London Technology Club

Future Technology Series: The Future Technology in Finance

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Foreword on the Future Technology Series: Finance

I have always had a keen interest in the fundamental importance of finance and its continued ability to adopt new innovative technology at scale to ensure the system allows clients and customers to exchange trust, value and assets in the most efficient manner. Finance and Technology working together has the ability to make an incredibly positive impact by boosting the UK economy, creating new jobs and delivering prosperity across the country. I can safely say, after over 25 years in the financial and digital sectors, I have not seen as much accelerated transformation in finance as in the past five years, due to the rise and proliferation of fintech. However until this year, I had never seen such an accelerated transformation in consumer behaviour brought on by the way we have all had change our lives to protect ourselves and each other from the advance of such an unprecedented global pandemic.

You will see later in this report that IG Group saw its high-quality customer base rise by 50% in 2020 with no change to either our risk limits or our rigorous client selection criteria. This shows that now, more than ever, our clients are using the technology our platform delivers to take control of their investments, either trading the market opportunities they see or proactively hedging their wider portfolio.

I see a new generation of curious, talented and innovative individuals, emerging within both IG Group and elsewhere in the industry, who self-confident and entrepreneurial in spirit and want to shape tomorrow's economy and creating national wealth. Fintech is releasing new levels of human potential and economic achievement. I firmly believe finance is a crucial enabler of our future, more people having more access to diversified sources of capital and funding is crucial in opening up more avenues to potential success for everyone.

There is a strong synergy between the evolution of technology and of finance. The economy needs a digital world that allows innovators to distribute their products widely. As technology advances, and companies are able to collect data and understand the behaviour of their existing and potential customers it can mean great growth for companies. Finance-as-a-service will be a key part of that evolution. As this report notes, with a rise in mainstream use of technologies such as AI, machine learning, cryptocurrency and blockchain, there seems to be endless potential for the growth of this sector.

As a member of the London Technology Club Advisory Board, it is great to see the focus of the report on how technology is going to be shaping the future of our financial companies, products and services.

Having lived in London now for several years, I believe it is THE global hub for fintech. London's history with financial services, its willingness to innovate in the space, its rich and diverse culture reflecting a truly global view means it can attract the top talent to continue to be the ideal enabling environment for fintech.

I am excited for the potential of fintech as a key part of the UK and global economy, with finance providing the tools enabling potential prosperity for all.

June Felix
CEO of IG Group

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About the London Technology Club

The London Technology Club is an exclusive community of family offices, private and institutional investors, venture capital firms, technology experts and pioneers. The club combines co-investment opportunities, education and relationship-building opportunities in the tech sector under one umbrella and provides access to competitive VC funds with attractive returns.

We organise events with leading technology visionaries, entrepreneurs and investors. A number of prominent international investors are members of our Advisory Board, such as June Felix, CEO of IG Group; Chris Rust, GP of Clear Ventures and ex-partner at Sequoia Capital; and Itzik Parnafes, GP of Battery Ventures.

Future Technology in Finance is the fourth report in our 2020 Future Technology reports series. The first three 2020 reports – covering Property, Nutrition and Space – add to our previous five published in 2019. All of these are available to download, in full, on the LTC website.

The basic needs of finance have remained the same for centuries- the need to pay for or be paid for something as well as to save, secure, lend, borrow, invest and transfer money. The products, services and companies delivering solutions for those needs, however, are now rapidly changing. As with other aspects of their lives, customers (B2B and B2C) want finance to be as tech-enabled and digitally seamless as possible.

As you will see, technology has the power to increase transparency and efficiency, reduce cost, and give the most vulnerable, unbanked and unaddressed access to financial services. Technology is moving us towards more inclusive finance through democratisation and disintermediation.

Fintech's rise is powered by the digital transformation in the global financial services industry. There is a real shift from banks with technology advantages to technology companies with banking licences. Inspiration for innovation is coming from the tech world rather than the financial sector. Banking is becoming modular and more user-centric, with solving real user problems at the heart of fintech roadmaps. We have seen a raft of companies, mostly founded between 2010 and 2014 accelerate their scaling and come into maturity (although many would argue that maturity should be measured not in the number of years you have been around but whether you can earn money[1]). The third quarter of 2020 saw a wave of investor enthusiasm for some of these later stage firms, which saw their status translating into bigger funding rounds, and higher valuations. Many fintechs were among the deals that generated the largest post-money valuation gains in 2020.

We have seen the unbundling of banks with challenger neobanks and now 'neoniches'. Those challengers are moving back to rebundling once they reach a scale of users as they look to monetize by offering other

1 The New York Times

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products and services. We are seeing super apps, financial dashboards and embedded finance… leading to a race to be the 'primary financial relationship' where your platform controls all the routes to your different financial services. The handful of banks and financial institutions that have controlled the marketplace should be wary of the both the fintechs but also the tech titans (Facebook, Amazon, Google, Alibaba etc.) who won't just recreate the traditional banking model, but create totally new products and services, leading banks to be the 'dumb pipes' of finance in the future.

The UK is the undisputed fintech capital of the world for three key reasons:

Firstly, the strength of the UK financial services and the City of London's history as the world leader in banking and financial services. London has the world's highest concentration of financial and professional service firms, over 64,000.

Secondly, the UK is Europe's foremost technology hub. The UK's deep pools of entrepreneurial and tech talent and its vibrant startups are driving the digital economy bolstered by digitally savvy UK consumers.

Thirdly, the UK regulatory environment i.e. progressive regulators and policy makers. The FCA's regulatory sandbox and Open Banking regime are the envy of the European fintech community and the blueprint for others around the world to follow in catalysing fintech innovation.

The UK continues to set the global standard in the application of technology, and more broadly, innovation in financial services. The majority of financial services CEOs in the UK (62%) believe that a focus on emerging technologies is the number one driver that will separate high-performing firms from the rest [2].

There are over 1,600 fintech firms in the UK; estimates suggest this will more than double by 2030. 42% of workers in UK fintech are from overseas. 56% of traditional financial institutions have put disruption at the heart of their strategy. London is anticipated to be the global digital asset hub by 2025. However, let's not also forget the rest of the UK. According to World Bank data, the North of England (Northern Powerhouse) would be the ninth biggest country in Europe by financial services Gross Value Added (GVA), making it larger than 30 other countries. The region employs 11 times as many people in financial services as Frankfurt, and twice as many as Paris. Scotland is now home to over 100 fintech companies and the country has been voted the best European place to start a tech business.[3]

There is an accelerating demand for fintech services using mobility, cloud computing, analytics, social media and emerging technologies such as blockchain and artificial intelligence (AI). It is time for the UK, which is perfectly placed to do so, capitalise upon this.

2 Innovative Finance
3 UK Government: Department for Interntational Trade

Simon Pavitt
London Technology Club
Chief Operating Officer

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01 Introduction

“The notion that 'banking was everywhere- but never at a bank' came true”

A Future Day in the Life of a Financier

Written by Simon Pavitt, London Technology Club

In our humble opinion, this could easily be a typical day for a financier in the very near future...

I moved from Silicon Valley to London because it is the global hub for fintech. Regulatory sandboxes and Open Banking opened the floodgates (in a good way) for every tech company to embed finance into their products and services. Fintech enabled commerce without borders. Looking back now, the early 2020s was the time where the infrastructure built then shaped the financial services industry for a generation to come. 2020 was the inflection point where we all shifted to digital in all of our everyday lives. It was the evolution from the cow to cash to cards to cryptocurrency. The notion that ‘banking was everywhere- but never at a bank’ came true. I haven’t seen a coin used in years now..."

As a consumer, I go to my financial dashboard, where I live my financial life, with everything in one place, it’s like Lego. I am able to add and remove different products and services, having them talk to each other in the back end means that the front end is incredibly simple for me, my AI financial assistant even automatically finds me the best insurances, investments, savings, mortgages, transfers, fraud detection all fully personalised (even fit for future purpose) for me. One touch, swipe, or voice activation is what we all expect now for any transaction.

There was a race by the legacy institutions, challengers, neoniches and the big tech companies to own the primary relationship with consumers through superapps and ‘techfin’. There was huge consolidation amongst payment, lending, trading, transfers, e-commerce and saving providers. Those that unbundled via focusing on niche customer segments in order to land and expand, then rebundled to adjacent services then realised strategic M&A was the only way forward.

Everyone was trying to eat each other’s lunch and offer financial products, consumers (and businesses) became confused with who provided what...Trust and convenience for the consumer became king.

As a large technology company owner, I quickly realised that I could embed finance-as-a-service modules into my business. The electronic fintech plumbers provided me with the ability to stitch together different software for best in class financial add-ons for my staff and customers. The global infrastructure was there ready to plug in. Coupled with the unique data we owned, we were able to tailor offers and solutions for both efficiency gains for our business as well as adding value for our customers... I now derive a significant portion of my company’s revenue from financial services.

The disruptor digital banks formed between 2010-2014 were just the canary in the coalmine for traditional banks and financial institutions. The digital era in the 2020s led to disintermediation, efficiency and reduced costs. Borders, friction and opacity in finance were eliminated. It also, I am glad to say, led to the democratisation of finance. The most vulnerable and unbanked were given access to financial services that they had previously been excluded from.

Decentralized ledger of all transactions across a peer-to-peer networks were adopted into mainstream, cryptocurrency and blockchain became part of everyday solutions and methods of value exchange.

There used to be the question asked: Do we need banks? In the end that question never needed to be answered, as everyone started offering banking-as-a-service and banks just became technology companies...

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Defining Fintech

We are aligned to LTC Member, UBS's definition of fintech:

"We define fintech as the confluence of financial and technological innovation that facilitates banking and financial services. Fintech, in our view, is about digitalizing finance, which takes advantage of digital services like social, mobile, cloud computing and analytics, as well as emerging technologies like blockchain and artificial intelligence (AI). The term fintech should not be confused with the usual technology spending by financial services companies on things like software, mainframes and data centre expansions" [4]

We are consciously avoiding certain sub-categories of fintech in order to be slightly more focused – namely:

Insuretech - technology focused on the insurance industry model, companies such as Lemonade, Oscar, Hippo and Ladder.

Proptech companies focused on products and services within real estate finance such as property lending and investing, Lendinvest and Cadre.

Regtech - e.g. technology focused on business regulation, compliance, tracking & reporting, governance risk, fraud detection, data privacy and employee monitoring etc companies like Eigen Technologies, Onfido, ClauseMatch, Bolt, ComplyAdvantage, Quantexa and Corlytics to name a few.

Macro Overview

According to UBS, fintech companies have been attracting significant financing, receiving cumulative investment of around $95B in the past four years . UBS believes this is plausible given that fintech today accounts for up to 5% of global financial sector revenues.

UBS expects the industry size to reach USD 500B in 2030, forecasting revenues will more than triple from USD 150B in 2018 to USD 500B in 2030, implying an average annual growth rate about three times faster than the broader financial sector's. By Q1 2020, globally were 67 fintech unicorns valued in aggregate at $252.6B (12 in Europe, 38 in US, 3 in South America, 2 in Australia, 12 Asia [5]).

The COVID-19 outbreak had a significant impact on fintech financing with many investors focused on shoring up/ firefighting their existing businesses and portfolio companies. It was the worst Q1 since 2016 for fintech deals and the worst Q1 for funding since 2017. In Q1 2020, VC-backed fintech funding dropped to $6.1B across 404 deals[6]. Investors did see some liquidity amid fintech M&A in 2020 however the IPO market remains uncertain. In Q3 2020, cumulative global investment activity across VC, PE, and M&A for fintech companies was just under $58.9B, much lower than the $73.5B seen through Q3 2019. M&A, typically the core driver of investment, posted only $9.7B in overall value so far in 2020 [7]. Overall deal activity in 2020 is expected to be lower than previous years with a natural shake-out of the less capitalized start-ups, yet later stage mega rounds are expected to be on the increase...with big investors potentially preparing for future events.

4 UBS March 2020 Longer Term Investments: Fintech Report
5 CB Insights
6 CB Insights
7 PitchBook Q3 2020 Emerging Tech Report: Fintech

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02 Banking & Personal Finance

"Nearly every company will derive a significant portion of its revenue from financial services...even those that have nothing to do with financial services"

The Evolution of Digital Banking

We start with digital banking as its recent evolution is a good example of the development of fintech overall. We see three sets of companies in retail banking, with the space quickly evolving due to technological advancements, changing consumer behaviour and now, a renewed penetration to the underserved, unbanked populations and overpriced niches. We have seen a case of unbundling back now to rebundling. We shall explain by talking about how the banking landscape has moved from versions 1.0 to 3.0...

The '1.0s': The Incumbents:

There are approximately 6,000 banks across Europe alone, including household names like Santander, HSBC, Barclays and ING. Very little changed in consumer banking for decades, the old model was based on branches, bankers, relationships, cheques and withdrawals. Then came what many saw as an age of disruption.

The '2.0s': The Challengers/ Neobanks

> *"Nobody wants to go into bank branches, nobody wants to touch cash anymore, and people are increasingly comfortable living their lives through their phones, "*
>
> *Chris Britt, CEO Chime*

Between 2013 and 2015 a raft of challengers formed, hungry to challenge the status quo. The incumbents watched nervously as Revolut, Monzo, Chime, N26, Atom and Starling came along and chipped away at their market share.

The challenger 'banks' all had a sharp focus on web and mobile, contactless, user experience and interfaces. They were the underdogs looking to make banking easier and more transparent for millions. These challengers did a great job of being more customer-friendly, cost efficient and convenient by offering services through digital channels. They ate away at the banking value chain. Neo banks quickly secured their position in the market by offering modern, low-cost solutions, and addressing underserved segments. It was the simplified user experience, paperless sign-up process, focus on mobile-first services. Each pitched their core USPs differently: Revolut was built around spending and sending money abroad, Chime, Monzo and N26 were debit cards, Nubank and Brex were credit cards, Starling and Tide: business banking. They were anchoring the business in a key banking niche and unbundling the incumbents.

According to the Fincog Challenger Bank Index there are now approximately 250+ independent neobanks with over 350 million customers[8]. We at LTC see two sets of neobanks:

1) The early 'Challengers', aggressively looking to scale globally and diversify to sustain growth

2) The 'nicheneos', a new wave of neo banks carving out their own niche, growing fast and more profitably, focused on selected niche audiences.

8 2018 Fincog overview Next Generation of Banks

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Challengers Race to Scale

The likes of Revolut, N26, Chime and Monzo have taken on large investment rounds to accelerate their scaling to as many markets as possible quickly. The race is to go global. Here's a look at a selection of the challengers and their futures:

Revolut

Launched in 2015, Revolut's initial USP was offering foreign currency. By 2017, it reached the milestone of 1 million users. The startup expanded beyond that simple feature set and now wants to become a financial hub, a super app for all things related to money. It wants more people to use Revolut as their daily account and as an overall one-stop shop for finance. Revolut now has over 12 million customers and supports usage in 35 countries. In July 2020 it extended its $500 million Series D round (led by TCV)[9] with $80 m new funding (from TSG Consumer Partners) at a valuation remaining at $5.5B.

Revolut has been busy launching in many new markets and innovative services, accelerating scaling through partnerships with Visa (bring its bank-like product offerings to five new regions, reaching 24 new markets), and Apple Pay[10] (in 12 countries). In 2019, Revolut introduced a cryptocurrency platform, allowing all customers to buy, hold and exchange cryptocurrencies in-app, in seconds[11].

