



**BANK TO THE FUTURE**  
PREDICTING EMERGING BANKING INNOVATION

THE —  
— FLOOR

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## EXECUTIVE SUMMARY

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Many will say that predicting the future is mission impossible. Yet accurate predictions have materialised throughout history. Look no further than the mid-1980s Hollywood sci-fi movie "Back to the Future". The film featured accurate depictions of the future world, many of them relevant to financial services.

If we focus on today's financial industry, technological and regulatory forces are reshaping traditional banks and are set to transform what the bank of the future will look like and how it operates. In the next decade, a broader ecosystem of more personalised services will integrate into almost every part of people's lives. Digital experiences will replace outdated banking models, architectures and large parts of the traditional bank infrastructure like customer service and backend administration. However, the application of technologies will not be geographically uniform. A sizeable unbanked population and growing middle class will result in China continuing to adopt financial technologies at a faster rate than many other leading economies, especially in cashless payments.

On the regulatory front, an increase in the number and complexity of regulations, many of which seep into new and uncharted areas will result in more power shifting into the hands of consumers.

In 2030 and beyond, converging technologies will make it possible to transform bank operations and the banking experience. With technologies like AI, Blockchain, VR, Quantum Computing and access to an unprecedented amount of data, banks will have the opportunity to provide products and services previously thought of as science fiction.

In a positive vision of the future, banks will become well-oiled machines, primarily digital, highly automated, smarter, and more flexible than ever before. They will evolve into efficient financial technology firms that offer all the services they do today and much more by using technology to deliver services in better ways. The successful banks of the future will resemble a supercharged shopping cart. Agile and dynamic to adapt to new technologies and regulations, protected from all sides against cyber attacks, and able to cherry pick the best startups through open APIs. They will keep the full value chain of financial services in retail, corporate and investment banking, maintaining strength, trust, and relationships with their customers.

What remains unknown is how banks will adapt to the changes bearing down on the financial industry and broader global economy. Whether they maintain consumer trust, remain the sole providers of the full value chain and continue to lead in the delivery of profitable consumer-facing services will depend on decisions made in the coming years. Either way, one thing is clear. The banks of the future will look very different from the banks of today.

Many will say that predicting the future in such a rapidly changing world is simply impossible. However, it has been done before. The mid-1980s Hollywood sci-fi movie "Back to the Future" featured an astonishing number of accurate technological and societal depictions of the future (VR headsets, biometric payments, drones etc...)

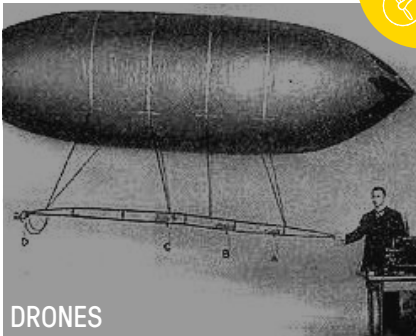


## VIRTUAL PERSONAL ASSISTANTS

"SIGSALY Speech Encipherment System exhibit - National Cryptologic Museum - DSC07919" by Daderot [CC0], licensed under CC0 1.0, Desaturated from original



"Smart home device with voice assistant" by markusgann, is licensed by Envato, Desaturated from original



## DRONES

"100 Years of Wireless Remote Control by Nikola Tesla, c.1900, Desaturated from original

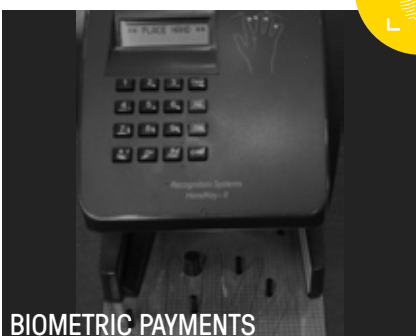


"DJI Quadcopter Phantom Vision Plus", by Vicki Burton, is licensed under CC BY 2.0, Desaturated from original



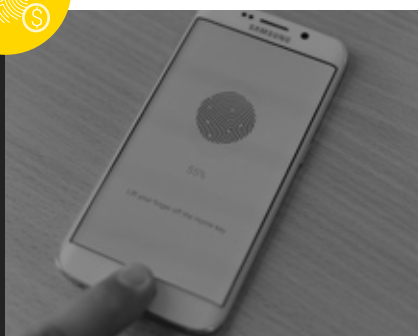
## VR HEADSETS

"Virtual Reality Headset Prototype", by Pargon, is licensed under CC BY 2.0, Desaturated from original



