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FINDING BALANCE

THE POST-COVID LANDSCAPE FOR FINANCIAL INSTITUTIONS

The Impact of New Technology
on Financial Institutions

Part 9

Renew & Reinvent
Own the Future



INTRODUCTION

Welcome to our ninth briefing on how COVID-19 has affected financial institutions and its impact on global mega trends. In this issue, we look specifically at technology as a key driver of innovation and change in financial services. We also consider the crucial role of supervisors, given that the financial services sector is a highly regulated industry. As always, in addition to sharing our own opinions, we reference the views of external commentators. Please bear in mind that our opinions are based on hypotheses that may change in a rapidly developing situation and there are doubtless other perspectives.

Key takeaways

What's driving the adoption of new technologies?

General trends / Sector trends — how is technology changing financial institutions?

Regulators' perspective

Annex - What are the main technologies?

Key takeaways

- The innovative use of technology in financial services is no longer limited to fintechs, but it is a vital part of every financial institution's business model to react to disruptive competitors, meet higher customer expectations and reduce costs.
- The business models of financial institutions are changing: how services are delivered, the ways in which they earn revenue and the search for new ways to monetize value. Financial institutions now operate in a world where they can analyze in real time vast quantities of data (as opposed to the processing of limited amounts of data using statistical methods in the past) powered by the flexibility of IT solutions through the cloud. At the same time, customers increasingly wish to interact through social media, mobile apps and online platforms.
- Regulators are supportive of fintech and profess to adopt a neutral stance when evaluating new technologies; however, they are concerned with accountability and whether technology performs as expected and in compliance with legal requirements. Similarly, regulators worry about the potential for financial crime and consumer detriment, the risks from under-regulation and the threat to financial stability. This is against a background of law and regulatory expertise failing to keep pace with technological and market developments.

What's driving the adoption of new technologies?

COVID-19 has accelerated the take-up of digital transformation due to the need to conduct more business remotely through digital channels. Simultaneously, customers have shown a greater willingness to use new technologies in which previously they may have lacked confidence.¹ As TheCityUK has stated, "we are already seeing the way people think about and use digital technology undergoing a radical transformation."² A number of factors are at play, as follows:

- The threat of corporate mass extinction: As detailed below, the sector is going through an evolutionary change and, to survive, financial institutions like other businesses need to reinvent the way they interact with the changing world.³
- COVID-19: The pandemic has put immense pressure on existing technology capabilities (e.g., remote working and combating cybersecurity threats) requiring chief operations officers to strengthen IT and accelerate the shift to digital channels.
- Reducing costs and increasing operational efficiency: For example, rising nonperforming loans and the current low-interest environment are squeezing banks' rates of return while some asset managers are under pressure over fees from increased transparency and passive investing.
- Improved customer engagement and experience: Customer expectations have changed over accessibility, functionality and ease of use.
- The threat from disruptors: Market disruption caused by fintechs and "digitally born" service providers is pushing legacy institutions to adopt more efficient ways of working to remain profitable and competitive.
- Dealing with ever-increasing regulatory and compliance risk: To manage the risk and costs of systems and controls, businesses are turning to "regtech" solutions and regulators to "supotech."
- Generating new revenues: With interest rates near to zero, productivity growth being limited and other services becoming commoditized and so less profitable, financial institutions are looking to technology to identify new ways to offer value to customers and earn revenue. Successful organizations can create added value and operate on a different level compared to their competitors.⁴
- Automating things that are "stupid" for people to do: This means enabling financial institutions' staff to work better for their customers. In other words, instead of replacing people with technology (e.g., artificial intelligence (AI) solutions), provide them with the tools to better serve customers.⁵
- Emergence of the new asset classes and industries: To facilitate dealing with new asset classes (e.g., virtual assets) and onboarding of the new types of clients.

General trends — how is technology changing financial institutions?

Cryptoassets — a new asset class

Distributed ledger or blockchain technology has created a new asset class. According to the International Monetary Fund (IMF), the market capitalization of cryptoassets has grown despite significant periods of price volatility and a lack of intrinsic value. In 2021, it reached a record high of USD 2.5 trillion with the market capitalization for stablecoin multiplying by 400% to USD 120 billion.⁶ The IMF report that there is now a greater correlation in the value of crypto holdings with traditional equities reducing any diversification benefits and increasing the risk of contagion.⁷ Crypto is very much investor-led and serviced by new entrants providing virtual exchanges and wallets to facilitate trading with traditional market players as late arrivals. Although issuance and trading activity is barely tolerated in many countries around the world, as a phenomenon, it appears unstoppable.

