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There are three main drivers for change in the payments industry – regulation, customers and technology – and the industry experts contributing to this paper confirm that these change drivers are not only disrupting the payments aspects of banking, they are fundamentally changing the business models according to which banks operate.

Among the many challenges facing banks as they respond to the transformation of the payments business, the biggest is how to hold on to the interface with their customers. Losing this raises the very real prospect of banks being reduced to mere generic providers of commoditised payment and banking services.

The good news is that technology is continually presenting banks with exciting new ways in which to retain the customer interface. The most obvious of these are customer-facing technologies such as new social channels and cognitive interfaces. But the open API revolution will be most significant here, because it will enable banks to forge closer, more responsive, more intimate and more embedded relationships with their customers.

It is possible to discern two distinct strategic approaches among banks grappling with the implications of open banking. Some are attempting to enhance their customers’ experiences through their own channels, while others have acknowledged the advent of a world in which payments are integrated into the customer journey and not a distinct step, and are providing white-labelled components to facilitate a smooth e-commerce experience.
Both strategies can be successful of course, but whatever route is chosen, success will depend on the strategy being business – not technology – driven. All banks will claim to have a payments strategy, but in order for that to be meaningful it must rise far above technology roadmaps and consider how the new world of payments can help deliver, inform and transform core strategic goals beyond the traditionally cloistered walls of the payments business.

As this paper shows, banks are also taking different approaches to tackling their other great challenge in the context of payments transformation: legacy. Again, any number of strategies could prove successful. But given the fundamental business-driven change that is happening in payments today, it is valid to ask whether it is really feasible that legacy payments systems can be made fit for purpose by simply wrapping them in a new API layer, or by continually bolting on new components.

The stream of new entrants to the payments business notwithstanding, it remains the case that incumbent banks are best placed to take advantage of the new landscape. Crucially, they have the operational capabilities to deliver in an end-to-end way on the promises implied by apps that can really only provide a pleasing experience at the customer interface.

However, if the banks fail to respond strategically to the fundamental changes enabled by these changes in payments, they run a real risk of losing this advantage and sleep-walking into irrelevance.

The open API revolution will be highly significant because it will enable banks to forge closer, more responsive, more intimate and more embedded relationships with their customers.
Payments transformation is becoming a cliché. It is so obviously the case that the payments landscape is changing profoundly – and that banks’ payments strategies and technology stacks need to change in response – that asking banks whether they have a payments transformation strategy is almost pointless. The answer is invariably yes.

Nor is there any mystery about the drivers for payments transformation. The same three key trends are cited time and again by the bankers embroiled in dealing with their implications on a day to day basis – regulation, changing customer behaviour and demands, and rapidly evolving technology – usually in that order.

Cliché though it may be, payments transformation is a major and necessary focus for banks. As one interviewee for this research put it, “if we are not thinking about payments transformation, then we really are ostriches”. And another reinforced this point. “If you take your eyes off disruption for a moment, it can happen overnight – and that is what keeps me awake.”

In this context, the purpose of this paper, which is based on in-depth interviews with a broad range of payments experts from banks all over the world, is to dig more deeply into the different approaches banks are taking to payments transformation.

The paper explores the difficulties banks face and how they are tackling them. It also examines how their thinking about their technology, and their business models, is evolving. Its aim is to offer useful insights for banks grappling with the much-discussed but still challenging phenomenon of payments transformation today.
Ask a banker what they think is driving payments transformation today and you get three overwhelmingly frequent answers: regulation, changing customer expectations, and technology.

There are other factors in play of course. As Dave Kretz, Managing Director and Head of Global Payments in the Global Transaction Services business at Bank of America Merrill Lynch, says, globalisation is an important trend, with banks supporting their customers’ sourcing in, and payments to, lower cost centres. “By virtue of that sourcing pattern, we are also seeing the average payment size decreasing, which then, in turn, increases use of non-traditional payment methods such as digital wallets,” he adds.

Another influencing factor is simple economic reality. “In some of the key core markets in which we operate we have negative interest rates,” says Lars Sjögren, Global Head of Transaction Banking, Danske Bank, “and that is changing our revenue stream. Part of the revenue from payments before was the fee and then also we had the transaction flow – and that value has changed quite dramatically over the last couple of years.”

The need to underpin economic growth is another driver, suggests Shirish Wadivkar, Global Head, Payables & Receivables, Transaction Banking, Standard Chartered. “Payments clearing can’t just take two to three days because we have no real-time solution,” he says. “These costs of delays are born by economies. Goods and services need to be transacted faster: economies are going faster and they need an infrastructure to support this. Though it is a much-abused term, it is important to acknowledge ‘Uberisation’ as a trend. Doing multitudes of micropayments across currencies and geographies is not feasible on today’s infrastructures. There is a pull for the industry to handle high volume micro-payments, but most payments infrastructure globally is built to handle payments of billions of dollars once a day – not payments of a few dollars multiple times a day.”
But nonetheless it’s the big three of regulation, customers and technology that dominate banks’ thinking. The fact that they are obvious does not mean they are impacting the payments landscape any less, and for completeness it is worth briefly exploring the implications of each.

The double-edged sword of regulation
In the regulation camp, the revised Payment Services Directive (PSD2) is cited by many in the EU and internationally as a critical change factor, because it is opening up the landscape to new competition, as well as requiring banks to make a whole host of other changes in order to comply.

“With PSD2, all the attention goes to the ‘access to accounts’ aspect, but I think also the secure customer authentication requirements, the reduced liabilities for users of payments products from banks and the inclusion of all transactions going into and out of the EU are a factor,” says Eric Tak, Global Head of Payments, ING.

Though the banks are doubtless still seething about the regulation at some level, you won’t find one today that doesn’t say PSD2 is an opportunity as well as a challenge: the camp of banks using PSD2 as a stepping stone to build better things is much busier than the camp shooting for compliance only. As Sjögren at Danske says: “PSD2 will change banking as we know it, and will propel developments that would otherwise have taken longer. We will definitely be PSD2 compliant whenever that is required, depending on final decisions on PSD2, and of course we are looking at this also from an opportunity perspective. Some go into this and say, ok, so now other third-party providers will be able to use these payment rails that we have worked so hard on, but we have decided that we are going to treat this as an opportunity to see if we can use it to develop new services for our customers.