## BIOMETRIC PAYMENTS

"Hand Geometry Reading Device" by Z22, licensed under CC BY-SA 3.0, Desaturated from original



"Samsung Galaxy S6 Edge", by Karlis Dambans, is licensed under CC BY 2.0, Desaturated from original

# MEGATRENDS

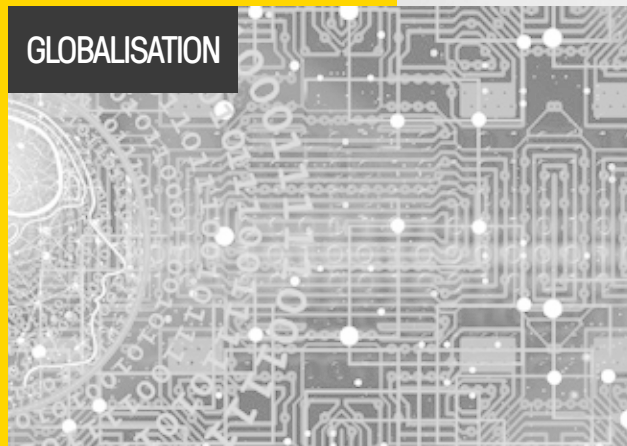
DIGITAL ECONOMY &  
HYPERCONNECTIVITY



REGULATION



GLOBALISATION



Global and sustained megatrends are impacting businesses, economies, and societies around the world and changing the way we live, work, consume and interact. These megatrends will ultimately shape what the bank of the future will look like and how it operates.

## DIGITAL ECONOMY & HYPERCONNECTIVITY

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Technological innovations are giving rise to an interdependent and connected digital economy. As the proliferation of personal digital devices and IoT change people's behavior, expectations, and the way they interact, new automated industries are coming to life, and old business models are digitising.

In the coming decade, access and connectivity will reach unprecedented levels with the number of physical devices, appliances, and other items embedded with electronics, software, and sensors expected to increase. Smart cities and nations will become integrated into every aspect of people's lives. Digitisation, accessibility, and connectivity will drive more cashless transactions and enable people to access vast amounts of information.

In the digital and hyper-connected economy of the future, the continued proliferation of personal digital devices and IoT will change people's behavior, expectations, and the way they interact with financial institutions. Banks will need to be digital first, offering a vast selection of on-demand services via an ever-increasing number of digital channels to form the ultimate omni-channel experience if they are to succeed.

At the same time, financial institutions will have to protect consumers from a vast array of cybersecurity risks in an environment where persistent, well funded, and sophisticated adversaries attempt to breach banking systems through a mind-boggling number of entry points.<sup>1</sup>

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<sup>1</sup>World Economic Forum:

Taavet Hinrikus 2016, What will the bank of the future look like?, viewed 23 May 2019, <https://www.weforum.org/agenda/2016/02/what-will-the-bank-of-the-future-look-like/>

## REGULATORY COMPLEXITIES & CONSUMER RIGHTS

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Regulations will continue to be a powerful shaper of the banking industry in the future. With regulators and consumers now questioning entrenched banking systems, business models and strategies, more stringent regulations that reduce systemic risk and improve consumer protections can be expected to burden and shape the banking industry over the next decade.

