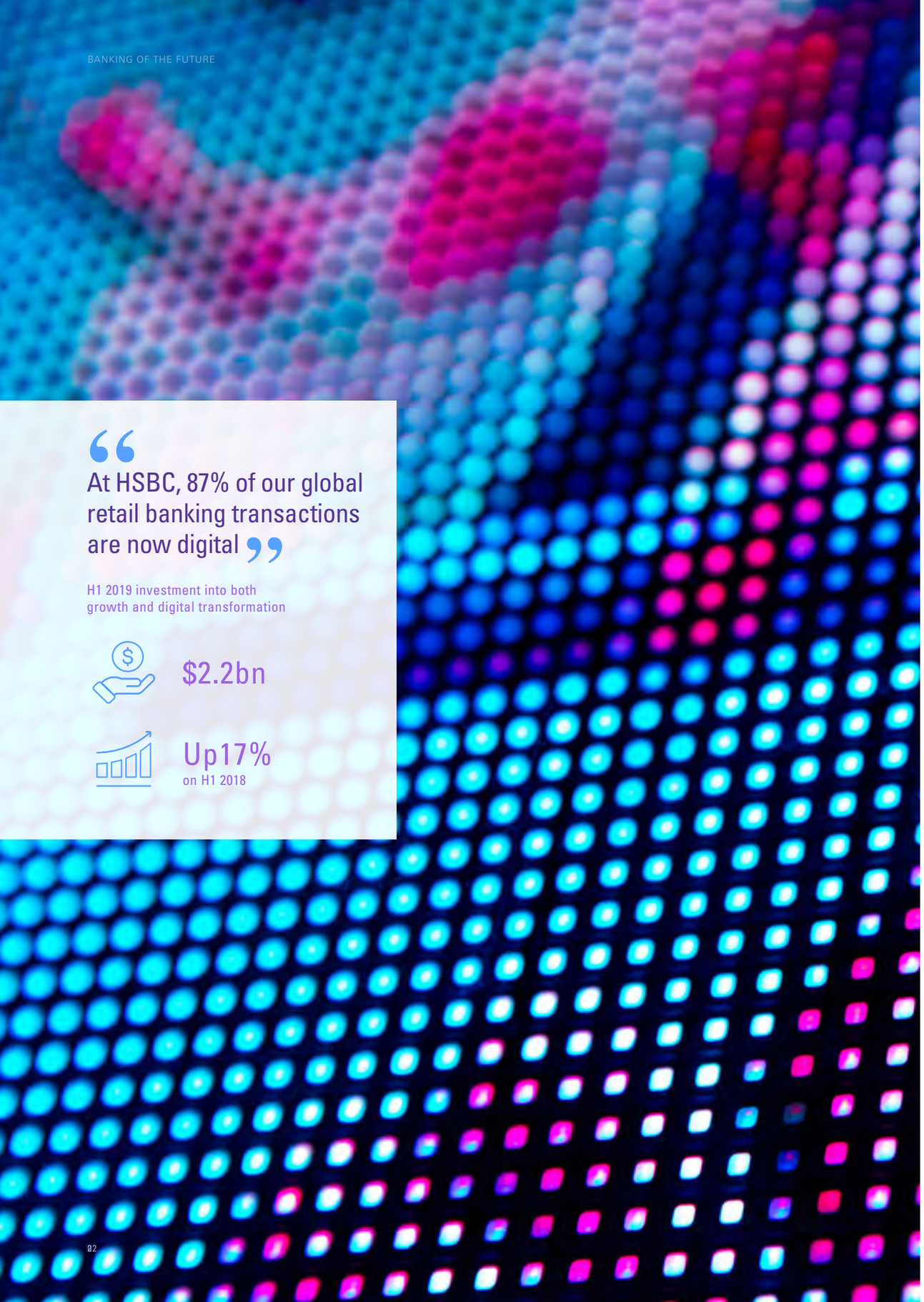
BANKING OF THE FUTURE: FINANCE IN THE DIGITAL AGE



> At HSBC, 87% of our global retail banking transactions are now digital

H1 2019 investment into both growth and digital transformation

$2.2bn

Up17%
on H1 2018

Foreword:

Josh Bottomley, Global Head of Digital,
Data & Development – HSBC

Banking of the Future – executive summary

Technology is rapidly advancing and is changing almost every aspect of our lives. Whether that is getting from 'a' to 'b'; how we stay in touch with our friends and family; do our shopping; or relax and be entertained. Technology is also becoming smarter as companies harness the power of data to personalise the products and services they offer.

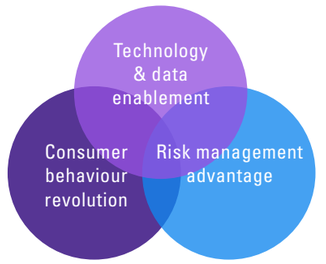
Digitisation is also driving change in banking and financial services. People are used to technology making their lives easier and expect the same level of simplicity and intuitive interaction from banks, as they have come to experience and benefit from in other areas of their lives. This has led to people increasingly turning to online or using their smart phones to manage their financial lives and interact with their banks.

But the impact of technology and data is going to be different in financial services because of the distinct aspects of this industry. For example, the need to protect people against borrowing money they can't afford; to stop them from making complex and risky retirement investments they don't fully understand; or protecting them, and the financial system, against fraud and financial crime.

Financial services is an industry inherently based on managing risk, unlike some other consumer-facing industries. Regulation is fundamental to ensuring good conduct, upholding the integrity of the financial system and protecting it against threats. Technology and data introduce new complexities to an already complicated risk management landscape.

On the one hand, technology can help both banks and regulators manage risk in the sector more effectively, while on the other hand new challenges are introduced to the system.

The critical balance in banking of the future



At HSBC, 87% of our global retail banking transactions are now digital. We are investing heavily in technology across the Group to meet customers' expectations, manage risks even more effectively, and at the same time, make our business more efficient. In 1H19, the bank made a global investment of $2.2bn, up 17% compared with 1H18, on near- and medium-term initiatives to grow the business and enhance digital capabilities.

The successful bank of the future will need to carefully balance a series of trade-offs between what technology and data enable, in terms of improving customer experiences, with the absolutely fundamental need to ensure the highest customer standards are upheld and the integrity of the financial system is maintained.

Josh Bottomley

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The Technology and Data **Enablement**

Technology – shaping the banking ecosystem

Digital transformation has accelerated the development of almost every sector from agriculture, to manufacturing, professional services and beyond. The financial services industry is certainly no exception and the journey is far from over. From payments technology and online banking, through to the complexities of blockchain or distributed ledger technologies (DLT), and the potential applications of deep learning algorithms, technology will continue to shape every part of the banking ecosystem. The future of banking and technological progress are, and will continue to be, intrinsically linked.

The focus on technology is not a new concept for the financial services sector – traditionally one of the biggest spenders on IT. During the 1960s, banks were some of the first organisations that sought to deploy mainframe computers to mechanise record-keeping and reduce paper-based processes for a multitude of transactions. The same decade also saw the introduction of the first bank cards and ATMs, as the industry's biggest players continued to drive innovation.

Technology transcends international borders

"In 1973, 239 banks across 15 countries made a decision that would become one of the most significant moments in the history of financial markets.