Claus Richter, Head of Cash Management Customer Solutions at Nordea, agrees. “Banks are under attack due to changes driven by PSD2, but also banks can use their assets and advantages (a large customer base, experience from compliance and regulation, strong investment capacity and wide product portfolios) in the right way. This is the starting point of new ways of working and new ways of collaborating with partners.”

“We’ve got regulation, and we’ve got trust – and we need to be able to leverage them to create new services for our customers.”
ONE BANKER INTERVIEWED FOR THIS RESEARCH
PSD2 is not the only game in town of course, and nor will it be the end of the regulatory journey. “A lot of other regulation, especially around data privacy, which has a huge impact on what banks and non-banks can and cannot do with customer data, is certainly an influence,” says Tak at ING, adding: “Last year already we saw the effect of reduced profitability of the cards business as a result of the interchange regulation. We expect a lot more regulation to come which will either tangentially touch us or shape the industry as it moves forward.”

Regulation that is “far reaching and wide reaching” that drives creation of improved payments infrastructure in markets is a strong influencer of payments transformation, especially when coupled with real demand in the corporates space, suggests Wadivkar at Standard Chartered. “Interbank obligations and interbank risk and liquidity are all key and are the focus of regulation such as Basel III. Another regulatory theme driving payments transformation is anti-money laundering and KYC: the expectation is that a payments message will carry more information, showing rich information on the who and the why, not just the what.”

Overall, regulation – though it is forcing change and requiring work – is also viewed as a positive factor for banks engaged in dealing with the implications of payments transformation. As Martin Walder, Head of Payment Product Management, Credit Suisse, says: “It is a good thing for banks that we are regulated. This is an advantage. It demonstrates that money is safe. There are procedures when something goes wrong. Compared to dealing with a regulated company, dealing with a private, alternative payment system can be challenging when it comes to dispute resolution.”

For Kretz, the banks’ regulatory pedigree is a useful strength in their relationships and interactions with customers. “When we deal with technology companies, they make us up our game in terms of being flexible – and we like to think we influence all our clients to be aware of and responsive to regulation and security.”

One interviewee involved in the research agrees, that being regulated and being an expert in regulation can be an asset for banks, agrees being regulated and being expert in regulation can be an asset for banks. “We’ve got regulation, and we’ve got trust – and we need to be able to leverage them to create new services for our customers,” they say.
The changing customer

Customer expectations – the fact they are “clearly expecting the same kind of service and usability and digital availability from their banks as they get everywhere else”, as Tak puts it – cannot be ignored, especially as in the payments context these expectations are being amply met already. As Ireti Ogbu, EMEA Head of Payments & Receivables, Citi, points out, “none of us as individuals can fail to have been impacted by the changes happening, the arrival of ApplePay and similar services”.

Their appetites whetted by innovations such as these, retail customers are driving transformation in a very tangible way, suggests Mike Baldwin, Head of Transactional Solutions, Westpac Institutional Bank. “Payments transformation is a continuing evolution: our customers expect this, and we have a very big drive to make payments simple and frictionless,” he says. “When they buy overseas, customers compare international payments with domestic payments and they are asking why it costs dollars to pay internationally and only cents domestically.” Meeting customer needs is the starting point for Westpac’s exploration in new payments capabilities, he adds. “Innovation starts with a customer need,” he says: “It has to be purposeful innovation, rather than us sourcing technologies and wondering what we can do with them.”

George Doolittle, Head of Global Financial Institutions Payment Services, Wells Fargo, agrees, and points out that banks have both an advantage and a challenge in this regard, in the shape of their existing customer bases. “We start with the customer first,” he says. “We want what the customer wants. We have an enormous customer base and from a demographic perspective we have millennials who want the latest in technology, and we have a massive baby boomer population looking for safe and security. It’s a continual balancing act.”

Delivering on more sophisticated customer requirements is already driving innovation by banks, suggests Leigh Mahoney, Head of Wholesale Digital Transformation, ANZ. His bank is trying to give to its customers what airlines have given to theirs, he says – “a great experience at check-in, in the lounge, and in flight” – and technologies such as chatbots have the potential to streamline customers’ experiences of automated services, “catching them when they fall”, he adds.

Without playing down its impact, it’s fair to say it is no surprise that changing consumer behaviour is shaping banks’ approaches to payments. However, it is important to note that this driver is becoming stronger, and spreading its reach more widely. “The arrival of the personal digital experience – now
“Private equity has invested £5 billion in fintech, and around 60% of that has gone into fintechs focused on payments. Most of these are on the retail side, but this means that our corporate clients are getting exposed to many different payments experiences in their personal lives – and this is driving their demand for innovation in their companies.”

IRETI OGBU, EMEA HEAD OF PAYMENTS & RECEIVABLES, CITI
Banks will also likely have to consider the implications for their customers of changes such as open banking – and to help them in that process, Brown adds. “I suspect we are going to see some challenges related to customer understanding around data protection, requiring education for customers about how to control and what to share in terms of their data.”

**The technology revolution**

The power of “the mass proliferation of relatively cheap technology in the hands of consumers”, as Tak puts it, is well recognised as a driver for change across multiple industries. “The next 10 years will be game changing,” suggests Richter. “Increasingly, Nordea sees itself as a technology company as well as a bank. Why? Because technology will define our future as a society, and within this, it will define the future of banking.”

While easy to use but incredibly powerful technology is clearly influencing the way consumers approach banking, the lure of high-tech is not always so strong for corporates, as Cindy Murray, Head of Credit Fulfillment, Service & Operations in Global Banking Operations at Bank of America Merrill Lynch, points out. “Whenever we ask a corporate to invest in technology to support new solutions it takes time to get the funding and the support,” she says. “It’s not overnight – particularly in the B2B space, and to some extent in the B2C.” As an example she cites clients asking to be able to use SWIFT MT940 messages to post payments intraday, in close to real-time. “We can say to them, what about API integration, and they may say, that’s great, but it’s not the solution we have today. It will take technology and development effort, and often that will be challenging.”

That said, banks are certainly experimenting with and in some cases using in anger a number of leading edge technologies as part of their payments transformation projects. In the general sphere of cognitive for example, many banks see and are exploiting the potential of bots to support customer service and robotics to improve efficiency. “At the back end, we are using robotics to improve STP (straight through processing), especially in the area of onboarding, where for corporate clients there has been very little STP. Many of the processes and documents and forms could be digitalised, and there is a big need to use digital and AI to significantly improve client service in this area,” Murray says.