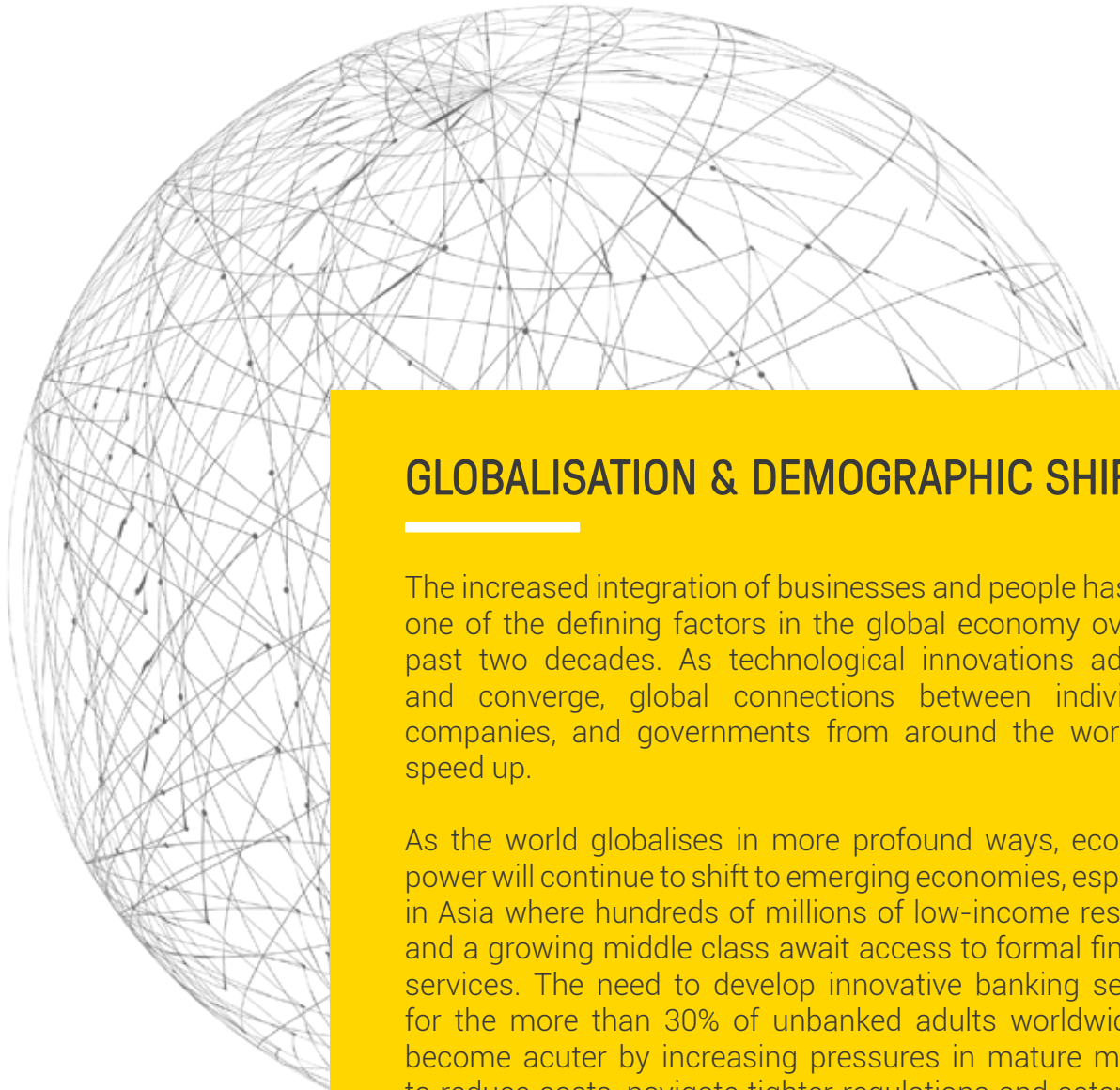
New and tighter controls will make the operating environment complex for banks as they attempt to adapt to the opportunities and dangers of a hyper-connected and digitised world. Regulations like PSD2 will be joined by others that seek to level the playing field for non-bank competitors and provide consumers with more choice. Consumers will demand more transparency, bold actions to safeguard their data and socially responsible business models.

Regulations will also expand into new areas such as Fintech and Cybersecurity. New competition made possible by the continued introduction of PSD2 type open banking regulation sets will mean banks will operate in a very different environment. Over the next decade, thousands of new startups and established technology companies offering a range of financial services will attempt to steal market share and talent away from traditional financial institutions making for a more competitive industry.

The General Data Protection Regulation (GDPR), a regulation on data protection and privacy for all individuals within the EU and the European Economic Area (EEA) will have a significant impact on financial institutions. Banks will need to understand all data flows across their various systems, put in place new processes and strict compliance standards in areas such as client consent, the right to data erasure and the right to be forgotten as well as data breach reporting.