In May 2020 Revolut launched its debit card in the US with Mastercard[12]. In January 2020 it entered the UK savings market[13].

Revolut plans to offer insurance packages, buy cryptocurrencies, shares, credit products across Europe, commission-free stock trading and savings products as well as innovations such as a subscription management tool, letting you see all your active subscriptions, cancel them from Revolut and receive alerts when a free trial ends.

Revolut is also after Small and Medium Enterprises (SMEs), earlier this autumn it passed the milestone of 500k business customers after the platform, Revolut Business launched three years ago [14].

As Forrester senior analyst Aurélie L'Hostis, comments: "Revolut has done tremendously well, acquiring users across geographies at lighting speed, and launching a subscription model that made the startup the highest revenue earner among its UK peers. But, we're now entering the reality-check phase for challenger banks. Investors will be looking for reassurance that Revolut can achieve sustainable organic growth."

Chime

Chime was founded in San Francisco in 2013, initially taking four years to get to one million customers then seeing torrid growth. The bank reached the 4 million mark in February 2019. As of February 2020, Chime had 8 million account holders. It provides fee-free financial services through a mobile app. Chime has no physical branches and does not charge monthly or overdraft fees. It's grown by focusing on a segment of Americans, the 'disaffected customers of traditional banks' who earn between $30,000 and $75,000 a year. Unlike regular banks, which make money on loans

9 Finextra
10 Finextra
11 Finextra
12 Finextra
13 Finextra
14 AltFi

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and penalties like overdraft fees, Chime mostly makes money when customers swipe their debit or credit cards (fees charged to merchants). The company CEO, Chris Britt has been keen to position Chime as different to the challenger banks:

> "We're more like a consumer software company than a bank," Britt said.

"Nobody wants to go into bank branches, nobody wants to touch cash anymore, and people are increasingly comfortable living their lives through their phones," Britt said. "We have a website, but people don't really use it. We're a mobile app, and that's how we deliver our services."

"The notion that you have to do it all physically and rent retail space to do that, I don't think that's the way a 30-year-old would see the world," CEO Chris Britt says. "Maybe for my mom."

Chime cleverly focused on ensuring customers' pay checks were paid into their account (increasing the likelihood of it becoming the customer's primary account) by offering access to pay cheques two days early (since copied by Revolut in the US).

In September 2020 Chime announced a $485 million Series F at a valuation of $14.5B[15], a large jump from raising $700 million in December 2019 at a valuation of $5.8bB, again up from a $1.5 B valuation in 2019.

The future looks like an IPO. According to the CEO, Chris Britt Chime will become "IPO-ready" within the next 12 months, although it isn't locked into going public in that time frame.

"I probably get calls from two SPACS a week to see if we're interested in getting into the markets quickly," he said. "The reality is we have a number of initiatives we want to complete over the next 12 months to put us in a position to be market-ready." Said Chime.

Nubank

Nubank, founded in 2013, has become the largest fintech in Latin America. Its headquarters are located in São Paulo, Brazil. Nubank has 26 million users spread across Brazil, Argentina and Mexico. Nubank is based on four pillars: technology, design, user experience and data science. According to co-founder David Vélez: "Nubank was born with the purpose of fighting the bureaucracy and complexity of the financial system, reinventing what banking means for Brazilians,"

"We are a Latin American company that wants to free the banking industry for Latin Americans. There are 250 million unbanked in Latin America, and we have a long-term vision," [16] says Vélez.

Nubank offers credit cards, personal loans and savings accounts by smartphone without the need for physical documents or branch visits, at more competitive rates than traditional banks and with zero fees. The company has so far raised $820 million in seven funding rounds, including from Chinese tech giant Tencent[17].

15 CNBC
16 Financial Times
17 Financial Times

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Monzo

Founded in the UK in 2015 as an app-based challenger bank. As of November 2020, it had 4.8 million customers. The company to date has raised a significant chunk of its funding from a series of crowdfunding rounds (for example £12 million and £20 million rounds in record time).

Monzo has attracted the younger users (72% of all Monzo's customers are under 34 years old). However, whilst fluorescent orange and hot–stamped foil holographic cards have attracted customers to sign up, Monzo has seen average deposits in their accounts reach £359. According to its annual results in February 2020, Monzo's deposits grew £930.7 million to nearly £1.4B in the previous 12 months. In the same period, its gross lending grew from £19.2m to £143.9m – volumes that were nowhere near sufficient to cover the company's costs.

In June 2020, the company closed a £60 million funding round at a valuation of $1.25B. Investors included Y Combinator, General Catalyst, Accel, Stripe and Passion Capital[18]. The round was a 40% drop in valuation vs £2B it received following a £113 million Series F raise in June 2019. In December 2020, Monzo announced a new $80 million round from investors Novator, Kaiser, TED Global and Goodwater[19]. Losses at Monza in 2020 doubled to £113.8 million. The bank is looking to find news ways to make money for example producing two new paid-for retail accounts. Monzo Premium costs £180 a year and comes with travel and phone insurance, £600 of fee-free withdrawals abroad each month and a steel card. Monzo is targeting the US for expansion, launching its application for a US banking licence in April 2020. It announced in Dec 2020 that it has tripled its revenue and added some 2.3 million new customers during the COVID-19 outbreak.

N26

The German-based mobile challenger bank was founded in 2013, built on the premise of the account opening process being completely paperless, via a smartphone. Within the app, customers can lock and unlock their card with one tap. N26 has been taking its business across 17 European countries, including Spain, Italy, Greece, Ireland and Slovakia.

Less than two years after entering the UK, the bank pulled out of the market, citing Brexit for its decision. It closed more than 200,000 customer accounts and stop offering new accounts to UK residents. N26 gave 200,000 customers less than two months to move their money, with all UK accounts closed by April 2020.
By February 2020, N26 had acquired 5 million users around the world across 25 markets. This includes 250,000 users in the US since launching there in July 2019. It is currently planning on entering Brazil next year. It has more than 1,500 employees across its main offices in Berlin, New York, Barcelona, Vienna and São Paulo.

In May 2020, it extended its Series D round with existing investors, raising an additional $100 million at the same valuation ($3.5bn). The round became a total of $570m, providing it a war chest for the economic downturn. Investors include Peter Thiel, Li Ka-shing and Tencent.

18 Financial Times
19 Tech Crunch

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The company has been vocal in positioning itself as a bank not just for millennials, in a statement from the Bank on its website:

> "Our customer base doubled in 2020 because our bank is built for the times we live in, not for a specific generation"

"This past year has also seen renewed attention from a broader range of customers, from all stages of life. The number of customers between 50–54 years old has increased 66%, and makes up one of the top three fastest growing age groups that opened an account at N26—next to the continued 75% growth in the 20–24 age group.

The 18–19 age group had the biggest jump in membership, with a staggering rise of 252%. These young people are choosing the bank that will fit their needs right at the beginning of adulthood, and will hopefully become satisfied long term customers" [20].

N26 has also been vocal in outlining its plan to be the central financial hub for its customers, with a 'partnership-first mindset' for its tech stack. It uses TransferWise for cross-border money transfers, and Raisin for saving and interest rates across Europe. N26 uses Mambu for its core banking system and Vaamo (acquired by Moneyfarm in 2018) integrated into its app for customers to invest their money and manage a portfolio.

20 N26

Starling Bank

Starling Bank was founded in 2014, again as a mobile-only bank, targeting "millions of users who live their lives on their phones". Starling however offered a personal current account, a business account and a marketplace- providing in-app access to a range of third-party financial services providers (insurers, pensions, investment platforms and mortgage brokers). In 2019, it unveiled its new product – a dual currency card with allows personal and business customers to spend in pounds and euros through one debit card.

In 2016, Starling received £48 million of investment from Harald McPike, an American quantitative trader as well as gaining its banking licence. In 2017 it announced Ireland as its first international location. By the end of 2019, it had reached 1m accounts, of which 80,000 were companies. In February 2019, Starling became one of the three recipients of the funds of Pool A Capability and Innovation Fund, set up by the RBS Banking Competition Remedies. It received £100 million. In June 2019, the bank partnered with PelicanPay and newly launched paytech Tribe, to provide more businesses with the latest payment services.

By autumn 2019, the bank had raised £263 million in funding, with the latest round of £30m announced in October.

Starling Bank has been rapidly lending out cash over the past 12 months, and has become a prolific distributor of the UK government's 100 per cent taxpayer-guaranteed Bounce Back Loans (designed to shield micro-businesses from the impact of the pandemic). By September 2020, Starling had a loan book of roughly £1.3B, which compares to total deposits of £3.7B and 1.7 million customers.

Tide

Tide is a business banking platform on a mission to save small businesses time (and money) on their banking and admin. Tide headquarters are in London with

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two other offices in Bulgaria and India. Tide is a UK financial technology company providing mobile-first banking services for small and medium-sized enterprises. It enables businesses to set up a current account and get instant access to various financial services. Tide doesn't hold a banking licence, meaning it can't lend out customer deposits and instead must fund all its loans from its own balance sheet. Tide is in discussion for a funding round worth "hundreds of millions of pounds" which is needed for the lender to continue distributing government-backed Bounce Back Loans.

Tide was founded in 2015 and since then has been designing a service from the ground up that takes the stress and paperwork out of business admin.

Kuda Bank

According to Olga Shikhantsova, fintech expert at Target Global "Nigeria is the biggest single economy in Africa and the 7th largest country in the world by overall population (over 200m people). About 60% of adults remain unbanked, though 39% of them use smartphones and over 50% of them have access to the internet, which potentially opens access to various digital financial services. Taken into account the market opportunity, we made a decision to invest in Kuda, Nigerian neobank, leading the $10m Seed round -the biggest seed round ever to be raised in Africa. The company has already reached almost 300k customers transacting over US$700m transactions per month, which are impressive results for the company launched just 1 year ago". More on Target's investment thesis here.

WeBank

We end with WeBank who's growth has been quite staggering.

WeBank is a Shenzhen-based fintech company that is China's first privately operated bank and internet bank. It was established in December 2014 by Tencent in collaboration with Baiye Yuan and Liye Group. It was founded with the mission of providing 'inclusive finance,' targeting unbanked and underbanked individuals and SMEs, while capitalizing on its technology advantages. It was the first private bank nationally in China and the first Chinese digital bank rated by Moody's and S&P. It took the company only five years to achieve a staggering CNY 110B ($16.5B) valuation.

WeBank has over 200 million customers and is the leader in assets, loans, net profits, return on equity and other major categories in the Chinese digital banking space. It has just over 2,000 employees, with more than half of them in the tech and R&D space. In 2019, it applied for more patents than any other bank, recording 632 in total, surpassing global banking giants such as Bank of China, Bank of America, JPMorgan Chase, and Goldman Sachs. The patents mostly relate to AI, blockchain, cloud computing and big data (ABCD). WeBank has one of the most popular microcredit in China, making solid progress on its track towards achieving the goal of scaled inclusive finance. Targeting those in the population with below-average income and with poor or non-existent credit records, WeBank

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is designed with the simplest operation patterns – it has minimal buttons, making it very friendly to users. Another product, WeiYeDai (small-business loan), debuted in 2017, intended to boost entrepreneurship in China. Among clients, 66% had never borrowed money; this provided job opportunities to more than 2 million people[21].

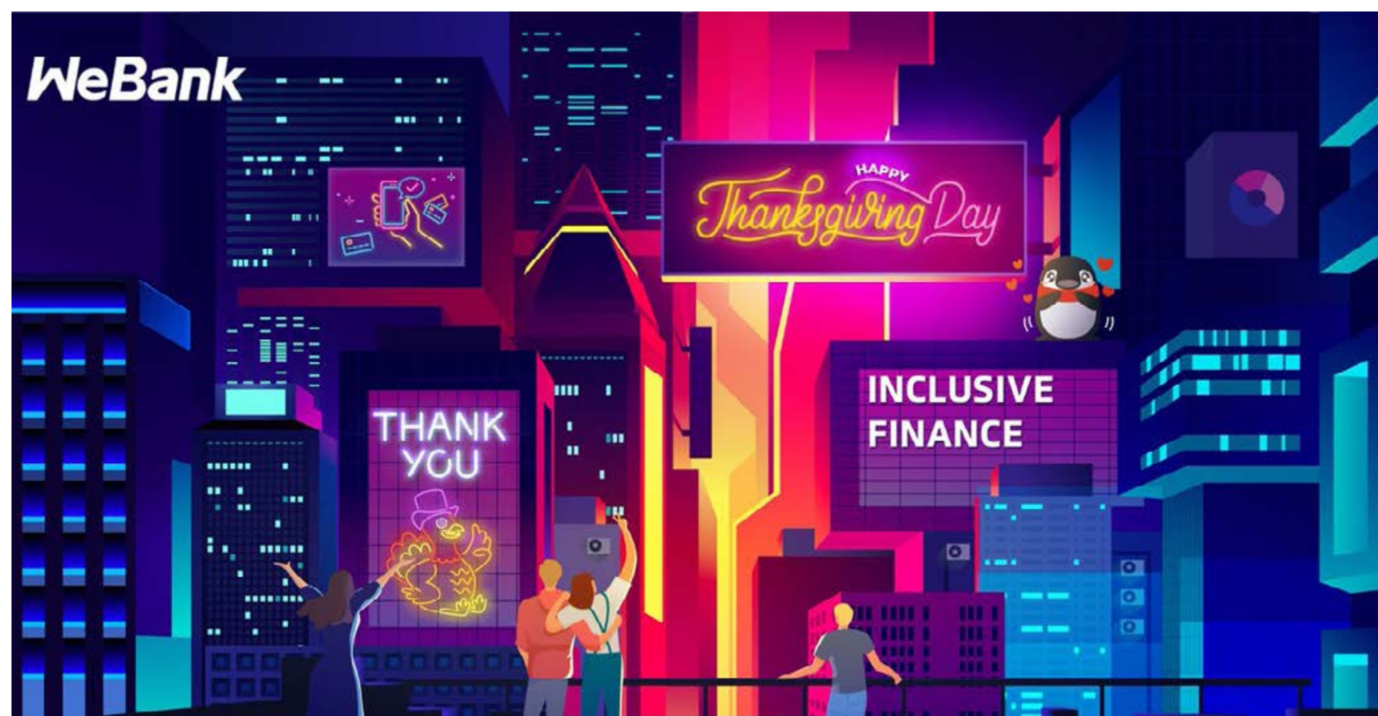
The bank has leveraged its WeChat ecosystem and Tencent video membership. In risk management, WeBank has introduced more than 30 kinds of data sources, including business and individual credit records, and Tencent-owned databases. In 2018, the company launched the 'WeBank Fintech' platform to promote its open banking ecosystem.

The strategy seeks to centre on banks themselves and to then expand to business partnerships, and finally to establish a technology ecosystem. The first step will be opening the platform. By sharing data models and algorithms, non-financial companies can provide financial services to the public.

The second step is opening innovation, which means WeBank can open its technical capacities to help more business partners, reduce its cooperation threshold, and therefore construct a shared business infrastructure. The last step will be the open collaboration that further promotes partnerships to build business alliances and ecosystems.

