FUTURE OF PAYMENTS

CASH

Kickstarting the cashless revolution

The nationwide lockdown, which has sparked a surge in online shopping and cut cash machine usage by half, could accelerate the UK's shift towards a cashless society

Anna Codrea-Rado

When the UK government announced closure of non-essential retailers on March 13, chef Ed McIlroy had to work out how to keep his business, a burger bar in a north London pub, going. Like many food outlets, Four Legs became a cashless, delivery-only business overnight.

"I didn't want my delivery staff handling cash," says McIlroy. "It didn't feel safe." Instead, he implemented an analogue cashless payments system. Customers who want delivery place their orders through a Google Form and then pay their bill via bank transfer. While rudimentary, the cashless system has enabled Four Legs to continue operating through the crisis. It has also shown McIlroy the potential for permanently shifting to a cashless model.

"It's been a dream for us," he says. "Before this happened, we weren't in control of the money coming in because we were using the pub's point of sale. It's never ideal for there to be a middleman between the customer and your money."

Prior to the pandemic, the UK was tentatively edging towards becoming a cashless society, with one in six millennials living a cashless life. While in lockdown, cash usage across the country has halved, according to LINK, the UK's largest ATM operator. A rise in online shopping and increased use of contactless payments, amid fears of the virus spreading via coins and banknotes, all contributed to the fall in cash transactions.

It raises the question: will this step-change in both consumer and retailer behaviour be the tipping point that pushes the UK into becoming a cashless society?

"The current crisis has accelerated the shift towards cashless payments among small community-based businesses," says Lu Zurawski, retail payments lead at payments systems company ACI Worldwide. "Once the crisis has passed, going cashless will not only become the norm for many small businesses, but also pave the way for the adoption of new, innovative payments services to capitalise on the shift away from cash."

> **Lockdown will continue the drive towards a 'new normal' based around the decentralisation, democratisation and digitalisation of finance so people no longer depend on a financial middleman**

The pandemic has already made tangible changes in cashless behaviours, as evidenced by retailers and payments providers increasing the contactless limit on April 1 to £45. The last contactless limit increase to £30 took two years to implement, but this rise was rolled out in a matter of weeks.

For consumers, the value proposition of a cashless UK is clear: convenience. "Carrying cash is just no longer convenient," says Laura McCracken, global executive vice president at Wirecard. "In the near future, flexibility around payment along the customer experience will explode."

McCracken sees a future in which technology will emerge that lets customers pay in the changing room or automatically as they leave the shop. "Integration of ecommerce and physical retail spaces will make payments a frictionless and even invisible part of the shopping experience," she says.

Some of the loudest champions of cashless societies are cryptocurrency players. Charles Hoskinson, co-founder of Ethereum and chief executive of blockchain giant IOHK, hopes COVID-19 will result in a permanent move towards a cashless society.

"The pandemic and associated lockdown will drive a revival of interest in the decentralisation and democratisation of financial transactions through 'challenger banks' and technologies such as big data and blockchain," says Hoskinson.

He sees digital payments as the only way of ensuring remote access to services that can withstand any disruption to traditional banking systems. "The lockdown will continue the drive towards a 'new normal' based around the decentralisation, democratisation and digitalisation of finance so people no longer depend on a financial middleman for their services," he says.

Proponents of cashless societies often look to Sweden as evidence of what's possible. Sweden is one of the countries in which its citizens use the least amount of cash in the world. According to research from the Swedish Central Bank, only 1 per cent of Sweden's GDP was circulating in cash in 2018 compared to 4 per cent in the UK and 3 per cent in the Eurozone.

While businesses and consumers alike herald Sweden's shift towards cashless payments as a more secure and convenient way to pay, it has also sparked a national debate about what happens to those who can't, or don't want to, go mobile. The same questions are now being raised here in the UK.

"It is now more important than ever to ensure no one is left behind," says Jeni Mundy, UK and Ireland managing director at Visa. There are currently 1.5 million unbanked citizens in the UK, who by definition are completely dependent on cash.