Such concerns on personal data protection are also shared by regulators in Asia. For example, Hong Kong has reformed its Personal Data Privacy Ordinance (PDPO) to enhance the protection of personal data, in the digitalised economy. There are also similar laws and legal reforms emerging across other Asian countries including Malaysia and Singapore with more to follow including Indonesia and India.





## GLOBALISATION & DEMOGRAPHIC SHIFTS

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The increased integration of businesses and people has been one of the defining factors in the global economy over the past two decades. As technological innovations advance and converge, global connections between individuals, companies, and governments from around the world will speed up.

As the world globalises in more profound ways, economic power will continue to shift to emerging economies, especially in Asia where hundreds of millions of low-income residents and a growing middle class await access to formal financial services. The need to develop innovative banking services for the more than 30% of unbanked adults worldwide will become acuter by increasing pressures in mature markets to reduce costs, navigate tighter regulations and cater to an aging population.<sup>2</sup>

Furthermore, whilst the adoption rate of new technologies differs depending on geographical location, it's clear that technology adoption will no longer be the exclusive domain of consumers in the West. Instead, new technologies will increasingly be developed in emerging economies and then flow to advanced economies, presenting unprecedented opportunities for banks to experiment with low-cost innovation and open regulatory frameworks.

Deeper globalisation and demographic shifts will bring challenges for banks, but advances in technology will also provide unprecedented opportunities to innovate, collaborate and capitalise on new sources of talent and growth. Technology will give banks the chance to design more frictionless global services that make it easier for customers to live in a borderless world and provide a range of profitable micro-services like microcredit for consumers and small businesses in developing markets.

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2. World Bank:

The World Bank 2017, The Global Findex Database, viewed 23 May 2019, <https://globalfindex.worldbank.org/>

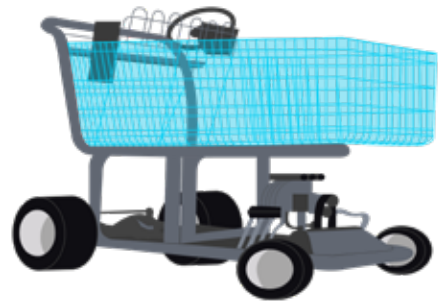


The competitive landscape in financial services has changed over the last decade creating significant hype about the wide-scale disruption of banks. It's true that Fintech startups, challenger banks, and global technology companies like Amazon, Apple, Alibaba, and Tencent have joined banks in the provision of financial services. Today, new competitors are providing siloed and niche solutions in payments, lending, robo-advisory, and many other areas while NEO banks primarily offer basic retail services to consumers.

However, a closer look at the influx of competition reveals a more nuanced story. Despite competition heating up, banks have managed to maintain the upper hand. They remain by far the most trusted financial service providers and the only players delivering the full end-to-end value chain of financial service products from retail to corporate, investment banking, asset management, trading and much more.

Customer trust and the ability to offer the full value chain of services are significant advantages held by banks, although maintaining these will be much more challenging in the next decade. Banks will need to make consequential decisions about whether they become utility providers that offer backend, low-profit-margin services or keep the end user relationship. For institutions that choose the latter, significant changes to legacy infrastructures, strategies, and business models will play a key role.

The successful bank of the future will need to be like a supercharged shopping cart in a supermarket. Able to cherry pick the best solutions from the market to ensure delivery of the full value chain of financial services. Agile, dynamic and intelligent, ready at all times to adapt to new technologies and regulations, protected from all sides against cyber attacks and operating transparent business models to meet changing customer expectations.



**Protected** - High levels of protection against cyber attacks and threats



**Transparent** - Providing transparency to customers for the services provided and the fees charged



**Fast & Dynamic** - To compete against the new entrants, and competitors and adopt new technologies and regulations



**Open at the top for APIs** - Banks can easily cherry pick startups to enhance their customer engagement & value chain



**Intelligent** - To drive the analytics of this new platform

# BANKING IN 2030

## INTELLIGENT MACHINES & AUTONOMOUS BANKING

Much like autonomous cars which operate without human conduction, pervasive automation in the coming decades will result in autonomous banking. In 2030, AI technologies will have matured as machines get smarter thanks to an inflow of data from billions of connected devices.