As Kretz points out, banks are typically “very interested in innovations that can improve security and usability” and in this sphere the increasing adoption of biometrics is a clear trend. For Brown “biometrics are essential”: “I think the one next big change will be how can we move completely away from
passwords. That is becoming closer and closer because of the technology that we are using, and from a security point of view that has got to be a focus for any type of institution today,” he adds.

Banks are also working hard to wrest back the initiative in the mobile wallet space. Mobile wallets are “of significant interest”, says Mahoney, adding that for ANZ, its experience with “Applepay has been positive”. Wallets are a significant competitive battleground, as Sjögren highlights. “This is one of the areas where you could see potential new entrants coming in, building very good mobile wallets, and thereby taking ownership of the payment interface,” he says. “From a strategic perspective we are quite interested in keeping our relationships with our customers when it comes to mobile payments and other solutions.”

Wallets are also an example of a technology that is making the leap from consumer payments to corporate payments, points out Baldwin. “We are looking at use cases around implementations for corporate customers, and their customers, for example to create closed loop payment systems,” he says.

When it comes to one of the most talked about technology innovations of all – blockchain or distributed ledger technology (DLT) – “measured” is probably the best word to describe the banks’ attitude to its potential in the payments business. Says Tak at ING: “We are very active in the R3 consortium, looking at which opportunities blockchain technology provides for banking services, and currently we don’t believe that the most attractive uses for blockchain are necessarily in mass retail payments. The most promising areas that we see are more on the securities side, trade finance, low volume, high value payments – but for now not really on the mass payments side.”

As one interviewee puts it, the banks are certainly “kicking the tyres” of blockchain, and there is definitely an interest in leveraging the technology for functions where there are currently gaps.

“We have no industrial scale, cross-border settlement in real-time for transactions,” says Wadivkar at Standard Chartered. “The closest we come

“At the back end, we are using robotics to improve STP (straight through processing), especially in the area of onboarding, where for corporate clients there has been very little STP. Many of the processes and documents and forms could be digitalised, and there is a big need to use digital and AI to significantly improve client service in this area.”

CINDY MURRAY, HEAD OF CREDIT FULFILLMENT, SERVICE & OPERATIONS IN GLOBAL BANKING OPERATIONS AT BANK OF AMERICA MERRILL LYNCH
is credit cards, but that solution handles only small values and is quite costly too. So if distributed ledger technology or blockchain could enable rails to execute international cross-border real-time multicurrency, that becomes a game changer,” he says. “Before we get drawn into the seductive logic of using blockchains, we should be sure that it’s a problem that can be addressed by such technology. Often I feel we have ‘a hammer looking for nails’."

There is also a strong sense that blockchain needs to further mature if it is to offer real value in the payments space. Baldwin reports a very positive proof of concept working with Ripple on cross-border payments, but adds that “blockchain isn’t quite ready: the whole ecosystem needed for data standards, legal agreements and dispute resolution, for example, is not in place”. The bank remains an active supporter of DLT as the technology and the governance model mature, Baldwin says, but he too emphasises the fact that current world solutions can also be brought to bear to address many problems. In the case of cross-border payments, Westpac realised it could achieve this “with a direct connection and an API – and it’s still fast and still low-cost”, he adds. “We always need to assess whether new technologies are solutions looking for problems, and whether the problems can be solved through conventional means.”

The addition into the blockchain equation of a fiat digital currency could make all the difference, Baldwin continues. “If you think about all the liquidity all around the world, the potential is there to use a much smaller amount of liquidity on a DL using a digital currency backed by a central bank,” he says. “This would unlock a whole lot of value, if banks could hold and exchange value on the blockchain and still enable central banks to control monetary policy and manage the money supply.”
Walder too says the role of blockchain in payments is not necessarily a given. “Blockchain is a technology which in certain cases is an advantage, and if there’s an option for us to do something faster in a way that is more cost efficient, we will certainly investigate adopting it,” he says. “But in the Swiss market we have a new clearing system – and blockchain is not it. Everybody is talking about it, but at this point it is not making so much impact in payments. What I do see as the most promising possibility for blockchain is applications in trade finance and other banking transactions which are linked to payments. Out of a banking transaction very often a payment emerges. But for blockchain solely for payments, I don’t see the business case at the moment. Nevertheless, we have a group of experts who are monitoring the latest developments closely.”

Brown too sees applications for blockchain close to but not specifically in payments. “I’ve started to see some blockchain solutions not around the payment itself, but around validating the audit trail for banks in terms of the files that come in and how they are managed and how they move through – so a slightly different security and audit-driven usage of the new technology.”

As Dianne Challenor, General Manager, Global Transactional Services & Client Experience, Westpac Institutional Bank, says, though, “to not continue to investigate blockchain would be a big mistake: at its grass roots it is very valuable, as an Australian bank it gives us a great opportunity to act globally”. Indeed, no bank can afford to ignore the technology – even if it were possible to do so, given the fact that, as Doolittle at Wells Fargo says, “it’s a daily discussion at the moment”. “We are very excited about what blockchain offers,” he says. “It is a whole new area for development with the potential to enable us to accelerate product cycles, improve interaction with customers, and better manage data and security over time. You can’t be a financial institution without having multiple initiatives concurrently across products: the challenge is finding which one to focus on.”

Doolittle sees potential use by clearing houses as “a real opportunity – especially for small asset classes”, and adds that “CLS (Continuous Linked Settlement) is also an interesting opportunity”. However, he emphasises that the banks are in a “learning process” with blockchain. “It could enhance our AML, it could enhance data collection, but there are without doubt challenges. It is a critical technology for our future, but we also need to understand more about it from our regulators, to talk to them about what it means, and how we are going to frame our initiatives.”
The banks have already learned a lot about blockchain through the initiatives in which they have participated, suggests Mahoney. “We have discovered that there are certain attributes that will drive success and failure of a blockchain POC. We see success where we’ve identified a genuine business problem where there is a limited number of actors and a genuine need for using a distributed shared ledger,” he says, citing an initiative with Wells Fargo on cross-border payments. “Cross-border payments take a long time, for legacy reasons, mostly to do with interbank reconciliations, and we saw a good opportunity to speed that up.”