De-mediation and modular financial services

Hand in hand with customer acceptance of the digital experience, financial institutions are adopting direct-to-customer business models offering specialized services to end customers without the intermediation of a traditional bank or insurance company. The legal implications of this are a greater compliance burden for providers that now have direct relationships

with end customers. This brings additional risk and regulation under data privacy, direct marketing and consumer/small business protection laws. Decentralized finance (DeFi) is another more controversial aspect of de-mediation, which uses smart contracts on a blockchain to allow users to lend, trade and borrow financial instruments without needing, for example, brokerages, exchanges or banks.

Alongside de-mediation, there is a trend toward "modularity" or disaggregation in financial services. This is characterized by the involvement of multiple new market entrants at different points of the manufacturing and distribution cycle, offering different components of what was previously a single service or product provided by one entity. While traditional players face more competition, they can take advantage by adopting this model by embedding their traditional financial services into platforms and apps of non-financial institutions. They may also use outsourcing to reduce costs and thereby look to take market share from competitors. Leveraging the cloud is part of this. Much depends on the attitude of regulators to the risks that arise with these new ways of carrying on business and the arrival of new market participants, such as tech firms that are outside the regulated community.

Big technology market entrants

Big technology companies are taking their place as an integral part of the financial services ecosystem, from providing cloud services and outsourced technical services such as payment processing to becoming competitors in their own right — although, to date, mainly in retail financial services to support their own platforms, for example, offering credit and payment services.⁸ Their impact in emerging markets and developing economies has been largely based on mobile phones and internet access taking advantage of lower levels of financial inclusion vis-à-vis traditional financial institutions. In the EU, regulators "observed

a rapid growth in the use of digital platforms to 'bridge' customers with financial institutions."⁹ This brings benefits to society but raises issues, including consumer protection issues among the less financially literate, concerns over local market power and a weakening of the profitability and, with it, the financial resilience of traditional institutions.¹⁰ Regulators in China, the EU and the US are concerned about what they see as the potential for abuse of big tech's technological and data advantages to dominate sectors of the market making more likely market intervention.¹¹ There are also questions over the financial stability of tech companies once they reach scale, as they are subject to lower levels of regulation and scrutiny. These questions are topical given recent failures in the payment sector and the debate on whether the regulatory perimeter should be extended.

Future of work

Traditional employment models are changing with employers moving toward a more flexible workplace, with some or all employees allowed to telecommute for some or all of the time even after the pandemic ends. Financial institutions must ensure that their workforce adapts to the new digital environment, re-skilling existing employees and recruiting new talent. Although changing work patterns bring opportunities, besides the regulatory issues around the adequacy of supervision, there are many legal issues to navigate such as employment, benefits, immigration, corporate and employment tax, trade secrets and data privacy.



Sector trends — how is technology changing financial institutions?

Banking

Banks are using technology to rethink how they engage with customers at every interaction, from marketing and customer acquisition through onboarding, product setup, payments and transactions. Besides de-mediation and modularity, the rise of "banking as a service" and "banking as a platform" is also worthy of mention. They allow third parties partnered with licensed banks to include digital banking services in their own product offerings enabling, for example, the provision of payment and credit cards. This can give incumbents a lifeline to stay relevant in the market place whose advantages (e.g., privileged access to data and branch networks) are being eroded. Smaller banks hitherto unable to compete with larger retail banks can partner with nonfinancial tech businesses. While incumbents can adapt, they carry the operational burden of legacy systems. Replacing core systems is a less frequent event compared to the short-term remedy of bolting on a new app.¹² Alternatively, incumbents may take a

more long-term approach and replace the old systems step-by-step by adding new "micro-services" on top of legacy systems.