As big data gets a whole lot bigger, AI technologies will help banks make sense of it to find real insights and efficiencies. The ramifications for the banking industry will be profound. AI will help deliver autonomous banking. Intelligent machines will become the new “face” of a bank providing an automated digital banking user experience including easy and reliable financial advice for the mass market.

The good news is that autonomous banking will not come at the expense of the customer relationship. This is one of the aspects of AI that makes it so useful in shaping the bank of the future. Banks will have the capacity to apply deep personalisation to automated machine based services while maintaining relationships and resolving customer issues in the digital world.

Intelligent personal assistants and advisors will display emotional intelligence and other human-like traits within customer conversations at a

level unseen today. Integrated intelligent personal assistants will anticipate customer needs and guide them throughout their use of bank apps and websites, from onboarding processes to daily banking activities.<sup>3</sup> Customers will get advice almost exclusively from robo-investment advisors that can alert clients of opportunities and analyse vast and complex sets of market data to predict stock movements and produce tailored and accurate investment advice in real time. Robo-advisors will be joined by advanced robo-financial planners that keep updated information and analysis about customer spending habits and generate personalised financial planning strategies on demand.

Beyond benefits to customer service, AI technologies will transform backend administration to increase operational efficiency. AML, KYC and fraud detection will become automated, making checks faster to carry out and more accurate. From simple repetitive and rule-based activities to complex decision-making tasks related to risk, AI will improve efficiency and save costs. The technologies will cut errors and speed up processing times, making the bank of the future simpler to deal with and more reliable.

3.EY

EY February 2018, EY Banking of the future: embracing technologies, viewed 23 May 2019, [https://www.ey.com/Publication/vwLUAssets/ey-banking-of-the-future-embracing-technologies/\\$FILE/ey-banking-of-the-future-embracing-technologies.pdf](https://www.ey.com/Publication/vwLUAssets/ey-banking-of-the-future-embracing-technologies/$FILE/ey-banking-of-the-future-embracing-technologies.pdf)





## QUANTUM COMPUTING

Quantum computing is in the early stages of exploration in the banking industry with very few institutions exploring its potential. As the pace of technological innovation speeds up exponentially in the coming decades, quantum computing will be so powerful that it could displace advancements in blockchain and distributed ledger technologies. In the future, quantum computers will speed up cloud computing systems and supercharge AI, enabling financial institutions to tackle complex problems and analysis at speed.

Quantum computing will transform everything from risk analysis, asset pricing, supply chains, trading strategies & modeling to cybersecurity and portfolio optimisation. They will predict how portfolios will perform under varying circumstances and identify which products to trade to get the desired outcome. Quantum-encrypted bank and information transfers will give banks the ability to send data over a quantum network that is extremely difficult to hack. Bank encryption and security mechanisms will be almost unbreakable making the digital landscape more secure.

Banks, operating on public cloud infrastructure, will integrate with new emerging technologies. They will have near-unlimited hardware and software resources enabling them to scale up or scale down as they need. With increased efficiencies and reduced infrastructure costs, banks provide their clients with a speed of service and flexibility previously unimaginable.



## BANK OF THINGS

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Welcome to the new “bank of things.” In 2030 the real and virtual worlds will interact with each other as the ability to connect anything, and everything becomes a reality. Billions of connected devices sharing data and transacting. Think digital and financial connectivity on a new level. Smart cities, businesses, cars, homes, and people.

Billions of connected devices will deliver banks masses of data enabling them to offer customers a more detailed, accurate and insightful view of their finances. In 2030, banks will automatically track customer spending from a variety of channels, helping clients manage their money more effectively. <sup>4</sup> There will also be benefits for SMEs as business operations are assessed with sensors, delivering real-time financial data to artificially intelligent robo-advisors that make accurate predictions and provide timely financial advice.

With an enhanced ability to understand their customers’ financial preferences and future needs banks will become smarter and provide a transformed customer experience. They will have the capability to send suggestions, services, and advice before a customer knows they need it and enjoy almost endless opportunities to increase business services and customer loyalty through targeted offers and rewards.

Banks will also gain the ability to refine their services faster than ever before. Understanding which are in demand, and where modifications are needed will be easier and less risky as data-driven decisions enable the rapid realignment of services to match customer preferences.

