillions of dollars in overseas assets around the world to fund these very slow-moving, high-value payments day-to-day. And that creates an enormous drag on the global economy - it's tied-up capital.

Now, imagine how we can solve that problem by rethinking how liquidity is delivered to the end-user. Whether you're paying somebody in the Philippines or India, fund these payments in real-time, rather than pre-funding days in advance. This can transform how organisations think about deploying capital in payments. For example, at Ripple, we use XRP as a digital asset, which is designed and fine-tuned for enormous high speed, for immediate delivery of value from one currency to another.

So technology is impacting payments in two ways. First, it's creating demand for a very different type of payment network. But also, it's creating the toolkit with which banks and payment providers can create a much better payment model globally.

In that new world, only the most fast-adapting innovative organisations, whether they're banks or payment companies, will succeed, leaving slower companies behind.



Mike Sigal

Founder

2022 Labs

Mike is the Founder of 20022 Labs, a non-profit dedicated to driving adoption of dataful payments; Co-Founder of Upside Partners which advises financial institutions on digital transformation investments and talent development; and Partner at 500 fintech, an early-stage venture fund investing into fintech and financial services startups globally.

Payments, just like the rest of the financial services industry is undergoing a massive transformation. If organisations, whether payments infrastructure providers, banks or corporate end-users of payments don't find a way to embrace this transformation, they're ultimately going to be left behind. These institutions have a responsibility to their stakeholders for genuine innovation, which will most often mean innovating without regard for existing revenue models or embedded organisational interests.

Many industries, such as media, retail, and travel have already been transformed by digital technology. The same process is now happening across the financial services industry, including within payments. There are two key lessons that payments industry players and their stakeholders should take from the digital leaders in other industries.

The first lesson is that customer experience is everything. Digital experiences delivered by companies like Uber, Amazon and Apple are setting expectations of consumers and corporate users alike. Payments providers that don't deliver world-class, end-to-end customer experiences will lose customers to those providers that do.

The second lesson to take from other industries is that sustainable competitive advantage is derived from the ability to learn about changing market and customer needs from customer behaviour, and implement relevant changes in your business based on that learning, faster and cheaper than your competitors. When you look at the success

of companies like Amazon, their advantage is not just data and scale, it's the technology and management frameworks they have in place to efficiently deliver new products, services and value to their customers based on their learning.

The corollary of these lessons in the payments space is that in the past, value was derived based largely on whether a payment arrived at the intended destination. In the future, speed and reliability will be taken for granted, while the real value will be in utilising the contextual data about the payment to deliver not just a better end-to-end payment experience, but also new value-adding services.

In fact, I believe there is a trust-versus-service dynamic that has already begun playing out. Financial institutions and infrastructures have a small window to close the customer experience gap before being sidelined by big tech and upstart fintechs who will leverage compelling customer experiences and brand affinity to push deeper and deeper into core financial services, including payments. Open banking is the battleground where this will play out and data is the strategic asset. Incumbent players have a choice to make — either embrace open banking and leverage dataful payments and their trusted market position as the foundation for creating delightful new customer experiences and value, or risk being disrupted by those players that do.

New payments infrastructures using the ISO 20022 financial messaging standard, or 'Dataful Payments', will make a huge

difference across the entire payments industry value chain. ISO 20022 is XML for payments and transforms payments to align with modern computing and messaging conventions.

Dataful Payments allows you to bond contextual meta-data about a payment to the payment itself, in the form of standardised, extended remittance information. By joining data about a payment and related business process together, organisations all along the payment value chain can find not only new efficiencies in processing payments, but also new opportunities for collaboration, business models and revenue streams that they otherwise might not be able to find.

However the key barrier to adoption of Dataful Payments is the fact that ISO 20022 represents a paradigm shift in what payments mean, and that shift is not yet well understood by payments providers, banks or corporate end-users. In the future, as Dataful Payments are widely used, I believe payments will become a rich medium of communication between all these actors.