New players are also entering the market. Small virtual-only banks are benefiting from cost efficiencies, achieving higher rates of return than traditional banks. For example, European fintechs have entered the US marketplace where traditional banks are losing market share. Retail banks are facing competition from fintech start-ups that are growing their market share. Some merchant services aggregators and payment firms are now nearly as large as established banks and enjoy better growth in their earnings.¹³ In Asia, Singapore recently awarded licenses to non-bank groups to operate digital banks from 2022. Many new entrants, however, do not offer radically new services but simply technology to replicate traditional offerings more cheaply, the equivalent of individuals in Victorian Britain wanting "faster horses."¹⁴

COVID-19 has accelerated digital change across wholesale business banking and in related activities such as cash management, trade finance and working capital solutions. The importance of providing these services to business users will continue to drive revenues. Traditional banks remain in pole position but to keep their business they need to raise their game and improve the customer experience. Although fintech start-ups are competitors, they are also partners and collaborators that banks can work with to modernize their operations and support the expanded digitization. This encompasses both the front and back ends of their businesses. Moreover, sometimes banks adopt a strategy of acting as a platform for fintech start-ups to facilitate provision of various innovative services.

Insurance

Despite InsurTech's high profile, insurers are one of the least digitally mature industries.¹⁵ The sector is now beginning to leverage technology to improve its efficiency and customer experience — over the last decade, growth has been limited except in Asia Pacific. The insurance industry has always been data-driven, but much more data is now available, for example, technology allows much more and varied types of data to be collected, including social media and other third-party data. Analyzing "big data" has become much easier because new technologies (e.g., algorithms and AI tools) allow its interrogation and analysis (deep learning) to design more targeted products and to better detect fraud.¹⁶

Much general insurance business is conducted largely on price with little customer engagement. The challenge for insurers is to use digital technologies to better understand customer needs, and to use more personalized touch-points to highlight a product's value and compete on a broader range of factors. To do so, many insurers are adopting a digitized "omni-channel" experience for customers, one that recognizes different customer preferences offering various outlets to purchase providing a joined-up personalized experience. To ensure that an IT system can support comprehensive change, insurers need to overhaul their "front-end" architectures and update their core systems to take full advantage of the new technologies, including the cloud, that are now available.¹⁷ Further growth may also be dependent on successful application of the Internet of Things (IoT), in particular in such areas as life and car insurance enabling insurers to collect key client data in real time. Different business lines are evolving at varying speeds, with the mass market (property and casualty) the most advanced. Those insurers that do not respond will see competitors and new entrants take market share and erode margins.

Financial sponsors, including asset managers

A range of pressures — such as increased transparency over cost and the rise of passive investing in the asset management sphere — is forcing business models to evolve and adapt or move to a lower cost model. AI is in use across portfolio management and client outreach to make front and back offices more efficient, as well as identifying investment opportunities (for active strategies), reporting to clients and responding to the regulatory imperative of better monitoring employee conduct risks.¹⁸ AI can efficiently and quickly process huge amounts of data to apply to environmental social and governance investing.¹⁹

Wealth advisers are key partners of asset managers and robo-advice is a fintech disruptor to the market. Until now, despite the apparent advantages of lower costs to clients, speed and fewer conflicts of interest, say around commission, the use of robo-advisers by the market has been disappointing.²⁰ In an industry where public confidence is low, there has been a lack of trust in the ability of current robo-advice technology to deliver.²¹ Nonetheless, assets managed by robo-advisers globally were projected to reach USD 1.8 trillion in 2022 with future annual growth expected of around 17% yearly.²² The largest market by far in terms of value is the US, followed by Asia Pacific, which has the most users, and Europe third, although the UK market is also active. Traditional financial institutions are acquiring robo-adviser firms and there is merger activity between robo-advisers themselves.²³

Financial infrastructure providers

This is one of the most innovative sectors where the biggest institutions as information businesses are beginning to resemble big tech providers. Meanwhile, its ecosystems contain many fintech and specialist providers delivering new solutions in innovative ways. For its part, big tech is investing

heavily in payment products in partnership with established payment firms and in emerging market economies with less tradition of banking.²⁴

Although digitalization was already making its mark, COVID-19 has provided added impetus. In the payments sphere, customer reticence over new technology has reduced, for example, with cashless payments declining further, and in the wholesale market with corporates expecting additional value-added services. Nevertheless, it's not straightforward. New payment services facilitated by legislation such as Singapore's Payment Services Act, the EU's second Payment Services Directive and the UK Open Banking initiative enjoy a high profile, but it is still early in their development and their market impact has been limited to date.²⁵ One obstacle is a lack of standardization of APIs across Europe — with national-only solutions — so better regulatory coordination is needed over a multitude of different systems and platforms. In terms of technology, a number of providers are trialing blockchain-based tech for payment processing, for example, to provide faster and cheaper cross-border payments dispensing with correspondent banks.²⁶ Again, despite the increasing use of blockchain technology, uncertainty over its regulatory status is impeding its take-up.