This group of multinational banks came together to solve the common problem of a lack of reliable, standardised, and efficient financial telecommunications infrastructures and formed a collective – the Society for Worldwide Interbank Financial Telecommunication – otherwise known as SWIFT. This move was one of the most significant examples in the history of finance where banking institutions came together to share knowledge resources, set standards, and create an infrastructure for the entire industry. It was the dawn of a more open era."[1]

Professor Markos Zachariadis

Today, online and app-based smartphone banking are becoming the norm. These interfaces have enriched the availability of data from economic transactions and human interactions. With this explosion of information comes the ability to collect and analyse it, from automation to artificial intelligence (AI) and the very latest developments in algorithmic processing – machine learning and neural networks (or deep learning).

Much has been made of digital disruption and the businesses that have redefined existing markets.

The music industry is a great example, with entirely new platforms from the likes of Apple and Spotify selling digital music via subscription services, displacing the more traditional physical record shops like HMV. In financial services this technological revolution led to the emergence of the FinTech movement and increased investment in innovation from the industry's biggest players.

It has sparked a revolution across the whole financial services ecosystem, providing new solutions to help consumers and businesses more intelligently handle their finances. While historically, technology investment in banking has focussed more on creating cost efficiencies through automation, today the technology investment is geared more towards rethinking entire business and banking processes, introducing new business models, breaking down long-held silos, and enhancing customer services. In fact, popular commentators in this space, such as bestselling author and industry expert, Chris Skinner, described FinTech as the "*R&D function of financial services in the digital world*"[2].

The ‘agile disruptors’ vs. ‘lumbering dinosaurs’ challenge

However, the common myth runs that traditional banks are lumbering dinosaurs ripe for extinction by a combination of insurgent FinTech start-ups and tech giants.

It is an attractive narrative because it pits different types of organisations against one another in a winner takes all scenario. But change is far more likely to come about through partnerships between the established banks and technologically fit firms from a variety of sectors. We are already in an era of innovative cross business collaboration which many would not have imagined a few years ago. Think of Uber and Spotify, Apple and Mastercard, Amazon and American Express, to name a few.

The ‘banks-as-dinosaurs’ argument rests on the assumption that financial services companies have ignored technology’s potential to provide cheaper, faster and more convenient services as the world around them has been transformed. This is highly questionable. The past decade has seen banks invest billions of dollars in growth and digital transformation to update their old, complex, and slow systems and processes and make it easier for customers to carry out their everyday banking needs. Great progress has been made, but there is still a lot more room for improvement and banks are increasingly reaching out to FinTech startups to leverage innovative thinking and agile ways of developing new services and customer-oriented value propositions.

Often the relationship is more collaborative than combative. While the FinTech sector has not gone through significant consolidation yet – mainly due to ample VC and other funding opportunities still available at large hubs in London, New York, Hong Kong, and Singapore – many founders and CEOs of these startups are now looking to partner with the larger banks rather than compete directly against them. Through this type of relationship, FinTechs can get access to a larger customer base and greater investment power, while banks can incorporate these new and exciting solutions into their product stack, continuing to drive innovation for their customers, and internally to run their business more efficiently.

We are already in an era of innovative cross business collaboration which many wouldn’t have imagined a few years ago.

From competition to cooperation: FinTech Partnerships

In 2017, UK bank, First Direct, partnered with FinTech business, Bud, to test the “artha app” on the bank’s customers, as part of the Financial Conduct Authority’s regulatory sandbox. After a successful 12-month trial wrapped up earlier this year, First Direct has been working to integrate the features from that trial into its own app, which, among other things, will allow customers to shop around for non-financial services products, like energy providers, to help them cut their monthly bills – a first for a UK bank.

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Mining the data economy

The new oil; seas and oceans of information. Data and the analysis and application of that data has come to define the 21st century. The world runs on it. Data has become an essential fabric of almost every industry – and financial services is no different.

Information has always been central to the nature of a bank. They have been effective in analysing credit histories to assess fiscal risks. In the same fashion, they are now mastering new data sources and analytical technologies that will allow them to better serve their customers and unlock new revenue streams. The appropriate application of data can add immense and often unforeseen benefits to various functions and tasks across the business: from tackling financial crime (see following section on risk), to achieving operational efficiencies, more effective marketing, and more personalised services.

It is unclear how far banks can or will take the application of AI and autonomous engines over the next decade. At this stage many are still getting to grips with the sheer power and potential of big data and predictive analytics. To truly unlock their data assets, banks will need to continue to focus on joining up business areas, so that information can be aggregated on cloud technology across the entire business. Only then can they get a true and complete view of the customer.

Automation driving speed for the customer

Across its global network, HSBC now has 1,600 robotics devices which processed 11.5 million transactions in 2018 – a ten-fold annual increase. Customer experiences, like account opening, that used to take weeks are far quicker. In Canada, for example, mortgage approvals have reduced from 22 days to same day, while in Hong Kong, credit card approval times have reduced from 3 - 6 days to instant approval. The bank has also developed Artemis, a digital Know Your Customer (KYC) solution that incorporates automation, AI and natural language processing to carry out checks up to 70 per cent more quickly and accurately.

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> “We tend to overestimate the effect of a technology in the short run and underestimate the effect in the long run.”

Roy Amara,
President of the Institute for the Future

An eye to the future

President of the Institute for the Future, Roy Amara, famously coined, *"we tend to overestimate the effect of a technology in the short run and underestimate the effect in the long run."* It is a challenging task to envision how technology will shape banking the next few years.

The emergence of the demand-driven and 'gig' economies – in conjunction with new technologies such as AI – are challenging the traditional ways of organising economic activity and pushing banks to re-think the way they create and distribute value. The emergence of what is described as *"crowd-based capitalism"* could lead to an increase in peer-to-peer commercial exchanges and platform-mediated distribution in financial services. This is where technologies such as DLT could play a significant role and banks will have to leverage them in order to facilitate transactions and maintain trust in the economy.

Much has been made recently around blockchain and crypto-assets, challenging the role and traditional notions of money, as well as the functioning of banks and central banks. It is difficult to envision the wide adoption of native cryptocurrencies – that lack any asset-backing and issuer – due to the monetary risks and potential legal consequences. Asset-backed crypto-assets (such as stable-coins) or central bank digital currencies (CBDCs) on the other hand, have attracted much more attention. According to recent reports, People's Bank of China is strongly considering a CBDC version of the Yuan which could have important ramifications on the moderation of money supply and also impact the role of reserve banks. Having said that, such ideas have still not been extensively tested, so remain under considerable scrutiny by regulators and policy makers. Were they to take hold, crypto-assets would raise significant questions around the conduct of monetary policy, the stability of the financial system and its operational feasibility. For example, in the case of a CBDC, how does one deal with the provision of credit to the economy through commercial bank cash deposits, and how can policy makers pass on changes in interest rates to savers and borrowers?

Part of the puzzle may even lie in the speed of adoption and development of technologies that have little or no application in finance yet. Technologies such as 5G, which is still being rolled out, will drastically increase the volume and speed of data crunching and accelerate the creation of data-driven models in banking. Quantum computing, which is only gradually making the transition from theory to reality may have huge benefits, whether in the near or very distant future.

