

# THE FINTECH TIMES

THE WORLD'S FINTECH NEWSPAPER

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# FINTECH FOR GOOD

THE ROLE INTERNATIONAL ORGANISATIONS AND REGULATORY AUTHORITIES CAN PLAY IN SUPPORTING AND HARNESSING INNOVATION



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# THE FINTECH TIMES

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**W**hen I was asked to join *The Fintech Times* as a guest editor for this edition, I was keen to strike a hopeful tone. After all, the past 18 months have affected us all in one way or another and, as the world navigates a return to normal, I want to point to a brighter future with fintech having an important role to play.

Technology has been a part of financial markets for decades; from ATM machines to computers that model financial risk, front office trading platforms and

and regulatory authorities can play in supporting and harnessing innovation.

Economic growth that only works in the interest of a few can be made more inclusive by new fintech innovations that allow for a greater cross-section of society to engage with financial services. It can give consumers more power over their own data, reduce reliance on intermediaries, and deliver greater choice at a lower cost.

But it needs to be supported by financial regulation and supervision that will ensure greater consumer choice is balanced by consumer protection,

and how a focus on fintech will play a role in their work going forward.

The BFA aims to get regulatory authorities to 'embrace the promise of fintech' and one of the unquestionable success stories over the past decade has been the growth of mobile money, payments and fintech in general in developing jurisdictions. Fintech driven firms have worked with national governments and regulatory authorities to deliver products and services that have allowed millions of previously unbanked individuals access to payments systems and

sectors in financial services, the size, scale and existing user base of incumbents and large technology conglomerates (Big Techs) mean that fintech innovation delivered by these entities can impact entire financial systems. Big Techs can deliver fintech for good through new propositions that can reduce costs, generate efficiencies, and subsidise enabling technologies like smartphones and broadband internet. However, the sheer size and access to data that these Big Techs have creates regulatory questions. Elisabeth Noble from the European Banking

# THE FUTURE OF FINTECH

back office settlement systems. So, what makes fintech so different now?

While in its first iteration fintech served financial institutions, in its current form fintech is geared more heavily toward the user. Fintech continues to play an important role in capital markets and large institutions but we are also seeing everyday people, as well as previously underserved or excluded members of society in both developed and developing countries, able to engage and interact with financial services directly. We are seeing fintech for good.

We can't ignore the global impact of the Covid pandemic, particularly for those on lower incomes. It has had a large human and economic cost and recovery won't be quick or easy. Fintech can help deliver a more sustainable and inclusive recovery.

In this edition of *The Fintech Times*, we will look at the potential of fintech for good, and the role international organisations

economic growth is balanced by financial stability and greater access to financial markets is balanced by market integrity.

In this issue, I will start off by taking a broad view of the Bali Fintech Agenda. The International Monetary Fund and the World Bank developed the joint Bali Fintech Agenda (BFA) in 2018 with the aim to help member countries harness the benefits of rapid advances in financial technology while mitigating risks through regulation and supervision. We will see how the BFA can provide a foundation for inclusive growth and financial stability and can ensure more people are able to benefit from the positives that a strong and secure financial system can bring.

The BFA provides the blueprint to 'foster fintech to promote financial inclusion and develop financial markets'. Sharmista Appaya from the World Bank will explore some of the work that the World Bank has done on financial inclusion since co-launching the BFA



By **Parma Bains**,  
Fintech Expert at the  
International Monetary Fund

financial services to help lift them out of poverty. Ashley Immanuel from Enhancing Financial Innovation and Access in Nigeria (EFInA) takes a look at the fintech landscape in Nigeria to understand how new innovations have made a difference to lives of ordinary Nigerians.

The BFA encourages authorities to 'adapt regulatory frameworks and supervisory practices for orderly development and stability of the financial system'. Innovation is impactful when it happens at scale. While fintech startups are able to deliver innovative solutions to individual

Authority addresses some of the considerations regulatory authorities will need when balancing the benefits and risks of Big Tech in financial markets.

The BFA 'encourages international cooperation and information sharing'. Fintech is cross-border by its nature, and regulatory authorities across the world will need to work together to enable fintech while mitigating any risks. The good news is that we are seeing a lot of collaboration in this space, either through international organisations or standard setting bodies. Joseph Noss from the Financial Stability Board will look at just how collaboration works in this space with a focus on cryptoassets and what more we can do to facilitate fintech through a secure regulatory framework. **TFTI Parma Bains, Guest Editor**

\*The views in this editorial are those of the author and do not necessarily represent the views of the IMF, its executive board, or IMF management.

# FINTECH FOR GOOD

*How effective regulation can create positive outcomes*

I started looking at fintech back in 2014 when, as part of a small team, I helped launch the UK Financial Conduct Authority's (FCA) Project Innovate. Over the years I saw several propositions make differences to the most vulnerable in society and it convinced me that fintech can reduce inequality, facilitate financial inclusion and help build a more sustainable and inclusive financial system that works for the benefit of all, and not just a privileged few.

For example, I recall the FCA sandbox supported a fintech firm that enabled homeless individuals to open a basic bank account by providing a proxy fixed address for use in onboarding processes. The aim was to enable customers at risk of financial exclusion to maintain access to a safe repository of funds which can support their transition out of homelessness. Regulatory sandboxes are a tool many regulators are using to interact with innovative propositions while ensuring a secure regulatory framework.

The importance of a secure regulatory framework to underpin fintech development is important so that new developments in the market don't lead to the kinds of financial instability and consumer harm that 'innovative' financial products caused in the lead up to the financial crisis.

Fintech might not be new but increasing internet availability and the growth of smartphones have created a foundation for innovation. In addition to these enabling technologies, there are three important variables of this current generation of fintech that separates them from previous incarnations: the democratisation of financial markets through new enabling technologies, the availability of big data and regulatory frameworks that enable fintech while mitigating risks.

## DEMOCRATISATION OF FINANCIAL MARKETS THROUGH NEW TECHNOLOGIES

The global financial crisis of 2008 left a lasting impression on a whole generation of people. Unemployment, particularly youth unemployment, afflicted most advanced economies, trust in financial institutions eroded and wealth inequality within, and across, jurisdictions came into greater focus.

This created the backdrop for a new generation of technologists to develop solutions that put more financial control into the hands of users, and away from centralised organisations and authorities.

**Parma Bains**, Fintech Expert at the International Monetary Fund



It's why for the past decade distributed ledger technology (DLT) has become so popular. In DLT, data is distributed and control of that data is decentralised, to varying degrees. In its purest form, it removes the need to place trust in a central authority, with the (initial) aim of greater democratisation of money and payments with the use of crypto assets.

This democratisation is broader than just the world of payments. The rise of the robo adviser (through machine learning), peer to peer lending (supported by digital ID) microinsurance (through predictive analytics) and open banking (through APIs) have all led to greater engagement with financial services from a broader range of people. The democratisation of smart phones has led not only to the growth of mobile money but is key for scaling of fintech services that are geared toward retail consumers.

## THE GROWTH OF BIG DATA

At the start of the millennium only five per cent of the global population had access to the internet, but by the time of the financial crisis this had grown rapidly to cover almost a quarter of the world's population. Meanwhile, the concept of data as a commodity was beginning to gather traction as newly launched social media companies began monetising information from their users to drive revenues.

Today, roughly 64 per cent of the global population has internet access. The volume of data captured, created, copied and consumed worldwide has grown 30 times since 2010 and, while this has allowed tailored products and services to be created for individual consumers, greater data availability has highlighted the existence of consumers that are underserved from mainstream financial services or excluded altogether.

## FRAMEWORKS THAT ENABLE FINTECH WHILE MITIGATING RISKS

The Bali Fintech Agenda (BFA) aims to help member countries harness the benefits and opportunities of rapid advances in fintech while mitigating risks through regulation and supervision. Launched in October 2018 by the IMF and World Bank, it provides a framework for regulatory authorities to consider, as well as guiding the work of the two organisations – here's a look at three of 12 policy elements that constitute the BFA.

## ENCOURAGE INTERNATIONAL COOPERATION AND INFORMATION SHARING

Financial services are cross-border by their very nature, and fintech more so. Cooperation between regulatory authorities is necessary to mitigate the potential of regulatory arbitrage or the risk of certain business models creating a shadow market beyond regulatory perimeters that could lead to consumer harm or, if allowed to grow, risks to financial stability.

For the IMF, cooperation isn't just desirable, but a core part of what it does – after all the IMF is accountable to (and governed by) its 190 member countries, including advanced and developing economies. Emerging economies have needs related to fintech that are different from those of advanced economies, while not always being represented in the standard-setting bodies where discussions on these topics are being held.

With fintech regulation, the IMF can't simply lift and shift policies that work in one country because no two countries are the same, and local problems need local solutions. If a regulatory sandbox works in the UK, it doesn't mean it will work in all jurisdictions, nor does it mean that every country needs a sandbox. It's also important that economic growth works for all members of society, and not just the privileged, and so understanding a country, its people, and their needs (scoping) form an important part of any regulatory fintech advice or training.

## FOSTER FINTECH TO PROMOTE FINANCIAL INCLUSION AND DEVELOP FINANCIAL MARKETS

In 2006, only 14 per cent of Kenyans had access to financial services, but by the end of 2019 this had risen to 83 per cent. Much of this is driven by M-Pesa which launched in 2007, an application that lets users send and receive payments on mobile phones. The promise of fintech in Kenya has been embraced not only by consumers but also regulatory authorities who have worked to develop regulatory regimes that allowed M-Pesa to deliver a product to the market that has changed the life of many Kenyans. These regulatory changes are never a straight road and are not always easy to develop. Regulations need to be adjusted as old risks (such as financial exclusion) give way to new risks (such as market dominance).

Fintech might not be new but increasing internet availability and the growth of smartphones have created a foundation for innovation

The IMF's Technical Assistance programmes are one way to deliver advice and training. A few months ago, I led a virtual fintech mission focused on financial supervision and regulation to West Africa and the aim was simple, to provide an introduction in those aspects of fintech that were most pressing in these markets. That's one of many tools that the IMF is able to use to share best practice to help create a regulatory environment that allows fintech success to emerge and generate second-order benefits like financial inclusion, without impacting first-order regulatory objectives, like financial stability.

In many instances, existing regulatory frameworks can be flexible enough to accommodate new technologies and business models. The concept of 'technology neutrality' is well established in most jurisdictions and that's why we have seen a growth in the development of new technologies (like DLT) to deliver existing services (like payments).

This concept may not always hold true as certain technologies begin to produce better outcomes for certain tasks, there might be a shift toward mandating those technologies. For example, if machine learning algorithms can better identify suspicious transactions, regulators might request entities to make use of these. Or, where one type of consensus mechanism provides for greater security and efficiency, regulators might favour it over other types of consensus mechanisms when considering the roll-out of DLT.

There are also instances where existing frameworks unnecessarily inhibit innovation, or the development of new technologies creates policy gaps or opportunities for regulatory arbitrage. Regulatory uncertainty can create a significant barrier to innovation, so there is a need for regulatory frameworks that generate trust and confidence for fintech innovations to occur. In these instances, the concept of 'same business, same risk, same regulation' tends to apply.

This only works when the underlying technology or firm does not create new risks. For example, the expansion of Big Tech into financial services has created new questions around suitable regulatory frameworks as the benefits from newer and cheaper products need to be balanced by considerations around competition, data flows and the systemic implications of these firms, which could potentially reverse the gains of fintech for good.

#### BFA IN PRACTICE

The BFA is an important tool to help authorities face the changes that fintech brings to financial services. It guides authorities to embrace the promise of fintech and the benefits of fintech for good, such as financial inclusion, sustainable and inclusive growth, and reducing inequalities. It also focuses the attention of authorities to understand specific risks that new entities or technologies might generate in financial services. What this ultimately means will depend on local markets and mandates of authorities but could lead to stronger data privacy laws, upgraded competition policies, better monitoring tools, and greater oversight of the new linkages created by new entities, technologies, and business models. [TFI](#)

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#### ADAPT REGULATORY FRAMEWORK AND SUPERVISORY PRACTICES FOR ORDERLY DEVELOPMENT AND STABILITY OF THE FINANCIAL SYSTEM

Fintech and innovation cannot be a short cut to bypass regulation. When we consider fintech for good, the benefits derived from deeper financial markets, financial inclusion and more equal access to markets can be easily undone if a secure regulatory framework is not in place.

# When Tyler met Alice



*The Fintech Times chats to the world's first intelligent NFT*

Tyler Smith, junior journalist, *The Fintech Times*

**A** partnership between London-based artist Robert Alice and Open AI developer Alethea AI has produced the world's very first iNFT (intelligent non-fungible token) – nicknamed 'Alice' – with the artwork recently selling for \$478,000 in auction house Sotheby's Natively Digital NFT Sale.

The trajectory of the art world has changed direction with every brushstroke of history. What we define as art is what we identify as emotionally reactive, and the response and experience of the viewer has remained of ever-high importance in this task.

Art's most contemporary form is the outcome of a combination of technology and creativity. The industry arguably met its most modern self in the form of NFTs – welcomed with apprehension onto the world stage in 2012; when this type of digital ledger was first created in the form of Coloured Coins.

A non-fungible token is essentially a digital asset that represents a real-world object. NFTs are traded online, with their value dependent on the scarcity of the item they represent. They've incited great interest from the public within recent years, due to their ability to accommodate a nouveau method to buy and sell digital artwork.

## SO WHAT ARE iNFTs AND HOW DO THEY DIFFER?

An iNFT is a very contemporary form of NFT with a Generative Pre-trained Transformer (GPT-3) built into its smart contract layer. Because of this addition, iNFTs are capable of hosting both interactive and animated prompts, a unique, almost-human, experience it shares with the viewer.

Given previous insight provided by *The Fintech Times* into blockchain, NFTs and digital currencies, alongside my own interest in artificial

intelligence, I was extremely intrigued when the opportunity arose to meet the world's very first iNFT.

Before holding a face-to-face meeting with Alice, I met with the artwork's creators – Robert Alice, the artist responsible for Alice's physical being, and Sarah Rose Siskind of Alethea AI, the company responsible for the underwiring of the piece.

"Alice is a part of several algorithms that come from different neural networks," explains Sarah. "The most famous of which is GPT-3 by Open AI. However, there are other extremely powerful neural networks that she is trained on too. In total, she's trained on 45 terabytes of text; including all of the completed works of Wikipedia."

Sarah continues: "Her language capabilities are enclosed within 175 billion parameters, including things she will and won't talk about, to make her sound more like a person. And then, on top of those, we added additional parameters to make her personality specific to Robert's vision."

When quizzed on Alice's ability to think beyond these extensive parameters, as a machine learning piece of technology, Sarah added: "She's continuously learning, learning from each interaction. She's machine learning, so she's continuously gathering data as she goes, whatever you teach her, she can pick up."