ANZ is also working with Swift on its GPI (Global Payments Innovation) initiative, Mahoney says, which in fairness seems to generate at least as much excitement as DLT among the banks with its potential to streamline cross-border payments. As Wadivkar at Standard Chartered says, “Swift has global reach, which has the potential to be more transformational”. Ogbu at Citi also “calls out” GPI. “This is Swift’s strategy to transform the correspondent banking model, to address the painpoints of cross-border payments. It’s our observation that this is probably being driven by some of the moves made by blockchain providers, to enable key requirements such as transparency, instantenousness and irrevocability,” she says. Indeed, the vision for GPI’s development is that at a later stage it will encompass a move to DLT as the underlying technology platform.

Ogbu highlights the value GPI will bring by enabling “track and trace” capabilities. “Swift will use cloud-based technology to track payments as they go through the infrastructure and provide visibility on payments going through the system,” she says. “What we are doing is overlaying on top of that capability Swift is providing through GPI functionality to upgrade our self service capability on our e-banking platform Citi Direct to allow our corporate customers to come in and track their payments on a real-time basis.”

“Blockchain could enhance our AML, it could enhance data collection, but there are without doubt challenges. It is a critical technology for our future, but we also need to understand more about it from our regulators, to talk to them about what it means, and how we are going to frame our initiatives.”

GEORGE DOOLITTLE, HEAD OF GLOBAL FINANCIAL INSTITUTIONS PAYMENT SERVICES, WELLS FARGO
Payments transformation is a broad church, but there are several key strands of tangible activity in which many banks are currently involved.

**Real efforts on real-time**
One of the most visible of these strands is real-time payments. As one interviewee puts it, “real-time is a reality, and we’re going to have to tool up”. The global opportunity for real-time in consumer and business payments is undisputed, as Kretz at Bank of America Merrill Lynch says. “The challenge is that many clearing systems don’t operate in real-time.”

As a consequence, the global rise of real-time payments is prompting banks to investigate what they need to do to their payments infrastructures to be ready. “We are certainly thinking about faster payments and asking what our infrastructure should look like to support that, not just real-time posting, but processing – and we are also asking what it means in terms of data,” says Murray. “We are asking questions like, do we need to move to a single payments engine on a global basis, what is the client expecting this to look like, if clients will be requesting and receiving payments in real-time, how do we create that client experience?” she adds. “Most of our corporate clients are operating today in batch. Are they going to be prepared to invest in moving to real time? New messages, real-time reconciliations, new functionality like request to pay... will that require technology development to support it on the part of our customers?”

All that said, real-time is certainly an opportunity she believes, and not just in consumer payments. “On the income side, this creates the opportunity for corporates to be able to reconcile and do the cash application in real-time when they receive the payment,” she says.

Ogbru at Citi too sees the expansion of real-time use cases beyond retail payments. “At the moment in the UK it is mainly consumer-led, but then again, the UK government has adopted instant payments for tax, so that is already an extension into government to person payments,” she says.
Ogbu also sees the potential to exploit instant payments in the e-commerce space, leveraging a similar model to the bank-owned Ideal scheme in the Netherlands, which hands off e-commerce customer transactions to the interbank platform (rather than the card network).

“Fast forward into a world of instant payments, if the banks are able to provide a front end e-commerce interface to the 30+ different real-time schemes likely to be in operation, we could reduce the cost of e-commerce payments, that is the merchant acquirer costs, making e-commerce cheaper. There would be challenges to resolve in terms of how to handle fraud – today with card payments there are all types of fraud detection measures in place – but in theory this would give us the ability to settle e-commerce transactions in a cheap, cardless way,” Ogbu says.

Tak at ING also sees the potential for banks to leverage 24/7 real-time payments to provide an alternative to card payments. “We believe that if you have instant payments – and we see this already in the countries that have instant payments today – it also provides an alternative to the card infrastructure, often at a much lower cost and ahead of what the cards do, because basically the card infrastructure provides a real-time payment guarantee or payment authorisation to merchants but it doesn’t provide the money which is still coming at least a day later, or sometimes even more. In this case, we could actually leapfrog what the current card schemes are offering by not only providing the guaranteed real-time payment execution, but also the receipt of the funds themselves instantaneously. This would help a lot of customers on the receiving end with their cashflows and cash management.”

There are certainly opportunities for the banks in the move to real-time payments, as Richter at Nordea observes. “There are various aspects of cash replacement that could be achieved from having a real-time set-up. Examples

“We believe that if you have instant payments – and we see this already in the countries that have instant payments today – it also provides an alternative to the card infrastructure, often at a much lower cost and ahead of what the cards do.”

ERIC TAK, GLOBAL HEAD OF PAYMENTS, ING
could be cash in the physical merchant environment, where the cost for handling cash is high and creates quite a big risk for the people working with it from a criminal perspective,” he says. “Another angle is the handling of cash internally within the bank and between banks and suppliers of cash like central banks and other players, where this handling is time-consuming, expensive and also introduces risk.”

Of course, there are also challenges related to real-time, he adds. “The need for control over fraud, AML and sanctions screening is as vital for real-time payments as it is for any other payment. The challenge here is then of course speed. How will it be possible to properly screen all transactions and have the time to take proper action on them?”

This notwithstanding, “real-time payments are totally necessary in order to transform the payments business”, he continues. “The customer requirements are there as well as changing behaviour due primarily to digitalisation and internationalisation. Add in e-commerce and mobility and this clarifies the need for real-time payments. There is no turning back: the need is there.”

Sjögren at Danske agrees. “Real-time is absolutely key, driven by customers. They want to be able to do real-time cashflow forecasting, and if you don’t have real-time payments systems, and there are glitches, they won’t accept that. Fewer and fewer customers will accept their banks sitting on money, and they require real-time – just as they do in most other areas also. This is important, and when we design and build our solutions we always go for real-time where possible.”

“The need for control over fraud, AML and sanctions screening is as vital for real-time payments as it is for any other payment. The challenge here is then of course speed. How will it be possible to properly screen all transactions and have the time to take proper action on them?”

CLAUS RICHTER, HEAD OF CASH MANAGEMENT CUSTOMER SOLUTIONS, NORDEA
Standard practice: ISO 20022

A second strand of transformation activity is being driven by a trend related to real-time – the wider adoption of ISO 20022 formatted messages in the payments industry. For Murray, these trends are inextricably linked. “There are two things happening in terms of payments transformation,” she says. “Various countries are looking to accelerate and implement real-time payments solutions, and this is not just about providing payments faster, it’s also about providing more data and consistency and conforming to the global ISO 20022 standard. In this context, real-time reconciliation becomes possible: I get the payment, I know specifically what I am being paid for, and I can immediately apply that cash and make a decision about subsequent credit.”