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What **could** happen

- Partnerships between FinTech firms and banks will most likely increase exponentially
- Data and analytical technologies, like AI and ML, will define 21st century banking and financial services
- DLT could play an increased role in peer-to-peer commercial exchanges and platform-mediated distribution in financial services
- Asset-backed crypto-assets (such as stable-coins) or central bank digital currencies (CBDCs) could become more widespread

What **won't** happen

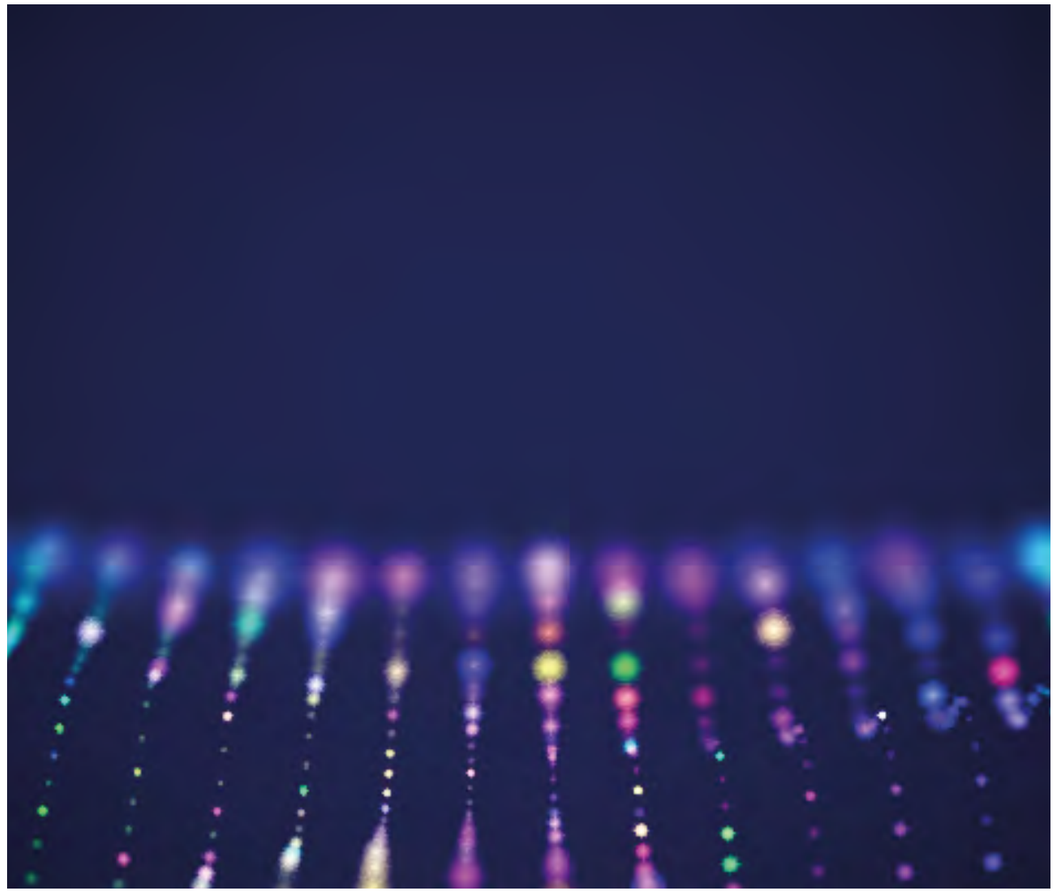
- FinTech will most likely not displace traditional banks
- There won't be a widespread adoption of 'native' cryptocurrencies, that lack any asset-backing and issuer

Food for thought

- **How far will banks go with their application of AI and autonomous engines over the next decade?**
- **Will FinTechs consolidate depending on the availability of VC funding?**
- **What impact will 5G and quantum computing have on financial services?**

02

The Risk Management **Advantage**



Regulation and banking – an entwined relationship

As long as there has been banking, there have been regulatory frameworks to govern those institutions. This is for one simple reason – risk.

Without taking a proactive role in managing risk, banks would be mere data transfer companies. It is the intelligence layer, the decision-making process that sits at the heart of financial services. But because it is risk based, the role that safeguards and governance plays must be deeply entwined with the industry and is what ties financial services so closely to every country's economy. It is the experience and guidance that banks can offer that builds trust with their customers – and those high standards around the management of risk must be protected if the industry as a whole is to maintain its position.

This relationship between banking and regulation means that banks of the future will need to focus on getting the balance right between opposing trade-offs.

On the one hand, regulators need to ensure consumer protection and the stability and integrity of the market. While on the other, they need to maintain healthy competition and innovation for customers. These distinctive aspects of regulation can often be at odds. Statistics from the OECD[3] reported that in 2016 while the finance industry accounted for 6% of the global GDP, financial institutions spent less than 1.5% of global R&D investment. Striking the right balance can be challenging, but necessary.

Balance: technology innovation vs regulation

As banks look to the future, new technologies like big data and AI are set to unlock unprecedented potential to improve services and bring institutions closer to customers, through the depth and breadth of the information they will have at their fingertips. But with these opportunities come responsibilities to ensure that these new innovations are developed, deployed and managed ethically. Robust ethical frameworks and controls will be crucial to protecting customers, building important trust in the customer relationship, while maintaining secure and effective competitive markets in wider economies and across the world.

Striking that balance between technology innovation and risk mitigation is a requirement for banks wanting to thrive in the future digital economy. Given the nature of regulatory oversight, banks have to manage the existing legal and regulatory risks, while also recognising that these will inevitably evolve alongside technological development. They must have their eyes on the future.

While technology is by-and-large borderless, the regulations governing its use are not. This can create friction for global banks operating international technology estates. The best way to manage this is by governments, regulatory authorities and businesses working together through regional and eventually global cooperation to break down those barriers.

Over the next 10 years, financial services regulators, data protection and competition authorities, national governments, supranational bodies and the banks will all have to work closer together in global forums towards building more harmonised requirements. The industry needs to avoid falling into a two-tier regulatory regime, to reduce the risk of regulatory arbitrage. Providing the same services with the same risks must mean that the same rules apply, from prudential and conduct, to consumer and data protection.

By creating a holistic, coherent, and coordinated regulatory regime, policy makers can ensure balance is established – fostering an environment where all sizes and types of companies are able to innovate at pace, while regulators have sufficient oversight and enforcement capabilities to safeguard consumers.

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In the meantime – the global vs local dilemma

Ultimately, developments in areas like big data, cloud and AI will need more and more international coordination. But in the meantime, banks will have to straddle national and global requirements more than ever.