Financial institutions and infrastructures are highly specialised and efficient at manufacturing and delivering discrete financial products like cash management, savings, foreign exchange, or payments to their customers. With the advent of Dataful Payments, they're being pushed, often by regulatory mandate, into making huge infrastructure investments without the benefit of understanding the emerging customer needs and opportunities reflected by the innovation of bonding payments to contextual data.

I believe that as corporate payments customers understand how Dataful Payments can support their overall digital transformation and growth strategies—and once they have an opportunity to validate the automation, customer experiences, and new revenue streams that modernisation can deliver—the financial institutions and market infrastructures that serve them will gain a clear line of sight to generating returns on the investments they must make to better support the economies they serve. Instead of doing it for compliance purposes, they will be investing in strategic assets.





I see the exchange or transfer of value in financial services businesses becoming more presence-less, more paperless, and more cashless. It is trending towards the digital exchange of value as well as digital identity. You see digital being used particularly in India and China; in developed economies such as the United States, it's still a journey but there is an inexorable move towards a more digital exchange, including a focus on authentication.

So much of that innovation is going on in emerging markets. For example, I look at what India's doing with IndiaStack, which is a presence-less, paperless, and cashless system for exchanging value and keeping the identity online. Or I look at Kenya, where the country went from having 10% of the population functionality banked to 40% in just two years.

The reality is that payments are such an essential part of every economy. So all the technologies that are having such an impact on our economies are going to have an impact on the financial services sector.

Cloud, for example, allows us to experiment with different business models. It enables new players, new entrants, and new innovators to compete even though they don't have the scale of the incumbent players. That is going to play out over the years ahead.

In the consumer space, mobile technology will continue to have a big impact on how consumers choose to live, work, play, and bank. That's not just about emerging markets; it's very much about our developed markets

as well. Also, APIs will continue to have a big impact in opening up the banking system; that will challenge us on how we truly create value for every customer relationship. We have to be able to provide that value to our clients on a continuing basis.

Then, in the longer term, cryptocurrency is out there too. Distributed ledger technology is only now starting to become better known, with Facebook coming out with Libra, for example. There will be a lot of experimentation in the space but I think that distributed ledger technology will be a very important technology for a very long period of time.

The question for providers will be how we leverage these technologies to make us more efficient, to improve our services, and to keep us relevant to our clients. For example, mobile will continue to be something that is very important in the consumer experience, but even in the corporate space, I think everybody wants a consumer-like experience today. With distributed ledger technology, those are among the ideas that we are experimenting with on a company-wide basis.

The bottom line is that the payments business is one of the most important industries in our economy. It's vital. There's a lot of friction in the system. There are pain points but there are technologies here today that can relieve that pain. Payments will be one of those businesses that is revolutionised by these future technologies.

A professional portrait of Ranjana Clark, a woman with dark hair, smiling and wearing a white sleeveless top with a subtle pattern. The background is a blurred indoor setting with a painting on the wall.

Ranjana Clark

Head of Global Transaction Banking

MUFG



Dr. Ruth Wandhöfer

Senior Adviser,
Banking & Payments Innovation

KPMG in the UK

One of the most foundational changes we are seeing right now is the development of distributed ledger technology, which very much started with Bitcoin, the first private cryptocurrency, but is evolving very rapidly. There's more innovation, more patents, more ways of creating the different elements of consensus and execution to make it more scalable and more appropriate for the regulated market, compared to the Bitcoin system.

We all agree that we cannot operate in a completely libertarian distributed network without any governance, rules and controls. In the future, it's all about ensuring resilience, safety, the right degree of transparency, the right degree of control of the regulator, of the sovereign, of the institutions participating and that is likely to happen within more defined private distributed ledger network types.

But we will see the connection of those networks over time to create what we could probably call "the Internet of value" where any type of valuable assets, in the form of digitised data, can be transferred between different communities as well as within communities.