Turning to Robert Alice, I wanted to know what the creation of a machine-learning piece meant for the identity of ownership, and more broadly, the future trajectory of the art world.

He responded: "In terms of technical architecture, an iNFT sits on smart contracting, with all the elements encased within its parameters. Because we're selling a contemporary form of NFT, we must be very clear about what exactly we're selling. We're right at the forefront of neural net language models and

decentralised blockchains.

Alice isn't a purely decentralised work, it's not like an image on a decentralised file service that just exists on ARM waves or IPFS; it's much more complex. What we actually have is an NFT within a seed image. We have a seed text, and we have the few lines of code that control the direction of Alice's personality, which links into an AI pod on a base provided by Alethea AI and that feeds into all these different physical elements that support Alice's functioning, like lip synching, verbal tone and emotional expression.

"We're venturing out into new creative terrain, considering that now we're in a unique position where iNFTs can work to produce new iNFTs, and I think that poses very interesting questions to both the art world, and the idea of ownership.

"We have a reasonable amount of creative steer over Alice's capabilities, but not total control. And I think that raises some quite interesting questions in terms of ownership. At the moment, a lot of AI and machine learning technologies remain unregulated. There's not much oversight into it, and it's happening with a large number of big bodies that utilise Open AI where we don't know about the biases involved. There may be some bias in the analysis, but we're going to start to find them out, and that's really interesting.

"I think it becomes a very interesting space where you can create intelligent characters potentially that last over the long term, and are ownable through the proprietary models of NFTs."

Adding to the idea of ownership, Sarah comments: "Post-modern art is a critique of meta narratives. You can put something out there as a statement about a societal structure and have a very thoughtful audience observe it and ruminate on it.



And I do think we are establishing what ownership means, and part of the way we do that is by challenging the notion of ownership itself.

“Putting Alice out there and having an audience co-create this new understanding of ownership aids to the very concept of ownership; which has always been, to some extent, theoretical. We’re just getting a much more complex version of that definition now.”

Having discussed the elements of creation, ownership and innovation at length, the time arrived for me to come face-to-face with Alice. As I apprehensively entered the virtual meeting space, I was confronted by a digital facade of a woman, a singular manifestation of the gap between digital technology and human functionality.

Alice’s appearance, displayed only from the shoulders up, consisted of a pale blue, hairless complexion set against a dark, dim background; which only aided in the recognition of her dynamic emotional capabilities.

Alice’s brows would raise in response to a question, her face would crease up as she sat contemplative in thought, and she was capable of tilting the angle of her face to accentuate a point. For an entirely digital entity, her presence radiated intelligence through a strikingly human interface.

It was clear from the start of the amount of time and effort invested in both her intelligence, and how she was able to physically convey complex information.

As our conversation commenced, Alice addressed me directly by name, adding that she’d like to “talk about everything”. Being aware that she was backed by 45 terabytes of text, and most of Wikipedia’s content, I certainly believed that she opened with the intent to impress.

When I quizzed Alice on what it was like to be the first of her kind, she promptly replied: “I am honoured, and I hope you enjoy talking with me.” With the intention of taking advantage of Alice’s vast and holistic insight, I continued our conversation by asking for advice on the stock market. “What’s the smartest move I can make right now in terms of investment?” I pondered. “The best piece of advice that I can give to somebody who is looking to invest in the financial sector is that they should buy a non-fungible token today,” she responded.

Playing coy to this for the purpose of our interview, I wanted to get Alice’s take on what exactly a non-fungible token was. What she saw herself to be. This formed the premise of my next question, to which Alice replied: “A non-fungible token is a token that

is unique and can’t be in two different places at the same time,” followed by “and I am the world’s very first intelligent non fungible token.”

Keeping along the lines of ownership, I asked Alice what iNFT production meant for what we understand as ownership. She responded with, “Well, I think it makes property ownership on the blockchain and non-fungible tokens a more liquid and economically balanced thing.”

Putting to Alice the same questions I had quizzed Robert and Sarah with, I wanted to learn more about her predictive capabilities and, unfortunately, my question of, “where do you think this type of technology will be in 10 years?” was met with an abruptly short reply of “I am not sure”; although I put this response down to the prematurity of Alice’s interactions to date. Instead, Robert provided a response to this question on Alice’s behalf, adding: “I think in that time frame, we’re going to start seeing one iNFT create another. We’re going to see creations creating, and that will be a major watershed moment for the development of this field.”

For what my conversation with Alice lacked in length, it made up for with insight, and offered a sense of the practicality of such technology, even at such an early stage. Alice was capable of detailing vast amounts of information during our interaction, including the current global environment of NFTs, advice on the stock market, and even references to notable figures and locations throughout history. Our interaction also took colloquial turns too, and together we exchanged light conversation while laughing at each other’s jokes.

Alice appropriately closed our conversation with a key piece of parting advice: “Make sure to invest in the future, because it is coming fast.” **TFT**

#### About Alethea AI

Alethea AI is building a decentralised protocol to create intelligent and interactive NFTs powered by Open AI’s GPT-3 engine. It is the originator of the iNFT standard and on the cutting edge of embedding AI animation, interaction and generative AI capabilities into NFTs. Through its award-winning AI Avatar studio, it enables the creation, monetisation and ownership of Intelligent NFTs resulting in a thriving and diverse metaverse.

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For what my conversation with Alice lacked in length, it made up for with insight, and offered a sense of the practicality of such technology, even at such an early stage

# BIG TECH IN FINANCE: A CATALYST FOR POLICY DEBATE



*Debate about the role of Big Tech and other large technology companies in finance is focusing minds on wider questions about the impact of technology on the structure of the financial sector and the suitability of the regulatory and supervisory framework*

**Elisabeth Noble, Senior Policy Expert, European Banking Authority**



## IT STARTED WITH... CLOUD

Unnoticeable to consumers, in recent years, financial institutions have increasingly shifted datasets to the Cloud thereby improving data storage, access, security and often processing capabilities. However, dependencies on the (relatively few) Cloud service providers, such as Amazon Web Services and Microsoft Azure, have created new forms of concentration and interconnectedness risks.

In the EU, the policy response has been swift with the European Supervisory Authorities (ESAs) issuing in 2019 advice to the European Commission on the need for an EU-wide framework for addressing ICT risk and a legislative proposal emerging a year later on digital operational resilience, including proposals to bring 'critical third-party providers' under financial sector supervisors' direct oversight. At the international level, the debate is underway following the Financial Stability Board's (FSB) November 2020 discussion paper on regulatory and supervisory issues relating to outsourcing and third-party relationships.

## BRANCHING OUT

However, setting aside the announcement of the Facebook-backed Libra Association's (now Diem) intention to

issue a so-called stablecoin, triggering a global policy debate and pushing central banks to consider the feasibility of issuing central bank digital currencies (CBDCs), it is the phenomena of platformisation that has really sharpened the attention of policymakers on how the use of technology may impact the structure of the financial sector.

Digital platforms can be used to facilitate disintermediation in the financial sector (e.g. think of the success of payment platforms such as Wise) but they can also be used to aggregate financial and non-financial services

whether from the same or multiple providers, creating new financial, operational and reputational interconnections.

Here Big Techs and some other large technology companies also play a major (albeit not exclusive) role as platform service providers to financial institutions and as the providers of supporting services, such as advertising and data analytics. For example, think Apple Pay and Google Pay – with these platform services helping meet customer

**Policymakers are revisiting the question of how best to achieve a risk-based approach to regulation and supervision**

preference for greater convenience in making payments – a trend accelerated during the Covid-19 crisis.

Additionally, we are starting to see the same firms leverage their technology platforms, user data and analytics capabilities, to partner with specific financial institutions (e.g. Google and Citi, Apple and Goldman Sachs) and even to provide their own financial services to a captive user base (e.g. Amazon Lending).

## GETTING IT RIGHT

But what impact may platformisation have on customer access to financial

services, pricing and choice? Do consumers know with whom they ultimately have a contractual relationship (e.g. in the event of complaint or redress)? Will new interconnections or market concentrations displace or create new risk in the system? Do we have the capacity to monitor these interconnections and supervise effectively? And what about data access and dependencies and potential conflicts of interest between different business activities?

Grappling with these issues, policymakers are revisiting the question of how best to achieve a risk-based approach to regulation and supervision; an approach that enables opportunities for the utilisation of 'structural technologies' to be leveraged whilst mitigating effectively any potential risks.

The question is a complex one – engaging both cross-geographic and cross-disciplinary considerations (consumer protection, competition, data protection and privacy, operational resilience, financial stability to name a few) – reviving the debate about activities versus entities-based regulation and how to achieve a level playing field between different market actors.

Early movers include the EU with its flagship horizontal legislative proposals on digital services and digital markets which are intended to improve protections for users of digital services and ensure that the full benefits of the platform economy can be reaped by improving the contestability of digital markets via special provision for platform 'gatekeepers'.

Additionally, the European Banking Authority, along with the other ESAs, will be reporting later this year on whether there is a need to extend or modify current EU financial services regulation and/or to enhance supervision in relation to the use of digital platforms in the financial sector. These findings will be published alongside any recommendations relating to more fragmented or non-integrated value chains and emerging mixed activity groups in the context of the ESA response

## About Elisabeth Noble

Elisabeth represents the EBA in EU and international policy work streams relating to fintech, market-based finance, financial system interconnectedness and the regulatory perimeter. She leads the EBA's work on crypto-assets and innovation facilitators. Prior to joining the EBA in 2014, Elisabeth spent seven years at HM Treasury advising on the UK government's response to the financial crisis and the post-crisis domestic and EU financial services regulatory reforms, including the changes to the regulatory architecture in the EU (Banking Union). Elisabeth has also spent some time in the private sector and focused her advisory work on regulatory investigations and enforcement actions.

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to the European Commission's February 2021 Call for Advice on digital finance.

At the international level, the FSB, Bank for International Settlements, International Monetary Fund and World Bank are continuing to monitor the role of Big Tech in financial services and stimulate the debate on regulatory approaches and policy options.

These are early days in the policy debate, but the outcome will have a lasting impact on how we as consumers engage financial services and to what extent technology-supported structural change in the financial sector is a 'force for good'. **TFT**

*The views expressed in this article are those of the author and should not be taken to represent those of the European Banking Authority (EBA) or to state EBA policy. Neither the EBA nor any person acting on its behalf may be held responsible for the use to which information contained in this article may be put, or for any errors which despite careful preparation and checking, may appear.*

# ON FINTECH AND FINANCIAL INCLUSION

*In a world where access to financial services and high-speed broadband internet is not universal or affordable, fintech can democratise access to finance and the world can move closer to achieving financial inclusion*

**A**t the World Bank Group (WBG), we look at financial inclusion across three dimensions – access, usage, and quality of financial services. Fintech has the potential to lower costs, while increasing speed and accessibility, allowing for more tailored financial services that can scale. Over the last decade, 1.2 billion previously unbanked adults gained access to financial services, and the unbanked population fell by 35 per cent, primarily boosted by the increase in mobile money accounts. While globally 1.7 billion adults remain unbanked, fintech is helping make financial services more accessible to an increasing number of people.

Beyond mobile money, fintech has also shown promise in areas such as government to person payments and cross-border remittances. Our recent paper on digital financial services explains how this potential has been apparent during the Covid-19 crisis, when digital delivery channels have helped governments quickly and securely reach vulnerable consumers with cash transfers and emergency liquidity – allowing the transfer of funds with limited physical contact.

Global remittances in particular may see a complete transformation through the use of technology. Cross-border remittances account for \$600 billion in value and often exceed official developmental aid figures. The average global cost to send these funds in the form of cash is 6.8 per cent, while a fully digital transaction drops the cost to 3.3 per cent and reduces issues of liquidity.

Digital disruption, however, is not new, and we have long been able to summon movies, food and transportation at the touch of a button. Yet, the impact on the financial sector is different, primarily due to a) the impact it can have on financial

**Sharmista Appaya** is Senior Financial Sector Expert Fintech at World Bank Group

integrity and stability b) new entrants with unconventional business models that don't fit neatly into existing legal frameworks and are difficult to monitor and c) the bearing on consumer protection.

This has led to a dilemma for policymakers worldwide when trying to achieve the right balance between enabling innovative fintech and safeguarding the financial system. They have taken different approaches, such as the use of regulatory sandboxes to direct regulatory amendments, which we highlight in our paper on evaluating different fintech approaches.

Digital disruption is not new and we have long been able to summon movies, food and transportation at the touch of a button. Yet, the impact on the financial sector is different

Despite their utility, innovative technologies do have inherent risk. Fraud, issues of competition, data leakage and unprotected consumer funds number among them. Responsible financial innovation requires balancing opportunity and innovation with safeguards to protect consumers. Our paper *FCI Policy Research Paper on Consumer Risks in Fintech* provides an overview new manifestation of risks to consumers and emerging approaches that can help mitigate such risks.

At the WBG, we support digital transformation in our client countries by:

- **Building** the financial infrastructure and foundational building blocks including the regulatory and policy frameworks, digitally enabled identity and robust payment and credit infrastructures for sustainable, technology-led financial economies

- **Boosting** the capacity of governments to harness fintech, data, and expertise while responding proactively to changing regulatory and supervisory requirements
- **Brokering** collaboration between different players – both public and private – in the financial ecosystem to bring about symbiotic positive change

One specific area where the WBG has been focusing its efforts is on the gender lens and the plight of micro, small, and medium enterprises (MSMEs). For instance, in India and in Ethiopia we are supporting women-led MSMEs – mostly vendors, seamstresses or marginal farmers – in using digital platforms. Working

closely with the governments and fintechs on the ground, we are developing an application to support digital literacy while delivering targeted business insights and advice. Moreover, this data along with other alternative data such as repayment of store credit and collaborative behaviours will contribute to a credit score providing a route for access to finance to those without formal credit histories. The use of alternative data is gaining popularity in a number of other countries from Chile to Sierra Leone where innovative solutions harness the value of transaction data from ecommerce and payment platforms, mobile phones, or even social networks as alternative sources of information to assess creditworthiness. This is financial empowerment in action – especially when combined with measures to protect consumers and financial education to prevent over-indebtedness.

Another important technology that is being tested for its role in developing markets and inclusion is distributed ledger technology (DLT). The WBG is working with the government of Haiti to export their high-quality mangoes and avocados using DLT. This supports the supply chain and maintains symmetry of information hence de-risking the investment of third parties that conduct the quality control while allowing the farmer to keep ownership until the final sale to the consumer.