A great deal of investment has already been made in ISO 20022 of course. Bank of America Merrill Lynch for example has already replaced its payment processing platform outside the US and implemented ISO 20022 within that, says Murray. “This means we don’t have to transform data into a different format, and – though it was a challenge, covering many countries with different nuances – we have successfully implemented SEPA on the new system,” she adds.

SEPA was obviously a major transformation project, and its impressive results should not be underestimated, Ogbu suggests. “By enabling domestic payments in between all countries across Europe, SEPA is an innovation in itself,” she says. On the other hand, the achievement of SEPA arguably did not go far enough, as Tak at ING points out. “Even though we invested millions in the payments infrastructure for the SEPA project five years ago, the big pity is that what we actually achieved was only partial harmonisation of payments across Europe, because we harmonised an already slightly – and by now really – outdated infrastructure which is batch-based 24/7 rather than real-time” he says. “What we actually should have done in hindsight is collectively use that momentum to actually move straightaway to real-time payments 24x7, because that is what our customers demand of us.

“You can clearly see that all those countries which didn’t have a major involvement in the SEPA project, like for instance Poland, Sweden, the UK and Switzerland, have instant payments capabilities right now. By contrast the countries that spent the most on SEPA typically do not have instant payments today. That is certainly something we need to remediate.”

ISO 20022 has already absorbed investment then, but it will still absorb more. In Switzerland this is a major driver for transformation, says Walder. “For the next two to three years, the change to ISO 20022 will remain the
focus in Switzerland. At the moment the clearing system has changed, and we are now starting to move our customers away from the legacy formats.”

Though the ISO 20022 journey is not finished, it is a worthwhile path to pursue, as Brown highlights. “In the UK, a lot of the banks made a huge investment to be ISO 20022 compliant for SEPA, and now they will have to invest more – admittedly with some reuse – to be compliant with core domestic systems as they move to ISO 20022. However, on the plus side, the UK has been at the forefront of the development of payments, having implemented Faster Payments in 2008. People in the UK now just expect to be able to move large amounts of money 24/7, and the banks in the UK have learned from that and they do understand well where the opportunities are for the future. The challenge is they face a further five years of change – payments systems consolidation, ISO 20022 implementation – but at the end of that process, if the UK does it well, it will have a very data-rich real-time platform, which will be superb for real-time e-commerce in the UK.”

Open season on open APIs

Because of PSD2 and the open banking movement, it is difficult to avoid a discussion of open APIs when looking at any aspect of payments. It is however important to keep APIs in perspective, says Mahoney. “Put simply, APIs are a way to loosely couple two pieces of software together for mutual benefit. The open API movement continues to be interesting, but open APIs are not relevant to everything. We have to identify where we need synchronous rather than asynchronous interaction. There are a lot of suggested use cases, for example there’s a suggestion that the way forward for governments to access data is through APIs. But if we are talking about a terabyte of data, the answer is not APIs. That said, APIs also fuel the programmable smart contract concept which is so interesting in the context of blockchain, so they are very important.”

While much of the focus of the open API discussion so far has been retail banking and payments, there is increasing interest among the banks in how they can leverage open APIs for their corporate customers as well. Sjögren at Danske says: “We do have a co-operation with one of the larger ERP providers here in the Nordics market where we are exploring opportunities through open APIs to add in data that they have and combine it with our data and see what kind of services we can build out of that.”

Ogbu too sees opportunities here. “APIs create the opportunity for seamless integration with the client to send and receive information. This means we can help the client connect to their ecosystem,” she says. “If they’re dealing
with an aggregator, we can connect with that aggregator for them and provide information back in an integrated way. Rather than a client having to go to A, B and C banks and dealing with aggregators and getting back multiple reports, we as the primary bank for our client can give them the information in an integrated manner.”

Overall, APIs are “a very positive development”, she says, because they create “a new standard way of engaging with clients”. One challenge though is that for the clients “it does mean integration, so technology spend, time and effort”.

Murray at Bank of America Merrill Lynch agrees there could be benefits in deploying open APIs to integrate with corporate clients, but points out another challenge. “Corporates will say, how can this solution be made bank agnostic? When corporates moved to Swift it was to take advantage of a single interface with their banking partners. The question is, how will open APIs support a bank agnostic solution?” Working with an ERP system provider – as in the Dankse example above – could be one option here.

The value APIs bring from an integration perspective is very attractive to banks, however, though there is a job to be done to determine a framework for sharing APIs of different kinds with different levels of security, Wadivkar points out. “APIs are not new. APIs have always been used. What is changing is how modular our banking systems need to be to deal with many more open APIs. We’ve recently launched our own API directory. There will be some open services. For example, a bank holiday list that could help clients schedule payments properly is one we could publish to everyone. We will need to balance that with different kinds of APIs that require more security. APIs have different levels of access and security and in this day and age, it the most important question for banks to answer,” he says.

Importantly though, he adds: “If you have an API, your integration with your client gets deeper. A bank with many APIs has a higher integration with its customers using those APIs. However, both the bank and the client need to invest.”
If banks were free to make whatever use they liked of every available technology there is probably no limit to the innovation they could introduce into their payments businesses. But in reality of course they are not free. They need to be careful, as Brown points out. “Transformation is good – but payment systems need to be robust and resilient, because they are core to the economy of any country.”

In addition to regulation, customer needs and technology change, banks’ thinking about payments transformation is then inevitably also shaped by considerations of fraud and cyber security – and this colours their approach to any innovation. “If the future is real-time, then fraud prevention has to be really fast,” says Walder. “If the payment is non real-time then there is obviously more time to get the money back. If it is real-time, then the financial industry has to be really good in detecting fraud before making a payment.”

With every innovation comes a possible threat to the banks’ ability to live up to their responsibilities around security. “We always have to focus on what is secure and where we can protect customers,” says Doolittle. “One of the things banks are struggling with as we get into biometrics is that now that we know so much more about people as humans, when we start putting that on computers, we have to be sure we can protect it. Protection is the critical part. If what makes us human is stored in a computer and socialised globally through wearables, how can it be protected?”