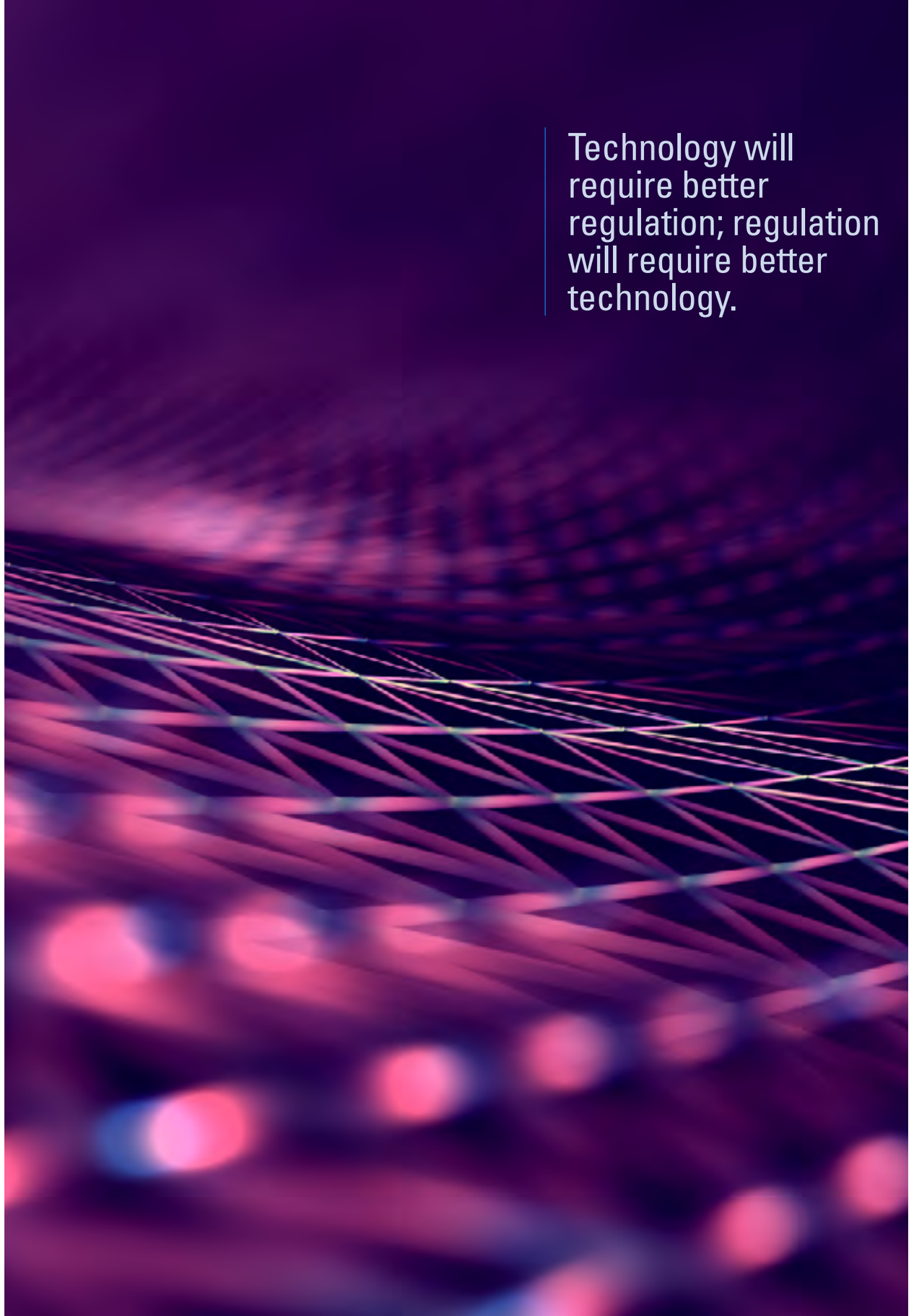
Until greater consensus is reached at an international level, banks will have to be global in their outlook but also need to be 'multi-national' in terms of their operations. Global operations will be crucial for sustainable growth strategies and dealing with whatever the geopolitical situation may be at any time, while local capabilities will ensure that it will be possible to bring the technology and capital from global markets and deploy it effectively on the ground.

Technology – the regulation solution and the challenge

Investment in regulatory technologies (or RegTech) from large banks has skyrocketed in the last few years, with more than $5 billion funnelled to RegTech start-ups since 2012. That investment is all targeted at addressing the issues banks face across the entire spectrum of regulatory demands: from transaction reporting and data aggregation, to financial crime and monitoring, or detecting fraud.

Regulators are also striving to keep pace, particularly with the complexity of the sector, when dealing with recent technological advancements. For example, the introduction of big data technologies poses challenges particularly when it comes to maintaining transparency and accountability. In a fully automated world where big data and the application of AI are widespread, how will financial regulation and conduct address biases and limited "*explainability*" or black-boxed performance in algorithms?

Technology will require better regulation; regulation will require better technology. But within this cycle, a responsible and more intelligent global banking ecosystem can thrive. RegTech may provide some



Technology will require better regulation; regulation will require better technology.

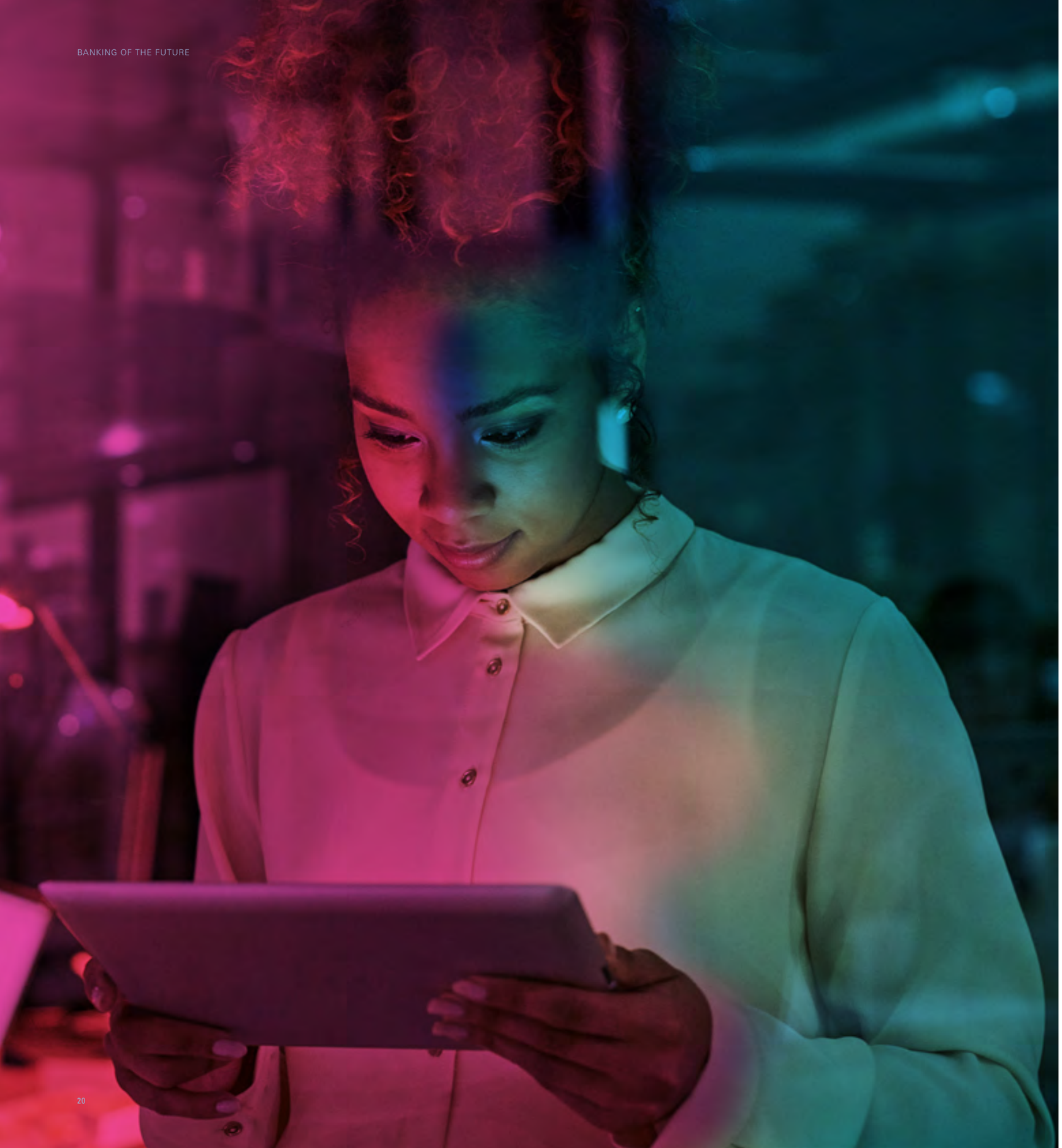
relief in this context by commoditising certain compliance categories and making it less costly for banks to deal with emerging regulation. For example, EU's General Data Protection Regulation (GDPR) provides some rules on algorithmic decision-making and the handling of data by introducing the *"right to information"* and ultimately explanation. According to this, there is a call for transparency regarding consumers' data. They have the right to request information about the collection and use of their personal data and this leads to a variety of obligations for the data controller (e.g. the bank). In addition, data controllers must provide ex ante: *"meaningful information about the logic involved, as well as the significance and the envisaged consequences of such [automated or algorithmic decision-making] processing"* to the data subject.