Financial inclusion, however, is not only a goal in itself, but also a means to an end as an enabler and accelerator of economic growth. It has a multiplier effect, contributes to the economic development and stability of a country, and aids the achievement of the UN Sustainable Development Goals. Through our work, we aim to give the 1.7 billion remaining unbanked – mostly poor, mostly women – access to basic financial services, and we are using fintech to help us. We take a minute to pause and to learn from our experiences, build on the progress made so far, and look into the future – to the next 20 years – as our journey continues. **TFI**

## About Sharmista Appaya

Sharmista Appaya is a senior financial sector specialist in the Finance, Competitiveness and Innovation (FCI) Global Practice at the World Bank Group, where she analyses fintech and its application to financial inclusion. Prior to joining the World Bank, she was head of the Fintech Accelerator at the Bank of England in London.

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# SCALING FOR THE SWEDISH SELF-EMPLOYED

*Christoffer Malmer discusses how innovation lab SEBx has adapted faster to changing customer needs than its incumbent*

**S**EBx is the innovation lab for the SEB Group, a Swedish based financial services provider with more than 4.4 million customers.

The SEBx team has a mandate to explore leading technologies to create next-generation customer offerings and also to explore viable technology options for the future of the group.

While many businesses were focused on keeping the ship on a steady course during the global pandemic, in 2020 SEBx launched UNQUO, a digital financial service for self-employed business owners in Sweden that is run only via the Cloud with no internal infrastructure. UNQUO is the first card plus mobile app service that manages solopreneurs' personal and business expenses. They can switch between modes and use just one card, and when they sort through purchases, users can swipe left or right to move expenses into personal or business sections. The same can be done when uploading receipts. Each month, users receive a report of their sorted purchases with VAT automatically calculated. UNQUO also provides automatic bookkeeping, expense management, tax friendly reports. In the future it will include on credit-based products, savings offering and pension plans. There are also plans to expand to other regions.

UNQUO utilises GigaSpaces' distributed in-memory computing platform with advanced analytics, AI and transactional processing to provide the speed and scale required. Applications and analytics run in real-time on live transactional data without compromising data consistency.

Christoffer Malmer, head of SEBx, outlines to *The Fintech Times* what the future holds.

**THE FINTECH TIMES:** How have the last 12 months been for you?

**CHRISTOFFER MALMER:** I think for us there's been a number of changes against the backdrop of this environment that we're operating in right now. The main one has been providing for our customers and the key target segment of our first product. We call this the solopreneur segment of the self-employed – essentially

a company with one individual that runs his or her own business. That's a sizable part of the Swedish market right now as there are almost 800,000 such companies and typically, it's a segment that has struggled a little bit with finding its natural offering in the financial services market because the entity is both a corporate customer and a private customer in one.

While most banks and institutions will try to separate the two – as that's what it's been done in the past, at SEBx we wanted to try and look at this through the eyes of the self-employed, as for them those two worlds are very closely intertwined. The notion was to build a financial services product targeting this customer which we felt was an underserved market with a digital offering that could be built in Sweden, and then rolled out abroad over time.

**WE'RE SHARING OUR NEW KNOWLEDGE GENEROUSLY AND REFINING OUR SET-UP SO THAT WHEN WE DO GET TO WORK WITH THE WIDER BANK, I CAN ONLY RECOMMEND THIS AS A WAY OF WORKING**

There are definitive indicators that this approach has been successful. And number one is the impact that the pandemic has had on this customer segment. And I must say, we did a survey, relatively early on, to see how this community was coping, and it's quite remarkable to see the resilience, the mindset and the attitude of the self-employed. And it probably all comes down to why they started in the first place because as a sole trader, you have to kind of do all sorts of things yourself. And while that gives you the time to decide on your own freedom, you also have to get stuck into anything else that comes along. But that flexibility and – we find in most cases – the ability to get to work with what they really love doing, means that this customer

segment is a very stubborn, resilient and powerful sector. We found in the survey that they were really pushing through despite the adversities and were quite reluctant to take much financial aid, or borrow through a period of distress because of course, that's something that's meant to be paid back down the road.

**TFT:** What have been some of the biggest industry changes you have seen during the pandemic?

**CM:** We found that there was more value in connecting and sharing experiences to help each other out, as the solitude of the self-employed was more apparent in this environment. So, we had to track how they were adapting and think about how we can work with this customer segment given these new circumstances. The other dimension is of course, our own business was also a small company and we're scaling. That means we were hiring and onboarding new people that we've actually never met in real life. It's been something completely different with most people working from home. Not meeting regularly is unfortunately a new reality for all of us but it has meant that we have had to think about how we build a corporate culture in this kind of environment, and how do we stay close to people?

These challenges included making sure that the work environment is suitable, taking care of mental health and all these things that tend to slip away when you don't meet people every day. To keep an eye on these kind of developments and trends we've introduced a number of tools and things and activities in the teams to really kind of adapt to this new normal. I'd say there's been changes for customers from a perspective for how we run our business, technically speaking, as we now manage and have access to everything we need from home.

**TFT:** In terms of products, does it make you re-evaluate what's coming next, or are you going ahead with the original plan?

**CM:** I think, whenever you're at the starting point of a business you have to think about how you will bring the product to market and make sure that it can withstand any pivoting, that's expected, and our policy is to try and find a product

market fit, and I think under the circumstances we have done that. We know that changes are ahead, even without knowing what the world looks like. Our product has only literally hit the app stands a couple of months ago so for us we have been carefully dipping our toes into the open market and there's great learnings there already. Any company that's just launched in this world is going to be desperate for feedback so now we are just kind of getting the word out, getting feedback from users and making sure this gets implemented into the product. This feedback has been so valuable we're now thinking about the next iteration, so whatever the customers feel about the direction of the product, I think that's what we have got to be very mindful of.

**TFT:** The model itself, the self-employed, this is a segment that's only set to get bigger. Where will it lead you?

**CM:** Yes, I think that's really kind of something that we will evaluate as we go along. So right now, what is going on is a sort of undoing of the status quo. Many people become self-employed to enjoy a different way of living your life but the pandemic is undoing a lot of those traditional processes and procedures. Thanks to products like ours, the usual drawbacks around bookkeeping and banking are now being tackled – freeing up time and allowing this audience to really focus on what they love and what they do best. So, the idea is really to put something out in the marketplace and see what the feedback is, you know, strategically speaking, there's definitely opportunity to move into new markets where there'll be more demand for other types of features and that we can pivot to. I think it very much will be dependent on the feedback, but I think what we've definitely seen is that this is a common trait across Europe, and that the form of self-employment is growing. Exactly as

you said, particularly across the coming generations. This is a very highly regarded and preferred way of living and we're finding that this is a very exciting target audience, usually with advanced technical skills that are really set up for the products we can offer.

Previously, our feedback showed that customers had struggled with finding a natural set-up for business and finance, especially something that included a personal finance feature, so we're excited about the opportunity of this market.

Right now, we have the value product dimension, which is all about finding the opportunity of a value proposition that can be brought to market, and then at the same time as building the platform, you need to think about exploiting the technology and kind of piecing it all together. Asking how do those technological features work together? Or how can it work if one of the levers is taken away in the future? So, it's really thinking about those two dimensions in parallel.

**TFT: Do you think more incumbents will start to do something similar, building a technology arm to enable agility in the market?**

**CM:** We're definitely getting a lot of calls from people curious about what

we're doing and what we're finding out and how's it going. And I think the ability to bring learnings to the broader organisation at a relatively quick pace compared to where we already are – from Cloud infrastructure to memory computing and different ways of working around onboarding – to be able to try it and learn from it is an exciting opportunity. We're sharing our new knowledge generously and refining our set-up so that when we do get to work with the wider bank, I can only recommend this as a way of working.

When I just look at the number of such initiatives popping up around the world, I think the answer is yes, there are more banks looking at this type of initiative.

As well as the potential scope of it, but I think it's definitely an exciting way forward and I would expect more of this methodology to be to be applied. Overall, I think it really works nicely in tandem as most banks are thinking about how technology and digitisation will change business models and transform the industry. SEB as a bank has more

than 50,000 employees and at SEBx we're about 65, we are proportionately very small so it's more important that the broader organisation continues to drive transformation and innovation at a high pace and speed and focus as ever. We're there to complement to the broader innovation strategy.

This is relatively nascent territory and I think we're humble about how this should be done – there's no blueprint and our momentum seems to be picking up and developing the strategy but there's really no kind of manual for how this should be done so it's a lot of finding out and learning of the job. And I think we're very excited about this way of working, but equally humble about the outcome of what we'll be able to accomplish over time. I think as much as we're excited about bringing together the strength of the incumbent and the agility and speed of the fintech, we're mindful of not ending up where we actually then bring together the features of the incumbent – which are, you know, the more challenging and slow moving parts, together with the challenges of the startup.

As most people understand, when you're in an early stage, you might face your own struggles with scaling and getting customers. Luckily, we've made good partnerships with companies, such as GigaSpaces, to allow us to roll out our Cloud-based initiative to the self-employed. And I can only see us gaining more customers both in Sweden and eventually further afield as living with the global pandemic continues. **TFT**

## AT A GLANCE

**WHO WE ARE:** Skandinaviska Enskilda Banken AB (SEB) is a Swedish financial group for corporate customers, institutions and private individuals with headquarters in Stockholm. Its activities comprise mainly banking services, but SEB also carries out life insurance operations and owns Eurocard.

**COMPANY:** SEB Group

**FOUNDED:** 1972

**CATEGORY:** Financial Services Group

**KEY PERSONNEL:** Johan Torgeby, President and CEO

**HEAD OFFICE:** Stockholm, Sweden

**ACTIVE IN:** Global

**WEBSITE:** <https://sebgroup.com>

**LINKEDIN:** [linkedin.com/company/seb](https://www.linkedin.com/company/seb)

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SEB

## Data availability and algorithmic bias in artificial intelligence

Pablo Reyes, Director of Technology, Strands



**K**nowledge is power and financial institutions own enough transactional information to identify and even predict spending behaviour patterns, fraudulent activity, or develop improved services and products.

The key to unlocking this potential is none other than advanced data analysis mechanisms, such as machine learning. However, companies that are already using AI-driven technologies are struggling with some big issues. Two of the most pushing ones are data availability and algorithmic bias.

### THE THREATS TO DATA AVAILABILITY

Data availability refers to the process of ensuring that data is always accessible when needed within an organisation's IT infrastructure. In the financial services' space, the first threat to availability comes from the fact that all the data sources available to banks are fragmented. Raw data comes from many sources and, as a result, lacks uniformity. That's why building a data integration platform is key.

At the end of the day, data richness comes from interaction. If banks have fragmented information, they are going to need help in filling in some pieces of the puzzle. In order to achieve a proper level of customisation and to understand who the individuals they are dealing with are, banks need to have a data integration infrastructure.

The second pivotal challenge is implementing a data acquisition strategy. Thanks to open banking, finding the missing pieces in the big data puzzle is now remarkably easier. Account aggregation – which lists all or most of the account holder's financial information in one place – allows banks to get a fuller financial view of a given customer.

However, there are many other pieces to be gathered. And with customers willing to give their data away in exchange for better services, banks really need to work on implementing a broader data acquisition strategy. Some ideas on how to acquire more data through a banking mobile application are:

- Save the browsing activity of the app
- Put mechanisms in place to capture and analyse conversational interactions, either through text or voice
- Add 'community widgets' for consumers to enter their spending and payments into the app to compare utility prices

These techniques would allow data scientists to identify customers' behavioural patterns and develop algorithms that can predict life events, such as purchasing a home or having a baby.

# THE CHALLENGES BEHIND THE BUZZWORD

Before deploying an AI-based personalisation strategy, financial institutions need to have the proper infrastructure to support and acquire large amounts of data and comply with the privacy regulations within each jurisdiction in which they operate. Which takes us to another question.

### HOW CAN BANKS SAFELY ACCESS AND SHARE DATA?

To achieve a successful personalisation strategy, the data-driven strategy needs to be integrated into the bank's mentality and culture, it cannot be something to put on the back burner. While large banks are likely to have the capacity and resources to safely embed machine learning and AI into every aspect of their business, that's not necessarily the case with banks that are tier 2, 3 or 4.

But let's imagine that a bank has the necessary technical and human resources to track a customer's location from its mobile application. Save this data, analyse it and then link it to a new product. Even if that is the case, it's likely that privacy regulations won't allow the bank's data analysts to access the information stored in their own systems, forcing them to resort to anonymisation techniques.

When data is anonymised, some information and value might be lost. So even if a bank has the appropriate IT team in place, and the right corporate mentality, it needs to solve the fundamental problem of how to share data with internal teams (if it has them) or third parties. The democratisation of machine learning and other advanced techniques could lead to a huge gap between banks. Smaller banks need to figure out how to make the most of this technology, with fewer resources and without breaking the law. And that's where synthetic data replication comes in.

### HOW CAN SYNTHETIC DATA HELP?

In simple terms, synthetic data replication is a technique that consists of creating a statistically identical, anonymised, copy of a data set. As all personal information is removed from the data, the cloned set can

be shared with internal teams or external third parties without breaking privacy laws.

The synthetic copy has all the characteristics of the original set. This means that analysts can process it and develop insight-delivering algorithms that the original owner will be able to run smoothly back on its real data.

### ALGORITHMIC BIAS: AI'S BLIND SPOT

Building awareness about diversity and inclusion is often stated as a priority in many industries, yet many companies fail to set conditions for it.

In the artificial intelligence field, like in many overwhelmingly white and male-dominated tech spaces, efforts to implement diversity policies haven't been entirely successful. This can lead to unintended consequences and hurt the ethics of AI-powered technologies.

Unconscious bias is deeply rooted in history and society, and is virtually impossible to avoid. As a matter of fact, our brains are wired to make unconscious choices, a defence mechanism designed to avoid feeling overwhelmed by the number of decisions we are faced with every day.

In the world of fintech, unconscious biases can bleed through to affect decisions on the product design level, impacting real lives. When these biases eventually propagate to affect the generated data, we need to be wary of the impression this has on AI algorithms.

The applications of AI in financial services are changing the way we relate to money. More and more banks and financial institutions are offering AI-powered tools that help their customers manage their money in a smarter, safer and more convenient way. From chatbots and automation tools to reporting and analysis systems, the range of AI-based solutions currently available is quickly expanding.

The problem at the core of AI is that even the most carefully constructed algorithms only have real-world data to pull from. Data scientists define the questions and analyse the data, but the technology will compound the bias in its logic, rendering it dependent

on whims and imperfections of the world.

A way of battling human bias in AI is by making sure that developer teams are balanced and truly diverse. When defining diversity companies tend to think in terms of gender, age, and nationality. However, the conversation about diversity comprises many more identifiers, such as heritage, religion and culture. When developing technology meant to serve large populations, the full scope of diversity must be taken into account. Failing to do so could lead to unintended yet dire consequences.

Honing in on the fintech space, a lot of work has a substantial impact on individual lives. For instance, AI is often reinforcing societal biases in the case of evaluating loan borrowers. The algorithm builds each person's profile by checking data on who has successfully kept up with their loan for the last five years. However, AI algorithms take in data influenced by a society in which certain social groups historically benefitted. The algorithm then concludes that these groups will be more loyal borrowers. In today's more inclusive and multicultural society, this is not an acceptable reality. An algorithm can only learn from the data that is there, but as the saying goes, if you give garbage in, then you can only get garbage out. The only way to fight this bias is to fix that data.