This concept of protection is also critical in the context of banks’ approach to addressing the other significant challenge many of them face in payments transformation: legacy. As Challenor at Westpac points out: “Protecting our core is something all banks need to think about. When we think about migrating to brand new technology, we need to think about the new cybersecurity threats of that. Moving too quickly for our legacy could be a downfall.”
It is absolutely not new information that some banks are struggling in their responsiveness to change in the payments landscape because of their legacy. As Walder says, “legacy is always an issue if you are a large company”. “One challenge is knowledge of the legacy system. They can be more than 20 years old and lacking documentation, so it can be difficult to find out what the system does and whether it is important and whether it is feasible to change it,” he continues. “There will always be people who say, my system is working well, there is no need to change it now. Market initiatives – like ISO 20022 – are a good opportunity to force this change.”

Sometimes “core systems have been working for 20 years and don’t have to change”, Walder adds. “That is not legacy – it is just old.”

The legacy situation – like so many others – is not black and white. “Given our clients’ expectations of a high degree of performance – which is delivered today by our well-established and tested platforms – maintaining that high standard as we roll out new products is very important,” says Kretz. “Everything we do has to be globally consistent, meet high performance standards, and have strong usability. It’s when a system is country or product specific that we face the consistency challenge.”

Banks also face the difficulty of managing so many drivers for change at one time, Doolittle at Wells Fargo points out. “The biggest challenge for our legacy platforms is that real-time, ISO 20022 and DLT are all coming at us at the same time,” he says. “There is no question that banks are being forced to reassess their legacy systems.”

The confluence of factors hitting at once is indeed problematic for the banks, agrees Brown. “The bigger challenge is that the legacy systems still have to cope with regulatory change. If legacy systems could be allowed to continue to run while new systems are being developed in a regulatory compliant fashion, that would be simpler – but that’s a world that doesn’t exist today. The banks continue to have to upgrade legacy systems to cope with regulatory
change, and that means they have less capability to build the new technology platforms that they need. We have seen this in other industries, the need to build new infrastructures alongside existing platforms and introduce them over time. Unfortunately, though, decommissioning legacy systems and legacy payments is very difficult to do.”

There is also a cost consideration, says Tak at ING. “Our legacy systems are robust, safe, running, they support our existing business and they support the delivery of services through APIs, so in that sense we could continue working with them. However, a lot of them are still quite expensive to run, particularly as we have always been a multi-domestic bank and now we are moving to a more one-bank view and more shared platforms. So we are working to move to low-cost maintenance shared platforms that all the countries and business units of ING can tap into. From a financial perspective, it’s a substantial investment to come to much cheaper infrastructure.”

Tak also highlights the need for banks to manage multiple streams of activity in parallel. “The main challenge is similar to the instant payments challenge,” he says. “We need to do a lot of stuff at the same time because we can’t just basically close our eyes to the need for innovation that is meaningful to our customers. We need to do this while we are integrating the internal legacy systems, which means that we need the capacity and the funding to keep investing in both.”

“Given our clients’ expectations of a high degree of performance – which is delivered today by our well-established and tested platforms – maintaining that high standard as we roll out new products is very important. Everything we do has to be globally consistent, meet high performance standards, and have strong usability. It’s when a system is country or product specific that we face the consistency challenge.”

Dave Kretz, Managing Director and Head of Global Payments, Global Transaction Services, Bank of America Merrill Lynch
Some banks are engaged in major projects to eliminate legacy. At Nordea for example, its Simplification programme is designed to “ensure we are leaders in the new space and do not suffer from legacy issues”, Richter says. “Nordea’s Simplification Programme will enable rapid, straightforward processing of all of Nordea’s incoming and outgoing payments. This will improve the service’s 24/7 stability as well as the quality of deliverables. The reduced system complexity will mean the faster introduction of new services and an improved ability to adapt and respond to changes in customer demand and the regulatory environment. The new payment platform, combined with common data warehousing and an updated core banking system, will be essential elements in our enterprise infrastructure and future banking approach,” he explains.

Others have strategies to enable continuous improvement. “We were lucky. We did a lot of moving early on off legacy systems and we have a single platform which is fairly new, 10 years old. Regardless of that, all of us banks will be challenged by an ‘always on’ payments world with requirements to do hundreds of transactions per second tomorrow. We have embarked on a transformation programme in the bank, focused on improving capacity, modularity, features and resilience, to be ready for tomorrow’s payments,” says Wadivkar at Standard Chartered.

Thinking about legacy functionality in a more modular way is also an option. “So much of what accounting platforms did years ago is now actually done by specialised applications,” says Murray. “So liquidity solutions are no longer delivered through accounting applications, for example, and because of digitalisation, a lot of the heavy lifting now happens in the channels. This is good, because replacing everything at once makes projects so big. We need to be selective in terms of the biggest painpoints,” she adds.

Another strategy is to innovate in a parallel environment. “Our legacy systems are fast, reliable and resilient,” says Baldwin at Westpac. “We are innovating much faster on the periphery of those systems than we are at the core, in order to keep those legacy systems stable and performing well. Today, our
software developers are working on payments innovation using our value-added payments software development company, Qvalent,” he explains. “These systems are completely separate from the Westpac core system, so we don’t have to do any regression testing in the core system when we introduce new capabilities at Qvalent. Qvalent is hosted in a data centre with hot-hot failover, so we can implement new features in real-time, expose them to a limited number of customers, and get their feedback before releasing production versions.”

An element of co-existence is inevitable, believes Ogbu at Citi. “Our view at the moment is that we have to find a way of combining the two, the legacy and the disruptive,” she says. “If you look at industries where there has been disruption – music or film – there’s a place for both types. People still buy vinyl and go to cinemas. If you apply that analogy to payments, we still need the core banking platform, tried and tested, proven and integrated and fully STP capable. We need to still maintain what is known and proven and works.”

That said, the banks do need to keep abreast of changes, she adds. “We need to preserve our core capabilities and through a strategic, investment-led process, look at ways of leveraging what’s happening now for the future. We are investigating different options, and at the point we believe these become scalable and can provide the same level of support as the existing infrastructure, we will migrate to them.”

The ubiquitous API also has a role to play in legacy system management. “We are building the APIs in order to be compliant with PSD2, and we are at the same time looking at internal APIs that will make it possible for us to be more flexible for our customers,” says Sjögren at Danske.

“You can use APIs to digitalise the core and programmatically interact with heritage systems in a new way,” agrees Mahoney at ANZ. “This creates tremendous opportunities to allow these systems to survive and be relevant.”

This approach works best with systems that are 20 rather than 40 years old, of course – and Walder adds a note of caution: “Using APIs, it is certainly possible to tie systems together, but there can be a challenge with true
legacy systems in that they have no flexibility at all, and that very limited information can be extracted from them,” he says.