As regulation continues to evolve, further steps need to be taken to standardise work in AI, and how that information is collected, presented and explained to consumers. In this way, banks can continue to maintain a balance between innovation while still ensuring that the right safeguards and transparency levels are in place.

HSBC partners with Nexus Frontier Tech to improve mortgage processes

In the UK, HSBC has partnered with Nexus Frontier Tech to apply AI and machine learning to automate mortgage processes. With natural language processing and image recognition, the technology transforms raw information into structured data in seconds. This enables mortgage applications to be made faster, more reliably and more objectively, benefiting and protecting both bank and lender.

HSBC



Building data trust

In an increasingly open data environment, banks will need to play a significant role in safeguarding customer data and helping them manage permission access to third parties. It is becoming more apparent that in any platform-based business model – where banks act as a trusted broker of third-party services – data governance is the most important ingredient for a trusting customer relationship.

Data is the basis of personalisation, but also of value creation and competition. Banks will need to use it wisely making sure that they protect customers' privacy, while simultaneously using it creatively to offer added value and new services. If consumers can see the value in sharing their data in a safe and transparent way, they will potentially be far more willing to do so.

Recent research done on the economics of banking platforms[4], discusses how data can be the source of positive network externalities and demand-side economies of scale, allowing banks to potentially curate third-party offerings (see HSBC / Bud example above) to their customers and reinforce accountability when things go wrong.

Data and the associated technologies provide a mechanism to ensure transparency but also of incident recovery, showing a clear recorded 'paper-trail' that allows banks and regulators to retrace their steps and pinpoint any errors that were made during a process.

Managing the risk of cybercrime

With greater use of technology and data, comes greater concerns around privacy and security. If 'identity is the new money'[5], then unfortunately that identity also inevitably becomes a new target for criminals.

Online fraud and account hacking having all but completely replaced the physical theft of banknotes. In fact, financial institutions are 300 times more likely to be hit by cyberattacks than other companies.[6]

Cybersecurity is now banks' number one Board priority.[7] The security of customers' money and assets is paramount, and businesses are investing heavily to stay ahead of the criminals. One incident, if not handled correctly, has the potential to destroy the confidence consumers have in that organisation's position within this new trust and data-based ecosystem. Data privacy will be crucial. Banks need to be on the front foot and play a central and proactive role in safeguarding customers' data, using emerging technologies such as AI to limit fraudulent transactions.

> Cybersecurity is now banks' number one Board priority.[7]

Further investment in cybersecurity and industry-wide collaboration to battle data theft, disruption to services and fraud is vital. But future banks' closer relationships with their customers could become an advantage in the fight against online fraud. They will be able to educate them on being more secure through continuous digital communication, flagging potential threats or fraudulent and suspicious activity before it does damage. By opening new communication channels, banks will be able to balance giving customers the personalised and intelligent services they desire, while better protecting them from the threats and dangers associated with the rise and use of personal data.

Tackling financial crime

In 2018, HSBC became the first bank to deploy AI and machine learning in the fight against financial crime. The AI solution has doubled the speed and accuracy of screening for sanctions and money-laundering in cross-border payments. The bank has also just launched a machine learning solution called Cog-I for transaction monitoring. Each month it screens over 650 million transactions, across 200 million accounts.

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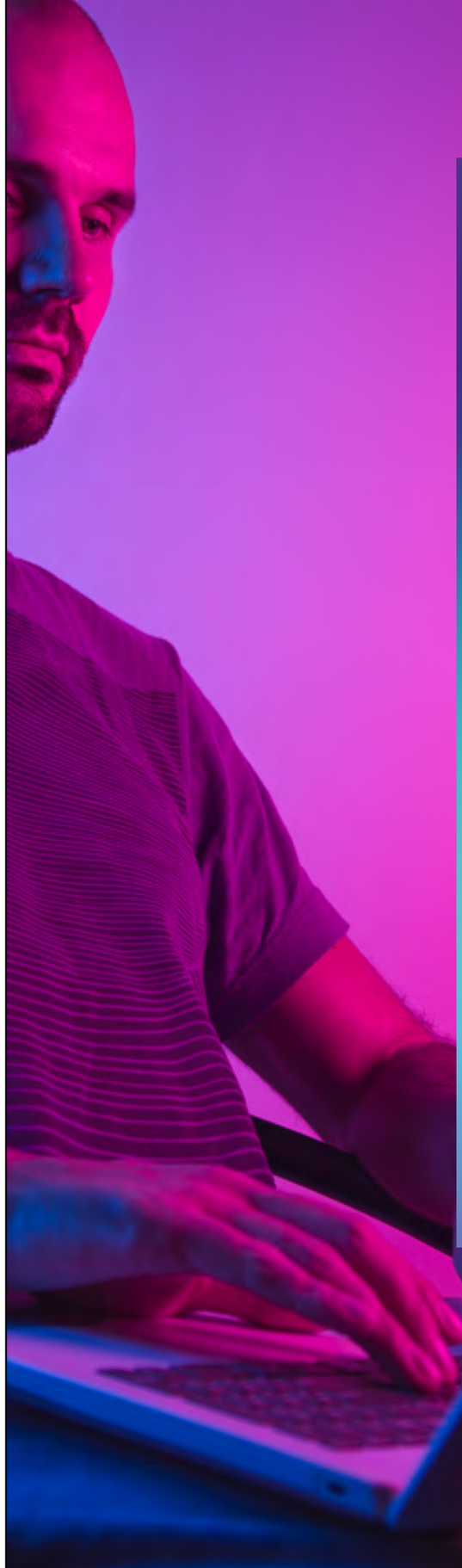


What **could** happen

- Successful banks of the future will be those that carefully manage the trade-off between technology innovation and risk management
- In the digital economy, data governance will be the most important ingredient for a trusting customer relationship
- Further steps will need to be taken to standardise work in AI, how information is collected, presented and explained to consumers
- Investment in RegTech will continue to boom, commoditising certain compliance categories
- Cybersecurity will be an ever-increasing Board priority and focus of investment
- Regulation will only continue to grow, and more non-traditional financial players will fall within its scope over time

What **won't** happen

- Regulation is unlikely to become entirely borderless – so there will always be a need for a local, as well as a global outlook
- Regulation won't globalise, but won't become completely local either

Food for thought

- **Will regulatory arbitrage narrow or widen between different markets?**
- **How far will collaborative efforts succeed in leveraging technology to tackle cybersecurity risks?**

03

The Consumer Behaviour **Revolution**

The digital age of convenience

In a world where nine in every ten people in developed countries own at least one smartphone or smart device[8], it is no surprise that consumers now expect digital access to the services they use daily.