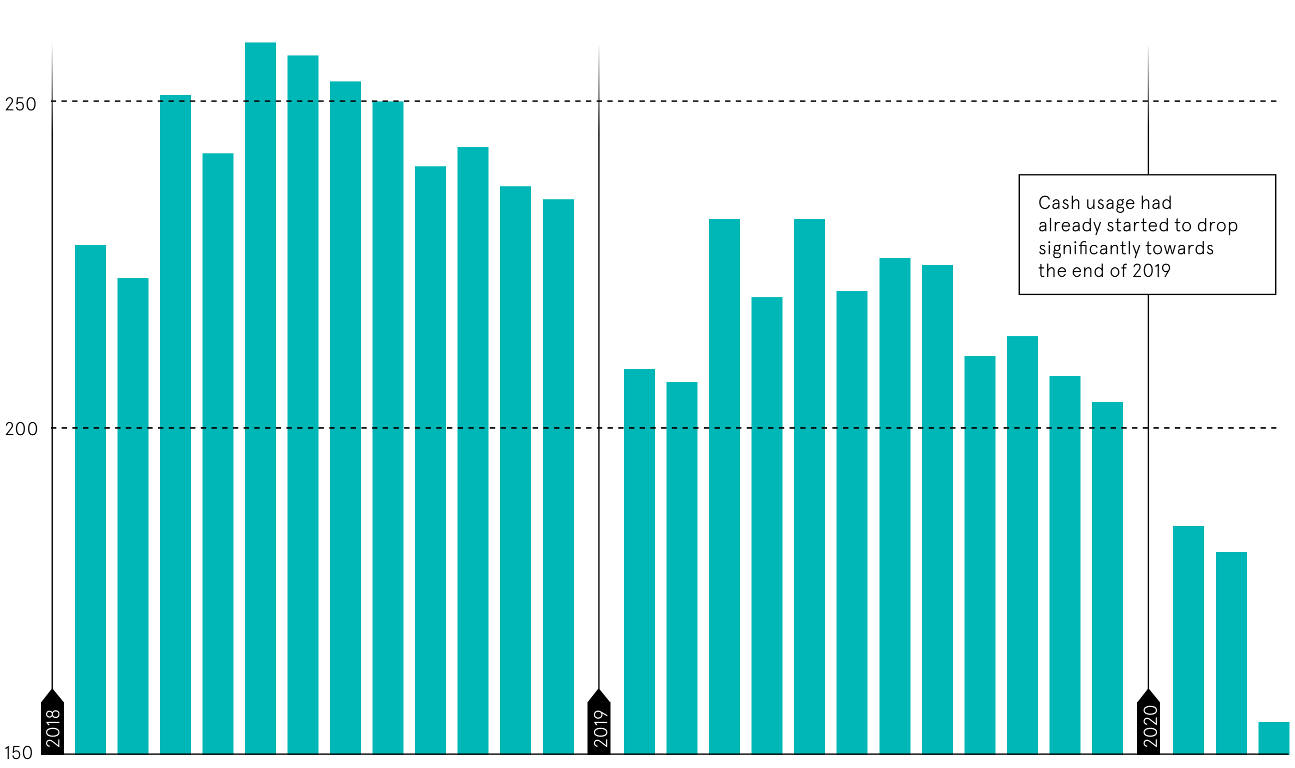
But Hoskinson believes the worry is overplayed as groups such as the elderly and unbanked can also see the benefits of a cashless society. "New fintech innovations such as app-based challenger banks and blockchain technologies can give people far greater ownership over their own identities and assets without depending on large financial institutions," he says. "The poor performance of many large institutions during the current pandemic is creating a consumer culture more conducive to decentralisation."

Other experts say the gains in contactless payments technologies should not come at the exclusion of improving access to cash for those who continue to need it. Earlier this year, Visa launched a scheme with its partner banks to incentivise retailers to offer cashback to consumers using their Visa debit cards in areas where access to cash is limited. "For some, cash remains the only option and as availability of cash reduces, we need to find ways to avoid excluding these individuals from the financial system," says Visa's Mundy.

McIlory sees this in his own business, which pre-COVID-19 operated out of a pub, where he says he wouldn't have made the call to go entirely cashless because a percentage of his customers still expect to be able to pay with cash. But now the situation looks different. "The plan was to grow into our own premises," he says. "If that still happens, then we'll also go cashless." ●

CASH USAGE ON THE DECLINE

ATM transaction volumes across the LINK network (millions)



LINK 2020

TOP REASONS WHY CONSUMERS STILL USE CASH

67% of UK consumers say they like to pay for small things with cash

55% say they use cash for peace of mind

35% say they like to have the option of how to pay

Access to Cash Review 2019

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Commercial feature

How technology is rapidly transforming the way we pay and get paid

The advance of technology in the past few years has revolutionised our daily lives; think virtual assistants, streaming services and conveniently buying anything from a hotel stay to a car via apps

GIG ECONOMY WORKERS THINK RECEIVING WAGES MORE FREQUENTLY WOULD HELP THEM MANAGE THEIR FINANCES

To what extent do you agree or disagree with the following statements? "Receiving my wages/salary at more frequent intervals would help me manage my finances more effectively" (n=1,265)

	Agree	Disagree
All	26%	39%
Full-time/part-time employed	25%	41%
Self-employed	28%	31%
Gig economy	38%	29%

MORE THAN ONE IN TEN UK ADULTS IS A GIG WORKER

Which, if any, of the following sources of income do you receive personally? (n=2002)