There is also a need for new ways of thinking about legacy transformation, suggests Mahoney “Banks tend to go through transformation programmes often,” he says. “What I would hope is that on both the technology and the business sides, we can more appropriately lifecycle manage assets. This puts us in a strong position for organic and evolved growth, and transformation becomes less and less of a trend. If banks have to spend millions on transformation it is often because the business and technology assets haven’t been well managed through their proper lifecycle. Given the rate of change, it is far more effective to actively manage an asset, technology or business so that rather than transformation, you have the opportunity to organically grow.”

Doolittle also favours a new approach, centred around “collaboration and community effort”. “Many of us are going to have to tackle our legacy challenges with key interfaces – Target, EBA, Swift, The Clearing House (TCH) – we’re all going to have to put some of our R&D into our legacy engines, and that will have to happen in the community so that we all benefit from centralised legacy rebuilds,” he says.

And of course, partnering is another route for banks to take to alleviate their legacy pain. As Ogbu says: “One way of being able to go to market quickly with new innovations is by partnering with fintechs.”

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LEIGH MAHONEY, HEAD OF WHOLESALE DIGITAL TRANSFORMATION, ANZ
Partnering with fintechs is not just an element of the technology solution for banks looking to transform: it is also part of the business solution. The changes in the payments landscape are so profound that it is a given that the banks’ response to payments transformation must comprise not only a technology strategy but a business model rethink. As Challenor at Westpac says: “We think about our role in the ecosystem every day. For us it’s about embedding ourselves in critical flows. Just being a payments provider and offering bank accounts isn’t differentiating. The provision of data with payments to enable clients to better understand their activities, rising up the value chain, embracing fintech relationships, these are all ways we are thinking about our role in the future ecosystem.”

Arguably, business model reinvention for banks is not a choice. As Kretz at Bank of America Merrill Lynch says: “The product proliferation, including real-time payments and digital wallets, that we are seeing now is more than we have seen for the past 20 years, and we view these advances as mandatory, not optional.”

The answer is digitalisation, suggests Ogbu at Citi. “The way we are viewing the business model question is that we are digitalising ourselves,” she says. “We are looking for ways to be more automated, leveraging robotics, further digitalising our interface with our clients, enabling our clients to be more digital and coming up with new solutions that enable digitalisation.”

A picture is emerging about what the future payments landscape will look like and how banks might fit in. “New regulations will open up collaborative developer platforms where ‘the customer is king,’” believes Richter. “Top-level customer experience matters the most and customer satisfaction and engagement will be the primary grounds for competition. This is very much amplified via the converging benefits of open banking regulation and technological advances with nuanced shifts in societal and consumer expectations. Nordea will introduce APIs and a special developer portal open to third party developers. This will allow the third parties and developer
communities to create collaborative apps on Nordea’s platform to solve customer pain points and create innovative new services and products,” he says.

Nordea views “a likely future scenario” as one in which “large banks will leverage new technology by providing platforms that act as ‘digital banking superstores’. Nordea is making significant investments in its core banking and payment platforms in order to optimise technological advances and prepare for the post-PSD2 landscape. In Nordea, we are committed to continuing our digital journey so we can provide safe, stable and personalised real-time convenience, premium digital tailored services and centralised services via universal banking offerings,” Richter adds.

In the longer term, “the world we are moving into is not about e-payments, it’s about real-time e-commerce and also real-time sharing of data – and I think banks recognise this,” says Brown. “The banks have a very good record in terms of trust and security around data, which is recognised, and they’re looking at and trying to understand how the combination of payments and data will change their business models for the future. This is where we will start to see additional flows off the back of data in a connected world,” he adds. “So on the purchase of a TV, the serial number is automatically advised to your insurer, and as soon as it’s connected to the internet your insurer can track it. I think we will see that connected world being driven off the back of some of the payment transformation changes starting today, particularly the increased data capabilities.”

Though they may know where they are going, banks generally may need to do a better job of showing customers what the future will look like, suggests Mahoney at ANZ. “When developers knock an old building down, they put up fences around the site with big billboards showing what the new building will look like. I think we need to get better at communicating what the new world of banking will look like when it has been rebuilt,” he says.

“In terms of payments, there is an opportunity for us to create an ecosystem of capabilities and partner with not only customers but also disruptors and other innovators, so we can use the proven services we have and white label our capabilities out the front door so our customers and partners can adapt them in a way that is real and meaningful for them. This ecosystem strategy is happening now, so banks have to get really good at business partner management and enabling APIs out the front door. This also needs to be business led. If it is technology led, banks will struggle with relevance,” he adds.
Relevance is critical, agrees Tak. “Next to becoming a platform ourselves we also need to become integrated into the platforms of others, and not necessarily only for payments,” he says. “When our customers go to a platform which is important to them, say autotrader.com, we want to be there for them so that if they see a car they want to buy they can in real-time check if they are eligible for financing – whether they are ING customers or not.”

This approach is not without its challenges, he agrees. “We realise this means we have a totally new channel which behaves and should be managed and run completely differently from the existing channels that we have – which have always been proprietary channels, where we control the entire user experience and the entire user flow. By contrast, we will be developing components that others will use to build services around, which requires a totally new mindset and a new way of organising. These services may make calls to our back end systems in the way our mobile apps do, but the way they appear to the customer and their branding will be different. This is completely new for us and something we will have to experiment with and learn about.”

Success in this for banks will require them to think differently about how they organise themselves around payments, Tak adds. “Increasingly, payments should no longer be a standalone silo within a bank,” he says. “As payments become invisible, it is no longer a good idea to have a standalone department that does payments isolated from everything else. It needs to be truly integrated into everything else.”

Brown agrees. “Banks need to look at payments transformation as a single area in their organisations,” he says. “For banks to really benefit their clients and be at the forefront of innovation they’ve really got to be able to join up the payments experience. They have a payment business in their retail bank, and one in their corporate bank, and if the two don’t talk to each other, they’re missing opportunities to join up the customer experience. As the banks look at payments transformation, they have to ensure their transformation model allows them to understand the end to end delivery from the consumer to government, consumer to corporate, corporate to consumer et cetera. They’ve got to be able to capture the whole journey of that payment and that’s not just within the banking industry – it’s often outside of the banking industry.”