CIO Henry Ma has been open about WeBank's plans: "We work with a lot of internet platforms. Essentially, we embed our financial products into our partner platforms. And we also work with our partner platforms and leverage the data and the user base that they have, and do a lot of pre-underwriting on the users. When we work with a particular platform, the user will get pre-underwritten and receive an invitation from us. Once the user accepts the invitation, we have already gotten some idea of what kind of a credit worthiness this user deserves.

We run a customer service very much based on artificial intelligence. We are handling more than 1 million inquires on a regular day. These inquiries are being handled by our chatbots for more than 98% of the total incoming customer inquiries[22]".



21 Equal Ocean
22 The Financial Brand

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The Rise of the 'Nicheneos':

Whilst the challenger banks aggressively scale, a new wave of neo banks following the challengers is growing fast and, potentially more profitably, by focusing on selected niches and unaddressed target customers.

The 'nicheneos' focusing on more than just age (e.g. millennials) as demographics of customers. For example Oxbury Bank, announced its fundraising in October 2020 to be Britain's first bank for farmers in almost 100 years. The company is raising £20 million for launch [23].

Nicheneos are being hyper-specific about who they are targeting.

From targeting those with poor credit scores

Vive was founded in 2017 but 'kept very quiet' according to CEO Nick Anthony. Vive are focusing on those with poor credit scores to help revive their finances. It has secured a restricted banking licence from the Bank of England in 2020. Vive will offer personal loans, a fixed rate savings account and an open banking-based money manager app. Two investors have funded the challenger so far: Turkish businessman Kasim Garipoglu and British financier Robert William Hanson.

To targeting the mass affluent market

At the other end of the spectrum there is the 'Monzo for Millionaires': The UK Challenger Bank Monument. Monument describes its target audience as "busy professionals, doctors, lawyers, accountants, entrepreneurs and investors". It claims this set of consumers makes up 3.5 million – (5.25%) – of the UK's total population. Of the £3.5 trillion in wealth Monument claims is getting overlooked, it believes at least £200 billion of this is sitting there in liquid savings. In July 2020, it raised £10 million in seed funding which provides working capital, it said, for the next 15 months. Since then Monument has raised a further £10 million in a Series A funding round.

"Increasingly, private banking is focused on the ultra-high net worth and lags when it comes to embracing modern technology," says Bhandari. "Premier banking really only exists in name only."

Targeting aspiring affluents: Pennyworth

Two former Barclays executives have co-founded a UK challenger bank, Pennyworth. It will target the country's "aspiring affluent" young professionals and middle managers, who are busy "climbing the corporate ladder". The start-up is in the pre-application stages of becoming an authorised UK bank. In the lead up to its beta testing in early 2021, Pennyworth wants to recruit 1,000 users who will gain advanced access to the app.

23 Financial Times

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Targeting silver surfers/ GEN Z: Longevity Bank

The challenger banks connected with the mobile-first consumers: Gen-Z. Longevity Bank is focusing on financial products to meet the needs of the Silver Surfers- the Baby Boomers, the 60+ demographic. Longevity Bank are targeting what they see as a 15 trillion dollar market opportunity- financial products for a limited age category. Longevity Bank is aiming to be the first bank to on-board Agetech, Healthtech, Data Science and AI to meet needs of people of all ages by developing new financial products designed for clients who are planning to live extra-long lives and want to remain high functioning and financially stable throughout.

Focusing on wellbeing: Maslife

Founded by Kash Amini in 2019, MasLife is built on the principle that your health and your wealth are intrinsically linked. The app is aimed at helping you to make more informed and positive lifestyle, wellbeing and financial choices – in other words, helping you to adopt a mindful approach to finance. With a full suite of functions, from payments and budgeting tools to transfers and a live currency exchange, MasLife is designed to help users easily and consciously manage their money. You can set up an account in less than a minute, gaining access to providing a multi-currency account, local and international transfers, a zero- fee currency exchange and more. MasLife is looking to become your financial and wellbeing app in one place.

The 'fintech for good': Picnic Bank

Picnic Bank, a UK startup, describes itself as 'fintech for good'. It planned to launch its small and medium-sized enterprise (SME) lending platform and payment cards in September 2020, with a rollout of its fully licensed banking service set for 2021.

In June 2020, the fintech raised £5.5 million, intending to direct £3.5 million towards its licence and bank building operations, while lending the remaining £2 million to SMEs straight away. Once built, the bank will offer three account tiers focused on eco-friendly living, overdraft help and debt rebuilding. After it sets up shop in the UK, Picnic Bank has plans to move into the Netherlands and the Nordics, before the launching in Brazil, India and Mexico.

Black and Latino focused: Greenwood

According to the National Bankers Association, there are only 23 minority-owned banks in the US – that's just 0.45% of 5,116 commercial banks and savings institutions. In 2017, 17% of Black Americans didn't have a bank account hence a challenger banking service has launched a waiting list focused on Black and Latino communities. Greenwood, part owned by US rapper Killer Mike, launched in October 2020. The other co-founder is Atlanta's former mayor Andrew Young. Greenwood raised more than $3 million in seed funding back in June. Its name comes from the former district in Tulsa, Oklahoma, also known as "Black Wall Street"[24].

A similar approach is being taken by UK challenger Atmen. It was founded because there were no Black British-led high street or digital banks. In fact, to date there are no established, Black-owned, UK-founded banks.

"Looking back at history, loans have become more accessible, but with accessibility comes paying over the odds in interest and falling into the high-risk categories," says Atmen co-founder Marvyn Smith.

24 Sifted

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Taking a different approach to Greenwood, Atmen will set up a peer-to-peer (P2P) offering before moving into business loans.

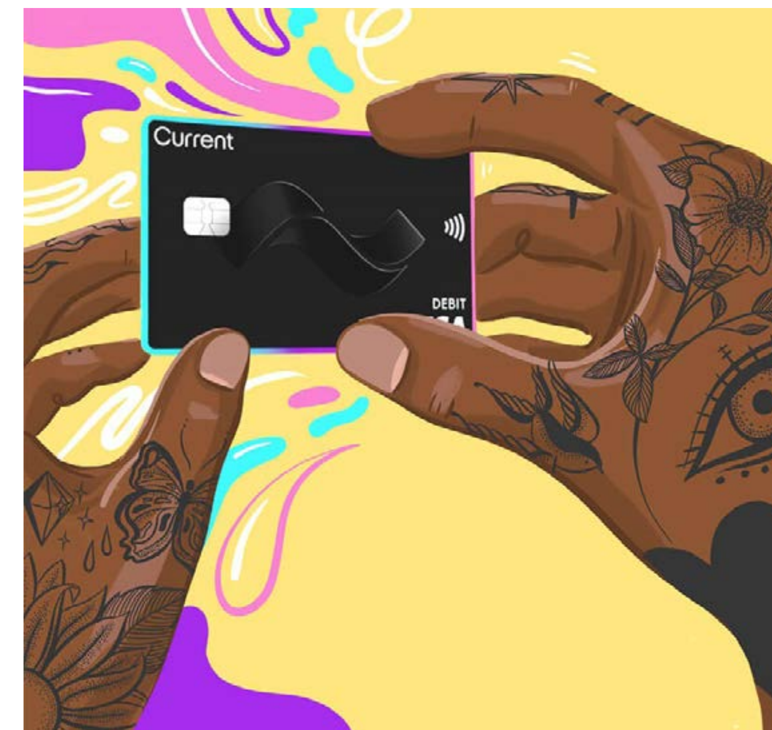
Question Marks

We could go on – with the likes of Atom Bank in the UK or Current in the US. At the end of November 2020, Tiger Global led a $131 million Series C round for Current, which has a valuation of $750 million. This demonstrates that investment firms are still keen to back the challenger banks. The bank offers services such as direct deposits, cash back and free overdraft options to over 2 million customers.

The question remains whether the challengers and neobanks are really having a meaningful impact on the mainstream consumer market. Are consumers still sticking with traditional banks and then adding neobanks as their second account? It appears the initial expectation was to first drive customer acquisition and build scale, then build loyalty with partnerships and look to monetise with other services such as mortgages, loans and credit cards. This would make sense as young customers start to see increased earnings, decided to buy houses and invest more of their disposable income. But the threat of negative interest rates are a worry to the likes of Monzo and Starling, which currently offer free bank accounts but might later have to charge millions of customers to keep their accounts. That would surely test their customer loyalty. Pandemic lockdowns around the world have also curtailed travelling and spending, both of which are key revenue streams for challenger banks.

3.0 The new wave

We have seen that the 1.0 incumbent banks felt pressure when the 2.0 challenger banks and neobanks started by providing specific banking services to unbundle the offerings of incumbents. The strategy is to 'land and expand'. Once challengers reach a certain scale of customers or users, they must then offer a broader range of adjacent services to satisfy additional customer needs and move into or increase profitability.



N26's hub strategy is to be the central conduit for plugging in other services. Revolut continues to innovate to provide more disruptive financial services. The majority of challenger banks initially won customers by being wholly digital and providing a 'mobile-first' experience. The keys are convenience and to control the initial touchpoint. So many are on a mission to scale as quickly as possible. That means driving customer acquisition is their primary motivation – even if that's at the expense making a profit. The idea is that, once they start to rebundling services again, their ecosystem can provide the full suite of finance-related services to monetise loyal customers.

However, the genie is out of the bottle. Consumer-facing fintechs have been the main beneficiaries of cost-effective and flexible, behind-the-scenes technology for their banking infrastructure. They focused on simplicity and the user experience. However, with such technologies now more readily available and simple to plug into, other competitors – such as big tech companies – can do the same for their customers.

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Emerging Model: Embedded Finance

Banking is being democratised through software. All companies can now be empowered with more effective financial capabilities. More and more slices of the banking stack – from customer authentication to cyber security – can now be done via software, automation and cloud-native tools, at faster speeds and for fractional costs. Companies can add modular software and third-party applications to also become a fintech. If you are an agile, API-led company, integrating new tech is easier than for incumbents that are operating on legacy systems or for businesses that need to build a platform from the ground up.

So we are seeing the emergence of banking-as-a-service. Fintechs can stitch together different software providers and choose best-in-class services, from core banking to detection fraud.

At the same time, the incumbents are now beginning to outsource parts of their infrastructure. London-based startup Thought Machine has won big bank clients like Standard Chartered, Lloyds and SEB by offering them a cost-effective, secure, cloud-based "core system-as-a-service". Atom Bank also use Thought Machine – this demonstrates that incumbents and challengers are now sourcing similar fintech solutions.

Enter the big tech brands (and everyone else?)

Providers are enabling an era of 'embedded fintech' that lets companies bring new financial capabilities to their offerings to increase customer value and efficiencies. It is an approach the big-tech brands have been quick to adopt.

Apple has launched its own native credit card in partnership with Goldman Sachs. Amazon offers loans to distributors by working with Bank of America. Google has announced plans to enter current accounts in the US, in partnership with banks and credit unions. Uber has announced a mobile wallet and debit card for its drivers, so that earnings can be paid faster and employees get easier access to overdrafts. Rather than building the banking technology by itself, Uber has partnered with Green Dot Bank to secure faster development and 'best-in-class' infrastructure.

Angela Strange, general partner at Andreessen Horowitz, stated in a recent article that, in the not-too-distant future,

> "nearly every company will derive a significant portion of its revenue from financial services, even those that have nothing to do with financial services"[25].

This raises questions: If every tech company can become a bank, what's the point of the banks? Will they be crushed by the likes of Amazon and Facebook moving into financial services? We could see Amazon creating a financial marketplace for products like loans and mortgages that offers a 'whole-of-the-market experience'. Amazon has over 1 million in its workforce – this could be low-hanging fruit. It has already been offering small business loans since 2011 and in 2017 launched a credit card with JP Morgan Chase.

25 Andreessen Horowitz

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So far, the big-tech companies have entered this space via partnerships. Google said its US partners, which reportedly include Citigroup, would start to offer accounts sometime in 2020. Google announced updates to its Google Pay platform that signal an increasing focus on providing consumer financial services. It has said that it's working with 11 partner banks to offer services like checking accounts.

"We believe our partners' regulatory and financial know-how is a great complement to our experience in building helpful tools and technology for our users," Google said in a statement[26].

And both Google and Apple – which has teamed up with Goldman Sachs' new consumer arm, Marcus, on a credit card as part of its Apple Pay and Wallet service – want to make Androids and iPhones essential.

Note the likes of Facebook and Google also entered the online advertising and media buying industry under partnerships with media agencies before cutting out the middleman and dominating the online advertising space.

The Fintech 'plumbers'

The financial infrastructure innovators, the companies that are powering many banking-as-a-service platforms, are working with the incumbents that can now incorporate APIs. Gone are the days when banks look to one full-stack solution for everything. The more progressive banks are partnering with innovative startups that are liberating them from cumbersome legacy systems and infrastructures. Or, as in the case of Societe Generale, they're acquiring them – in 2019, it bought the three-year-old company Treezor, which powers over 30 fintechs.

Spanish bank BBVA famously said it "will be a software company in the future" [27]. It has become innovation-centric and has built a scalable, modular platform that operates in real time to provide the customer's services they demand. Goldman Sachs and JP Morgan have already begun building out specialised "banking-as-a-service" (BaaS) platforms. The established 'plumbers' or enablers such as PayPal, Square, Stripe and Shopify continue to go from strength to strength, investing heavily in startups to ensure they aren't disrupted.

Visa showed its hand in 2020 with its proposed acquisition of Plaid, another API provider that powers development of financial service applications – and that also has access to important financial data from over 11,000 US banks. The proposed price was $5.3 billion. However, in November 2020, the US Justice Department sued to block the acquisition, citing competition concerns.

The overarching narrative above is nicely represented by SoFi. The San Francisco fintech started out in 2011 providing student loans – in other words, it had a niche unbundling focus at the start. Fast-forward to 2020, and SoFi has expanded into mortgages, personal loans, stock trading services, crypto trading, ETFs and checking accounts. It is rebundling. SoFi is now positioned as an 'online personal finance company'. The company's ambition is to become a highly diversified financial services business and to provide the primary relationship for consumers with financial needs. In 2020, it acquired Salt Lake City payments firm Galileo for $1.2 billion in stock and cash. Galileo helps many fintechs – for example, Robinhood, TransferWise and Chime – with payments and bank accounts infrastructure. Since 2011, SoFi has raised $2.3 billion in venture capital from the likes of Softbank.

SoFi's intention to become a mainstream financial brand was signalled by its decision to spend a reported $400 million over 20 years for the naming rights to the spread across a twenty-year partnership with the new California Los Angeles arena stadium for home of two Los Angeles NFL teams: the Rams and Chargers. Incidentally, $400 million incidentally was the revenue of SoFi's total revenue in 2019. The decision was a clever

26 BBC
27 BBVA

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because the stadium hosts double the games as other NFL team stadiums. The stadium will also be used for the Superbowl LVI in 2022, the College Football National Championship Game in 2023 and the LA Olympics opening and closing ceremonies 2028.. SoFi's sponsorship follows in the footsteps of other major bank brands in the US: the likes of JP Morgan, Citigroup, Barclays, Bank of America and Capital One that have all over the years bought naming rights to major sports arenas.

> "Every sports arena is named after a bank these days" [28] .