But digital availability isn't enough – this access needs to be instant, simple and available anywhere and at any time. The financial industry has been slower to adapt than other industries but is rapidly making advances in this field to cater to the shifting demands from customers, moving ever closer to a frictionless experience.

Selling experiences not products

Digital transformation in financial services, the spread of mobile devices and the app economy, have all changed the way people interact with money and financial institutions.

The agenda has already been set by many banks, including plans to develop their mobile and digital communication channels beyond straight-forward transactions, finding new ways to engage consumers through personalised nudges and notifications based on dynamic data sources. These are usually combined with human support for more complex interactions and 'moments of truth', to enhance problem solving and increase empathy. As well as 24/7 digital banking, the majority of customers still want to be able to speak to expert advisors, especially in times of significant stress like divorce, bereavement, redundancy and insolvency.

As future banks move to more service-based models, they will not be bound to specific customer propositions such as mortgages, loans, savings and investment. Requirements will be more tailored to individual customers depending on their dynamic needs at any one time – the so-called 'segment of one'. Data will be central to this endeavour as will the analytical technologies that will identify such opportunities. Selling financial services will come closer to the transactions and interactions that matter to customers. In certain circumstances this will actually become invisible to consumers, working in the background, as they learn to trust their bank more with automated provisions. The rapid adoption of technologies like 5G and IoT, as well as the rapid advancements in mobile computing, will reinforce and accelerate this trend as richer personal data will be communicated and calculated more quickly and closer to the source.

This service-based model implies that banks will be geared towards investing in experiences rather than products. Indeed, the emergence of the app economy and the aggregation of services and data requires a fundamental rethink of the way money and information is being communicated and experienced by consumers.

The role of experience as an important part of the mediation in selling goods and services is not new, but it was revived by firms such as Apple that paid particular attention to the emotional components and events packed into their services and products.

Apple used this approach to design Apple Pay to replace what it saw as the traditional bank card. During the launch of the product, Apple's CEO Tim Cook made an explicit reference around how many have tried to build digital wallets and failed before, as they focused more on their self-interest rather than the user experience. Winning the experience game alone may not be the decisive factor though. Rather, it is the bringing together of the power of transactional data and purchase histories with payment, locational, credit and social network information, which has huge potential.

Cash, card or cashless?

Neither cash, nor 'plastic money' will disappear completely over the next decade. While the demand for digital and increasingly frictionless experiences will see a move towards more 'cashless societies', physical money will still have a role to play – albeit a significantly reduced one.

Open banking will certainly push large card networks to reduce their fees but 'plastic money' will persist, as there is a huge installed base and infrastructure that cannot be replaced overnight. Also, newer, and more digital payment journeys will have to be tested, improved, adopted, and – crucially – trusted by consumers before they feel comfortable abandoning their cards. Banks can certainly play a leading role in this transition, as retail payments processes and IT architectures are re-engineered to fill the gaps in the new open banking environment.

It is also important to acknowledge the variation of payment technologies (such as faster payments) and relevant innovations (like QR codes) and their penetration in the market across different regions. For example, the rapid adoption of instant payment schemes in Asia – particularly in Hong Kong (with Faster Payment System) and Singapore (with Paynow) – is accelerating the digital transformation of businesses more than developed economies in the west.

In China, the value of mobile payments is already close to $28 trillion per year. At the same time, payment via facial recognition technology is starting to take hold, and is expected to spread rapidly next year. Around 1,000 convenience stores have already installed the system and more than 100 million Chinese people have registered to use the technology, mainly operated by Alibaba and Tencent.[7]

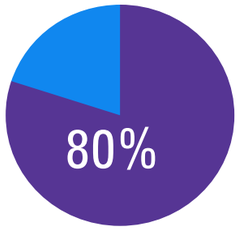
Identity is the new money and trust is the new currency

In the wake of a torrent of stories about data breaches and mishandling in the technology sector, a survey by Boston Consulting Group and Capgemini[9] asked respondents what kind of company they trusted most to manage their data: more than 80 per cent said banks; less than 5 per cent said consumer tech companies.

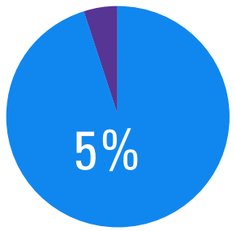
Banks are trusted with customers' identification and reference data (e.g. customer IDs, proof of address, etc.) and so will be seen as a reliable safeguard of customers' identity when they transact online.

This is a real strategic advantage, and to capitalise on it, banks will build on their existing infrastructure to capitalise on new authentication protocols and communication standards to interface with external marketplaces or platforms. The convergence of identity and money has accelerated with the extensive influence of social media and mobile phones leading us to rethink the concept in the digital age[10]. Managing people's privacy and confirming their identity online will continue to be a crucial stronghold for the banks in the battle for data. This will give choice to consumers when they want to share some of their credentials but remain anonymous to certain non-financial providers or networks.

Capgemini[9] asked respondents what kind of company they trusted most to manage their data:



More than 80% said banks



Less than 5% said consumer tech

The Digital ID

Over the next 10 years –– consumers will take much greater personal ownership over their data and who they want to open it up to. This will evolve towards the formation of digital IDs, secured and accessed by advanced biometrics technology, which individuals will use to open and close relationships with providers underpinning their entire financial lives. These IDs will not just contain financial information and history, but also build an individual profile of social patterns and preferences encompassing their entire digital footprint. Robust identity is critical to risk management and these digital IDs will enhance banks' ability to limit bad actors' access to the financial system, without significant impact on customer experience.

This crucial data will open up the opportunity for new levels of hyper-personalisation, and hyper-automation. For example, banks will be able to harness AI to present personalised real-time insights and prompt customers to make better financial decisions. These will be tailored to individuals, with banks predicting where people want to be in their lives in the future and helping them towards their goals.

Banks will be at the centre of a more open and connected ecommerce system – able to integrate and partner with organisations outside of financial services and become the gateway to this activity. Take utilities for example. Imagine you move home; the bank would automatically get in touch and offer to set up all your utilities for you – finding the most competitive providers or eco-friendly ones if that is more important to you – based on your digital ID profile.

> "While large e-commerce providers, like Amazon, and social media firms, like Facebook, have tremendous access to behavioural data, either through purchasing patterns or user-generated content, they are missing that crucial piece of the puzzle: credit history data."
>
> Professor Markos Zachariadis

Banking on a more sustainable future

The banks of the future will also be able use the information at their disposal to help their customers to have a more positive influence around key societal issues, like climate change. Using the information collected in individuals' Digital IDs to identify customers that would be receptive to recommendations for green investing, banks can embed these practices into their financial recommendations. For example, if you are a scuba diver and regularly go on nature-based holidays, a bank might deduce that you care about the environment and therefore might recommend investment options based on companies that support those values. Banks can even provide an option to rank investment opportunities based on their carbon emissions data.