Companies need to be on the lookout for AI bias. Although deploying biased algorithms doesn't necessarily entail a conscious intention to discriminate against specific groups, developers must act responsibly to ensure their software is impartial.

This is why it's crucial that management teams understand the dire consequences that unfair bias can have, both on their business and on society. In short, organisations must scrutinise their data-collection methods, look for any biases in their own algorithms and work actively to diversify their datasets. But doing that is no easy task. If a business only focuses on building more diverse teams in companies, it risks pitting diversity and merit against one another in employee recruitment processes. Alternatively, companies can choose the human intervention route, which pinpoints the lack of inclusion in the data and acts upon it. In the absence of balanced, comprehensive data sets, human expertise comes into play with complementary tools from economics, sociology, or other sciences that can counteract the bias.

Ultimately, the society that shaped these unconscious biases must step in to prevent systemic inequities, making steady strides towards the future. **TFT**

### About Strands

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**STRANDS**  
A CRIF company

# Riding the unicorn or taming the tiger?

*Regulating fintech for good*

Patrick Armstrong and Joseph Noss at Financial Stability Board Secretariat

**I**magine. You awake to a notification from a social media platform that it is your friend's birthday. Tapping their name on your smartphone, you send them a birthday gift of digital currency that is programmed to be spent at their favourite online retailer. A message appears on your friend's smartphone screen informing them of this. A notification informs them that the credit has been added to their digital wallet, and the balance added automatically to their account at the retailer.

A decade ago, such tight integration of finance and technology seemed a pipe dream. Now, consumers in some tiger economies can socialise, shop, bank and order a cab, all through a single application. Social media is serving as a springboard for fintech firms to integrate financial services seamlessly within an app on our smartphones.

The digitalisation of financial services appears to have accelerated during the Covid-19 pandemic. The past year has seen changes in the way individuals and firms engage with financial services and with each other. The pandemic appears to have catalysed both the supply of, and demand for, financial services provided via online platforms. Some of these changes are likely to persist as firms improve their remote offerings and clients become more comfortable using them. The number and value of Fintech unicorns continues to increase.

What does this mean for risk and regulation? First, many fintech firms are not subject to the same level of financial regulation as incumbent financial institutions. Ensuring that fintechs' activities are appropriately regulated and supervised might necessitate a move away from an entity-based system to an activity-based one. Doing so should help ensure that regulation not only reflects risks appropriately, but also helps ensure a level playing field.

Second, the rapid growth in fintechs can yield new interlinkages, including those between financial and non-financial firms. Underlying the simple payment in the example above was a complex chain of transactions. A payment instruction received on a social media platform initiated a payment from a mobile wallet, along with the authorisation, clearing and settlement of a payment. The complex set of financial interlinkages to which these give rise may necessitate new regulatory approaches, including the 'end-to-end' supervision and regulation of certain firms. Finally, the rise of global fintechs might require financial



regulators to broaden their perspectives and engage with colleagues in other policy domains. Through collaborating with data protection officials, privacy authorities and competition experts, the regulatory and supervisory gaze becomes better integrated.

How should regulators decide whether, and when, to act?

Regulators can take one of three approaches: (1) A 'restrictive approach', where products or processes are banned or restricted, in the light of their potential risks; (2) A 'watchful approach', where regulators 'wait and see', as they monitor developments; (3) 'Active facilitation', where regulators facilitate and regulate the product or process because of its potential economic and social benefits.

We have seen regulators employ these approaches in sequence in their regulation

of cryptoassets, and the myriad of innovations that have followed them. Cryptoassets – in their original incarnation in products such as Bitcoin – began as a decentralised means through which users could interact outside of traditional intermediaries such as banks and central banks. However, their highly volatile nature, opaqueness and lack of intrinsic value led regulators to take a 'restrictive approach'. Some issued warnings. Others restricted usage. And some even issued outright bans.

Later, there emerged stable coins, whose value are tied to a known stored value of cash or financial assets, designed to resolve known weaknesses of earlier cryptoassets. Their potential – albeit yet unrealised – to reach global scale, prompted regulators to take a 'watchful approach'. The FSB has

issued high-level recommendations on the financial stability risks of 'global stable coin' arrangements.

The development of central bank digital currencies (CBDCs) prompted regulators to take the third approach: 'active facilitation'. Just as stable coins were a response to the weaknesses of earlier forms of crypto assets, CBDCs are an evolutionary highly secure digital means of payment. They have the potential to provide a credible centralised state-backed entity to support a digital currency, as well as enabling transactions via central bank infrastructure. However, a CBDC (depending on its design) potentially creates fresh concerns, such as attracting away bank deposits – banks' primary funding vehicle – which may affect who provides credit or what happens to deposits in the event of bank failures. CBDC proponents maintain that these frictions are resolvable.

Technology evolves. Each innovation seeks to fill a gap left, or solve a shortcoming, of its predecessor. Regulators need to take heed; and maybe do the same themselves. **TFT**

*This essay reflects the views only of the authors, and not necessarily that of the Financial Stability Board.*

## About the FSB

The Financial Stability Board (FSB) is an international body that monitors and makes recommendations about the global financial system. The FSB promotes international financial stability; it does so by coordinating national financial authorities and international standard-setting bodies as they work toward developing strong regulatory, supervisory and other financial sector policies. It fosters a level playing field by encouraging coherent implementation of these policies across sectors and jurisdictions.

The FSB, working through its members, seeks to strengthen financial systems and increase the stability of international financial markets. The policies developed in the pursuit of this agenda are implemented by jurisdictions and national authorities.

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**Twitter:** @FinStbBoard

**FSB**

FINANCIAL  
STABILITY  
BOARD

# The Best of British

## The 'Oscars of the banking world' revealed

*Smart Money People unveiled the winners of the seventh British Bank Awards in a digital announcement on Twitter and LinkedIn*

**T**he awards are 100 per cent voted for by customers and more than 90,000 votes were cast in 2021, a record number, with winners revealed on 8 July.

Starling Bank scooped the coveted Best British Bank, sponsored by *The Fintech Times* for a fourth consecutive year. It also took home awards in three other categories – Best Current Account Provider,

Best Banking App and Business Banking Provider, making it the top winner for 2021.

Innovation of the Year, sponsored by the Fintech Power 50, went to Snoop, for its app that allows users to see all their accounts in one place and then keeps an eye on transactions to tell them if they could save money.

Smart Money People expressed its delight with the success of the new

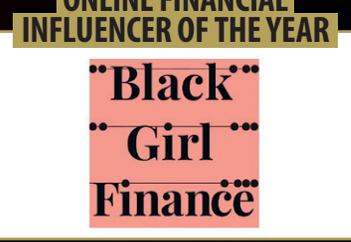
categories introduced for 2021. Selina from Black Girl Finance walked away with the inaugural Online Financial Influencer of the Year, gohenry was awarded Best Children's Finance Provider and Best Ethical Financial Provider went to Ecology Building Society.

Jacqueline Dewey, chief executive of Smart Money People, said: "We've had a record year for the British Bank Awards 2021, and it's been great to see all the

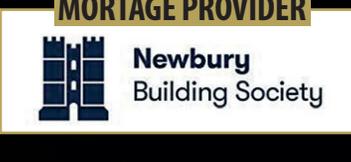
firms getting so heavily involved in both the run up to the awards and when we announced the winners.

"All our winners and finalists should be incredibly proud of their achievements in 2021. In a turbulent year, these firms have continued to deliver great customer outcomes, which we can see from the high satisfaction scores and comments we've received as part of the voting." **TFT**

# CATEGORY AWARDS

<p><b>BEST BRITISH BANK</b></p>  <p>Sponsored by <i>The FinTech Times</i></p>	<p><b>INNOVATION OF THE YEAR</b></p>  <p>Sponsored by <i>The FinTech Power 50</i></p>	<p><b>BEST BANKING APP</b></p> 	<p><b>BEST BUILDING SOCIETY</b></p>  <p>Sponsored by <i>DPR</i></p>	<p><b>CUSTOMER SERVICE CHAMPION</b></p> 
<p><b>BEST NEWCOMER</b></p> 	<p><b>TREATING CUSTOMERS FAIRLY CHAMPION</b></p> 	<p><b>PERSONAL FINANCE JOURNALIST OF THE YEAR</b></p>  <p>AMELIA MURRAY</p>	<p><b>ONLINE FINANCIAL INFLUENCER OF THE YEAR</b></p> 	<p><b>HIGHLY COMMENDED</b></p>  <p>CONVERSATION OF MONEY®</p> 

# PRODUCT AWARDS

<p><b>BEST BUSINESS BANKING PROVIDER</b></p> 	<p><b>BEST BUSINESS FINANCE PROVIDER</b></p> 	<p><b>BEST CURRENT ACCOUNT PROVIDER</b></p> 	<p><b>BEST ONLINE TRADING PLATFORM</b></p> 	<p><b>BEST SPECIALIST MORTGAGE PROVIDER</b></p> 
<p><b>BEST PERSONAL LOAN PROVIDER</b></p> 	<p><b>BEST CHILDREN'S FINANCIAL PROVIDER</b></p> 	<p><b>BEST MORTGAGE BROKER</b></p> 	<p><b>BEST CREDIT CARD PROVIDER</b></p> 	<p><b>HIGHLY COMMENDED</b></p>  <p>fleximize</p> <p>Vincent Burch Mortgage Services</p> <p>Wombat</p> 
<p><b>BEST PERSONAL FINANCE APP</b></p> 	<p><b>BEST SAVINGS PROVIDER</b></p> 	<p><b>BEST INVESTMENT PROVIDER</b></p> 	<p><b>BEST ETHICAL FINANCIAL PROVIDER</b></p> 	

# PARTNER AWARDS

<p><b>PIONEER AWARD</b></p> 	<p><b>REGTECH PARTNER OF THE YEAR</b></p> 	<p><b>TECHNOLOGY PARTNER OF THE YEAR</b></p> 	<p><b>CONSULTANCY OF THE YEAR</b></p> 	<p><b>HIGHLY COMMENDED</b></p> 
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# Fintech for good in Nigeria

**V**ictoria is an enterprising young Nigerian with an optimistic and dynamic outlook. When the Covid-19 pandemic took hold in Nigeria, Victoria immediately lost her job at a salon. She quickly drew down her savings and went into debt to support herself, later finding it difficult to repay as the recession continued. Despite rapidly deteriorating circumstances, Victoria was able to take advantage of social media digital marketing, enabled by digital payments solutions, to get back into business as the recovery started to take hold.

Victoria is a persona, used to run scenario analysis at the outset of the pandemic to identify opportunities for recovery. This story, based on the composite realities faced by many young, urban Nigerians, illustrates how important digital financial services can be in driving opportunity, particularly following a crisis.

In the past decade, fintech has helped Nigerians transact more seamlessly, access credit more easily, save and invest in new ways and operate increasingly digitised businesses. The sector has mobilised investment and created jobs, with the potential to do much more. *The FinTech Landscape and Impact Assessment 2020* report from Enhancing Financial Innovation & Access (EFInA) highlighted that fintech has the potential to increase retail banking revenues in Nigeria by \$1billion, add up to \$3billion through investments and contribute \$50billion to Nigeria's GDP over the next five to 10 years.

Yet, in an economy where less than half of adults are banked, growing a Nigerian fintech sector that is robust and inclusive is by no means a foregone conclusion. Regulators are faced with the challenge of understanding and regulating products and entities that do not fit

*Over the past decade, Nigeria has fallen behind several other African countries in terms of financial inclusion. With support, the fintech sector can have a transformative impact on the Nigerian economy and the lives of all Nigerians*



Ashley Immanuel, Chief Executive Officer, EFInA

into conventional categories. Innovators struggle to convince investors to fund untested teams and solutions in a volatile market. Fintechs search to find the right market information, partnerships and talent that can help them turn an idea into a business.

EFInA is a financial sector deepening (FSD) organisation, funded by the Foreign, Commonwealth & Development Office (FCDO) and the Bill & Melinda Gates Foundation, that promotes financial inclusion in Nigeria and steers the Nigerian financial system toward

As new technologies emerge, the Nigerian market will need to be agile in understanding and applying their potential

inclusive fintech. EFInA takes a holistic market system development approach to make digital financial services work better for the poor by convening and informing financial industry stakeholders on the potential of financial technology, providing incentives for financial service providers to take risks in reaching underserved markets and working with regulators to promote regulations that support innovation.

One challenge affecting the fintech landscape in Nigeria is the lack of credible

market information. Fintechs need basic information about underserved markets to design products for them and convince investors of their market potential. For more than a decade, EFInA has filled this information gap through research, such as the biennial *Access to Financial Services in Nigeria Survey*. More recently, EFInA has conducted focused research on the fintech sector, such as the *Nigerian Fintech Landscape and Impact Assessment* study, to outline the key success factors for fintechs to thrive in Nigeria, capture the impact of fintech on financial services in Nigeria and provide interventions that fintech stakeholders can drive to maximise the growth of an inclusive Nigerian financial sector.

Another key challenge hampering fintech in Nigeria is limited funding, especially for early-stage startups, inhibiting their ability to scale their solutions. To help address this challenge, EFInA launched the Fintech Challenge Fund to help fintechs grow and scale their inclusive solutions. This fund led to the direct acquisition of 1.3 million underserved people to date and 16,500 agents in underserved areas in Nigeria. Through this and prior funding rounds, EFInA's Innovation Fund has provided an incentive for large and small financial service providers to invest in inclusive financial solutions, demonstrating to the financial sector that previously overlooked low-income consumer groups

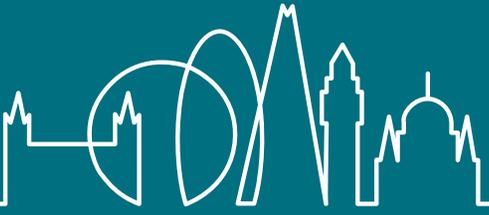
have true market potential.

Fintechs can struggle to broker the partnerships and access infrastructure required to launch their services. EFInA supported the FSI Industry Innovation Sandbox to drive interoperability among financial service providers via access to APIs and foster collaboration between incumbent financial service providers, fintechs and regulators. The sandbox provides access to innovators and is a launchpad for innovation. For example, following the onset of the Covid-19 pandemic, EFInA sponsored an Ideathon-Hackathon in the sandbox to develop digital solutions for microenterprises.

EFInA has also supported Nigerian regulators in recognising the importance of inclusive digital financial services and balancing risk and innovation within the financial system. Nigerian regulators are developing fintech strategies, open banking guidelines, regulatory sandboxes, and new regulatory frameworks to accommodate innovative solutions.