Also not wanting to miss the chance to create a digital financial platform is Marcus by Goldman Sachs. Named after Marcus Goldman, one of the firm's founders, the platform began in 2016, providing consumer loans of up to $30,000 for periods of two to six years. In September 2017, Goldman Sachs unveiled its plans to move into the UK retail banking market with Marcus, starting with savings and deposits. Loans might be added at a later stage. It will be a greenfield site, although Goldman Sachs does not exclude the possibility of buying an established book of deposits, if the opportunity comes its way.

The next question is whether Asia's financial 'super-apps' might set their sights on European and North American markets in the future and whether we see the fintechs try to expand across Asia, including China?

Ant Group would not be worth as much, or as scalable, had it stuck to disrupting China's payments market. It has done what every fintech provider would love to do: become a digital enabler of all financial services. Ant Group offers services across payments, wealth management, lending, credit scoring and insurance. As a result, a very large IPO is now in the cards, albeit with significant challenges and bottlenecks to overcome with Hong Kong regulators to go public.

Unlike many emerging digital giants, Ant Group has been profitable from the start[29]. It began life as Alipay, a third-party online payment tool created by Alibaba in 2004. By 2006, over 300,000 merchants – in everything from travel to gaming – had adopted Alipay. By 2010, it had connections with over 200 banks in China and started providing payment services for online retailers outside of the Alibaba Group[30]. Alipay has been able to move into other financial services due to its access to funds and customer data.

An ecosystem was also built around Ant Group. Credit Sesame was created to leverage Ant's access to personal data – it provides credit score profiles for borrowers and offers financial advice. Ant Group launched MYbank to use big data nd AI to lend to small and medium-sized firms that were underserved by larger banks. Cross selling is key. It is estimated that 80% of Ant Group's customers use three or more services, and 40% use all five of its offerings. By taking a platform approach, Ant Group has reduced direct competition with traditional financial institutions.

Its ambition to be a true super-app beyond financial services was signalled by the Ant Group's acquisition of online food delivery group Ele.me in 2018. As a company spokesperson put it, "The idea is that people are living their lives through this platform."

Ant Group has grown to become a marketplace that matches hundreds of millions of customers with financial products offered by both its own companies and those of other traditional players.

28 The Comeback
29 The Business Times
30 Research Gate

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Ant Group appears to have strong potential to grow outside of China. It has formed strategic partnerships with mobile payments providers in India, Thailand and Mexico. These added another US$90 billion to the US$17 trillion in processed transactions in China in 2019.

To offer expanded financial services, Ant Group has also developed a portfolio of tech capabilities, including cloud and blockchain platforms. It has been selling these tech services to financial companies, emphasising that the group is primarily about tech, not finance. It coins itself a "techfin" rather than a "fintech". The company has rebranded itself from Ant Financial to Ant Technologies. Its services contributed 50% of the group's revenues in 2019. By comparison, payments brought in 36%. This is another reason that investors are excited about the future of the group.

Ant Group would not be worth as much – nor would it be as scalable – had it stuck to disrupting China's payments market. It is only by having become a digital enabler of all financial services that such a large IPO is on the cards.

Wealth Management

Wealth Management has traditionally been one of the most attractive sectors within financial services. This is due to the relatively low capital requirements compared to other retail banking businesses, as well as to the retained customers who become profitable retail customers.

According to Deloitte, "mass affluent customers can typically represent 80% or more of the net income generated by retail banks and they often regard their relationship with a provider of WM services as their most important financial relationship[31]."

Without doubt, 2020 has been a challenging investment environment, characterised by increased levels of uncertainty and rising costs of risk to investors. This makes it harder for advisors to generate superior investment performance for their clients. Many believe that this is the time in which wealth managers have the chance to prove their differentiation and value with astute advice and portfolio management. Others, however, think the wealth management industry has become commoditised.

According to a recent fintech report from UBS: "We do not expect fintech innovation to significantly disrupt the wealth management business, particularly with regard to the offerings to ultra-high net worth individuals (UHNWIs). This is because UHNWIs generally have sophisticated needs and therefore prefer personal interaction with relationship managers."

Certainly, for the ultra-wealthy, they often have a family office or a bespoke team built around them, rather than looking to technology for automated advice. One company with specific focus on clients linked to Emerging Markets that seeks to make London based U/HNW wealth advisors' lives more fulfilling to disrupt the bigger players through hybrid client interaction is Welrex.com. The firm is empowering self-employed advisors through a 'platform as service' solution that provides full regulatory and compliance, legal and commercial, IT and operations support facilitating access to a range of suppliers and offers features like the ability to independently choose and manage a wealth management solutions provider with no conflicts of interest and the click of a button. The platform provides and end-to-end user experience suited for constantly changing 'new normal' based on genuinely open architecture, online account opening, secure omnichannel communications, latest portfolio management tools, advanced portfolio analytics and consolidated reporting. Aspiring to eventually become a wealth management marketplace of choice, WELREX allows advisors with key U/HNWI relationships to receive all the support they would get in a large institution and beyond, allowing them to focus on the relationships and advisory side of things.

31 Deloitte

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Meanwhile, in the mass-market wealth management segment, disruption is noticeable:

Digital wealth managers and robo-advising

"With a minimum of $500, commission-free trades and low advisory fees (0.25%), they have essentially unveiled investing for the average person[32]." Leap.Ai

Robo-advisors use algorithmic applications that manage and optimise your savings and investments. Robo-advisors have become a go-to option for entry-level investors because of their low fees, low-cost thresholds and ease of use.

The fifth-largest wealth manager in the UK is a robo-advisor: Nutmeg. It has a 36% share of the digital wealth management market, despite recent increases in competition[33]. Nutmeg was founded in 2011 by Nick Hungerford and William Todd. At the start of January 2020, the company had 80,000 customers and managed £2 billion in assets. By June 2020, it had jumped to 95,000 customers and £2.3 billion in assets under management – a 30% year-on-year jump. After eight years, Nutmeg has yet to make a profit, with losses increasing year on year. For example, it reported a loss of £18.4 million in 2018 and a loss of £21.2 million in 2019[34]. However, Nutmeg will argue that it is playing the long game and investing heavily in technology. It has produced a line of digital firsts for the industry – for example, the first wealth manager to offer customers the ability to top up investments via Google Pay and Apple Pay, as well as the first to offer Open Banking payments. Nutmeg partnered with TrueLayer for payment initiation, allowing bank transfers from one account to another, rather than by card payments – this reduces the user process to just a couple of taps.

Companies in North America are among those currently leading the charge in robo-advising.

32 Leap.Ai
33 Financial Adviser
34 Companies House
35 Statista
36 Crunchbase

In 2017, there were 42.7 million clients whose assets were being managed by robo-advisors. This number has increased to 224.5 million. Statista data shows that the number of investors using robo-advisor financial planning services is likely to jump to 436.3 million by 2024[35].

As the wealth management space realised that robo-advisors were a threat, many big firms – such as Charles Schwab and Vanguard, with trillions of dollars in assets under management – rolled out their own robo offerings.

Wealthfront Inc

Wealthfront is an automated investment service firm – one of the earliest in the space – based in Palo Alto, California, and founded by Andy Rachleff and Dan Carroll in 2008. As of May 2020, Wealthfront had more than $13.5 billion in assets under management. The company has received over $200 million in venture capital across six rounds, including a $75 million round led by Tiger Global in 2018[36].

Since then, it has added additional banking services such as high-interest checking accounts and other products such as its 'Self-Driving Money' service. The new service, called Autopilot, automates a client's savings plan. When a customer deposit a paycheck, Wealthfront will automatically pay bills and then figure out which accounts to route money to, based on what the customer wants.

According to co-founder Carroll, "The system we're

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building has the potential to be one of the biggest wealth creation engines of our generation, automatically optimising your money in the background while saving you time and stress."

Wealthfront targets "millennials who save". It has been pushing further into banking with a cash account where users have access to a debit card, and can receive paychecks two days early as direct deposits.

Betterment

Betterment is an American financial advisory company that provides robo-advising and cash management services. Founded in 2010, the company is based in New York City and has $22 billion in assets under management (as of March 2020) and over 500,000 customers. A $70 million funding round was led by Kinnevik, a Swedish investment company. Other investors in that is round included Menlo Ventures, a California-based venture capital firm, and Francisco Partners, a California-based private equity firm.

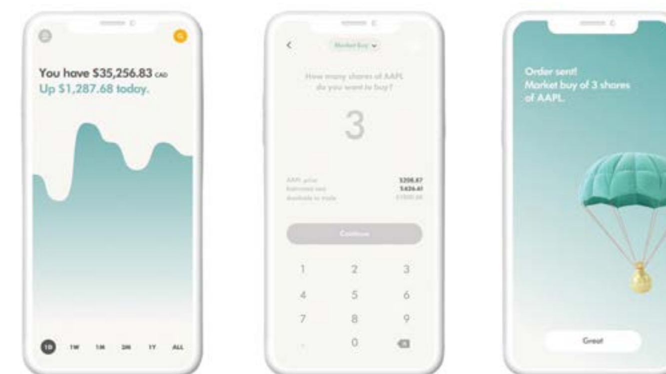
Wealthsimple

A recent addition to the unicorn club is Toronto-based startup Wealthsimple, founded in 2014. It recently announced an $87 million funding round led by PE investor TCV. The platform operates in Canada, the UK and the US [37]. According to Wealthsimple CEO Michael Katchen, the company is looking to "ultimately replace banks" in becoming the "primary financial partner" for clients.

The company manages approximately $6.4 billion in assets and has more than 1.5 million users. It has expanded its services to savings accounts and also offers cryptocurrency-trading features. One key service, tax-filing software, enabled one million Canadians to file their taxes in 2019 via the company's acquisition of tax preparation app SimpleTax. Next on the product roadmap are "responsible credit" products such as mortgages, as well as insurance offerings. Wealthsimple is also pursuing trading services, in line with the core messaging on its website:

"We're building the world's most human financial company. We want to democratise wealth by giving the financial tools of the rich to everyone. But removing every single barrier that stands between human beings and their financial freedom is going to require some work."

37 Investment News



Ellevest

This digital investments platform was founded in 2014 after CEO and Wall Street veteran Sallie Krawcheck realised that "financial products weren't serving women". Ellevest uses gender-specific salary curves and longevity data to provide personalised recommendations and forecasts for its customers' goals. Its algorithm takes into account the gender income gap between men and women, as well as women's greater longevity in general.

The company has taken a mission-driven approach, overtly talking about the fact it was

> *"built by women, for women, the financial industry wasn't".*

Ellevest's overt mission: "Get more money in the hands of women." In March 2019, the company announced a $33 million funding round with high-profile investors such as Melinda Gates, PayPal, Elaine Wynn, Eric Schmidt and Valerie Jarrett. Returning investors also

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included Aspect Ventures, Khosla Ventures, Morningstar, Astia Angels, CreditEase Fintech Investment Fund and Ulu Ventures. The strategy was to start with a clear purpose and audience with simple products, then roll out several new products, including Ellevest Private Wealth Management, designed for high-net-worth clients. This product has hit the milestone of $100 million in assets under management. Ellevest also offers a unique premium service, which gives women access to a team of executive coaches and Certified Financial Planner™ pros to help take their career and money goals to the next level. Ellevest serves women and allies across all their stages of life through a combination of technology and personal service. Having a clear target audience and demographic of customers has helped Ellevest attract partners for cashback and reward offerings.

Stash

Stash provides a mobile-first route to managing money through investment. It has grown to five million customers in just five years. It provides a bank account with investment advice to help manage budgets and save to meet long-term goals. For a monthly subscription, it unites banking, investing and advice in one app – and includes budgeting and saving for retirement. In April 2020, Stash received a Series F funding round led by publicly-listed online lending platform LendingTree, with accounts advised by T. Rowe Price Associates Inc., Breyer Capital, Goodwater Capital, Greenspring Associates, Union Square Ventures and others participating. The $85 million funding means the company is valued at over $800 million.

According to Techcrunch, "Stash is part of a growing list of fintech startups that are disrupting the financial industry, and specifically big banks and brokerages, by making some of the more arcane aspects of engaging in financial services like investing and borrowing money more transparent and accessible to the consumer masses, using smartphones, automated services and easily explained instructions[38]."

Raisin

Raisin is the leading pan-European wealth management platform, connecting retail customers with financial institutions looking to expand or diversify. Originally founded in 2013, Raisin set out to open up the savings deposit market in Europe by taking advantage of EU-wide banking regulation. Raisin is a pan-European "savings marketplace" – think of it like your smartphone's Apple or Google store, but for savings. Raisin.co.uk is the UK marketplace for Raisin, which serves over 220,000 savings customers across Europe. The Raisin marketplace lets you shop around and compare different rates Europe-wide. However, the key difference from a comparison site is that, via its own bank partner, Raisin offers consumers a single interface that includes account opening and anti-money laundering checks, making it easy to switch and continually ensure you get a competitive interest rate. The company has so far garnered €23.5 billion in deposits from over 265,000 customers across 28 European countries and 94 partner banks[39].

In 2019, Raisin raised $114 million in Series D funding. Existing investors Index Ventures, PayPal, Ribbit Capital and Thrive Capital all participated in the round, bringing the total the company has raised to $200 million. The new infusion of capital was for strategic acquisitions and further internationalisation. Later the same year, it was also confirmed that Goldman Sachs had invested $25 million into the company to help it build a presence in the US and go after that country's $12.7 trillion savings market.

38 Tech Crunch
39 Retail Banker International

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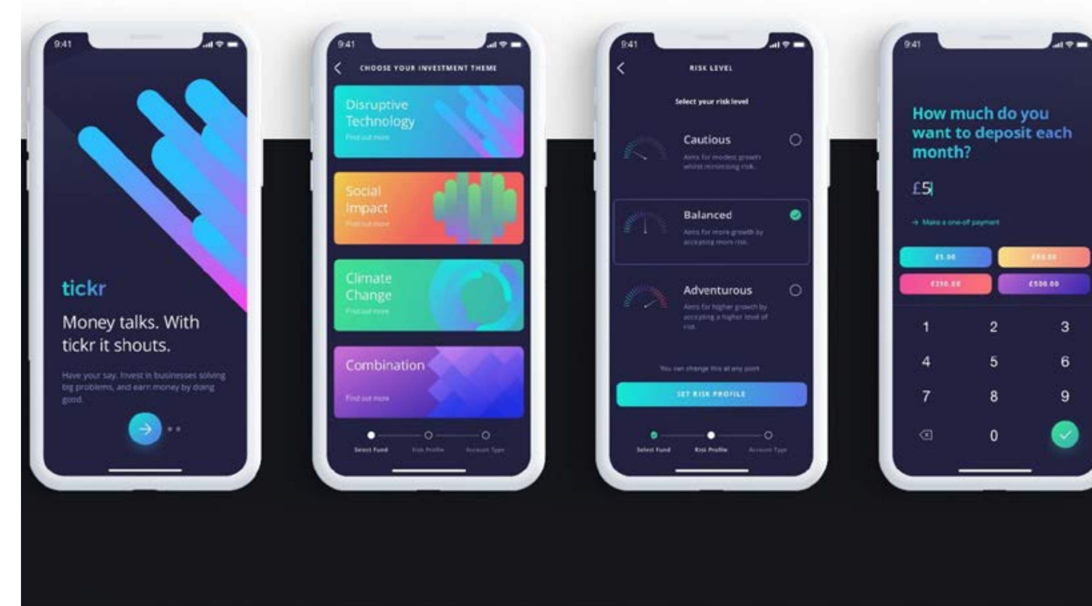
Raisin CEO and co-founder Dr. Tamaz Georgadze says: "We want to break through unnecessary barriers to profitable saving and share the benefits of open markets – with both consumers and banks. Our central aim is to give savers and financial institutions the 'Schengen experience' for banking. Our first five years demonstrate that, indeed, Raisin stands for the saving and investing of the future."