HSBC

Whether ‘identity is the new money’ or ‘trust is the new currency’, banks of the future will need to intensify their efforts in order to compete

The trust factor

Trust will be an absolutely crucial factor in this new partnership, as banks become the bastions of their customers’ digital identities – helping them to maintain, nurture and grow them over time.

Customers should be more willing to share their data when the benefits of doing so are clear and there is transparency around how it is being used. Banks will therefore focus heavily on building this trust exchange with their customers, sharing their profile on an ongoing basis. In fact, this could even take the form of the future bank statement – including a summary of how one’s digital ID profile is developing and who your data has been shared with.

Whether ‘identity is the new money’ or ‘trust is the new currency,’ banks of the future will need to intensify their efforts in order to compete in this fast-changing global economy and redefine their role in the future financial services industry. Their success will depend on how they handle the competition from encroaching technology providers, and how they embrace digital transformation initiatives to evolve their organisations, by exploring new business models and digital strategies.

Can I afford this car?

Ten years from now, day-to-day consumer banking may largely happen in the background, and without much human engagement. For requests, customer interfaces will evolve, with voice activation becoming more mainstream, along with augmented reality in real life situations.

A consumer could walk past a car dealership and via voice activated augmented reality, ask their bank, “can I afford that car?” The bank will then be able to not only respond with a recommendation on the question, but also other viable options on the market, recommending the best funding options based on the customer’s financial and life profile. Should you buy, lease, rent, or car share, for example?

HSBC

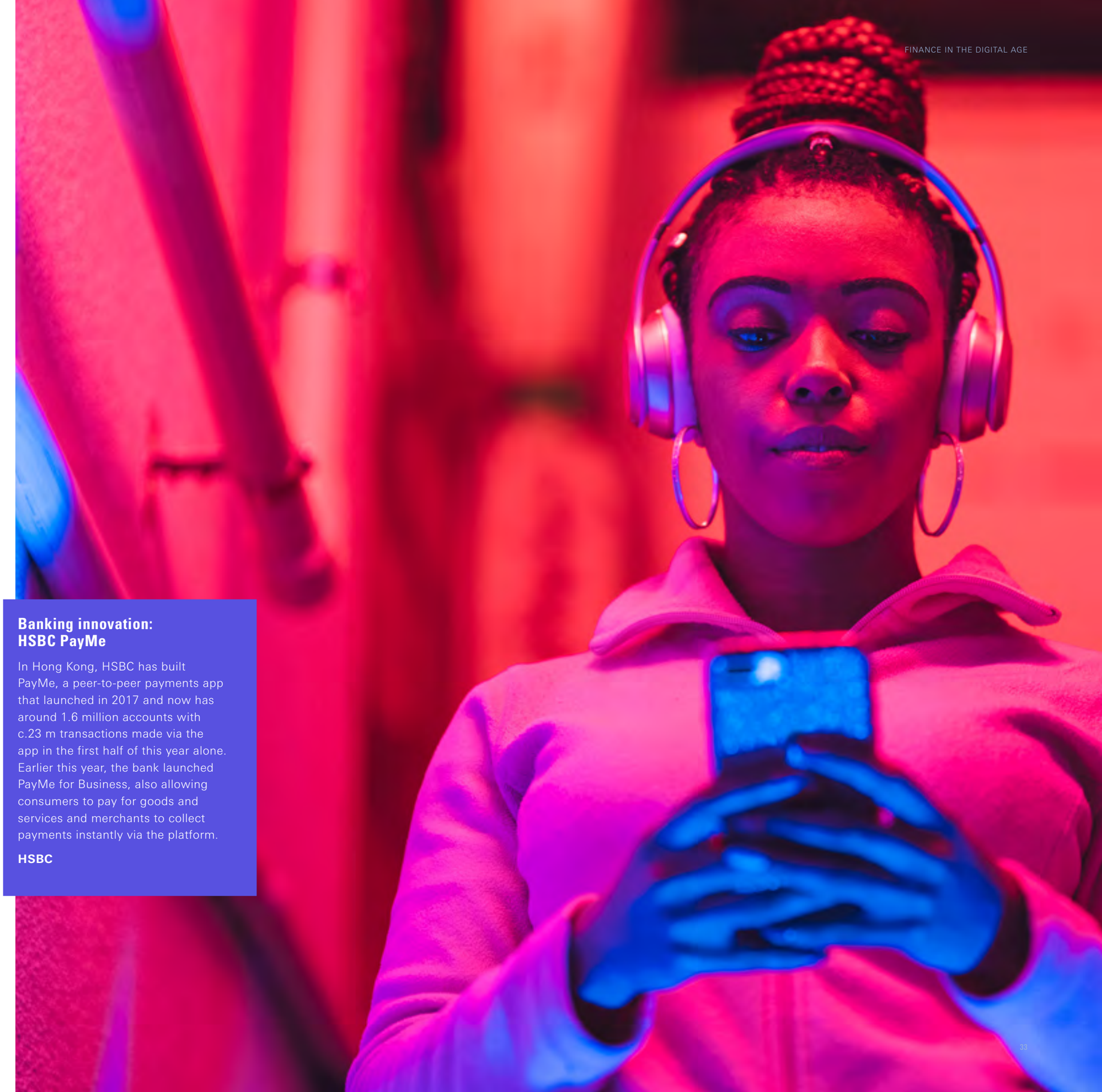
The "Chatification" of Money

Shifting competitor landscapes, and the introduction of non-bank entrants in the industry has been a big driver of digital transformation within banking.

One area where this is evident is in payments. Technology firms like Apple, Alibaba, Facebook, Amazon, Google, Samsung and payment specialists like PayPal, have all eagerly entered this space and launched solutions that sit across the entire value-chain of payments – from initiation to communication and processing (e.g. Apple Pay, AliPay, Facebook Messenger payments, Amazon Payments, etc.). Until now, banks have managed to remain central to the process, as they control a big part of the infrastructure for the clearing and settlement of transactions which is crucial to security. They are also innovating themselves and, in many countries, have developed joint-ventures to manage online payment solutions (e.g. Currence in the Netherlands) and offer mobile payment applications (e.g. Paym in the UK).

Some have gone beyond payments to create a 'super-platform' approach. In China, Tencent's messaging engine, WeChat, has been offering a variety of services since early on in its development including social networking, music, web portals, ecommerce, mobile games, internet access, ride-hailing and more. By incorporating B2C and C2C payments using QR codes and money-holding functions through its wallet, WeChat has been transformed into a gateway for mobile commerce and enhanced user retention.

Several additional financial services and partnerships have gradually been added to its original messaging application, including universal banks like HSBC, crowdfunding, wealth management, and loan applications. With this approach WeChat has managed to make money conversational – a phenomenon, Finn Brunton calls the *"chatification"* of money – and build a fundamental infrastructure which can be used by external services as a channel of communication with their customers.