Exchanges, clearers and other financial market infrastructure have become intensively competitive information data businesses across the value chain through to post-trade and risk management services. AI and distributed ledger technologies are introducing new and innovative products in data and analytics, although this is counterbalanced by the growing commoditization of traditional data services. According to the OECD, in 2020, financial markets saw a global spend of over USD 50 billion in AI.²⁷ Again, there is potential for using distributed ledger technology in post-trade services to bring about faster and more transparent clearing and settlement.²⁸ These businesses will need to think and act more like big tech firms by providing state-of-the-art technology solutions and increasing investment in innovation.²⁹ Fintech businesses are disrupting business models, but legacy institutions are acquiring or partnering with them to lower costs and boost margins.



Regulators' perspective

The major financial centers and their regulatory agencies are well aware of the opportunities that new technologies bring. Innovation, competition and disruption provide opportunities to attract business away from rival centers. Fintech is a driver of financial inclusion which is a high priority for regulators. The IMF points to fintech as supporting financial inclusion through reducing costs and removing barriers to accessing financial services, especially in emerging markets.³⁰ Understandably, regulators talk up their support for technological innovation. In reality, their performance is mixed and most fall short through a lack of resources and expertise coupled with regulators' inherent caution and adversity to risk.

Meeting regulatory objectives

According to US Securities and Exchange Commission (SEC) Chair, Gary Gensler, when new technologies emerge and change the face of finance, the central question for regulators' is "how do they continue to achieve their core public policy goals?"³¹ While regulators recognize the benefits to financial services of lower costs and increased access and choice, their focus is on consumer protection, conflicts of interest, bias and systemic risks. More specifically, in the following ways:

- Cloud — concerns about regulated data being stored outside of the regulator's jurisdiction (and/or regulated entity's premises)
- Big data — concerns over regulated data being processed in an unconventional way

- AI — the need for "explainability," transparency and accountability for unintended consequences or inherent biases as well as regulation being typically based on the assumption of a human being's involvement in business processes
- Blockchain and cryptoassets — concerns over transparency, financial stability and the risk of financial crime
- IoT — concerns over security of data processing and the risk of cyber-attacks and sensitive data theft

Regulatory catch-up

Such concerns are being tackled through new legislation with, for example, compulsory due diligence (as recommended by the Financial Action Task Force (FATF)) to combat financial crime, data residency and data processing requirements in the case of cloud computing and big data, and through improved systems and controls in the case of AI.³² A number of jurisdictions are restricting the marketing of cryptoasset-based investments or of investments that reference them, but regulators' instincts to clamp down have been tempered by their relative lack of power to do so. Here there is debate around the need for licensing for cryptoasset products that fall outside both securities and payments regulation, yet have financial product-like characteristics.³³ We will see fresh legislation during 2022, for example, the EU's Markets in Cryptoassets Regulation, so the sector should have a better idea of regulators' appetite to let crypto markets grow. However, it remains likely that they will continue to play catch-up as the industry innovates.

Technology neutral?

Many regulators claim to have a supervisory approach that is technology neutral — to adopt the words of the UK Financial Conduct Authority's (FCA) chair, "same risk, same regulation."³⁴ The European Central Bank also shares the view that decisions about technology are best made by the market.³⁵ However, by applying existing requirements to new technologies, without making sufficient allowance for their difference in nature, can lead to a tougher approach. In other words, many innovative products and services do not easily fit into existing regulation. Outside the major financial centers, smaller, less well-resourced and inexperienced regulators depend on the regulated and their advisers to educate them. Perhaps it is not entirely coincidental that the wait time for authorization is now significantly longer in many jurisdictions. Ultimately, regulators recognize that the sustainability of any business model is dependent on its successful digital transformation. For banks, insurers and parts of the financial infrastructure, a failure to change could impact financial stability and therefore supervisors' regulatory objectives.