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4. Infosys  
Infosys 2018, IOT - Enabled Banking Services, viewed 23 May 2019, <https://www.infosys.com/industries/financial-services/white-papers/Documents/IoT-enabled-banking.pdf>

## VIRTUAL BANKING

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AR & VR in 2030 will have moved way beyond the video game experiences that we see today. Applications for advanced augmented and virtual reality technologies will permit banks to provide an immersive user experience, expand on a range of services and help reach new customers.

By 2030, AR & VR technology is set to turn mundane tasks into more meaningful experiences and help create more engagement. Convenient and immersive experiences in payments combined with the ability to access updated and timely information will recreate large parts of the customer experience.

Virtual in branch banking will deliver a personalised banking experience to help banks keep a level of humanity and personalisation as the number of physical branches decreases. Moreover, beyond providing a more immersive and personalised banking experience, VR technology will also enable the provision of financial services to unbanked populations who own a mobile phone but lack access to physical bank branches.

## BLOCKCHAIN 4.0

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Since blockchain technology emerged in 2008, the banking industry has paid close attention to its development, experimenting to explore how the technology could transform their operations. Although regulations and technological hurdles currently inhibit usability and scalability, many banks have begun deploying blockchain based solutions to deliver specific benefits in areas like trade finance, remittances & payments.

By 2030, blockchain technology will have evolved to enable intelligent, automated and real-time operations and services. The elimination of many of the

manual processes that form parts of KYC and AML compliance, trade finance, post-trade clearing and settlement, and cross-border payments will result in game-changing efficiencies.

Cryptocurrencies will be more mainstream and accessible as similar regulations, and KYC/AML mechanisms to those that govern traditional fiat currencies are implemented. Banks will facilitate the trading of cryptocurrencies, and a new crypto asset class will integrate into the global financial system leading to an increase in new crypto-investment vehicles and liquidity in global markets.



## DEVICELESS TRANSACTIONS

Banks, Fintechs, and technology companies are currently working on the application of biometric authentication technologies in a wide variety of areas. One of the most exciting and rapidly evolving is in payments which form an integral part of the banking experience.

Already, in parts of Asia, facial recognition solutions such as Alipay's Smile to Pay have launched allowing for deviceless transactions. Facial recognition is also being mapped with credit risk for payments solutions without credit cards, cash or mobile. China and other parts of Asia will continue to forge ahead when it comes to deviceless payments while many other leading economies rely on cash or traditional payment methods.

Although the adoption of deviceless payment solutions will be more challenging in some countries, the evolution from cash payments, to electronic, to mobile and now toward deviceless transactions will continue and result in a far more user-friendly and better protected payments experience.

## THE BANK OF THE FUTURE

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Global megatrends and rapid advances in technology are transforming what banks look like and how they operate. The future bank that emerges can condense into two scenarios. In a more positive vision of the future, banks lead the customer relationship and maintain the full value chain. They become well-oiled machines, digital first, highly automated, smarter and more flexible than ever before.

Large parts of the traditional bank infrastructure from call centers and customer service to back-office functions will become automated and digital experiences replace outdated core banking models and architectures. Banks will have evolved into new and hyper-efficient financial technology firms that offer all the services they do today and much more by using technology to deliver services in better ways.

The successful bank of the future will have reimagined their role in their customer's lives and created a digital architecture that delivers not only seamless digital services on demand but also an ability to pivot, scale and grow at speed.

In an alternative vision, one that has already started to play out in China, where banks have lost the battle to Alibaba and Tencent in retail banking payments, financial institutions which fail to adapt to new realities, face relegation to utility providers that offer backend, low-profit-margin services for consumer-facing technology firms.

Of course, the future that unfolds will most likely be somewhere between these two scenarios and differ from bank to bank. It is the choices made by executives today that will determine the position of each financial institution in the future. Whatever decisions are made, what remains clear is that the bank of the future will look very different from the bank of today.

## ABOUT THE FLOOR

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The Floor is an exclusive platform sourcing & developing exceptional technologies for tier-1 banks.

We follow a unique “challenge-first, solution-second” approach; a Reverse Innovation Model, through which we help our partners by innovating, building and adapting solutions to address the banks’ particular challenges. This enables our partner banks to leapfrog their competitors and remain at the forefront of their field.

## WITH THANKS TO:

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