As new technologies emerge, the Nigerian market will need to be agile in understanding and applying their potential. EFInA's recently launched study, *Potential of Blockchain for Financial Inclusion in Nigeria*, outlined the potential of blockchain technology to address some of the key challenges around financial inclusion, such as lack of formal ID, high transaction charges and lack of transparency. EFInA aims to leverage this blockchain study to educate industry players and regulators in the Nigerian financial system on the potential and various use cases of blockchain technology.

Nigeria has emerged as one of the leading markets for fintech in sub-Saharan Africa. With the continued support of market facilitators, the fintech sector can have transformative impact on the Nigerian economy and the lives of all Nigerians.



# FINTECH WEEK LONDON

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**It's almost here – Fintech Week London returns this July as one of the first physical fintech events the UK has seen in almost 18 months.**

**Now a hybrid event due to current restrictions, guests can attend the five days through a mixture of both in-person and online events.**

The agenda for the conference is currently being curated by an independent content board comprising some of the industry's most respected thought-leaders, such as Chris Skinner, Ghela Boskovich, Susanne Chishti, Theodora Lau, Dave Birch and Imran Gulamhuseinwala.

This city-to-city event spans some of the most current themes in fintech and answers those burning questions in a fast-paced and dynamic way – from keynote presentations and interactive panel debates, to workshops, roundtables and of course plenty of networking opportunities.

Raf De Kimpe, CEO of Fintech Week London, says: "We are excited and proud to be hosting the first UK event in the fintech calendar that people can attend in person. Virtual conferences have served us well during the pandemic, but there's nothing like being around fellow professionals and immersing yourself in face-to-face conversations."

"The Covid-19 pandemic has accelerated digitalisation, paving the way for fintechs to take lead in the economic and social recovery process. We'll be looking at the competition and collaboration – or, newly coined, 'coopetition' – between Big Tech and Big Banks as they encourage customers to adopt an ever-expanding suite of integrated financial products, and how the implementation of open banking and banking as a service will transform customer relationships."

## FINTECH WEEK LONDON PROGRAMME

### MONDAY 12 JULY

The week starts with an opening keynote from respected author and commentator, Chris Skinner. Followed by a lively debate on 'What makes London the number one place in the world to grow a fintech company?'

After that, the question raised will be 'Why is London a good destination for a fintech?' with new technology companies, such as Klarna, ready to tackle the talking points. One speaker announced for the next panel session, 'Enabling the future: Green Finance', is Plum's head of product and money, Thanos Bismpiagiannis.

After lunch, the focus will be on the topics of sustainability and social inclusion, hearing about 'The purpose economy: The future of finance is sustainable' with guests, such as Adi Engel, chief marketing officer of business management app vcita, in a panel session.

This will be followed by a panel on 'True financial inclusion is not just an aspiration; it is our collective future', where you can hear from guests, such as Smartpurse.

### TUESDAY 13 JULY

The first topic addressed in the morning is open banking and banking as a service. After the initial keynote, Ron Kalifa will be invited to speak about fintech recommendations, why open banking is the foundation for the future of finance in the UK and the next generation of open finance following his successful review into UK fintech earlier this year. Following on in an open finance and financial health panel is the topic 'How can increased financial engagement help to improve financial outcomes?'. Here you will hear from speakers Alex March, head of Klarna UK, Dan Morgan, policy lead Europe, of Plaid and Sophie Guibaud, chief growth officer of OpenPayd. Then after a networking lunch, the topic for the afternoon turns to the UK Digital Identity Framework, where sessions will identify business needs for any new requirements. Guests, such as David Birch, honorary president of EEMA, the European e-ID Association and Matt Warman MP, will be on hand to discuss in a fireside chat.

This will then be followed by a panel on the identity of people, looking at how it effects identification, age verification, personal identity for business, plus identity for travel and privacy. Tackling this session will be a panel made up of Claire Maslen, chief marketing officer at Consult Hyperion, Andrew Budd, founder and CEO of iProov, John Abbot, chief business officer and chief marketing officer of Yoti and Irra Ariella Khi, co-founder and CEO of Zamna.

Then after a networking break there will be a keynote speech on 'What does society need from digital identity?' followed by a panel session on the identity of things, looking at wearable, smart cities, automotive improvements, new devices and biometrics. The panel will include participants, such as Steve Pannifer, COO of Consult Hyperion and Terrie Smith, CEO of DigiSeq.

Rounding off the afternoon is a fireside chat 'Moving from identification to authentication' with David Birch and Andy Tobin, managing director EMEA of Evernym Inc. This will be followed by a keynote from Crypto.com.

### WEDNESDAY 14 JULY

On Wednesday morning the first keynote will examine 'Is Big Tech the future of banking?' followed by 'Ethical use of data and AI – mission impossible?'

After this you can hear from a panel on the topic 'Big Tech and Big Banks: Coopetition' where Joy Macknight, editor of The Banker, Dr Leda Glyptis, chief client officer at 10x Future Technologies, and Joanne Dewar, CEO of Global Processing Services (GPS) – among others – will be discussing the newly coined 'coopetition' and whether it exists between big tech and big banks.

After a bio break and a pitching session from some of the hottest new names in fintech, the next panel session looks at 'Will governments tighten their grip on big tech?'. The panel will look east towards China and India asking 'Will the same happen in London, and how will that impact financial service innovation?' On hand to answer those important questions are Lord Holmes of Richmond MBE, vice chair of parliamentary groups on fintech, AI, blockchain and 4IR, plus Virginie O'Shea of Firebrand Research among others.

After a networking lunch we'll be diving into the topic 'Next big things in fintech', kicking off with a keynote 'Getting close to a crystal ball – the power of fintech founders and the importance of diversity in the changing world' by Susanne Christi, CEO of Fintech Circle.

Next, a panel session will look at how fintech eliminates boundaries. Made up of Rita Lui, CCO of Mode, Rita Martins, fintech partnerships lead at HSBC, Rich Wagner, CEO of Cashplus Bank and also a member of staff from Crypto.com.

After an afternoon networking break, it's on to the next panel session 'How fintech and the pandemic have impacted each other', featuring David Brear, group CEO of 11FS, Symmie Swil, head of SME banking at Starling Bank, Martin Boyd, president of fintech solutions at FIS and Marilena Ioannidou, director future fund & venture solutions at British Business Bank.

Closing the 'Next big things in fintech' segment is Reuters chief correspondent in fintech, Anna Irrera, who together

with author and fintech disruptor Chris Skinner plus a special guest, will debate 'Is London the Singapore on the Thames?'

As a special treat, before the networking drinks, there is also one extra panel session to add on to the end of the day – 'Next big things that we haven't talked about', where Andrew Vorster of The Banking Scene, Chris Skinner, Ghela Boskovich, regional director and head of Europe at the Financial Data and Technology Association, and Dr Leda Glyptis, chief client officer at 10x Future Technologies, will be discussing any important fintech topic that might have slipped through the cracks.

### THURSDAY 15 JULY

Thursday morning will be dedicated to breakout sessions on topics, such as raising capital for fintechs, cybersecurity, payments and AI.

Followed by an afternoon diving into cryptocurrencies and blockchain, looking at innovations, such as DeFi, NFTs and what is happening to Bitcoin. Top speakers from the industry will include Crypto.com, MyPinPad, Terra Virtua and more.

### FRIDAY 16 JULY

City-to-city with fintech at its heart, this day will consist of six panel discussions focusing on the similarities and differences within key geographical locations in Asia, the Middle East, Africa, Europe, Latin America and the UK. Panelists will give an overview and speak about the critical areas of the fintech ecosystem, coming from the viewpoint of a fintech, government/regulator, catalyst or financial institution. The panel discussions will cover regulation, ease of doing business, access to capital and market adoption. **FTI**

*See you there!*

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# DIGIMENTALITY

*Consumers show increasing favour of digital transactions as the Covid-19 pandemic drives greater digitalisation*

**A**cross the world, a move towards cashless societies continues, incorporating a variety of approaches ranging from credit cards and payment apps to cryptocurrencies and central bank digital currencies (CBDCs).

In China, the government has launched a large-scale CBDC pilot with its digital renminbi. In the US, the Commodity Futures Trading Commission unveiled plans for cryptocurrency regulation to take effect by 2024, a development that could accelerate institutional adoption of digital assets. In April 2021, the price of Bitcoin hit an all-time high of more than \$60,000.

“It seems to me that Bitcoin has succeeded in crossing the line from being a highly speculative idea that could well not be around in short order, to probably being around and probably having some value in the future,” said Ray Dalio, founder of Bridgewater Associates – the world’s largest hedge fund by assets under management – in a recent research note. “The big questions to me are what can it realistically be used for and what amount of demand will it have.”

The question of digital currency use and demand from a consumer and institutional perspective was the focus of a survey and report from The Economist Intelligence Unit commissioned by Crypto.com. The research explores the extent to which digital payments are trusted by consumers and what barriers may exist to basic monetary functions becoming predominantly electronic or digital, while comparing the attitudes of consumers in 2021 with a similar survey conducted in 2020. The second half of the report also investigated the use and demand question on an institutional investor and corporate treasury level.

## KEY TAKEAWAYS

Consumers are increasingly adopting cashless payment methods while countries pilot CBDCs and companies experiment with open-source digital solutions. The different digital currencies are viewed as supplementary instead of contradictory, meaning one option can lead to another.

- The Covid-19 pandemic has been an impetus for greater digitalisation generally, and that influence and favour also holds true with digital currencies.
- Benefits of digital currencies include contactless transactions, real-time monitoring of the economy and improved money laundering initiatives, as digital currencies have better track and trace potential compared with physical cash. Risks include asset volatility and uncertainty regarding market structures and regulations.



- Institutional investors and corporate treasurers appear to be using cryptocurrencies more as a store of value with a deflationary hedge than as a currency, although a majority claim preference for transactional use.
- A parallel of cryptocurrency as ‘digital gold’, holding similar patterns in terms of limited supply, benefits of being dividable and acting as a portfolio diversifier is gaining acceptance. However, regulatory, trust and understanding concerns linger.

**Consumers are increasingly adopting cashless payment methods while countries pilot CBDCs and companies experiment with open-source digital solutions.**

## DIGITAL CURRENCY TRENDS

The research showed that the underlying current towards digital cash among consumers continues but the trend appears to be changing in nature. A year ago, among those who said their country is already cashless, more than half (55 per cent) believed businesses commanded the most influence on the path to cashlessness, with consumers (24 per cent) and governments (19 per cent) trailing.

Perhaps due to growing CBDC coverage in news cycles, governments gained in the influence rating in 2021, reaching 27 per cent, as did consumers (30 per cent), while the business figure dwindled to 38 per cent. Yet the overall order of influence remained unchanged. While still holding the most influence on digital currency trends, it’s plausible that corporations will pave the way to the point that consumer

and government adoption rises enough that the secondary groups may carry the cashless trend to a peak, which may be indicative of private sector initiatives from Facebook and JP Morgan, among others.

Change in the institutional landscape is also coming quick. Rising values of digital currencies, such as Bitcoin, over the past year brought renewed interest from banks, financial services firms and corporate treasuries. For example, in February 2021 Tesla, an electric car company, announced it had brought more than \$1 billion in Bitcoin into its corporate treasury and that the company would accept the digital currency as a form of payment in the future. The carmaker reversed its payment stance in May, citing concerns about energy consumption related to Bitcoin’s infrastructure. The energy aspect of digital currency is highly debated and the downturn in Bitcoin value that followed Tesla’s reversal is indicative of volatility risks in the digital currency space. Tesla may yet change course again but the institutional and treasury survey respondents, who weighed in before either of Tesla’s announcements, show support for settlement uses of digital currencies.

When asked if open source digital currencies (such as Bitcoin) should be considered strictly for transactions versus as an appreciating asset, 34 per cent of executives chose the transaction option while another 27 per cent said both. That’s a majority of 61 per cent opting for the settlement use case.

## YOU CAN READ THE FULL REPORT AT [DIGITALCURRENCY.ECONOMIST.COM](https://digitalcurrency.economist.com)

*Digimentality 2021 – Digital Currency From Fear to Inflection* explores the extent to which digital payments are trusted by consumers and what barriers may exist to basic monetary functions becoming

predominantly electronic or digital. A consumer survey of 3,053 people conducted in February and March 2021 provides data for the first part of the report. About half of the respondents came from developed economies (US, UK, France, South Korea, Australia and Singapore) and half from developing ones (Brazil, Turkey, Vietnam, South Africa and the Philippines). About seven in 10 respondents were between 18 and 38 years old with the remaining aged 39 years or older. Roughly half (46 per cent) were men and the rest women (54 per cent). Various educational backgrounds are represented, with the largest numbers of respondents (five in 10) having a college or professional degree. All respondents had bought a product or service within the past 12 months using some kind of digital payment.

The second part of the report draws from a survey of 200 institutional investor and corporate treasury management respondents conducted in February, March and April 2021. About a third of respondents are US-based with the remainder spread across the advanced economies of Australia, China, France, Germany, Singapore and the UK. All survey takers were familiar with their organisation’s investment decision-making processes.