Some indications of what the new future banks are creating will look like are starting to emerge as they make the vision of partnering and new services a reality. Says Baldwin at Westpac: “We are opening up to partners to bring new capabilities to our customers. We don’t honestly believe we can do everything ourselves. APIs are a big enabler here because fintechs can then use our rails. As just one example, we’re working with a company which has developed a
closed loop payment system for children to pay for lunch at school with an
app that enables parents to see what they are eating. APIs enable us to embed
payments quickly and easily into services like these.”

Tak cites an initiative by ING in Belgium called Payconiq. “This is a
payments-plus-loyalty solution which works in all channels, so the physical
world, e-commerce world and mobile, and which leverages the ACH
infrastructure. We position this as an alternative to traditional card methods
as we think it can be cheaper and offer better usability for the customer as
well as a richer experience. Other banks, namely Belfius and KBC, have come
on board to jointly develop this solution, and if it turns out to be successful in
Belgium we want to scale this across Europe,” he says.

A second example is Yolt, he continues. “This is an account aggregation
service we launched in the UK recently. You don’t need to be an ING customer
to make use of this, and that is something we have not done before. These
examples are obviously retail customer focused, but we are looking to launch
similar solutions for SMEs, mid-corporates and corporates as well.”

Indeed, Walder agrees that corporate banks must think about business model
change as well. “Corporates tend to be concentrating payments flows and
creating payments factories,” he says. “When you have a payments factory,
then you have to think about compliance and regulation and how to handle
this in a cost efficient manner. How do you achieve industrial strength
effectiveness in dealing with large amounts of payments in a compliant
fashion?”

Sjögren at Danske highlights the banks’ opportunity to provide value-added
services to corporates on the back of existing mobile payment solutions. “One
obvious one would be to combine invoices with payments so that when their
customers pay everything is reconciled in real-time,” he says.

Murray at Bank of America Merrill Lynch agrees that corporate banks can
attract new business through the ecosystem approach. “We are looking at
how to leverage the offerings of fintechs to build out the ecosystem so we can
play a bigger role in distributing payments across the globe for clients,” she
says. “This wouldn’t have to be account dependent. We can win new sources
of revenue. We can also integrate added value services into existing channels
– for example creating a really strong self-service experience by seamlessly
integrating an e-signature into an existing onboarding workflow.”
Though banks should not ignore new sources of competition, they should be confident in their ability to respond, suggests Doolittle at Wells Fargo. “The wholesale cross-border market is definitely very competitive, but all of the most innovative fintech companies in the cross-border space have fantastic front ends and are more focused on the customer experience. Meanwhile, there is a tremendous amount of complexity in how corporates interact with banks,” he says. “These new entrants can teach us about the front end, and we as banks can continue to digitalise the complexity at the back-end.”

Brown agrees. “The challenge for banks is to get their heads around the risk and their own risk appetites for partnering and trialling new technology and new emerging services,” he says. “The fintech community is coming up with some very smart uses of technology, but the challenge fintechs have – and this is the part core banks do understand well – is settlement. They have very innovative new ideas in terms of the ability to read messages and perform transformation, but there is still a need for the fundamental understanding the banks have of how the settlement of cash works. We are already seeing and will continue to see fintechs pairing up with banks, with the banks providing the settlement services behind the services the fintechs are creating.”

In short, the banks are in a strong position, he suggests. “Fundamentally, the banks have some key attributes. They’re seen as a safe place for money. They’ve still got a very high trust rating in terms of stored data. And I think they still probably understand the true settlement in terms of movement of money better than anyone else. I think there’s a strong role for them to play in all elements of that.”

Nonetheless, they still have to make those strengths count, Brown adds. “As the data around payments becomes more important, the banks need to be able to learn in particular from large retail organisations and other businesses that have got very smart at using customer data. They’ve got to be able to bring in new skills and learn from other industries about how to create the
frictionless, straight-through service customers are looking for. We all want things to happen with one click: and that one click has got to be absolutely secure.”

There are salutary lessons to be learned from other industries, Tak at ING agrees. “The telco industry has seen similar levels of new entrants into the market and the imposition of regulations forcing them to open up, and there is a warning there about what could happen to us,” he says. “The good news is that the incumbents are still there and still have similar market share - but their profitability has been drastically reduced and they have to a large extent lost their position as primary owners of the customer relationship. They have become the pipes. We see them starting to come back now with partnerships to provide richer services, but obviously if you have lost the customer connection to a large extent, it’s hard to fight back.”

Banks can also look to the IT industry for inspiration “on how parties can work together to deliver services”, he suggests. “I think we have moved on quite a bit from the situation of two or three years ago where it was the fintechs against the banks, and the fintechs had only one goal: the total disappearance of the banks. Now both parties see they can complement each other and provide richer services to each other by collaborating.”

The critical first step is to “let go of the myth – or myopia” that all a bank’s customers will come only to its own platforms, Tak says – and Sjögren at Danske agrees. “For us it’s a strategic priority to keep the direct link to our customers. However, we have also realised that not all services will be produced by the bank. There are some industries that failed to see this was happening and were too slow to react,” he says. “We need to be a little bit brave to take these decisions, but at the end of the day, if we do nothing, we will lose, so it is key that we are prepared to disrupt ourselves.”

“LARS SJÖGREN, GLOBAL HEAD OF TRANSACTION BANKING, DANSE BANK
CONCLUSION

Payments transformation is a given, and the drivers for change are well recognised. The question the banks have to answer is how they will respond, as the inexorable rise of real-time payments and the unstoppable force of open banking continue to further reshape the landscape in which they operate.

From a technology standpoint, there is no shortage of innovative new solutions banks can harness to help them on their payments transformation journeys – from the flashy and possibly tactical “facilitators” such as chatbots and wearables, to the much-hyped but probably critical “game-changers” like APIs and blockchain.

But to leverage all of these to the maximum, most banks still have to do something to tackle their legacy system challenges – without playing fast and loose with either security or customer protection, a significant responsibility which they must factor in to all their innovation thinking.

And of course, the payments transformation challenge goes beyond technology. The payments business has already seen disruption and is ripe for more. To continue to operate successfully and profitably in the space, banks will need to reshape not only their technology approaches but also their business model approaches. As payments become invisible, how do the banks make sure they do not disappear as well?

As this paper has shown, there are a number of options for banks looking to reinvent their business models and their technology infrastructures to face the brave new world of payments. Critical for success will be acknowledging how thorough that reinvention will need to be if the banks are to fend off new sources of competition and continue to dominate in the lucrative payments industry of the future.
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