Their pitch is that the US savings market remains underserved and outdated, with the average American saving less than 9% of their income[40]. Raisin hopes to cut out the administrative challenges of "shopping around", offering an array of products tailored to the US savings culture. It believes it can instil trust and attract large user deposits — and, by extension, large commissions.

Georgadze, CEO of Raisin says: "Many fintechs are concentrating on a niche proposition, which is at times easier to build but harder to scale later. From the beginning, we have approached the broad European market of savings and investments that is more than €15 trillion in size. This way, we were able to win a large number of customers in a short period and grow fast[41]."

Just as banking saw the plumbers working with both incumbents and challengers, many believe – as Simon Bussy, consultant at Altus, told FTAdviser that most robo-advice firms will need to evolve into technology providers for incumbent players if they want to survive. We are now seeing the move to targeting specific niche investor demographics and investment themes, like the neoniches in banking[42]. Enter the likes of UK robo-advisor Tickr, founded in 2019 – it provides access to investments that build social responsibility into investing with four themed portfolios: climate change, disruptive technology, equality and combination. Syfe has launched in Singapore as a digital wealth manager offering professionally managed portfolios to everyone. These have previously been accessible only to institutional investors or high-net-worth individuals.

We expect a raft of new challengers to enter the space and for incumbents to increase their investment advice with minimal human intervention. The big fintechs are also moving into the space. Ant Financial has created Ant Fortune, a wealth management platform that enables users to choose between its Yu'e Bao product as well other funds offered by rivals. It now boasts over 4,000 wealth management products from more than 100 asset management companies[43].



40 Raisin
41 Netguru
42 Financial Adviser
43 Shine

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Retail Investing & Secondary Markets

> *"At IG we'd had consistent growth over the 46 years of the company's existence and then in 2020 there was the pandemic... we saw a 50% increase in customers."*
>
> *Simon Myers, CTO, IG Group*

A retail investor, also known as an individual investor, is a non-professional investor who buys and sells securities, mutual funds or exchange traded funds (ETFs) through traditional or online brokerage firms or other types of investment accounts. The market in the US alone is huge, with over 50 million households as retail investors of some kind [44].

The year 2020 was a remarkable one for trading and brokerage companies. The pandemic led to volatile stock markets, with investment platforms seeing a huge volume of new registered users.

We begin with IG, established in 1974 as the world's first spread betting firm.

IG Group

With offices in 17 countries and over 1,000 staff, IG is a global leader in online trading. The platform provides clients access to over 10,000 financial markets—including indices, shares, forex, commodities and binaries. IG has been leading innovation in the financial industry for 40 years—its mission is to be the default choice for active traders globally. What are IG's differentiators? It says it's an award-winning multi-platform trading company, the world's No.1 provider of CFDs and a global leader in forex. In late 2014, IG launched a new execution-only stockbroking service in the UK and Ireland. IG is a FTSE 250 company with a market capitalisation of £2.2 billion.

"At IG we'd had consistent growth over the 46 years of the company's existence, and then in 2020 there was the pandemic—we saw a 50% increase in customers," says CTO Simon Myers. "When Pfizer announced on Monday 9th November 2020 its vaccine progress, we saw 10 times usual trading that day."

IG's performance was driven by the continued increased levels of trading activity from existing clients, as well as by a growing number of new customers. The company registered 201,500 total active clients, up 50% year-on-year; in Q1 2019, the number was 134,100. 134,800 clients traded OTC leveraged products in Q1 2020, compared to 92,300 in Q1 2019.

"Our focus remains on providing a first-class experience to sophisticated clients looking to trade across a range of global financial markets. We continue to invest in our people, platform and technology, to deliver the functionality and capabilities demanded by our loyal, high-quality client base, while maintaining our differentiated business model." June Felix, CEO IG Group

eToro

Investment platform eToro reached 13 million registered users in 2020, an increase of 427% in new users globally in the first four months of the year compared with the same period in 2019. As of Q1 2020, stocks account for nearly a third of all trades carried out on eToro, many driven by the zero-commission offered by eToro. It provides a membership club to gamify usage. And users can access different tiers of membership and unlock further benefits, such as access to webinars and prestigious member events. eToro has outlined expansion plans to roll out commission-free investing for stocks in the Asia-Pacific region and the US in the near future.

Robinhood

Robinhood was founded in 2013 by two Stanford graduates with a mission to "democratise finance for all". The company offers a mobile app and a website that offer people the ability to invest in stocks, ETFs and options through Robinhood Financial, and crypto trading through Robinhood Crypto. In 2020, Robinhood saw a leap in new users signing up to the platform. As reported in Forbes[45]:

"millions of novices, armed with $1,200 stimulus checks and nothing much to do, have begun trading... Robinhood applied the formula Facebook made famous: Their app was free, easy to use and addictive."

Robinhood added more than 3 million customers since January (a 30% increase) and expects revenue to hit $700 million in 2020—an increase of +250% compared to 2019. It now has 13 million registered customer accounts. It is now closing in on Charles Schwab for registered customer accounts—it took that company 49 years to reach 14 million. Robinhood has twice as many accounts as rival E-Trade, which was purchased in 2020 by Morgan Stanley for $13 billion. Schwab also bought TD Ameritrade for $22 billion.

But it's not all rosy at Robinhood. Customers were completely shut off from their accounts for two days early in the pandemic as the firm's systems crumpled under the strain. Robinhood wasn't the only one caught out by the spike in volumes. Hargreaves Lansdown and AJ Bell left investors fuming on 9 November 2020 when system outages and technical glitches caused millions of customers to miss out on one of the busiest trading days on record amid clarity over the US election and positive COVID-19 vaccine news. Fidelity UK also experienced issues that day, while across the pond Charles Schwab, Vanguard and TD Ameritrade also suffered slowdowns.

Robinhood raised an additional $460 million in a series G funding round, lifting its valuation to $11.7 billion, the company said in September. Robinhood's investors include Sequoia, DST Global, Ribbit Capital, Andreessen Horowitz, Index Ventures and D1 Capital Partners. The company is aiming to go public as soon as the first quarter of 2021, according to sources who asked not to be identified because the information is private [46]. Some think Robinhood could garner a $20 billion valuation if it went public or were acquired.

Tioex

Swedish startup Tioex is creating a secondary market for private tech companies, allowing shareholders to sell some or all of their shares to 'ordinary people'. Tioex works by buying secondary shares in tech companies and then distributing the shares to members

44 Investopedia

45 Forbes
46 Bloomberg

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who have shown an interest, allowing each of them to invest as little as a few thousand euros. In Sweden, the secondary market for shares in tech startups is a new field for fintech companies to enter.

In other parts of the world, the US-based Forge Global, which recently merged with its main competitor Sharespost, is leading the race.

The UK-based Crowdcube, which has merged with Seedrs, earlier this year launched a platform to create a market for existing shareholders—including employees with stock options—to sell its shares to interested buyers on the secondary market. The likes of Carta (described next) and the NASDAQ stock exchange have similar plans [47].

Carta

Carta, which largely helps private company investors, founders, and employees manage their equity and ownership— is setting up a private share trading platform. With a $1.7 billion valuation, it raised $300 million in a Series E round at a $1.7 billion valuation, led by Andreessen Horowitz. Firm co-founder Marc Andreessen is also joining the board[48].

Carta offers robust scenario modelling tools that pull data directly from your cap table, assisting with planning for financing rounds and exits. It is the leading provider of 409A valuations and has over 15,000 companies on its platform.

WHY CARTA?

Equity. Simplified.

Carta helps companies and investors manage their cap tables, valuations, investments, and equity plans.

With Carta, you can model future financings or exits in-product. Its easy-to-use tools include sensitivity and breakpoint analysis, payout and dilution modelling, and pro forma cap tables. Carta points out that its competitor, Captable.io, has “extremely limited modelling capabilities, which makes it harder to plan your next round”. Captable.io is a cloud-based cap table management tool that replaces Excel and email for cap table creation and sharing.

Is the future also trading indicies on human beings?

Aqua Digital Rising is on track to launch in January 2021. It will offer the opportunity to trade on the success of individuals, from sports people and celebrities through to social media influencers and politicians.

Aqua Digital Rising is a big data and AI analytics fintech that creates investable indices on human beings. Aqua Digital Rising has developed the next generation of alternative assets. It uses AI, mathematics, analytics and algorithms to interrogate big data to create tradable indices, putting a price on human success. For the first time in history, you will be able to invest in sports stars, business leaders, celebrities and influencers, buying a derivative trading product based on the person. Over 500 data points are evaluated and monitored through a real-time pricing engine, allowing everyone to buy, hold or sell options on the individuals they know and follow.

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03 Payments, Transfers & Lending

“The shift is that modern consumers and businesses now expect convenience, speed, security and personalisation when it comes to payments and transactions.”

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Payments and Billing

As societies, we started with the likes of livestock, leather and gold to transact and trade value. Then we evolved to cash and cheques. The payments evolution is once again upon us, with cash and cheques decreasing in usage. (The Royal Mint, for example, announced it was to stop producing £2 and 2p coins for at least 10 years in 2020. [49]) The demand for cash is falling, cashless transactions are rising. The payment process is becoming more invisible and fluid through electronic and digital payments.

The payments landscape is vast, with approximately 17 different categories of companies identified [50]:

1. *Card brands*
2. *Acquirers*
3. *Issuers*
4. *Payment processors*
5. *ISOs*
6. *Aggregators*
7. *Mobile wallets*
8. *Mobile wallet platforms*
9. *Mobile payment providers*
10. *Online payment gateways*
11. *eCommerce payment providers*
12. *Recurring billing payment providers*
13. *Tablet POS providers*
14. *Terminal hardware providers*
15. *POS terminal companies*
16. *POS software*
17. *Closed loop payment networks*

According to a report by McKinsey in 2020, "The COVID-19 crisis is having a significant and widespread effect on global payments across sectors. The most striking and potentially lasting impact is an accelerating pace of change in the industry."

According to the report, global revenues grew at nearly 5 percent in 2019, bringing total global payments revenue to just under $2 trillion. Payments revenues in the first six months of 2020, however, contracted by an estimated 22 percent—roughly $220 billion—relative to the first six months of 2019. McKinsey expects full-year 2020 global payments revenue to be roughly $140 billion lower than in 2019, a decline of about 7 percent from 2019. This would be a change equal in size to prior years' annual gains, which leaves revenues 11 to 13 percent below pre-pandemic revenue projections for 2020.

Alternatively, a BCG forecast suggests that payments revenues globally could soar to $1.8 trillion by 2024, from $1.5 trillion in 2019. Revenues would be lifted by the continued transition away from cash, sustained strong growth in e-commerce and electronic transactions, and greater innovation [51].

Revenues through the full fall of 2020 remain to be seen. However, what is clear is the immediate consequence was a steep reduction in discretionary spending and a severe demand-side shock, along with reductions in cash usage. Many of the following changes were already taking place. But analysts like BCG believe shifts in payments have happened four or five times faster than expected in 2020. As such, there is a scramble for market share across all areas of payments.

We see five main trends across the payments landscape:

1) E-commerce is growing in select categories, chipping away further at brick-and-mortar retail, with smartphones increasing in the share of digital shopping.

2) Cards traditionally have dominated in-store retail; however, mobile wallets are seeing a rapid uptick in usage.

3) Digital peer-to-peer (P2P) apps are integrating more and more into day-to-day lives of users and across generations.

4) Such digital shifts are also trickling down to industries that have traditionally been dominated by cash and paper—for example, remittances, B2B payments and supply chain digitisation.

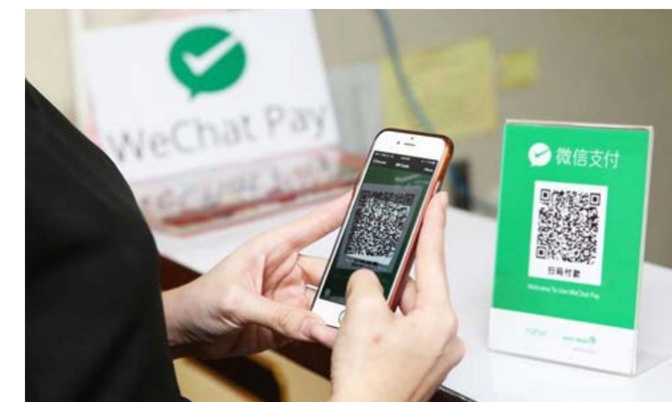
5) A handful of giants in the space are looking to diversity, with consolidation creating 'mega-giants'.

The shift is that modern consumers (and businesses) now expect convenience, speed, security and personalisation when it comes to payments. The omnichannel requirements from consumers and businesses has created opportunities for value-added fintechs to emerge, leading to a friction-free payment ecosystem. Following are some of the companies we see taking advantage of this in the future:

Surges in mobile payments

As their adoption numbers grow around the world, smartphones are seeing increasing usage for digital shopping and mobile wallets. And China is in a league of its own: its two largest providers of mobile and online payment solutions are Alipay (Ant Financial), with over 1.3 billion users, and WeChat Pay (Tencent), with over 1.15 billion users.

Alipay faces fierce competition to maintain its 55% share of Chinese mobile payments, with rival Tencent's WeChat Pay and QQ Wallet closing in on a combined share of 40%[52]. Other big names in mobile payments include Apple Pay, PayPal, Samsung Pay, Amazon Pay, PayTM and M-Pesa.



E-Commerce

Retail e-commerce is projected to jump from $4.2 trillion in 2020 to $6.5 trillion in 2023[53], and PayPal will be there to capitalise on that growth. With its web and mobile app payment platforms, PayPal is an early disruptor-turned-dominant player in digital payments. In the second quarter of 2020, there were 346 million active PayPal accounts worldwide, representing 21 percent year-on-year growth [54]. PayPal has built itself into a financial juggernaut that is worth more than every U.S. bank except JPMorgan Chase & Co.

PayPal has made a number of key acquisitions in recent years to fuel immediate and future growth. For the most part, these deals have expanded either PayPal's customer base or its service offerings across the customer's shopping journey; they include Honey Science Corp for shopping and rewards and iZettle, which expand PayPal's in-store presence with small businesses and enables it to compete with Square, as well as to grow its presence in the European and Latin American markets. PayPal also acquired Hyperwallet Systems,

49 BBC News
50 Payfirma
51 BCG
52 Fintech News
53 eMarketer
54 Statista

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which allows companies to send and receive payments in any currency, and Venmo, which supports peer-to-peer payments and contactless payments (and has very fast adoption rates among younger users). Venmo represents the next big growth avenue for PayPal.

"The goal is to move beyond being an app for payment between friends," said Daniel Esch, Venmo Senior Vice President, and to transform Venmo into a "really ubiquitous digital wallet that lets consumers spend and pay" at businesses as well. Venmo competes with Square's Cash App, among other mobile wallets. PayPal Chief Executive Dan Schulman said,

> "I would not underestimate how zealous the customers of Venmo are about living their financial life on the platform."