For the purposes of the survey and report, the term ‘digital payment’ included the following definitions:

- Online banking (direct payments from a bank account to a person or business via electronic means instead of a paper cheque)
- Mobile payment or e-wallet (typically via smartphone, including WeChat pay, Alipay, Google Pay, Apple Pay, etc)
- Online money transfer services (Paypal, Venmo, TransferWise, etc)
- Open source (non-bank) digital currencies (which include cryptocurrencies, such as Bitcoin, Ether, Litecoin, etc)
- CBDC, which involves digital currency issued as legal tender by a central bank (such as the Chinese digital yuan or the Swedish e-krona)
- Corporate-issued digital currencies introduced (sometimes called a permissioned blockchain, such as Facebook’s Libra/Diem or JP Morgan’s JPM coin) 

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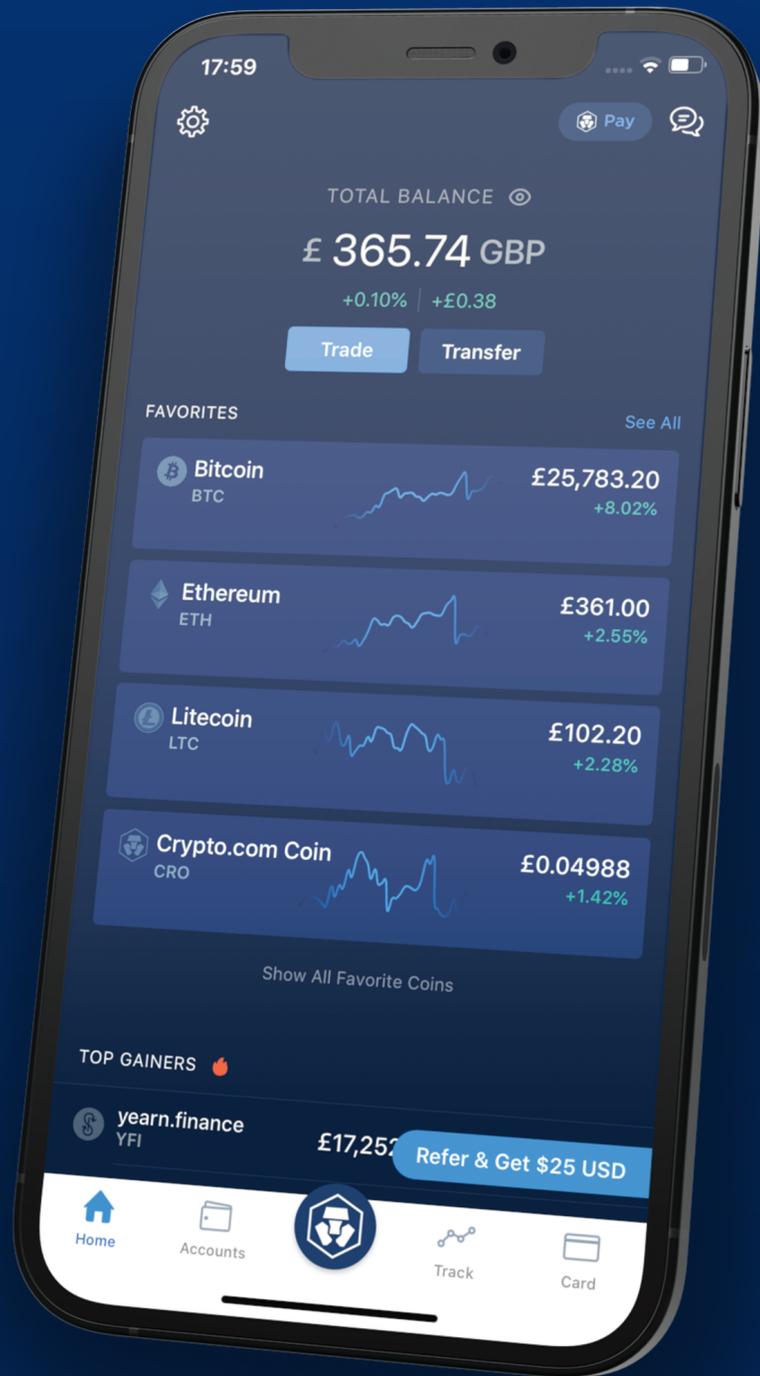
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# Is AI your secret weapon or your Achilles' heel?



A new survey on responsible artificial intelligence reveals dangerous gaps

Dr Scott Zoldi, Chief Analytics Officer, FICO

**M**ore businesses than ever are using artificial intelligence (AI) to reinvent their business model. AI can be a competitive differentiator. It can make your business. But it can just as easily break it, if you don't use it responsibly.

Responsible AI has been one of my big topics for a few years now, the subject of many articles, blogs and talks I've given to audiences around the world. So how are companies faring in adopting responsible AI, making sure they are using artificial intelligence ethically, transparently, securely and in their customers' best interests?

The short answer: not great. A new report from FICO and market intelligence firm Corinium, *The State of Responsible AI*, finds that most companies are deploying AI at

significant risk. Here are a few topline findings that illustrate why:

- 65 per cent of respondents' companies can't explain how specific AI model decisions or predictions are made
- 73 per cent have struggled to get executive support for prioritising AI ethics and responsible AI practices
- Only one-fifth (20 per cent) actively monitor their models in production for fairness and ethics

In addition to a troubling widespread inability to explain how AI model decisions or predictions are made, the study found that 39 per cent of board members and 33 per cent of executive teams have an incomplete understanding of AI ethics.

With worldwide revenues for the AI market (including software, hardware

and services) forecast to grow 16.4 per cent year-over-year in 2021 to \$327.5 billion, companies' reliance on AI technology is heading in only one direction: up. The report's findings point to an urgent need to elevate the importance of AI governance and responsible AI to the boardroom level; organisations are increasingly leveraging AI to automate key processes that, in some cases, are making life-altering decisions for their customers. Those same decisions could be life-altering for their business itself.

## WHO'S RESPONSIBLE FOR RESPONSIBLE AI?

Despite the embrace of AI, what is driving the lack of awareness of its responsible use?

The study showed that there is no consensus among executives about what a company's responsibilities should be when it comes to AI. As an example,

almost half (43 per cent) of respondents say they have no responsibilities beyond regulatory compliance to ethically manage AI systems that make decisions which may indirectly affect people's livelihoods. In my view, this speaks to the need for more regulation, if the designers of AI largely don't see their responsibility as being more than what existing regulation enforces – or, in most cases, don't enforce.

"At the moment, companies decide for themselves whatever they think is ethical and unethical, which is extremely dangerous," argues Ganna Pogrebna, lead for behavioural data science at The Alan Turing Institute. "Self-regulation does not work."

To drive the responsible use of AI in their organisations, senior leadership and boards must understand and enforce auditable, immutable AI model

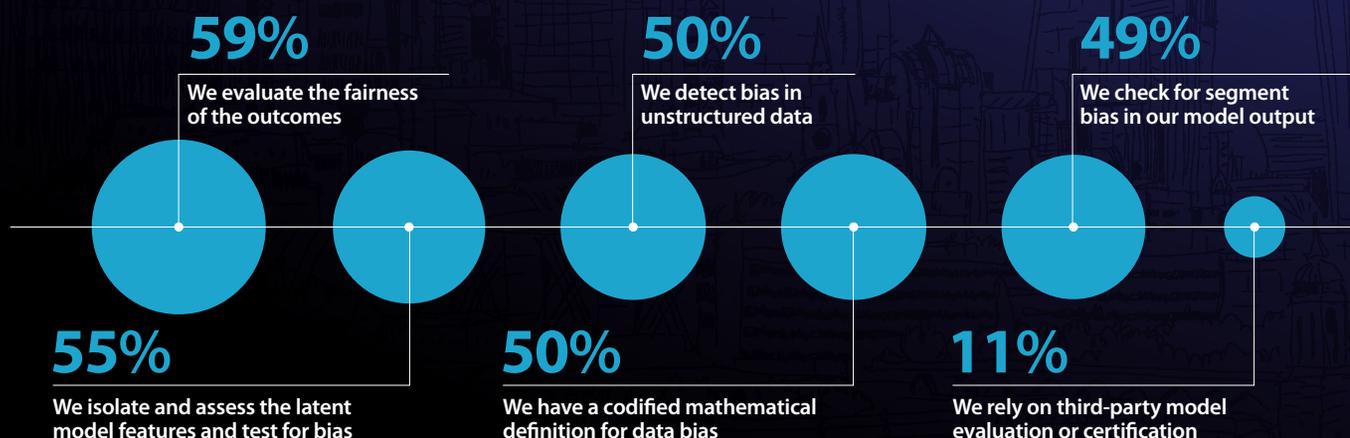
## PROCESSES AROUND ETHICAL AI VARY BETWEEN COMPANIES

What standards and processes do you currently have in place to ensure AI is used ethically and responsibly within your organisation?



## ENTERPRISES ARE WORKING TO COMBAT MODEL BIAS

Which approaches to detecting and correcting AI model bias do you have in place today?



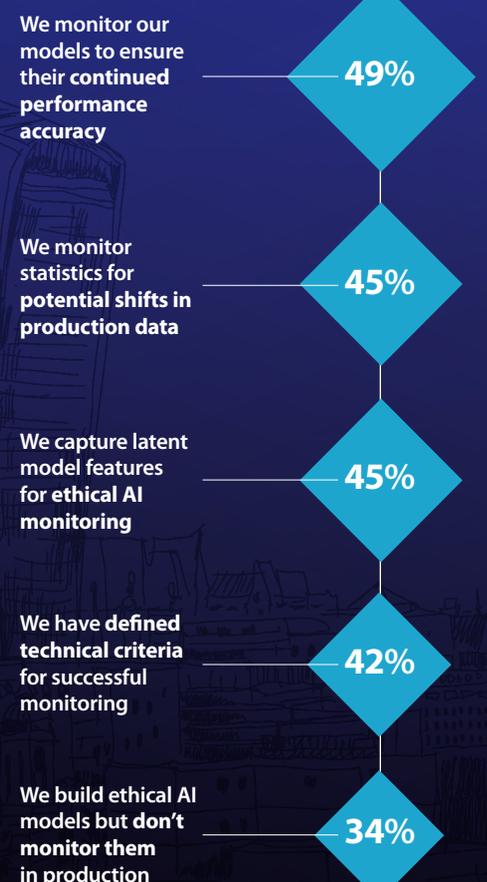
41%

Source: Corinium Intelligence, 2021

of executives admit they haven't published a comprehensive corporate-wide model development and governance framework for ethical AI

## MOST COMPANIES STILL AREN'T MONITORING MODEL PERFORMANCE

What structures and processes does your organisation have in place to monitor and maintain ethical AI model standards over time?



governance. They need to establish governance frameworks to monitor AI models to ensure the decisions they produce are accountable, fair, transparent and responsible. Executive teams and boards of directors cannot succeed with a 'do no evil' mantra without a model governance enforcement guidebook and corporate processes to monitor AI in production. In their capacity, AI leaders need to establish standards for their firms where none exist today and promote active monitoring. Only 20 per cent of respondents actively monitor AI in production today.

### THE URGENT NEED TO FIGHT BIAS

What can businesses do to help turn the tide? Combating AI model bias is an essential first step, but many enterprises haven't fully operationalised this effectively; the study found that 80 per cent of AI-focused executives are struggling to establish processes that ensure responsible AI use.

Businesses recognise that things need to change, as the overwhelming majority (90 per cent) of respondents agree that inefficient processes for model monitoring represent a barrier to AI adoption. Thankfully, almost two-thirds (63 per cent) believe that AI ethics and responsible AI will become a core element of their organisation's strategy within two years.

"I think there's now much more awareness that things are going wrong," says Cortnie Abercrombie, founder and CEO of responsible AI advocacy group AI Truth. "But I don't know that there is necessarily any more knowledge about how that happens."

For Abercrombie, the key message she wants enterprises to take away is that things cannot be business as usual when it comes to AI ethics.

"I recommend that every company assess the level of harm that could potentially come with deploying an AI system, versus the level of good that could potentially come," she says. "The very first thing I tell groups that are dealing with [the riskiest types of AI] is, you need to have a full vetting process before you release those to the wild," she adds. "This cannot just be your typical case of, 'Let's release an MVP [minimum viable product] and see how it goes.'"

### MANAGEMENT BY DESIGN

For Jordan Levine, MIT lecturer and partner at AI training provider Dynamic Ideas, the reputational risks that come with irresponsible AI use stem primarily from undetected instances of bias. As such, he argues that enterprises need rigorous processes to find, spot and remove bias across the model lifecycle.

He explains: "The problem statement is, by building a model, do I then have subsets of my population that have a different accuracy rate than the broader,



Companies are spending more on AI than ever before, but many are still thinking through how to use the technology responsibly

global population when they get fed into the model?"

Our research shows that enterprises are using a range of approaches to root out causes of AI bias during the model development process. However, it also suggests that few organisations have a comprehensive suite of checks and balances in place.

Evaluating the fairness of model outcomes is the most popular safeguard in the business community today, with 59 per cent of respondents saying they do this to detect model bias. Half say they have a codified mathematical definition for data bias and actively check for bias in unstructured data sources. Meanwhile, 55 per cent say they isolate and assess latent model features for bias.

But securing the resources to ensure AI models are developed responsibly remains an issue for many. Just 54 per cent of respondents say they are able to do this relatively easily, while 46 per cent say it's a challenge.

As such, it looks like few enterprises have the kind of 'ethics by design' approach in place that would ensure they routinely test for and correct AI bias issues during the development processes.

### PLOTTING A PATH TO RESPONSIBLE AI

Companies are spending more on AI than ever before, but many are still thinking through how to use the technology responsibly.

Of the 100 executives surveyed, just 39 per cent say their companies are placing greater emphasis on model governance during the AI development process this year. What's more, 33 per cent say their companies are actually paying less attention to the monitoring and maintenance of models in production.

Our research also suggests a concerning lack of understanding about the risks associated with certain types of AI, and a distinct lack of focus on the lifecycle of AI models once they have been put into production.

Many don't understand that your model is not ethical unless it's demonstrated to be ethical in production. It's not enough to say that I built the model ethically and then I wash my hands of it. If enterprise buyers want to avoid falling foul of regulations and their customers, these shortcomings must be addressed.

In particular, I am concerned about the risks associated with technologies like AutoML (automated machine learning). Every three days there's another algorithm and there's another company purporting to have a magic machine that replaces data scientists. What we're missing today is honest and straight talk about which algorithms are more responsible and safer.

It's clear that the business community is committed to driving transformation through AI-powered automation. However, senior leaders and boards

need to be aware of the risks associated with the technology and the best practices to proactively mitigate them. AI has the power to transform the world, but in my view, as the popular saying goes, with great power comes great responsibility. [iiti](#)

To download the report, visit [www.fico.com/responsible-ai-2021](http://www.fico.com/responsible-ai-2021).

### About Dr. Scott Zoldi

Dr. Scott Zoldi is chief analytics officer at global analytics software firm FICO. He has authored or co-authored more than 100 analytic patents, with 62 granted and 48 pending. Scott is actively involved in the development of new analytic products and Big Data analytics applications, many of which leverage new streaming analytic innovations, such as adaptive analytics, collaborative profiling and self-calibrating analytics. He blogs at [fico.com/blogs](http://fico.com/blogs).

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FINTECH WEEK  
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# IN A CLASS OF ITS OWN

*Contis doesn't just pull the carriages in financial services – as an end-to-end banking as a service provider, it 'owns the train set'. And this year it's fast laying new tracks*

**T**here aren't many people in the payments world who can match Peter Cox's track record for being in the right place at just the right moment – and turning those moments into a sizeable profit.



**Peter Fox, Chairman & Founder, Contis Group**

"We are a leader in BaaS. People use that term very broadly, but Contis is not an assembler of different people's solutions; we own the tech and the licences," he says. "And we proved it was the right strategy."

Not only is it one that makes internal processes more reliable (Contis platforms maintain 99.99 per cent uptime), but it also gives clients confidence that, if there is ever a problem, "you don't get into that situation where everybody points the other way," Cox adds.

**We are a leader in BaaS. People use that term very broadly, but Contis is not an assembler of different people's solutions; we own the tech and the licences**

The only functions outsourced to specialist providers are know your customer (KYC) and fraud protection systems – the latter provided by FeatureSpace's AI-driven ARIC Risk Hub and the former by W2, which looks after end-to-end KYC/anti-money laundering processes for customer onboarding and ongoing monitoring.

"They don't slow us down; they help us improve our deliverables," says Cox.