The "halo" effect

Of all the new innovations, the authorities have exercised the greatest caution with regard to cryptoassets and other distributed ledger technology spin-offs, such as DeFi. This is not simply due to the perceived risk of financial crime and fraud (and as the market value of crypto grows new concerns over financial stability),³⁶ but the inherent concept driving this technology, namely a decentralized system eschewing central control, something inimical by

nature to regulators. Numerous studies by central banks into setting up their own digital currencies show the desire to retain control. Despite regular warnings over cryptoassets — the US and the UK have been very vocal and China has banned it in its entirety — there are ever-increasing numbers of investors and regulated entities gaining exposure to related products and services. Nonetheless, crypto, unless represented by derivatives, remains largely unregulated. Ironically, the authorities fear that imposing regulation may confer a form of legitimacy, a false sense of confidence as happened with the extension to crypto of anti-money laundering/counter terrorism financing (AML/CTF) regulation. Some commentators refer to this danger as the "halo" effect.

Operational and cyber resilience

Among the hottest regulatory topics in 2021 and into 2022 are the related issues of operational resilience and cyberattacks. This reflects supervisory concerns about new and heightened vulnerabilities in financial institutions because of digitalization. Recent technology malfunctions have affected both card issuers and card schemes, while trading on exchanges has been suspended following outages. Meanwhile, the incidence of cyberattacks continues to grow exponentially. Regulators know that financial institutions are an attractive target because of the amount and value of the data they hold. A loss of service whether because of an IT malfunction or a criminal attack has the potential to cause disruption to customers and counterparties; in the most serious cases, it could affect financial stability.

Regulatory expectations of financial institutions are therefore growing, especially around cloud outsourcing risk such as the concentration of so much banking infrastructure and information in the hands of the large tech companies that

dominate this space. Regulators are concerned about the continuity of service for customers in the event of a cloud outage or from other cyber risks, and for financial institutions to have the ability to access and migrate data off the cloud and back on to their own systems. For these reasons, operational and cyber resilience are a special focus for supervisory attention, rulemaking and enforcement. Such concerns are reflected in the growing weight of regulatory requirements and guidelines issued to regulated institutions. Regulators may also seek more direct oversight of cloud providers.

Traditional regulation often assumes that humans run the internal processes within financial institutions rather than technology. The adoption of regulatory monitoring, reporting and compliance, so-called "regtech," will be a challenge for both businesses (in terms of complying with existing regulations) and regulators to develop new regulations and methods of supervision more appropriate for the present day.

Toward digital regulators?

As financial institutions change so are regulators to varying degrees and speeds. Businesses that are digitally transformed will require supervisors to adjust to new business models. Some have been quick to adopt technology including "suptech" and "regtech" to improve data analytics, reporting and surveillance of markets.³⁷ Using AI, some regulators intend to identify those behaviors and events that they consider likely to result in consumer harm or markets failing to function. There are benefits to regulated businesses from reducing existing reporting burdens. Yet, at the same time, they face the prospect of "data-driven enforcement." This will see enforcement agencies identify rule breaches based on electronic monitoring, record keeping and

reports along with surveillance of market trading. The FATF wants the pandemic to be a catalyst for adopting "regtech" and for more efficient and effective AML/CFT measures. A key priority for the FATF is to explore the opportunities that digital transformation brings to fighting money laundering when onboarding customers and detecting criminal activity.³⁸

The UK FCA proclaims that "a data-driven industry needs a data-led regulator" and that "data is also central to [its] own transformation as an organisation."³⁹ The reality is that supervisors, in common with the businesses they regulate, struggle at times to keep up with the pace of change. They must adapt by re-skilling existing employees and recruiting new talent with digital and IT skills. In doing so, they are competing against a range of businesses — financial institutions, technology companies and fintechs — to secure and retain the best talent. As public bodies subject to budgets, they are slower to react and have fewer resources to do so.

Fintech facilitators

More promisingly, many countries accept that fintech is an opportunity to inject more competition into financial services and to strengthen those markets. A growing number of regulators have established regulatory sandboxes to help test new, innovative products in a controlled but favorable environment. The UK FCA pioneered sandboxes in 2015 and, more recently, regulators have set up the Global Financial Innovation Network to support the development cross-border of new and innovative services. A related international initiative by the Bank for International Settlements' Innovation Hub seeks to foster international collaboration on innovative financial technology by central bankers.⁴⁰

ANNEX — What are the main technologies?