With 43% of its users from the US, PayPal still has room to grow. Millennials account for 85% of PayPal users, while Gen X, Y and Boomers make up just 15%[55]. Over 400,000 websites in the US alone use PayPal. One of the key benefits: merchants know that checkout conversion for PayPal transactions is 70% higher than for other types of transactions—in other words, shoppers are more likely to complete their purchase during the same browsing session on websites that use PayPal than they are on website with other options[56] . PayPal collects vast amounts of data, which it shares with over 600 other companies, including Facebook, Apple and Google[57] .

Increase in mobile retail transactions: Rezolve

Bricks-and-mortar retail is losing the battle with e-commerce. High streets and stores must find new and innovative ways to entice people and improve the retail experience. Rezolve is a retail engagement technology that turns any mobile device into an instant transaction tool. It enables consumers to discover and purchase goods and services, provide personal details in response to advertising, pay a bill or make a charitable donation—all with a single scan and a tap. Rezolve Inside™ is provided as a Software Development Kit (SDK), which is added into mobile apps. This allows your consumers to instantly engage with the world around them through actions like one-tap purchases. In effect, Rezolve technology turns passive media space into active selling space. The key for Rezolve is the integration into handsets like those from Huawei and Samsung. Rezolve agreed a deal with Samsung last year which gave Rezolve access to more than 300 million devices in the US.

Digital shift in business-to-business payments: Rapyd

Rapyd is taking on PayPal in B2B payments, which according to CEO Arik Shtilman is a $160 trillion market. Rapyd positions itself as a global fintech-as-a-service platform that helps businesses collect and disburse money. Based in the UK,-based Rapyd is focusing on e-commerce businesses, gig economy platforms, and any digital business service that wants a "highly localised" customer experience. The company helps with things like 'cart abandonment' by accepting local payment types without sacrificing global scale.

Rapyd started as a mobile payments company but soon realised there was a much bigger problem that needed to be solved. In 2016, it decided to build an e-wallet product that would allow customers to withdraw cash from an ATM in any country without a bank account. Rapyd began with just a single country, but found that required integration with seven different systems and local services, as well as managing licensing and regulatory requirements. It was something that simply wasn't scalable globally. This proved to be a true barrier to innovation, as commerce is becoming increasingly cross-border while also becoming more local. Rapyd decided to help businesses create great local commerce experiences anywhere. It builds technology that removes the backend complexities of cross-border commerce while also providing local

55 Ewebmarketing
56 Transaction
57 The Telegraph

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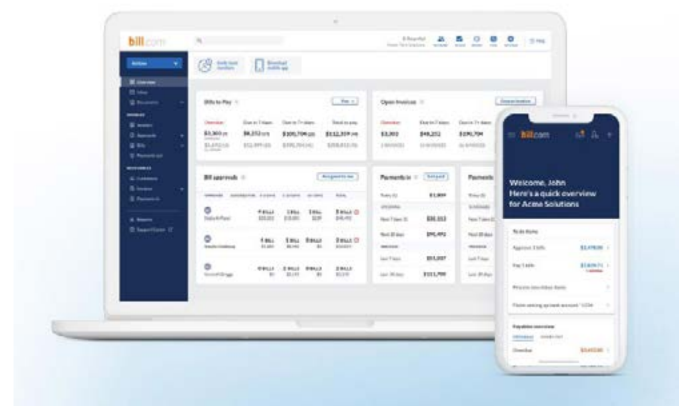
payment expertise. The company has built the Rapyd Global Payments Network, the world's largest local payment network, which lets businesses access over 900 locally preferred payment methods, including bank transfers, ewallets and cash in more than 170 countries. Rapyd expects to hit $100 million in revenue in 2020 and was valued at $1.2 billion in December 2019; that's when it last raised capital from investors like Target Global, Stripe and Tiger Global. Since then, it has launched the first cross-border fraud prevention solution for all payment methods[58] . (Global card fraud alone is projected to exceed $37 billion by 2025.) The Rapyd platform has 2 billion users and is backed up by partnerships it has with key players in India's payment ecosystem—including Paytm Payments Bank, PhonePe, PayU, Citibank, DBS Bank, HDFC Bank, BharatPay and Unimoni. This has helped it to roll out a comprehensive payment service that allows international merchants to grow their business in India and helps Indian merchants expand sales internationally and easily access over 900 locally-preferred payment methods around the world.

Increase in business payments automation: Modulr

Modulr is the Payments-as-a-Service API platform for digital businesses. Modulr's API and platform deliver automated pay-outs, simplified pay-ins and the ability to launch new payment services across employment services, payroll, accounting platforms, lending, fintech, travel and more. To date, the company has moved over £40 billion for customers that include Sage, Revolut and Paxport. It says its platform has an uptime of 99.999%. Founded in 2015 and authorised as an E-money institution in 2016, Modulr received an electronic money institution (EMI) licence from the Central Bank of Ireland for its Dublin-based entity in October 2020. The company secured £18.9 million in growth funding from lead investor Highland Europe and participation from existing investors, including Frog Capital. Modulr says the injection of capital will be used to further develop the payments platform and expand into new products and markets, including European expansion. It brings the total raised by the company to just over £43 million, not including a £10 million grant from the Capability and Innovation Fund.

> *"We see ourselves as the plumbing layer behind the scenes-delivering the payments infrastructure that enables other businesses to automate payment flows and reconciliation, embed payment flows within their platform and build entirely new payment services for their customers,"* [59]
>
> *Myles Stephenson*, Modulr CEO



BILL.COM

Bill.com is a cloud-based home for business payments networks—enables users to pay bills, send invoices and get paid. The Bill.com Business Payments Network brings small- to medium-sized businesses simple online bill payment, custom invoicing services, unlimited document storage, workflow collaboration and the ability to access their back office from anywhere via any mobile device. Bill.com's services sync to users' accounting software and online bank accounts to help better control company finance. Its main customers include over 4,000 accounting firms, which make up 54% of its total customers and revenue[60]. The company listed on the NYSE in December 2019, and shares surged 61% in the first day of trading. In November 2020, Bill.

58 Rapyd
59 Tech Crunch
60 Market Watch

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com announced a new offering for wealth management firms supporting HNW clients. The solution enables firms to shift to automated and secure bill payment processes.

Increase in automation in supply chain, trade finance and accounts payable: Tradeshift

Tradeshift is a global supply chain platform offering accounts payable automation, trade financing, commercial card services and other solutions for enterprises and their suppliers. The company has 900 employees across 23 countries. They manage the online B2B network and platform that enables buyers and suppliers to digitise trade transactions and collaborate across the supply chain. Tradeshift reported two years of strong quarterly revenue growth; in 2019, for example, revenues grew by over 60%.

The company benefitted from lockdowns during 2020, in which many company back-office operations stopped because businesses were unable to process paper in offices. Tradeshift saw a surge in supply-chain digitisation. With some of the largest global supply chains using its platform, Tradeshift's proprietary data is becoming a strong asset for future value. Tradeshift is now able to leverage the power of its network and platform for scale. CEO and founder Christian Lanng believes the world is moving from "cloud businesses to networked businesses[61]". The company received $250 million in funding in 2018, with a valuation of $1.1 billion. In January 2020, it announced a $240 million Series F round from investors like HSBC, Notion Capital and Kite Ventures.

Consolidation of mega-giants:

In 2019, megadeals between Fiserv and First Data, FIS and Worldpay, and Global Payments and TSYS put the industry's largest players in a league of their own in terms of scale and reach.

Worldpay grew from a UK startup into a global market leader in fintech worth over $35 billion. It then merged with FIS, which brought together the No. 1 global fintech provider with the No. 1 global merchant acquirer.

The UK-based merchant acquirer provides payment technology to merchants, businesses and financial institutions around the world, with a focus on e-commerce and omnicommerce. By 2019, the company was supporting over one million merchants worldwide and processing over 40 billon transactions annually. FIS has significant relationships with most of the Top 50 global banks and Worldpay has relationships with more than one million merchants. The merger allowed the combined company to provide end-to-end payment solutions—for example, to do both the transaction and the ledger settlement. And enabling cross-selling to each other's clients will bring efficiencies to execution. More consolidation in the industry is expected in 2021 as others regroup and look to help merchants align with the needs of today's hybrid consumer, who shops, orders and pays across in-store, mobile and e-commerce portals.

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Money Transfers and Remittance

In April, the World Bank predicted that remittance volumes during 2020 would decline by 20%—the sharpest decline in recent history. Yet one area that has seen a sharp rise in activity is person-to-person (P2P) transfers. With restrictions preventing people from being able to travel and lockdowns making it hard to pay cash into banks and transfer services, people still want to ensure their loved ones back home are safe and capitalised. This has led to a sharp uplift in adoption of digital money transfers.

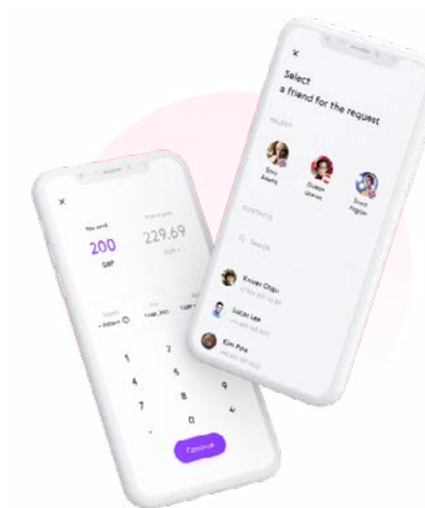
According to the World Bank, an incredible $440 billion every year is sent back to developing countries. However, there's an even more astounding statistic: $32 billion in remittances fail to reach recipients due to high transaction fees and commissions associated with the transfer of money. Slow regulators, complexity and high fees have been holding back the money transfer market for decades[62].

Paysend

Paysend was founded in 2017 by serial fintech entrepreneurs Abdul Abdulmerikov and Ronald Miller. Their vision was to

> "change the way people manage their everyday finances, as both had been "frustrated by the time and complexity of traditional bank systems".

Paysend was the first fintech to introduce international card-to-card transfers, allowing connections between 12 billion cards globally, including Mastercard, Visa, China UnionPay and local card schemes. The company has disrupted organisations like Western Union and challenged Transferwise. Paysend now allows you to securely transfer money online to over 90 countries within minutes without visiting a physical bank location. The company has now reached over 2.7 million customers on its Global Transfers platform; that's an increase of one million new users since March 2020 alone, due to cash usage plummeting and the fact that people have less access to high-street banks during lockdown restrictions. Paysend has managed to help many more people send money internationally from the safety of their homes via digital devices. Since its launch, Paysend has launched a number of products, including Paysend Global Transfers, Paysend Global Account, Paysend Link and Paysend Business.



Paysend focuses on 'payment corridors': specific flows of funds from one country to another—for example UAE to India, India to Bangladesh, etc. The biggest payment market is the US, which transfers more than $148 billion internationally every year. And the largest corridor of the world is the US to Mexico: worth $30 billion. So it's no surprise that Paysend launched in the US in September 2020 in partnership with Central Payments, the payments subsidiary of Central Bank of Kansas City. Paysend also recently signed a partnership with Alipay to expand its reach in China. In December 2020, Paysend announced its latest partnership with Samsung Pay. This will allow Samsung users to store their Paysend Mastercard credentials in their mobile wallet and make contactless payments. The partnership will optimise the checkout process for Samsung users with Paysend, with their card no longer needing to be pres-

62 Paysend

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ent. This will increase speed, convenience and safety for customers.

Paysend has worked to empower women by giving them their own independent stream of income that doesn't pass through the hands of men. While 270 million fewer women than men have bank accounts around the world today, Paysend believes access to financial services is a human right.

Paysend is hot on the heels of TransferWise, which was founded in 2010 and now has 9 million customers, 14 offices around the world and moves over $6 billion every month. TransferWise supports more than 750 currency routes across the world. TransferWise avoids international bank-transfer fees by keeping the money transfers inside the country, using domestic accounts to minimise the distance that money has to travel. The company raised $292 million through a secondary share sale and had a valuation of $3.5 billion in May 2019, making it the most valuable fintech start up in Europe[63].

"The world is moving towards a more transparent way of doing business and we want to be part of that. International money transfers represent a multi-trillion-dollar market, until now dominated by banks keeping prices artificially high and transfer times slow. TransferWise has changed all that."— Nimay Mehta, general partner at Lead Edge Capital

TransferGo, the third major player, is also accelerating its activities, with a £4 million pre-Series C investment from Silicon Valley Bank. Funds will be used to develop and expand TransferGo's real-time payments (RTP) platform for consumers, small- and medium-sized enterprises (SMEs) and enterprise clients.

Africa is certainly at an inflection point for online payments and remittance. WorldRemit reports the doubling of transfers to Zimbabwe. Azimo, the UK remittance company, saw a 200% increase in new customers in April, May and June alone. And Mukuru saw a 75% acceleration in growth in 2020 compared to 2019. Moving forward, digital payments and remittances will be fast, borderless and frictionless due to fintechs. Now trusted by millions of customers, these companies will next look to offer new products and services now that they have a regular financial services relationship with them.

Lending

We've divided lending into lending size- from smaller point-of-sale consumer financing to mortgages to lending to small medium businesses (SMBs).

Short-term consumer loans

A lending model liked by investors currently is the 'buy-now-pay later' short term consumer loan. To fintech leaders in this space are Affirm and Klarna. One has filed for IPO, the other valued (as of Sept 2020) as the fourth largest private fintech in the world[64].

Affirm

Led by PayPal co-founder Max Levchin, the fintech company offers buy-now, pay-later services for a range of consumer products. The short term lender which allows you to spread the cost of your purchases over a fixed period of 3 – 36 months. Similar to a traditional credit financing the service allows you to pay off your short term loan in multiple instalments. Just two months ago Affirm raised a $510 million private round. Affirm revealed a net loss of $112.6 million against $509.6 million in revenue for its fiscal year ended June 30, compared to a $120 million loss on revenue of $264 million a year earlier. That 93% year-over-year jump in revenue certainly creates an attractive growth curve. A startling amount of that cash, though, came from a single source: Purchases from Peloton represented about 28% of Affirm's total revenue during that last fiscal year. Other clients include Expedia and Wayfair. At the end of 2020 the firm published documents for its initial public offering.

Affirm's annual revenue nearly doubled year-over-year to some $510 million for the fiscal year ended June 30, with fitness company Peloton accounting for 28% of that revenue. Combined, Affirm's top 10 merchant partners represented around 35% of the sales in the period. The fintech company lost $112.6 million in the period, down from $120.5 million in the previous fiscal year. Khosla Ventures, Lightspeed, GIC and Founders Fund each own 5% or more of Affirm, which was valued at $2.9 billion in April 2019[65].

Klarna

Swedish fintech unicorn Klarna (founded 2005) on the other hand is best known for their 'try before you buy' model of payment which lets you pay 14 or 30 days after your order is shipped (popular with clothes shoppers that want to try on clothes before purchasing). In September 2020 investors put $650 million into the company at a valuation of $10 billion. Ant Financial bought a small stake in Klarna. The buy now, pay later firm is already embedded into AliExpress, the international shopping platform run by China's ecommerce giant Alibaba (owned by Ant Financial).