A
54%
Full-time or part-time employed

B
20%
Pension

C
12%
Gig economy

D
12%
Government benefits

E
10%
Investments

F
8%
Self-employed

G
5%
Online merchant

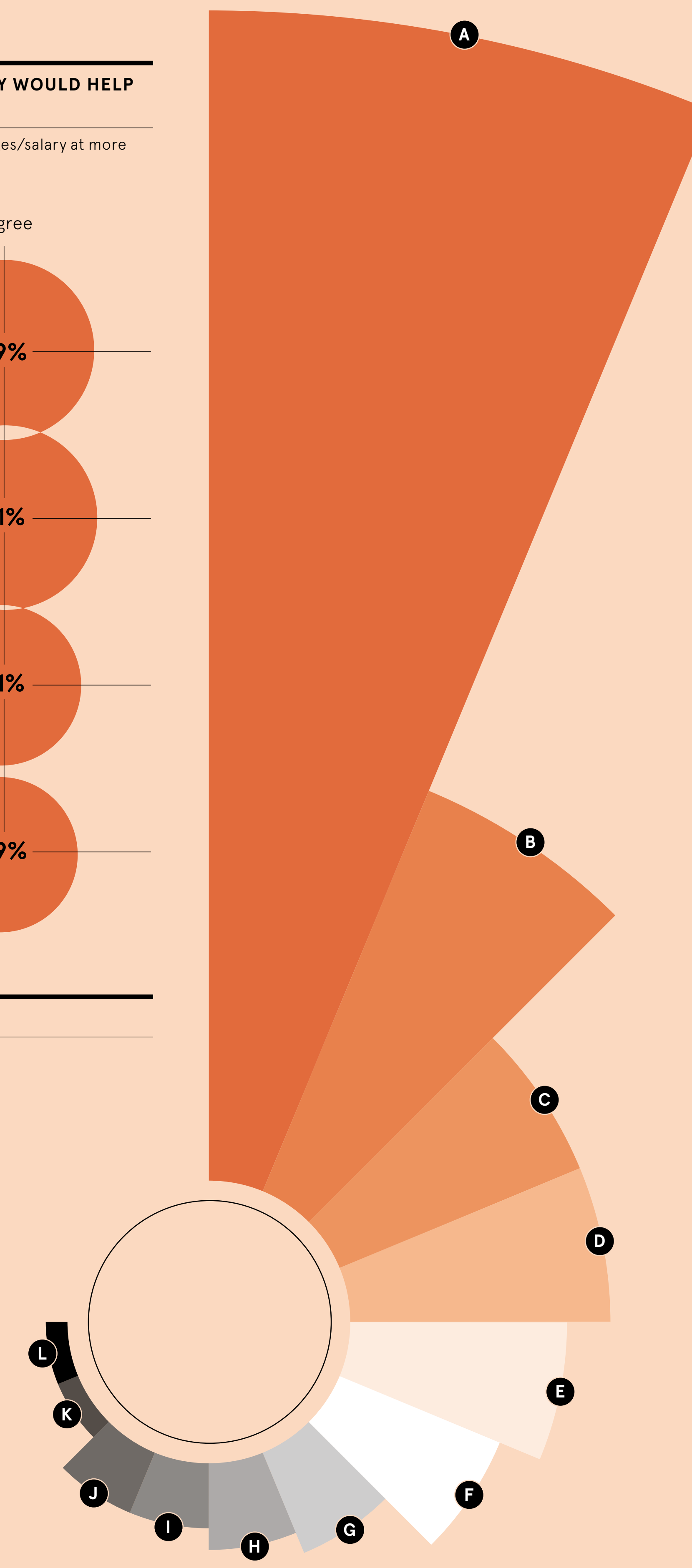
H
4%
Zero hours

I
3%
Property (long term)

J
3%
Casual or seasonal

K
1%
Contract for online platform

L
1%
Property (short term)



Mastercard 2019

We now expect technology to solve problems we never knew we had. But when it comes to our money, technology advances have been slower. That is until now. Whether it's new ways to verify our identities, sophisticated banking apps, permission to share bank account data or faster payment solutions for people and businesses, technology is transforming how we pay and get paid. And it is helping us to better manage our finances while addressing one of the biggest risks we all face: security.

Sci-fi-style security is here

The combination of behavioural analytics and passive and physical biometrics reduces the reliance on passwords and security questions for user verification, which are both knowledge-based security tools no longer reliable in a world with nearly 20 billion records since 2013.

However, new solutions using behavioural and passive biometrics security could transform payments. We are already aware of physical biometrics; authenticating mobile payments with a fingerprint or our face is now commonplace in the UK. Combine that with behavioural analytics and passive biometrics and you have a potent combination where the trade-off between security and convenience no longer exists.

Passive biometric authentication relies on the way we use our phones, computers or tablets, which differs from person to person. Engines collect hundreds of datapoints on each user to build a picture of their unique biometric identity. For example, how fast do they swipe and type on the screen or keyboard?