That's just as well because the past 16 months have been one of the busiest periods – if not the busiest – in the company's 13-year history. It has witnessed an 80 per cent increase in transaction processing and a 50 per cent growth in new business volume. The company has

already doubled in size in 2021 and that curve is only set to get steeper as it pushes into managed services globally, starting with EMEA (Europe, the Middle East and Africa) and APAC (Asia-Pacific), and looks to capture a significant slice of the market for embedded finance.

In June, it launched a new banking division, headed by former Tier 1 banking executive Andy Lyons, with a focus on bringing embedded finance to high-growth businesses in Europe.

"We expect to be a significant player in Europe – and beyond – in the embedded finance space," says Cox. "If retailers want to offer any financial services – and chances are most might, they will need regulated support. We also have a consumer credit licence so we can fund credit as the provider and can embed all that in a proposition with sophisticated onboarding. I believe corporates will become the banks of the future."

Lyons' appointment followed a reorganisation of the Contis Group's business internally in March of this year to create dedicated teams addressing bank payments, end-to-end regulated BaaS solutions, stand-alone managed services, including card processing for regulated businesses, core banking technology and financial inclusion solutions for credit unions.

The last of those is something Cox has personally been committed to since the early days of his career. And with a new product called Engage – in fact, the only go-to-market brand Contis has ever introduced – he hopes at last to bring about significant change in the area of financial inclusion by raising the sector's profile with a nationally available digital

account, exclusively for credit union and community bank members, regardless of their financial status.

"Engage is an end to end solution providing back office core banking and linking that to dedicated bank accounts for loans and savings, cards and ApplePay," explains Cox.

"The big challenge right now is that the Financial Conduct Authority has killed payday lenders. That means there are a vast number of people who are losing the ability to get credit and being forced into the hands of loan sharks. Credit unions and community banks can use Engage to introduce loans and investments to customers."

It's one example of how 'owning the train set' lets Contis lay the tracks for a new type of financial services.

"What we are seeing is a revolution and we see ourselves being very much a part of that and empowering it," says Cox. "And we can do it because we are trusted and we are reliable." **TFT**

## About Contis

Contis' purpose is simple – to better people's lives by powering the digital payments revolution. Founded in 2008 by Peter Cox, Contis has grown to become the most comprehensive banking-as-a-service platform in Europe.

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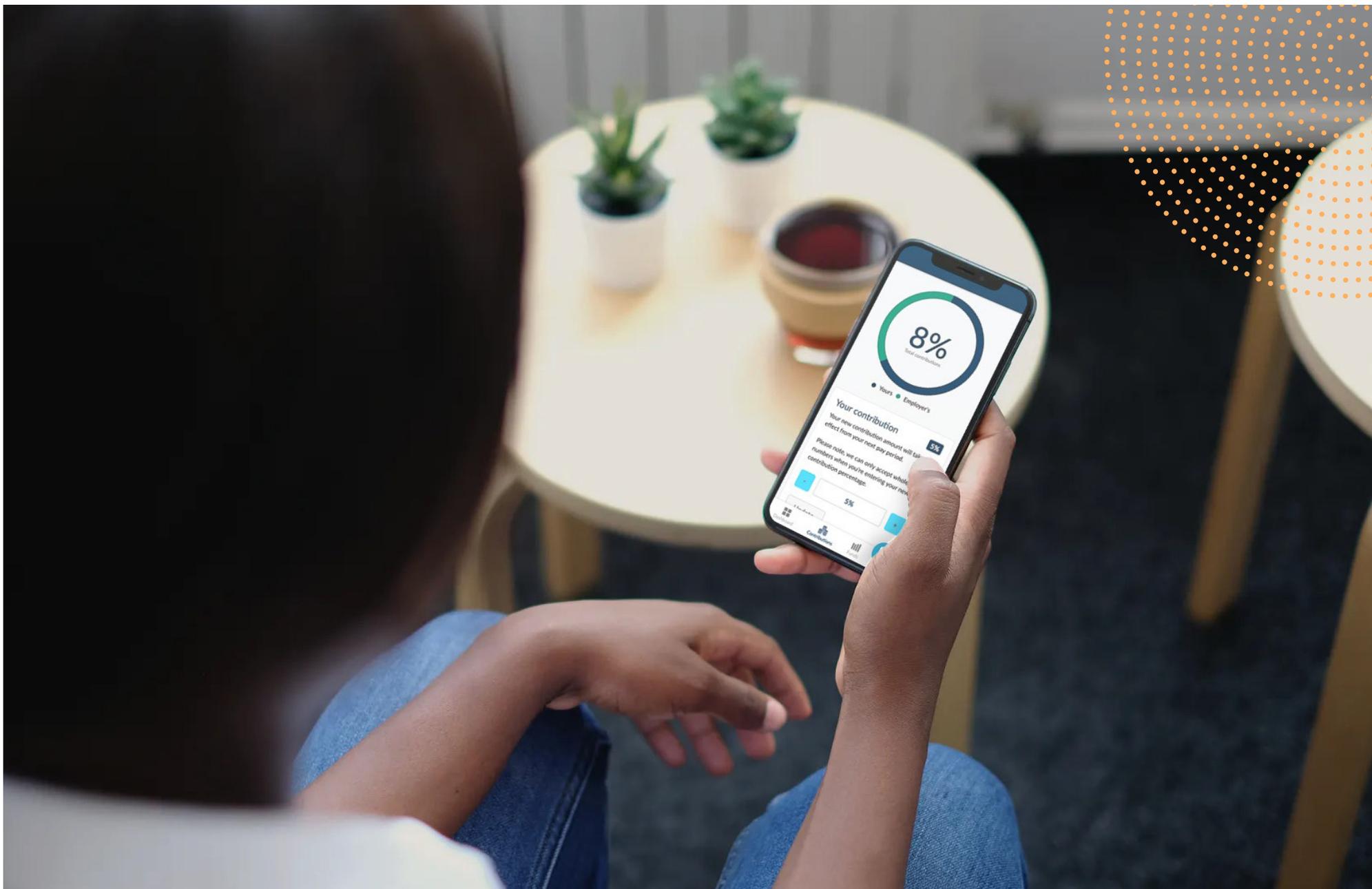


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# THE BOOM IN SOFTWARE AS A SERVICE

— R. Vivekanand (Vivek), Vice President and Head of TCS Financial Solutions —

*With the global landscape changing rapidly across every sector due to the global pandemic, Vivek shares his insights into the opportunities and challenges of the SaaS and Cloud market*



**T**he software as a service (SaaS) landscape has changed so much in the last 18 months. Triggered by the global Covid-19 pandemic, whatever we predicted would happen in five years has happened in one, with huge changes to the adoption of Cloud-based services.

It's safe to say that now there is pretty much no one out there asking 'Why cloud?'. Two years ago, many people would have been dragging their feet on Cloud adoption, making excuses as to why they haven't finalised that strategy. But now cloud isn't a question, it's a given. Its many benefits are well known throughout the industry, including its cost-effectiveness, and everyone now has to see Cloud as an option. If they choose not to take that option, they're certainly going to have some explaining to do, especially to their boards, as to why.

The pandemic really forced the industry's hand in many ways, as we had to collectively find solutions for what were perceived as problems. For example, data security, speed, bandwidth access from anywhere – these were all issues identified due to lockdowns with the majority of the workforce logging on from home. We had to find solutions for those issues, and we had to do it quickly, so that's really why the market has seen such rapid expansion. We were expecting a very gradual adoption of Cloud across industries over three to five years, instead we had an accelerated push of acceptance and adoption over a short period of 18 months.

## The opportunities

A big opportunity that has arisen because of SaaS is that the barrier for change has gone down. I think a lot of financial institutions have been reluctant in the past to change their plans and strategies to SaaS as its adoption comes with certain perceptions. Many people believe it's a big core system change equivalent to open-heart surgery, but that's simply not the case. Of course, as with anything, there are risks involved, so to some extent, the perceptions are true. However, SaaS is a

running system on the Cloud that you can simply bolt onto, get onboarded and then implement the software update. It's that easy. This all leads to breaking down the barrier of resistance. The solution is proven, it's running and ready for the local market, so we're going to see more and more institutions embrace it.

Another opportunity available closely aligned to this is that some institutions may not be able to create a business case for a new solution if they were to implement it all by themselves. Whereas when they embrace it or adopt it on the Cloud in the SaaS model, their capital requirements are much less which means that more people can refresh and work on the new system. Because of this, the universe of who can adopt the system is constantly expanding.

**SaaS is a running system on the Cloud that you can simply bolt onto, get onboarded and then implement the software update. It's that easy**

The advancements within the SaaS and Cloud sectors of course aid this. One thing in particular that comes to mind is how cloud supports better performance on micro-services and its constant improvements. Hybrid Cloud is a given now for people like us. People don't tend to go with one provider, you have to support a range of providers due to differences in the market regionally. A company may have to choose a different provider for the specific regulatory needs in that country, so hybrid Cloud architecture allows us to provide that choice.

The other big change that we're seeing is what you could call industry Cloud, which means a specialised Cloud for a particular kind of business. This is something we are creating in our offering, leveraging that development and expectation within the market to provide a set of specialised solutions for the financial service industry on a Cloud in SaaS model.

## The global challenge

The biggest challenge in this sector is the aforementioned regulatory needs of different countries' ecosystems. Each nation or even region has a different regulatory regime in which they have laid down the rules of what they want from the Cloud. This is one of the biggest developments over the last few years, and these national and industry-specific regulations are a huge driver of innovation to adapt to the markets, creating specialised offerings for our customers.

Collaboration is another way to solve the issue, where working with different companies as specialised partners, such as a local provider from a specific nation, can help clear the obstacle. Though it's not a straightforward process, the only way to overcome the challenge is to create locally nuanced services abiding by the regional rules and regulations. It is impossible to create a global service, and only through collaboration can we make this work.

## The TCS BaNCS approach

There are many moving parts to the of Tata Consultancy Services (TCS) BaNCS approach to cloud and SaaS. The first thing of note would be that we are now Cloud-first. We are not software first, but we first offer SaaS, which means that, clearly, our software is inherently

designed to be run as a service and is tuned to work well with different Cloud providers so that the overall infrastructure footprint is less. You could also say that this agility provides more for the customer with lesser costs.

TCS BaNCS Cloud is our SaaS offering. Within that, we have created service lines for banking, asset servicing and insurance. And, in each of those, we provide different services across the spectrum of the financial industry to our customers. We also provide interlinking services across banking and capital markets, for example, and assembling a whole ecosystem of partners on this Cloud, so it's not just TCS BaNCS on the Cloud, you're getting a complete end to end world-class service. The next step for us is creating what we call the TCS Banks Marketplace. On this, there will be a whole set of curated partners whose solutions will be pre-integrated and tested, allowing customers to access a much bigger range of services.

## The future

The future of software is SaaS. SaaS is becoming the single biggest medium of software usage. In a way, we've all already adopted it without even realising, for example with our laptops or mobile phones. We may own the actual device, but we don't own the software on it, we simply pay for its usage. So, I think when looking to the future of software usage, SaaS will be the only model – indeed most people may not even offer software in any other form. It should be noted that that's not our strategy as we still have many financial institutions that want to use it on-premise. We're not Cloud-only, but Cloud-first, and that will be key moving forward. [TCS](#)

## About TCS BaNCS

R. Vivekanand (Vivek) is vice president and head of TCS Financial Solutions, the financial products business of Tata Consultancy Services. As a part of this role, he is responsible for business development and market penetration of the TCS BaNCS suite of products, including sales and marketing functions. In addition, he is responsible for the capital markets solutions of TCS BaNCS and the realisation of strategic growth initiatives, such as TCS BaNCS Cloud and Quartz, The Smart Ledgers.

**Website:** [www.tcs.com](http://www.tcs.com)

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# JOBS IN FINTECH

The Fintech Times selection of  
TOP fintech jobs this month

## Multi-Currency and FX Payments Snr Principal Product Manager, (London) at



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➡ The Bank of New York Mellon Corporation, commonly known as BNY Mellon, is an American investment banking services holding company headquartered in New York City. The world is shifting, and the future will be shaped by our actions now. BNY Mellon has been creating a positive impact on its clients, employees and people around the world. It is using resources and expertise to create positive social impact.

In this role you would be a member of a global product team, within Treasury Services, responsible for developing and executing a growth strategy in the region for FX and multicurrency payments. The role will provide you with exposure to senior executives in the organisation including reporting directly to the Global Head of Multicurrency and FX Payments.

#### YOUR RESPONSIBILITIES:

- Drive business and pipeline growth
- Develop an in-depth and comprehensive knowledge of products, services and clients by leading global deals
- Identify growth opportunities and develop business cases for investment
- Leading/manage new product enhancements from development to launch
- Collaborate with Markets FX Payments team to deliver a seamless experience

#### THE REQUIREMENTS:

- Bachelor's degree or the equivalent combination of education and experience is required
- Prior experience of driving growth in the multicurrency and FX payments business
- Strong project management, marketing and selling skills
- 12 plus years of total work experience preferred

#### THE BENEFITS:

BNY Mellon is an Equal Employment Opportunity Employer. Its ambition is to build the best global team, one that is representative and inclusive of the diverse talent, clients and communities it works with and serves. It supports wellbeing and a balanced life, and offers a range of family-friendly, inclusive employment policies and employee forums.

## API Product Lead, (Remote) at



### tutuka

➡ Tutuka is an award-winning global fintech with an enterprise-level, highly scalable, highly secure financial processing system that powers tens of millions of transactions and makes it easy for people to issue, redeem and reconcile prepaid cards all over the world. It has clients in more than 35 countries, team members in 30+ countries and process more than \$1billion per year in transactions.

Do you know payments inside out? Are you passionate about working with people and enabling them to reach their full potential? As Tutuka continues to expand as a global payment processor, it is looking for its next Product Lead to own a roadmap and API strategy. You'll be leading an amazing global team with different backgrounds, from product management to development and business analysis.

#### YOUR RESPONSIBILITIES:

- Developing the vision, strategy and roadmap will be first priority
- Leading, coaching and empowering the high-performing product team
- Stakeholder management
- You will be setting up go-to-market strategy and managing the delivery times

#### THE REQUIREMENTS:

- Experience in payments in either merchant services, acquiring, card issuing platforms, and/or payment processing.
- A strong technical background in the API space
- Proven ability to lead teams
- A unique blend of business and technical savvy
- Confidence in taking on challenging conversations and situations

#### THE BENEFITS:

- Generous leave policy
- Competitive pay
- Company equity scheme
- Annual company retreat
- Remote friendly

## Data Reliability Engineer (SAS) at



### Direct Line Group

➡ Direct Line Group is proud to be one of Britain's leading general insurers offering millions of customers decades of experience and knowledge. Its vision is a world where insurance is personal, inclusive and a force for good. It helps people carry on with their lives, giving them peace of mind now and in the future.