As we are starting to move into a more distributed ledger-based technology environment, there will be a question about the role of intermediaries because these technologies reduce or remove the relevance of financial institutions in that sense. However, as different elements of the technology evolve and become more sophisticated, the intermediary role will change but continue to be relevant.

So, maybe banking institutions that do certain jobs today may do different jobs in the future?

Equally, we may see completely new types of intermediaries coming into play. We will also have to adapt our old logic into the new world. Principles such as audit, transparency, regulation, will continue to be applicable but will need to be able to cope with the new technology. So, you would have to be able to audit code, to be able to implement governance structures in a digital environment and be able to control things in an effective and efficient way.

Governments, too, will have different roles to play. As we rapidly move into a digital payment environment, we increasingly see government initiatives to create their own digital currencies. Sweden has the e-Krona project, for example, while China may be about to launch its own digital currency. Over time, we might see the development of rails between those national digital currencies, which could enable more ubiquitous cross-border payments, even in the retail payment space.

Even though some technology developments, such as Bitcoin, were seen to challenge the ability of sovereign control, we now increasingly witness nation-states adopting technology innovation in payments as a means of exerting soft power. It's about how you control the financial flows within your country and cross-border, and how you gain more transparency and understanding of the underlying economic purpose.

Finally, digital identity will also play an increasingly important role in payments. We might even see wider use of biometric chips under the skin, where everything is contactless and you just wave your hand to make a payment.

Regulators will have to get used to the idea of regulating the activity of payment provision rather than regulating payment providers. Payment is about to become an activity provided by a number of different types of players, using a number of different systems, and across multiple borders. The real challenge for the regulator is going to be to move away from an institution-based way of looking at the world to an activity-based view.

The greatest risk imposed by emerging technology is unquestionably the issue of the visibility of payments in the system. In principle, developments such as blockchain enable complete traceability. But that traceability is not necessarily open to external observers such as regulators. The concern is that authorities will lose even the limited degree of visibility that they currently have as to who is paying who what. For a whole set of reasons to do with money laundering, terrorist financing, the prevention of crime, tracing of stolen assets, and so on, that is a real worry.

There is a bigger picture too for regulators and policymakers. If you look at something like Facebook's Libra, the idea is to create a multinational payment system which operates across borders, and therefore largely beyond the constraints of national governments and their central banks. If you are a country where Libra circulates very widely, you have effectively lost your ability to impose exchange control restrictions or to impose capital controls, and your ability to influence levels of economic activity within your own economy may well shrink dramatically.

This is an interesting time for governments to be thinking about this and it explains the reactions, ranging from equivocation to outright hostility, of so many governments to the Libra proposal. They quite correctly perceive this as a potentially significant diminution of their ability to control their own economies. The issue for the product creators and innovators is that they know perfectly well that what they are trying to do doesn't fit within the existing legislative and regulatory system. They also know perfectly well that they will only be able to do what they want to do if governments allow them to do it. And I think they also know that the price of those governments allowing them to do it will be a degree of supervision, oversight, and control. But it does seem a deal that can and will be done.

The idea that absolute monetary sovereignty – to the extent that it ever really existed – is a thing of the past. That is not necessarily a bad thing because while governments have an economic policy job to do within the economy, trying to do that job indirectly, by controlling the banking system or the money supply, has actually never really worked. As banks simply become one amongst a number of different types of payment providers, governments are going to have to give up on indirect economic policy implementation through control of the payment system. That just doesn't look as if it's got a future.



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The future will see payments becoming more ubiquitous, more invisible and much more part of everyday life. Payments will just happen in the background; people won't go out in the morning thinking, 'I need to make some payments today'; they'll just get on with their daily lives and payments will just happen behind the scenes. An example of this progression would be wearable technology that acts as a payment mechanism. This, together with the security that is being developed to support wearables coupled with greater use of biometrics, will revolutionise how consumers pay.