Shop now.
Pay later
with Klarna.
Klarna.

Klarna also partners with Raisin, whose customers in Germany can access Klarna's deposit products.

Klarna recently introduced a consumer financing product similar to Affirm, allowing consumers to finance larger purchases and pay in instalments of between 6 and 36 months. The company has over 200,000 retailers using the platform with access to over 90 million customers worldwide[66].

Klarna and Affirm are joined in the market by AfterPay, which has more than 8.4 million customers all over the world and two-thirds of them are millennials and Gen Z shoppers. Retailers are adopting the point of sale financing plans because they are seeing shoppers typically spending more, and spending more often as a result.

Digital Mortgage Lending

The 2008 financial crisis left an indelible mark on the mortgage industry. A new breed of tech-powered companies, keen to avoid the mistakes of their predecessors, can now provide responsible, transparent and personalised lending at scale versus the one-size-fits-all breed of lenders that led to so many problems over a decade ago.

Non-bank lenders are not as regulated as other lenders. With less limitation on capital requirements, non-bank lenders have been able to enter the market and scale quickly.

63 Forbes
64 The Guardian
65 PitchBook
66 The Guardian

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New York-based home mortgage provider Better.com for example operates an alternative lending platform that allows users to buy or refinance homes without loan commissions or lender fees. By streamlining the mortgage process, remvoing unnecessary steps and time-wasting appointments, Better.com can translate that efficiency into better rates. Better.com's technology means the mortgage process is mainly automated and a decision can be made in minutes rather than weeks.

According to Better.com:

> *"We've dismantled the old mortgage infrastructure and replaced it with innovative technology and far fewer hurdles"*

The company which was founded only in 2016 has funded more than $25bn in loans. According to Fortune: "Better.com's customer base is dominated by groups like single women, minorities and LGBT couples – all whom have lower rates of home ownership and have faced historical bias from lenders".

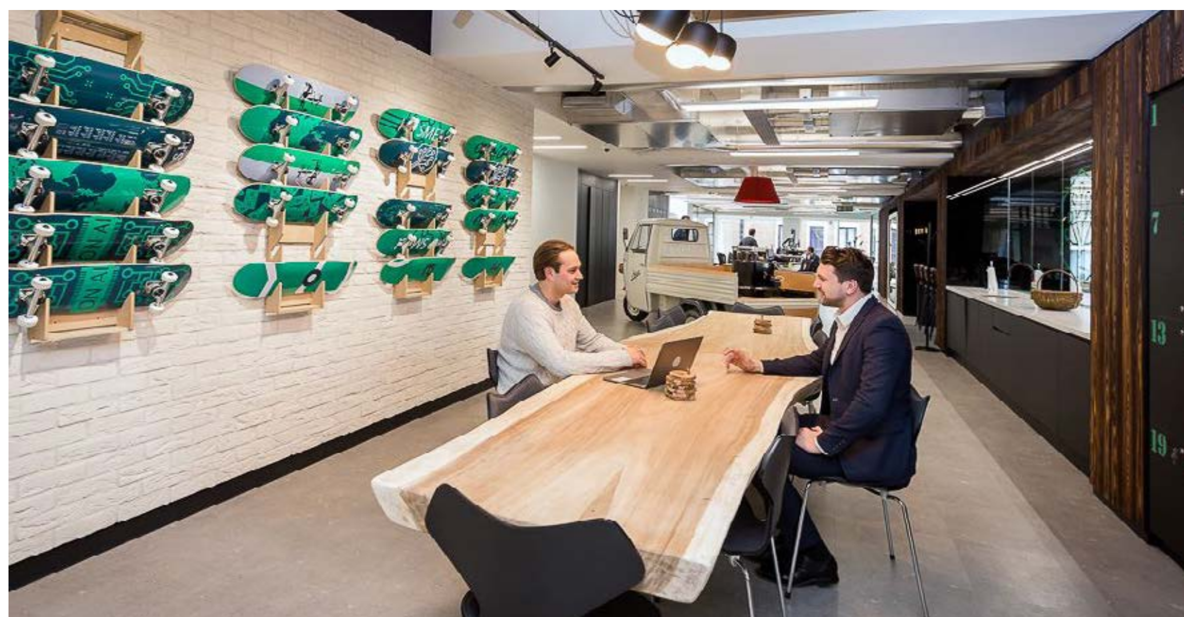
The company has $410 million in backing from Goldman Sachs, Citi, KPCB and American Express. Its most recent round (November 2020) was a $200 million Series D round at a $4 billion valuation with an expectation that it will be filing for an IPO as early as January 2021. Its valuation has surged since a $160 million round in Feb at an estimated $884.5 million.

Technology is enabling digital mortgages to thrive. Applicants can apply on a smart phone using things the camera for document capture and biometrics for authentication. Digital lenders can pull in best-in-class capabilities and deep automation across pricing, closing, and document management from a variety of niche fintechs.

Small and Medium Business (SMB) Loans

There are 5.1 million companies of less than 1,000 employees (small and medium businesses or SMBs) in the US alone[67]. According to a Google and Accenture report, driving revenue growth is the primary purchase motivator for SMBs. Growth goals include targeting new customer segments, opening new locations, or entering new markets[68]. Along with the need for capital for expansion they also require shorter term funding to deal with unforeseen cash flow issues, such as the COVID-19 pandemic. Yet the lower mid-market has often been overlooked in lending.

OakNorth Bank, a UK fintech focused on commercial lending, calls this the 'missing middle'. Despite growth businesses being the backbone of economies and communities globally, OakNorth believes they have been a banking blind spot for decades. OakNorth is addressing this gap through its Credit Intelligence software which it licenses to other banks and uses to lend via its own UK bank, OakNorth Bank.



67 Accenture
68 Accenture

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OakNorth Bank provides debt financing to entrepreneurs in growing businesses, lending £0.5 million to £50 million to profitable, growing British businesses. The bank, which gained regulatory approval in early 2015, was founded by entrepreneurs Rishi Khosla and Joel Perlman, to provide secured loans to mid-sized companies. To fund its lending, OakNorth Bank offers digital savings accounts. It has over 175,000 savings customers[69] and has lent over £4.6 billion since its launch in September 2015. The bank has approved over £1.5bn in new loans since March this year, including over £550m via the Coronavirus Business Interruption Loan Scheme (CBILS) and Coronavirus Large Business Interruption Loan Scheme (CLBILS).

From UK Challenger to Global Fintech Provider

OakNorth Bank has redefined lending to lower mid-market businesses and has been making money whilst doing so, £65.9m pre-tax profits in 2019. OakNorth Bank's core banking backbone is on Amazon Web Services. Cloud-based systems lowered start-up costs, operational costs, and time to market.

Rather than expanding by trying to obtain banking licenses in multiple markets as Monzo, Revolut, N26, etc. are doing, OakNorth's international scaling strategy lies in licensing its Credit Intelligence software to other banks.

The technology is being licensed to dozens of banks globally, including SMBC, PNC Bank, Customers Bank and Modern Bank in the US, as well as NIBC and OIMIO in the Netherlands, and of course, its own bank (OakNorth Bank) in the UK.

The company has offices in London, New York, Gurgaon, Bangalore, Singapore and Istanbul.

OakNorth's enterprise software combines a deep understanding of credit, dynamic data sets, auto-analysis capabilities, cloud-computing and state of the art machine learning, to deliver an extraordinary borrowing experience for businesses. Its credit and monitoring tool is informed by industry benchmarks, peer analysis, and scenario analysis to improve the quality, consistency and speed of commercial lending decision making. Through analysing each borrower's data in the context of its geography and sector and monitoring a borrower against its peers, the software is able to alert lenders when a loan, or borrower needs attention as well as assisting in providing granular information to regulators.

In 2019, OakNorth received $440m of investment led by Softbank Vision Fund in order to expand to the U.S. In 2020, Japanese commercial lending giant Sumitomo Mitsui Banking Corporation (SMBC) took a $30m stake in OakNorth through a secondary share purchase and signed as a client. The Japanese commercial lender manages over $2 trillion in assets and has deployed OakNorth's credit intelligence software to boost its lending in the US and Asia, with a particular focus on improving its asset review process.

The result of all of all of the above is more effective, better equipped Relationship, Risk and Transaction Managers, superior credit outcomes, improved efficiency, reduced risk, enhanced regulatory compliance and greater customer delight.

The growth of OakNorth points to a larger trend of digital lenders licensing out their lending platforms to financial partners[70].

69 OakNorth Bank
70 OakNorth Bank

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Smart Lenders Article

Written for London Technology Club by Jérôme Camblain,

Partner at Smart Lenders Asset Management

Fintech is the engine behind our decision-making processes in lending.

Where technology is changing the world, fintech has so far only helped people do finance related actions either cheaper or easier. It has optimised existing usage rather than generating new behaviour.

The first phase was digitalisation of existing services, offering better user interface (UI) and user experience (UX), followed by a wave of segmentation, with start-ups specialising in a single product offering, done better and mostly cheaper (payments, transfer, checking accounts). The third wave is disintermediation or cutting out the middleman. We are in full agreement with Bill Gates' 1997 prediction when he said:

"We need banking. We don't need banks anymore."

Online lending platforms are the symbol of this tech-led disintermediation, matching prime borrowers with investors and lenders hungry for yield.

This is where Smart Lenders Asset Management comes in. We are using technology to 1) source, 2) score and 3) digitally manage these loans acquired through online lending platforms, these new tech channels bypassing banks for loan production, of which we are one of the prime clients in Europe.

The product we manage is a fund that looks like a short-term bond fund, except the fund does not buy bonds, but a very large number of very small consumer loans, a job that could not be done manually.

This is where our fintech enters the frame. The use of technology applies to both the sourcing of the loans as explained above (API connection to lending platforms) and the scoring or selection of each loan in a few milliseconds. This algorithm-based scoring or loan selection is a process that uses a mix of a traditional statistical approach and more novel use of artificial intelligence and machine learning, for which our advanced research has been recognised by the French Ministry of Research that granted us with the status of "young innovative enterprise" in France. This comes with a tax credit linked to the amount invested in AI research.

As an asset management company, we are predominantly focused on performance, i.e. a good rate of return for the investors in our fund, coupled with a low risk approach.

Fintech is not directly visible in our activity but constitutes the engine behind the decision-making process. It is a better use of resources than deploying a visible piece of technology with no other direct benefit than ease of use or cost optimisation.

Our clients do not directly benefit from a tech feature for a new type of usage, like a Google search box, but ultimately they benefit through the use of financial technology, with two great advantages: access to an asset class historically reserved to banks and credit card companies, and at a cost and ease of access that makes it great to integrate in portfolios of Institutional Investors, Families and HNWI.

After a very visible entry into the world of finance through extensive marketing by neobanks or money transfer apps, fintech is working its way through a silent revolution of processes and data analysis allowing better financial decisions, better services with undetected changes (open banking, data treatment...). Smart Lenders Asset Management is taking part in this process shift, offering unique access to an asset class so profitable that it used to be reserved to banks and credit card companies. In this sense, fintech is making some aspects of finance available and affordable to a wider public for a better and safer investment environment.

The pioneers of this online lending business appeared in the United States and Great Britain. In the consumer loan sector, Prosper and Lending Club were born before the financial crisis of 2008. The financial crisis was an opportunity for these players to take advantage of the weakening of the banking sector (heavy losses and tightening of regulatory constraints) and the tremendous progress in technology (access and processing of data) to develop their business.

The valuations of these companies reached a peak at the end of 2014 when Lending Club carried out its IPO at a valuation of more than USD 5bn. However, investors quickly became disillusioned, as most of these companies did not have a sufficiently robust business model in terms of shareholder value creation. The production of a loan by a platform that connects a borrower with a lender by remunerating itself with a commission is a simple brokerage operation. Obviously, in the end, the market does not value a broker in the same way as a true technology company. The absence of recurring revenues from the platforms' clients (lenders and borrowers) and the low barrier to entry into this business (many followers appeared in 2013-2015) quickly led to a drop in valuations. The high sensitivity to the economic cycle of the only product offered by the platforms also reduced their ability to withstand a period of recession (disappearance of lenders and a corresponding drop in revenues).

Some US lending platforms (Lending Club, Upgrade) have therefore changed their strategic direction by trying to move up the value chain to offer their borrowing clients a range of services that are more resistant to cyclical fluctuations and are likely to create a regular revenue stream. They should gradually transform themselves into Neobanks. Others (such as Marlette) have increased their financial risk by exposing themselves (in terms of equity and debt) to the loans originated in order to obtain additional profitability on top of the commissions received. This model is more similar to that of a traditional financial company or fund.

In any event, the platforms have considerably changed the credit business by improving the quality of service to the borrowing customer (faster response, better rates), organising access to a large public of investors to this asset class hitherto reserved for banks and revolutionising underwriting techniques.

Smart Lenders Asset Management, Europe's premier algorithm based lending fund manager, strong of its nearly 5 years track-record and mostly supported by its strong positive performance in 2020, despite the COVID19 crisis, is a proof that technology applied to finance creates a new area of value creation for investors, in a long term, risk controlled environment.

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04 Digital Assets

"If confidence in accepting these instruments as a medium of exchange were to be fully adopted, cryptocurrency would have a hugely decentralising role in finance."

So far we have explored the large shift in technologies from cash and cards to smartphones and digital wallets, from challengers to neoniches and from specialists to embedded finance across more providers. The next technology shift, wanted by many, will be provided by blockchain and cryptocurrencies.

A digital asset is a digital representation of something of value, for which ownership is verified and recorded on a distributed ledger. A cryptocurrency (or crypto for short) is a digital asset designed to work as a medium of exchange wherein coin ownership records are stored in a distributed ledger existing in databases using strong cryptography to secure transaction records. The creation of additional coins can be controlled and the transfer of coin ownership is verified amongst the network of records.

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Digital Assets Article

Written for London Technology Club by Sep Alavi,
General Partner at Digital Asset Fund

At White Star Capital Digital Asset, we invest in real technologies that are hugely transformative and disruptive. Across our investments, we are looking at crypto-networks and blockchain-enabled businesses at each layer of the tech stack including protocols, infrastructure and applications.

THE EVOLUTIONARY WEB

Web 1.0 - The internet became a consumer-facing technology in the late 1980s, through the adoption of protocols such as TCP/IP, which provided a trusted basis for transmitting information digitally. In the late 1990s and early 2000s, technology was about making information ubiquitous and instantaneous. Over time, this ushered new business models and user behaviours, which transitioned us into the Web 2.0. A user-data obsessed Web, dominated by FAANGs et al. Today, we have entered a new era of the internet: the internet of value, Web 3.0, an open, trustless and permissionless Web. A new technology stack with new standards has emerged on the back of Bitcoin's birth. These standards established a trustless basis for transmitting value in addition to data and information. Web 3.0 creates an environment online where participants can interact without the need of a central, rent-seeking, intermediary or institution. Data is stored on the user-end of the server, allowing for self-sovereignty online for the first time ever. Where Web 1.0 had solved for information flow, Web 3.0 solves moving anything of value (digitally native) around the world in a fast and cost effective way. This technology has the potential to reshape existing business models through transparency, trustless interactions, and allow for true price discovery.