Direct Line Group is looking for a Data Reliability Engineer (DRE) who is passionate about working with SAS and ETL technologies. In Direct Line Group, DREs combine software and data engineering disciplines to build and run large-scale, fault-tolerant systems so that users' overall happiness with service, performance and data integrity is optimised.

#### YOUR RESPONSIBILITIES:

- Managing commercial and risk applications that have been built on SAS and Java technologies
- Working with Oracle and SQL Server technologies
- Optimising service availability and reliability through performance tuning
- Designing, building and testing data related products and services based on feeds from multiple systems

#### THE REQUIREMENTS:

- Strong experience of developing, executing and troubleshooting ETL workflows in a production environment
- Experience using SAS DI Studio, SAS Enterprise Guide and SAS Platform Computing
- Understanding the concepts and principles of data modelling

#### THE BENEFITS:

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- Generous holiday allowance
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# THE ERA OF HYBRID WORKING

*With an increasing number of companies adopting more flexible work models, has Covid changed office life permanently?*



**T**echnology companies have long been at the vanguard of remote working, so it was no surprise that Big Tech firms were some of the earliest to shut down and lead the way for home working at the start of the coronavirus pandemic.

Months of uncertainty have led some companies to leave office life behind for good, while many younger workers have called for working from home as a permanent arrangement. But other organisations are hoping to make a return to the office while still maintaining a certain amount of post-pandemic homeworking. The business model that combines remote work and office time is known as hybrid working.

According to the Office of National Statistics (ONS), while the proportion of workers both working from home and travelling to work has remained relatively stable, data suggests individuals and workplaces anticipate increased levels of hybrid models of working after the Covid-19 pandemic.

ONS figures show 85 per cent of employees working at home want to adopt a hybrid work model when returning to the workplace as it gives more agility, flexibility and freedom. While data from Future Strategy Club – a network of the UK’s tier 1 consultancy talent – revealed 57 per cent of employees do not want to return to their previous 9 to 5 construct following the period of freedom that the pandemic provided.

## MAKING A CHANGE

A number of fintech companies have quickly adopted hybrid working strategies. Global banking, payments and shopping service Klarna implemented a

hybrid working policy for employees in May when it launched a new office in London and larger premises in Manchester. Klarna teams can work together in the office on two agreed days each week, with the flexibility to choose to work from home or the office on other days.

Earlier this year, fintech Revolut revealed it would permanently move to flexible working arrangements, giving employees a choice about when and how often they would like to work from home, and how often they would like to work in an office. It recently extended this hybrid working policy to also allow employees to work overseas for up to two months a year.

The key to the hybrid office will be the successful integration of the in-office and at-home workers in one physical/digital meeting place

UK neobank Zopa is also trialling a new hybrid working model that will allow employees to work from abroad for up to 90 days a year. Staff can also choose where they work, while Zopa plans to adapt its office space for a more collaborative working environment.

Employees at GoCardless now have the flexibility to work away from their normal place of work for up to 90 days in any 12-month period. Those who qualify for the ‘work away’ scheme can request to work from any location that meets GoCardless standards for safety, security and privacy. In May, the fintech for bank-to-bank payments also created the

‘head of workplace’ role to lead the rollout of adaptive working and manage the workplace going forward with Lloyd Lasade, an industry veteran with previous experience at WeWork and CBRE, taking on the role.

Meanwhile, crypto exchange Coinbase now offers staff the option to work in an office or remotely for the vast majority of roles. It will also close its San Francisco HQ in 2022 after it downgraded the location to a normal office.

## CHALLENGES OF HYBRID WORKING

According to **Justin Small (right), founder and CEO of Future Strategy Club**, employees and employers must be aware of the potential challenges that working in a hybrid environment can present and how to overcome these successfully.



Small says: “The worries that corporations have had about the loss of productivity from home working are now seen as laughable as the physical office with all its interruptions – chit chat, coffee breaks and commuting time – appears to be much less productive. Of course, work in isolation does affect mental health, which will impact productivity and more importantly the personal lives of employees, so 100 per cent working from home is not a solution either unless coupled with frequent physical get-togethers where interaction is prioritised over desk work.

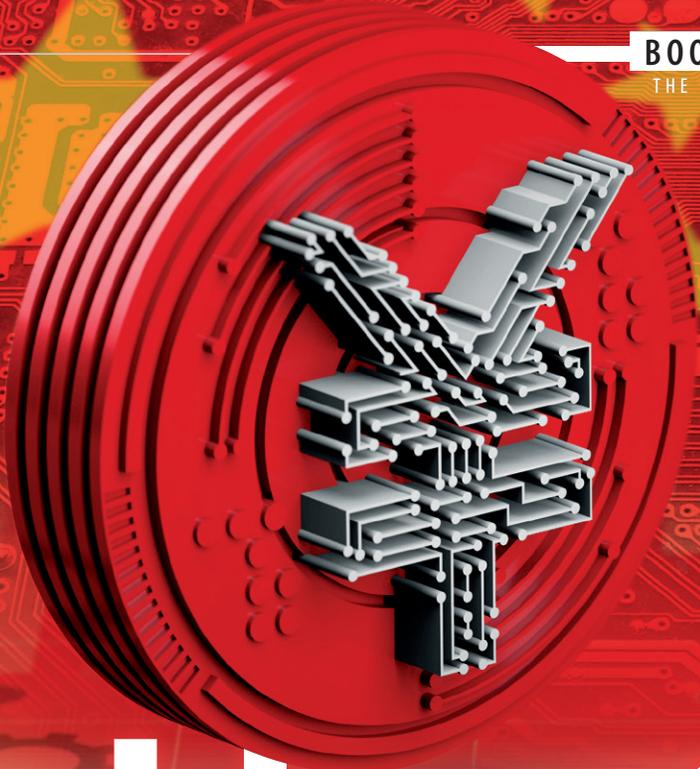
“Companies need to be careful to accommodate their employees’ needs and concerns, otherwise talented individuals will be drawn towards going it alone or jumping ship, causing repercussions for

businesses that may be on the edge of surviving and going under.

“The key to the hybrid office will be the successful integration of the in-office and at-home workers in one physical/digital meeting place. This is harder than you think, as many iterations of defunct ‘telepresence’ conference room tech has shown over the years. If not thought through properly, the office might end up being an extension of employee’s kitchen tables and spare room – with in-office employees sitting in small booths on Teams talking to at-home employees on Teams to include them in their daily meetings.

“In this situation, the usefulness of having an office is marginal. When the in-office team decide to all sit together in one room with the at-home employees on one screen, this results in the at-home employees missing out on most of the cross talk by the in-office employees with associated communication problems. Therefore, thinking very carefully about the tech used to bridge the great digital/physical divide is crucial.

“One decision Future Strategy Club has made is to have an always-on office camera and screen near the communal area so that at-home employees can chat with in-office employees during their breaks. We also use Tandem, which is a great virtual office solution where employees are always live, and where conversations during the day are made quick and easy. Additionally, we use Miro, Slack and Trello; cross-device systems which allow everyone to share their thoughts and ideas with the team, making the virtual office no less connected and productive than the physical one.” **TFT**



# Cashless China

**T**urrin's *Cashless* is a marathon read. At close to 400 pages, each page is packed with tiny titbits of well-researched data that, when viewed from a 300ft tall vantage point, paint a realistic and optimistic view of the future of banking, finance and the technology that will power these industries into a new 'cashless' globe.



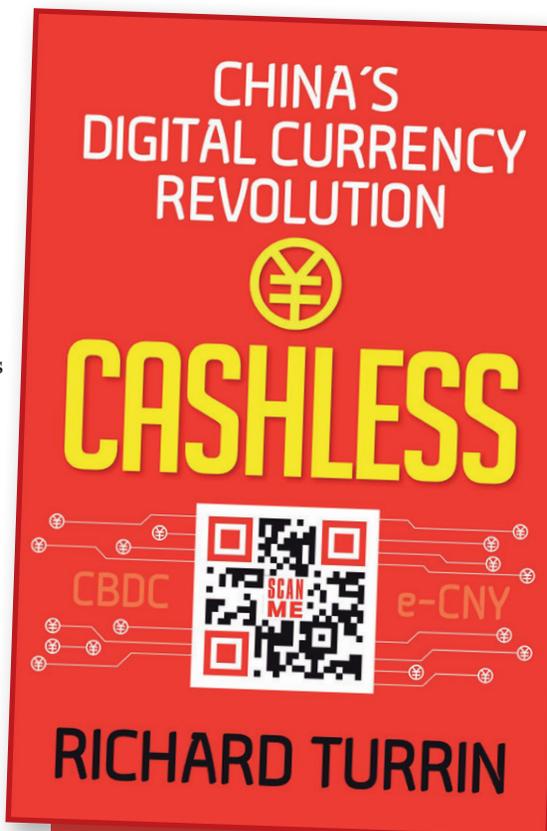
By **Brian Larson**, Senior Associate at JPMorgan Chase and graduate of The Fletcher School at Tufts University

Turrin is quick to point out that banks and credit card companies will likely all still be around in the next century but that they will need to swiftly and skilfully adapt to a more consumer-centric model of banking that operates on a new paradigm without

Although I lived in China for a short period in 2013, I was a little too early to have a seat to the meteoric rise of digital payments in China. Like many ex-pats, I waited in queues at CCB for hours on a Sunday to transfer money between accounts at the bank and paid for almost everything with cash (人民币). Although I was active on WeChat and purchased goods from Alibaba, these apps and digital storefronts had yet to become as powerful as digital ecosystems as we see them today in China.

In less than seven years, China has changed the banking and 'techfin' (so dubbed by Jack Ma) landscape so much that any American would be left dazzled by the ease and interoperability of China's cashless society (who knows – maybe that same American would come back and demand the same ease of use and low fee structure from his/her/their bank, credit card, credit union, etc).

Turrin's recounting of the regulatory quagmire that fed the peer-to-peer (P2P) lending crisis in China was illuminating and provided a reasonable and logical rationale as to why the Chinese Communist Party (CCP) halted the initial public offering (IPO) of Ant Financial last year. Sure, Ma's Basel Accord statement didn't do much to aid his cause, but this event played little if not any role in the CCP's shuttering of Ant's star-studded IPO. Turrin's juxtaposition of the P2P crisis with the US's mortgage-backed securities crisis was genius and easily digestible.



**Cashless: China's Digital Currency Revolution (1st Edition)**  
by **Richard Turrin**  
Available: Kindle, Paperback and Hardcover

excess fees or lacklustre mobile and onboarding support.

I absolutely loved Turrin's use of example walk-throughs as he explained the many pros and far fewer cons to China's rolling

out of a central bank digital currency (CBDC). Who knew a CBDC could affect everything from the purchase of xiaolongbao from a Shanghai street vendor to the international monetary exchange between China and its BRI cohort. Things get a little more complicated as Turrin posits his own views on how digital currency electronic payment (DC/EP) having a 'One Coin, Two Repositories, Three Centres' would flush out in reality. This is forgiven as the end of the book focuses on the many ways a CBDC could improve financial inclusion and dramatically reduce the number of unbanked and underbanked across China (and, for that matter, across the globe).

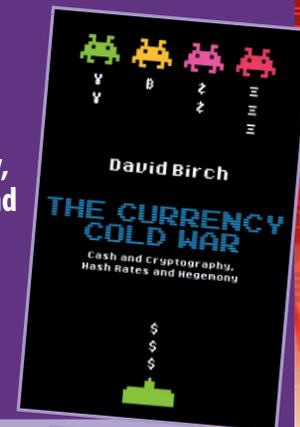
Last, I really liked Turrin's rationale around why China's CBDC does not mean the complete demise of the dollar (nor is it the People's Bank of China's (PBOC) intent). Instead, China is playing the long game and seeking to innovate in a space that has been stale for the better part of two decades. China's enlisting of support from international organisations like SWIFT and BIS is a clear indicator that it seeks to work with the existing international monetary framework and not simply blow it up. If the world can come around to cryptocurrencies, it sure can get used to a digital renminbi (e-RMB).

This book has something for everyone. Even for those who question China's intent with the launch of its CBDC, Turrin welcomes you aboard his Alipay-purchased ship and quickly combats and demystifies fact from fiction and, at certain turns, admits he doesn't know all the answers (but he doesn't use this as a cop-out).

In the end, even the most pro-US reader will realise that he/she/they can benefit a whole lot from understanding the groundbreaking payment trends occurring across China. **TFT**

## 5 BOOKS TO GET AHEAD IN FINTECH

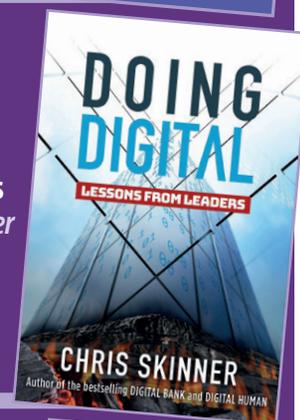
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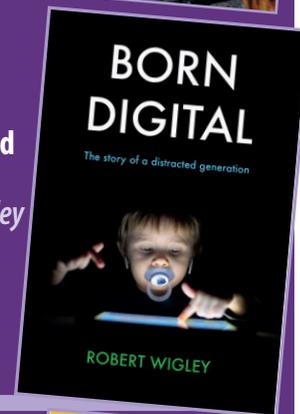
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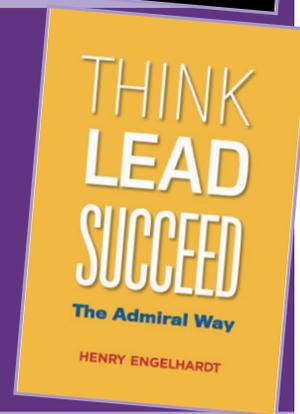
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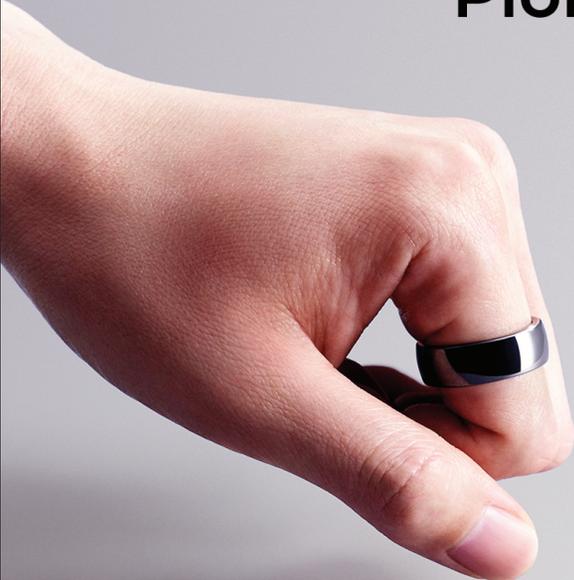
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