Part of that is the challenge of digital identity. The next phase of payments evolution is going to really focus on identity: the importance of being sure it's definitely your customer initiating a transaction can't be over-emphasized. So, as we move forward, different proxies for payments and for recognising customers will be increasingly important. Banks have a crucial and big part to play in providing identity solutions. One of the big themes coming through is that we must continue to help our customers to remain safe and also to consume on a frictionless basis. So whether it's on a consortium basis, or whether individual banks develop their own solutions which are interoperable, banks will continue to be key market players.

Equally, we shouldn't lose sight of inclusion: we need to take our whole customer base with us, including those with vulnerabilities. People talk about the cashless society, but you need to be aware of consequences of that, for some parts of society the consequences are not positive; maintaining access to cash has to be maintained - not every customer has a smartphone.

Payments are the oil that keeps the economy going. Domestically that comes back to 24-7 payments capability, but it will also become a global capability as individual jurisdictions develop their own real-time payment systems, true step-change will take place when national faster payments schemes connect. Schemes that are connected will facilitate trade – and as the payment is incorporated into the end-to-end trade transaction possibly using distributed ledger technology - bringing speed, improved transparency and less friction.

As an industry, we have some heavy-duty lifting to do. A common and important theme is around the ISO 20022 standard and how optimising its deployment will bring benefit to customers and market participants.

More exciting still is the value that can be derived from data. Using tech such as artificial intelligence and machine learning to mine and analyse data brings a host of opportunities, ranging from a tailored customer dashboard to developing more relevant propositions and services

Banks will not be dis-intermediated as long as we continue to put the customer right at the heart of everything that we do, and as long as we continue to harness technology and work with partners to provide trusted and richer propositions.

At PayPal, we are focused on leveraging financial technology to improve financial health. Can I pay my bills on time? Can I save for my family? Can I build enough wealth to leave something behind? These are the real questions that people are struggling with. Technology can really improve those situations. That's really where we're most interested in innovation.

For example, there is so much potential in AI. There's just so much opportunity to take some of the traditional processes associated with payments, automate them, and make them a lot smarter at predicting, for example, ebbs and flows in somebody's cash flow.

Bringing AI to financial services will help people gain access to credit when they might need it; managing bills in more efficient ways; and, identifying fraudulent or mistaken transactions. If you can build up AI to identify fraud, there is just so much runway there in the next 10 years.

That translates to business financial solutions as well. One of the biggest challenges right now is small business financing. Managing cash flow is the number one concern for almost every small business. PayPal has a \$10 billion working capital finance product for businesses. We are able to leverage their payments data and demonstrate that they're a good credit risk to us.

We can't do this on our own. So, we work with banks around the world to provision that capital, and then all of a sudden, that business can now engage in a payment that otherwise they wouldn't be able to do. And that enables more consumer transactions which get the flywheel turning in the economy.

There are so many challenges to being a small business. When you're a small business owner, everything is on you. The biggest challenge is managing the cash flow. Making

sure that, the money coming in and the money going out match up, and then ensuring there's something left at the end of the day for you.

A wide variety of financial services are needed to kind of help manage that. You've got to have the ability to accept payments. You've got to be able to do bill payment easily and quickly. You've got to make sure that when money is coming in, it's coming in at the exact time to manage some of those bills. You've got to be able to get access to capital, if there's an opportunity or if there's a challenging month.

At almost every single part of a small business's lifecycle, they need financial services innovation. And it's an area that traditionally has been very difficult for financial services firms to provide. And that's where this kind of technology - data in particular - can be incredibly valuable because if you can understand the business and provision exactly the kind of product that is needed, at exactly the right time, you can unleash opportunity. I think that's the key differentiator that technology enables in the small business space.

We see the payments world helping with more and more of these real-world challenges for consumers and small businesses. Working with partners across the financial services ecosystem, we believe there is a huge opportunity to democratise financial services and improve financial health.

We also want to look to partner with governments on improving financial health. Governments want their citizens to have better lives so if we can align on at least that high-level goal, then we can work through challenges relating to security, stability and consumer protection.



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