Blockchain and Digital Assets are all about removing friction and cost inefficiencies. The tech stack is maturing, retail adoption is ticking up, top talent is migrating across geographies, institutions are entering the space, and regulators are taking a pragmatic stance committing to innovation and capital formation in key jurisdictions.

THE FUTURE OF MONEY

Blockchain and Digital Assets are shaping the next wave of innovation in financial services and infrastructure. As a monetary policy response to COVID-19, all of the world's major central banks have cut interest rates to 25bps or lower and have introduced a variety of emergency lending facilities. In addition, the Fed, the ECB, and the Bank of England have all explicitly committed to providing unlimited support to financial markets through money printing and quantitative easing. The combined efforts are leading us towards zero and negative interest rate policies globally where savers get penalized and the chase for yield becomes imperative.

These actions have consequently accelerated the adoption of the new era of digital finance, which offers higher interest rates, lower costs, greater access and transparency than its predecessors.

DECENTRALISED FINANCE (DeFi)

A new monetary and financial system is being built on public blockchains. DeFi creates value by enabling access to a new paradigm by allowing 1) financial innovation in the form of incentives and community ownership and 2) financial inclusion (banking the unbanked).

DeFI is already one of the fastest growing verticals within the blockchain sector, having reached over $13 billion in value a few months ago. Unlike the legacy banking system, DeFi and Open Banking platforms are starting fresh, designed for the internet and digital era without carrying legacy baggage. They are built with decentralization, transparency, censorship resistance and sovereignty at the core. DeFi gives anyone with an internet connection anywhere in the world access to trading, lending and borrowing without a central intermediary.

STABLECOINS

One particular sector we have been keeping an eye on is Stablecoins - designed to mimic the value of fiat currencies and to minimize price volatility thanks to their peg and over-collateralization. As with our observation of central banks' commitment to digitize currencies, we view Stablecoins as an easier, more accessible, and programmable way of transacting and financing in US dollars. Stablecoins which fuel DeFi deposits have seen net inflows of over 100% since January, the largest surge in demand ever, with an aggregate market cap exceeding $12 billion. One can explain this surge due to the big demand for US dollars and dollar-denominated assets from all over the world creating a massive shortage. In this context, Stablecoins are rapidly becoming the best way to get dollar exposure and we anticipate this pent-up demand to accelerate in the foreseeable future.

Driven by this digitization of US dollars, we are seeing some great opportunities in blockchain-based financial services building the infrastructure and application layers to support this trend. Companies such as Multis, Dharma, Compound, Uniswap and Argent, just to name a few, which bring the best of Web 2.0 security and user experience to Web 3.0 decentralized finance applications are well poised to accelerate its adoption.

CREDIT, SAVINGS AND LOANS

Bitcoin is the oldest and largest cryptocurrency with a market cap of $320 billion at the time of writing. Bitcoin surged over 90 percent in 2019, more than three times the gains in the S&P 500 Index, and for the year to date, is up another 120 percent to $18,000. Not surprisingly, there is rapid growth in this market. We are seeing retail and institutional investors expressing increased interest in this new asset class. Many investors and holders of digital assets are willing to pledge bitcoin and Stablecoins to lenders such as Ledn and BlockFi in exchange for interest rates of 6% to 12% . Crypto prime brokers, like Genesis, Galaxy and Tagomi, have seen strong demand from institutional investors and borrowers over the last 12 months. As of the second quarter of 2020, these crypto lenders have originated over $15 billion of loans. The space is maturing at a rapid pace which is attracting new entrants in this current zero to negative interest rate environment.

The COVID-19 pandemic is a world-changing event that accelerated the digitization of the economy that would have otherwise taken years to materialize. The new alternative financial system being created on top of blockchain rails is increasingly disrupting parts of traditional finance. As highlighted above, we believe that Web 3.0 and non-sovereign money, powered by blockchain technology will see an uptick in overall demand over the next few years. Digital-first will become the new norm and over time, the increasing sophistication and composability of blockchain will extend its reach into other market segments as additive technologies due to (1) security and encryption in sectors such as communications and healthcare, and (2) the "marketization" of non-financial sectors such as gaming, rewards and collectibles.

White Star Capital is a global multi-stage technology investment platform that invests in exceptional entrepreneurs building ambitious, international businesses. Operating out of New York, London, Paris, Montreal, Toronto, Tokyo, and Hong Kong, our presence, perspective, and people enable us to partner closely with our Founders to help them scale internationally from Series A onwards.

As nicely set up by the previous article – we see three main trends looking ahead: the maturation of digital assets into mainstream finance through institutional adoption, the disintermediation of the traditional financial ecosystem and then thirdly, the shift towards applications, infrastructure and protocols. We provide companies harnessing and leading the three trends across cryptocurrencies, storage, securities and exchanges.

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Cryptocurrencies

Since the explosion of innovation that blockchain has brought, we are witnessing many creative solutions that are aiming to disrupt whole industries or industry segments. Perhaps the best-known disruption is that of the transformation of currency. However crypto's future outlook is still very much in question- proponents see limitless potential while critics see nothing but risk. If confidence in accepting these instruments as a medium of exchange were to be fully adopted, cryptocurrency would have a hugely decentralising role in finance.

According to Olga Shikhanstova of Target Global: "During the last couple of years, the cryptocurrency market has been marked by the entrance of institutional players. As a result, AUM for the institutional crypto ecosystem reached $25.1bn in Q3/2020 compared to just $5.6bn at the beginning of 2018. Many traditional institutional investors started entering the segment with recent estimations believing 30% of them are currently holding digital assets. Moreover, large corporations such as Square, MicroStrategy, Stone Ridge Holdings have started to hold Bitcoin as a treasury reserve.

With the high interest in cryptocurrencies among institutional players, the attractiveness of companies offering institutional-grade infrastructure solutions for custody and trading of cryptocurrencies is growing rapidly".

In October, a watershed moment for cryptocurrencies occurred: PayPal and Venmo announced that they will offer and accept cryptocurrency for all online payments. The announcement makes PayPal arguably the most significant company in the financial tech sector to adopt support for virtual currencies. With 346 million active accounts around the world, this is expected to create wider adoption of bitcoin and rival cryptocurrencies as viable payment methods. PayPal competitor Square launched support for bitcoin back in 2018 through its Cash app (Square also purchased $50 million worth of bitcoin earlier this month), but PayPal is going further in supporting bitcoin, Ethereum, Bitcoin Cash, and Litecoin.

The San Jose, California-based company hopes the service will encourage global use of virtual coins and prepare its network for new digital currencies that central banks and companies may develop, President and Chief Executive Dan Schulman said in an interview. "We are working with central banks and thinking of all forms of digital currencies and how PayPal can play a role," he said.

"The shift to digital forms of currencies is inevitable, bringing with it clear advantages in terms of financial inclusion and access; efficiency, speed and resilience of the payments system; and the ability for governments to disburse funds to citizens quickly," PayPal CEO Dan Schulman said in a statement.

"Our global reach, digital payments expertise, two-sided network, and rigorous security and compliance controls provide us with the opportunity, and the responsibility, to help facilitate the understanding, redemption and interoperability of these new instruments of exchange."

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Tech giant Facebook announced its plans in 2019 to launch its own cryptocurrency, Libra as the centrepiece of its blockchain and digital payments plan. However, legislators and partners criticised the plans and withdrew from the project. Facebook went back to the drawing board and has changed goals and scope. Ambitions were curtailed but the company continued to plan for a launch in 2021. Facebook in November 2020 announced a new name for the cryptocurrency: Diem. Facebook is readying to launch as early as January, reported the Financial Times[71]. Diem would be a single digital coin backed by the dollar, a significant scaling back from early plans to issue a series of Stablecoins backed by individual traditional currencies, as well as a token based on the currency-pegged Stablecoins.

The news has alarmed central banks, which are currently at least two years out from creating their own digital alternatives:

> *"What is a stake is nothing short of the future of money"*
>
> *Fabio Panetta, Member of the Executive Board of the ECB at the ECON Comittee of the European Parliament*

"As private money goes digital, sovereign money also needs to be reinvented. This requires central bank money to remain available under all circumstances - in the form of cash, of course, but also potentially as a digital euro."

We expect institutions right the way up to central banks to continue to move towards blockchain technology as the lines between traditional and crypto finance continue to blend in 2021 and beyond

"While regulation continues to evolve pragmatically and positively around the sector, enterprise and institutional giants like Fidelity, JP Morgan, Facebook, Walmart and Square are embracing blockchain technology at an accelerating pace and this is just the beginning" said Sep Alavi of White Star Capital

71 The Financial Times

Infrastructure

The active VCs in the digital assets space are all point out that their focus currently is in digital asset infrastructure. One should not forget: infrastructure build up in big institutions happens at the same time as in a startup market. We've picked three startups to showcase here around infrastructure, protocols and applications.

LEDN – Canadian- promoted as 'a better home for your digital assets'. Ledn builds financial products with a mission to help more people save in digital assets. The company provides three core products built around storage, loans and savings:

1) Borrow – a bitcoin-backed loan which allows customers to access dollars without selling their bitcoin

2) B2X – allowing clients to instantly double their bitcoin holdings through the use of a Ledn loan

3) Save – a bitcoin and USDC (United States Digital Coin) savings account that pays interest on bitcoin or USDC with no minimums

Ledn is incorporated under the Federal Laws of Canada. As such, Ledn is held to the highest standards of consumer protection and data privacy in order to be a safe haven for bitcoin storage. Ledn has two key partners BitGo as custodian and Genesis for digital asset lending.

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BitGo is the world's first Qualified Custodian purpose-built for storing digital assets and has one of the most comprehensive insurance policies in the industry. It allows Ledn's clients to purchase their own dedicated excess limits above BitGo's $100 million policy, ensuring an extra layer of protection

Genesis is the world's largest digital asset lender. Genesis helps clients increase capital efficiency and access alternative liquidity for hedging, speculation, institutional market-making and working capital needs. Genesis launched the first U.S. OTC bitcoin trading desk in 2013. Since then, they've grown to facilitate billions in monthly digital currency trades, loans and transactions. Genesis is becoming a leader in access to deep pools of global liquidity throughout the digital asset ecosystem.

Protocols: Proof of trust

As smart contracts and blockchain technology reshape the way customers and businesses interact, establishing trust in data will be essential. Proof of Trust is a blockchain firm that resolves disputes on blockchain networks. The company owns a worldwide patent that it says will help it to this end, offering clear dispute resolution with smart contracts. Proof of Trust provides a digital protocol powered by distributed consensus. The platform has developed an innovative anti-collusion algorithm that takes the risk out of smart contracts so they can gain institutional adoption. This disruptive technology validates the authenticity of data with a bank of trusted and verified experts before it is put on the blockchain and used to execute smart contracts. Proof of Trust is currently developing the technology in partnership with computing giant IBM and has already presented its protocol to several government leaders. Proof of Trust has stated that it wants to list on the LSE to raise the company's profile and stimulate funding to compete on a global scale – something which it says tech companies rely on heavily.

"We at The Proof of Trust are excited at the prospect of a full listing on the main market of the company's shares and we look forward to providing investors with the opportunity to share in this groundbreaking project", said Proof of Trust chief executive Dean Armstrong.

The firm added that once the listing process is completed, it will be the only blockchain assurance company on the main market.

Also partnering with IBM are Digital Assets Custody Services (DACS)

DACS are another emerging force in digital asset lifecycle management and infrastructure. To enable companies to protect and use their digital assets freely, DACS teamed up with IBM to create a first-of-its-kind servicing platform based on IBM LinuxONE™ servers and IBM Hyper Protect Virtual Servers for IBM Cloud Private solutions. The key is connectivity into multiple platforms for infrastructure (API) e.g., lending, AML/KYC, staking, data management, reporting, insurance, audit etc. DACS architecture is built for a future tokenised and digitised economy - embedded smart contracts, freely tradeable secondary markets, and fractional ownership. DACS have client traction and have gone to market with IBM. IBM provide the highest grade security, using their hardware, and have signed a joint development agreement.

DACS also partner with LG for data centres with DACS advising LG them on blockchain strategy.

Applications

Copper

Copper is a UK-based startup launched in 2018 as a cryptocurrency custody solution. It has quickly grown to manage the movement and reporting of digital assets between trading accounts and to secure offline storage. The platform built by Copper integrates custody architecture with seamless trading, providing institutional investors the ability to offer digital assets easily and at low cost.

Since launching in 2018, Copper has quickly grown its client base to over 100 traders, wealth companies, private banks, crypto funds and institutions.

In 2020, Copper launched CopperConnect. A simple, highly secure Google Chrome application, it is the first ever dedicated decentralized finance (DeFi) tool for crypto institutions.

When an institution deposits crypto assets onto a DeFi pool, they are effectively contributing to a decentralised pool of assets that can be borrowed from at interest by individuals or businesses. This means that institutions that deposit funds onto a DeFi pool are able to earn passive income from their assets.

In the past, the DeFi space was viewed as too volatile for many crypto funds. However, over recent months, the number of unaudited DeFi projects (i.e. projects where their smart contracts have not been security checked by third-party experts) have decreased, and fluctuations in value of DeFi markets have become less dramatic. As a result, the level of risk is now more manageable for institutions. This has led to high demand from institutional crypto investors for secure ways to gain exposure to the DeFi marketplace – a demand that CopperConnect satisfies.

Copper's infrastructure ensures the security of assets throughout the DeFi lifecycle, ensuring that assets are secure when under custody, during transfer, and when locked into a smart contract to be transferred onto a DeFi Pool. When withdrawing, assets can only be returned to the wallet from which they came.

Katrina Daminova, Head of Product, Copper, said: "There has been a lot of excitement about the potential of DeFi for crypto institutions. The prospect of being able to earn interest on assets that would otherwise just be sitting in a secure wallet is a potential game-changer for any crypto-fund. However, up until very recently, the lack of security auditing coupled with radical value drops on major DeFi projects have driven up the risk and deterred institutions from investing."

"But the tide has rapidly turned – only last month, DeFi audit firms reported an overwhelming demand from DeFi companies to get their projects audited. This push for credibility has come with a notable stabilisation across the sector, and finally institutions are looking at DeFi as a legitimate channel to earn revenue, especially when many other financial markets are more volatile or weaker than normal".

The startup raised $8m in Series A funding. Investors included investment firm Target Global, LocalGlobe and MMC Ventures[72]. The fund raising followed a previous seed round that saw Copper raise $1.3m in 2018. Copper will use the funds to develop regional client-facing operations in North America and Asia and accelerate the launch of new products.

Dmitry Tokarev founder and CEO of Copper, said: "Copper was always designed to be a global offering. Since 2017, we have seen many crypto custody solutions emerge that don't fully meet the needs of institutions. Instead, they have built for an institutional framework that doesn't exist yet, and is unlikely ever to, leaving institutions discouraged."

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Final Word

Digital assets have more than entered the scene. While we are witnessing the early stages of the industry where trust is still to be earned and infrastructure is still being built, it cannot be overlooked that existing players in the 'old world' have shown incredible interest in digital assets. These assets can undeniably offer direct economic interest, speedy settlement, and reduced costs. It is not surprising, then, that many of the big players are working hard on embracing this technology. There is no doubt we will see more digital asset infrastructure developed in partnership with pioneering institutions. The addressable market can be quantified as nothing short of a multi-trillion-dollar opportunity.... We will continue to see the gap bridged between Decentralized and Legacy Finance.

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