Banking innovation: HSBC PayMe

In Hong Kong, HSBC has built PayMe, a peer-to-peer payments app that launched in 2017 and now has around 1.6 million accounts with c.23 m transactions made via the app in the first half of this year alone. Earlier this year, the bank launched PayMe for Business, also allowing consumers to pay for goods and services and merchants to collect payments instantly via the platform.

HSBC

The implications for banks

Banks can take advantage of their central position in the financial system and try to build platforms offering a variety of services from third-party providers. One major benefit for banks as it stands is their large customer base and access to credit history data. This allows them to make better assessments regarding customers' financial needs and inherent risk.

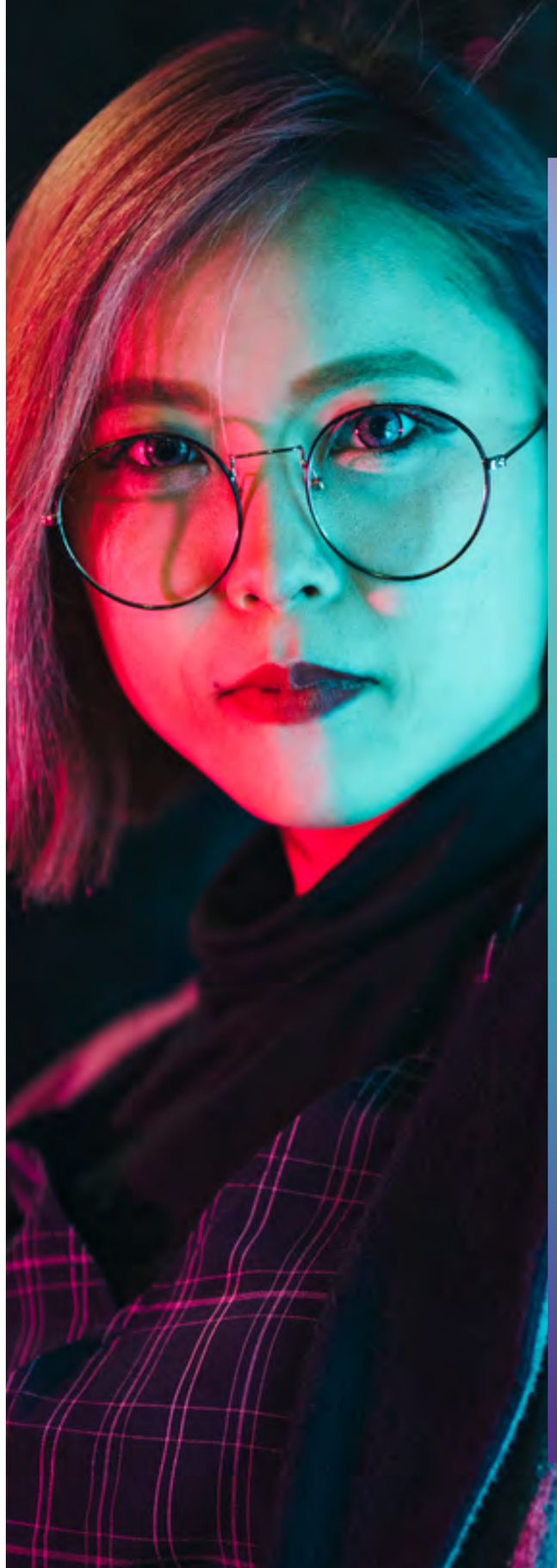
With businesses of all shapes and sizes encroaching on the financial services sector, banks will need to experiment with new business models – like more platform-based approaches – to remain competitive. By creating ecosystems and acting as a central provider of services, banks will be able to play the role of the platform provider servicing core functionalities such as customer identity, accounts provision, payments processing, while ensuring that there is order to the buying and selling of products on their platform.

In other words, they will be very well-positioned to integrate a huge amount of data in one place, allowing for even deeper levels of personalisation. Banks will be able to sync-up and interface with other organisations, applications and platforms outside of the banking world. This will provide new opportunities. For example, a customer could use their banking credentials and authentication mechanism to log-in to online retail accounts, choose the product of their choice, and by allowing access to their trading data online, as well as their credit history, get instant approval for a loan that would pay for those goods automatically.

Such applications and opportunities in the context of Open Banking are currently being driven mostly by regulatory push rather than consumer pull. As the industry matures and more data openness is applied in the sector, financial institutions and banks will be able to experiment more with new platform-based business models. It is without a doubt that data sharing in finance will transform the entire market architecture and allow for the emergence of new entities and even new markets[11]. However, the magnitude of change in the industry will depend on the level of openness introduced by regulation and the nature of competition.

Currently, Open Banking approaches vary dramatically across the globe, as regulators choose to cater their economies based on their different needs and state of competition. Other factors such as the development of data standards, the state of payment systems, and the existence of data privacy regulatory frameworks will also affect Open Banking implementations. The changing environment and competitor landscape may mean that traditional banks will need to compete differently as well, providing banking services into an ecosystem of 'experience providers' – including tech giants for example – while still maintaining customer engagement across proliferating touchpoints. This will feed the ubiquity of banking services entering other industries, crossing boundaries and the adoption of 'banking anywhere and anytime'.

> The magnitude of change in the industry will depend on the level of openness



What **could** happen

- Consumers will take much greater personal ownership over their own data – leading to the formation of digital IDs
- Banks may become the trust brokers in the management and development of these digital ID profiles and the access to third-parties through a platform-based financial services model
- Driven by data analytics, banks' service to customers will become much more personalised to particular needs and situations
- Selling financial services will come closer to the transactions and interactions that matter to customers. In certain circumstances this will actually become invisible to consumers, working in the background, as they learn to trust their bank more with automated provisions
- Digital voice activation may become the default channel for customer communication, along with augmented reality in real life situations, with the option to speak to a human advisor for more complex problem solving

What **won't** happen

- Banks could no longer be bound by products like mortgages, loans and savings – requirements will more be tailored to customers depending on their dynamic needs at any one time
- Neither cash or card will entirely disappear over the next decade

Food for thought

- **Which organisations will be dominant in the race to become the guardians of financial and personal data?**
- **Will Open Banking become more joined up across different markets, and more open in terms of data sharing?**

04

The Race to the Top – the Next Decade

> “It is always wise to look ahead, but difficult to look further than you can see.”
>
> *Sir Winston Churchill*

Sir Winston Churchill’s words seem more than apt when looking to gaze into the crystal ball of the future of financial services. When we think of the change and transformation that the industry has undergone in the last 10 years, the prospect of the next decade is truly exciting.

A vision dominated by new technologies all geared towards improving the consumer experience and allowing banks to position themselves at the centre of a newly evolved ecommerce ecosystem. A world governed by data and entwined with the proper implementation of AI and machine-to-machine transactions through IoT, smart cities, augmented and virtual reality. All of these will bring banks far closer to their customers than ever before, acting as the trust broker and financial partner to guide consumers to make better financial decisions.

However, the banks of the future will be defined by the need to balance a continuing array of trade-offs, while still realising the potential of new opportunities.

The complexities of the intertwining relationships between new technological and data capabilities, customer behaviours, and an evolving risk and regulatory landscape, will certainly challenge financial institutions in a ‘race to the top’ for excellence over the next decade.

The next 10 years will be one of the most dynamic decades in the history of financial services. Those that innovate while building trust with consumers and successfully managing risk, will realise the true potential of the market opportunity in the future of banking.

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