Financial technology or fintech has a wide meaning covering the use of technology in financial services by existing businesses, although it is frequently used to describe new business start-ups either offering services at a lower cost or new, innovative ones. Reference is also made to digital or virtual services, particularly over the customer experience or interface. We look at five of the main technologies and their uses below.

Cloud computing

Cloud service providers — the on-demand availability of computer system resources — which usually sit outside the regulatory perimeter, are fast becoming part of the financial infrastructure. This is because financial institutions are becoming progressively more dependent on cloud computing due to economies of scale, flexibility, operational efficiencies and cost-effectiveness. Nonetheless, cloud services present challenges in terms of data protection, banking secrecy, outages, security issues with cyberattacks and concentration risk. These affect individual businesses and the systematic level because large cloud providers risk becoming a single point of failure when so many institutions rely on them. The fact that cloud providers are unregulated and often sit in third countries raises further regulatory issues with supervisors stipulating the need for access and audit rights. Increasing data localization policies are restricting the ease by which data may be transferred cross-

border, thereby increasing costs and, counterintuitively, impeding regulatory oversight.⁴¹ For further insights on cloud adoption by financial institutions, please refer to our publication *Digital Transformation and Cloud Survey: A Wave of Change* — [FI Takeaways](#).

Big data

Big data allows more efficient data analysis and the ability to leverage the vast quantities of information available today to optimize decision-making. An important feature is that data sets of an unstructured or semi-structured nature can now be analyzed to provide new insights and to identify trends, correlations and patterns. The insurance sector, with its need to evaluate risk and calculate premium, is well known for its use of big data, as are fund managers seeking to identify optimum investment strategies. With big data come risks, for example, the need to keep data secure against cyberattacks and, in the case of personal data, compliance with data protection laws, where the potential for significant fines has grown in recent years. There are also privacy and ethical issues.

Artificial Intelligence (AI)

Both AI and machine learning (ML) are increasingly used across a range of applications, for example, to assess credit quality, to price and market insurance contracts and to automate client interactions commonly with chatbots. Moreover, fund managers and broker-dealers use them to improve returns and optimize trading execution, while both regulators and financial institutions employ them to assess data quality and carry out surveillance for regulatory compliance and fraud detection.⁴² The transformative effects of predictive data

analytics have been described by SEC Chair Gary Gensler as having the potential to "be every bit as big as the internet was in the 1990s."⁴³ AI and ML require the proper management of their inherent risks — such as bias when underwriting insurance and assessing credit or accentuating market volatility in trading (e.g., herd behaviors) — through proper governance, auditability, "explainability" and accountability of their users.⁴⁴

Internet of Things (IoT)

The use of the IoT is closely related to big data. Obtained from potentially millions of devices (e.g., smart phones, bank ATMs and biometric sensors), data can be used by financial institutions to anticipate customer needs and provide personalized solutions, as well as to detect, for example, possible fraud.⁴⁵ A well-known example is in insurance with the use of smartphone apps in vehicles to relay information on driving performance to inform underwriting assessments. In this way, data can help businesses offer better, more competitive services to gain market share. There are potential use cases across financial services in banking, capital markets and investment management.

Distributed ledger technology

Blockchain rose to fame as the technology underpinning bitcoin, but its promise goes much further as it becomes increasingly important. Besides cryptoassets, use cases include DeFi, trading, clearing and settlement, asset management, identity verification and compliance. Many use cases rely on "smart contract" technology that enables the automation of transactions (e.g., payments) when certain conditions are met. Non-fungible tokens (commonly known as NFTs) — unique and noninterchangeable units of data — are another example of the technology, and they can represent ownership in and allow trading of any unique asset whether tangible or intangible (e.g., art, music, videos and collectibles). Legal uncertainty has slowed the development of blockchain but this is beginning to change.

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Beyond COVID-19

In the new normal, there are many opportunities for businesses to embrace now-or-never transformation. While there are drivers that can accelerate renewal, there are also potential blind spots that can derail your organization. We can help you adopt an integrated approach to success and renew and reinvent in order to own the future.





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