The range of information expands with the behavioural analytics layer, which leverages the data from the passive biometric technology and collects insights, such as locations, how the device is connected to the internet, historic payment patterns or device and browser type. The vast data creates an accurate score for each user in real time. If an attempt to make a transaction is flagged as high risk, the financial service provider can automate rules to respond and transactions can be blocked, further verified with a physical biometric request or put forward for further investigation.

This approach takes security beyond user names, passwords, or other security measures bad actors are proficient at bypassing. This security doesn't only apply at login or checkout as the user behaviour can be monitored across the customer journey, at moments such as creating an account or applying for credit, checking the balance on a gift card or asking for a password reset. This approach to user verification helps companies remove friction for their trusted users while weeding out fraudulent traffic.

Paul Stoddart, president of New Payment Platforms at Mastercard, says: "The impact of being able to analyse behavioural data is phenomenal. NuData Security[1] helped a Fortune 200 web retailer defend against a persistent attacker, with its cutting-edge behavioural analytics service. It tracked 77 million logins over 90 days, with 39.3 per cent detected as high-risk and blocked, and 100 per cent accuracy. The attackers modified their attack pattern and within an hour NuData had updated its modules to rebuff the new method."

Innovation in emerging markets

Too many people are excluded from the financial system, lacking bank accounts or access to basic financial tools. This is true for all economies, but especially for emerging ones. It's in these markets where we are seeing the greatest innovations in payments.

Take Thailand, where digital payments are challenging the dominance of cash. Despite a relatively high proportion of the population having a bank account, millions lacked access to banking and financial services, and almost half of all Thais paid in cash for internet purchases.

The government and central bank of Thailand approached Vocalink[2] to help them modernise its national payments system, to reduce fraud and risk in the system, reduce the use of cash and increase financial inclusion.

> **The success of open banking will rely on establishing trusted relationships, a brand promise, technology, processes, and security working seamlessly and in harmony**

The result was PromptPay, a real-time payment platform that allows people and businesses to make and receive payments instantly into their bank accounts or digital wallets linked to their national ID, corporate ID or mobile phone number. This underlying infrastructure allows Thai people to make purchases in-store or online, pay bills and donate to charities, and send and receive money to other people securely from their digital banking app.

"PromptPay has made a significant mark on the country's bid to address financial inclusion and support the expansion of Thailand's burgeoning digital economy," says Mastercard's Stoddart. "Since launch, PromptPay has attracted 49 million subscriptions in a population of 69 million and processes an average of 4.5 million transactions a day."

The Thai government is also using PromptPay to make tax rebates and social welfare payments. The Bank of Thailand credits PromptPay among the initiatives that have resulted in the 83 per cent rise in digital payments since 2016. The Thai economy has been transformed.

Additionally, 164 million[3] migrant workers globally rely on traditional money remittance methods where payments can take five days to clear and often lack transparency. In the Gulf Co-operation Council region alone there are 35 million migrant workers, primarily from India, Bangladesh and the Philippines[4]. Transfast[5], a company recently acquired by Mastercard, enables people to make cross-border payments to family or friends in more than 50 currencies nearly anywhere in the world. It's fast, secure and transparent, and offers a variety of pay-out methods, including into a bank account, digital wallet or cash.

Power of open banking

The UK has seen the birth of hundreds of creative fintechs thanks to its mandated open banking initiative. Open banking enables people and businesses to share access to their bank account data with other providers securely to access a range of new financial services. It has the power to revolutionise how we interact with our money by providing a wealth of services such as better budgeting, savings innovations, access to fairer credit and techniques to improve our overall financial wellbeing.

For example, when a person uses Venmo, a digital wallet that lets them make and share payments with friends, it's open banking that allows Venmo to initiate those payments from the person's bank account. Or when they use Emma, a budgeting and personal finance app, it's open banking that allows Emma to aggregate recent transactions and balances from the person's bank and/or investment accounts. The same technology also enables traditional banks to innovate their financial services; many already provide customers with a view of their finances across accounts at different providers.

As expected with any new initiative as large as this, there are challenges that lie behind the scenes. Overcoming them is critical to growing trust in open banking among people and businesses. They might never know their favourite financial services apps are enabled by open banking initiatives, but they expect the experience of using them to be safe and reliable, and expect any issues to be resolved quickly and effectively nonetheless.

Mastercard Open Banking Solutions™ support the banks, financial institutions and third party providers by connecting, protecting and resolving issues among ecosystem participants. Open Banking Connect provides a single, universal connection to financial institutions' open banking functionality regardless of their application programming interface (API) standard or implementation. Open Banking Protect provides financial institutions with verification of third parties, fraud monitoring and alerts, while Open Banking Resolve provides a clear framework for resolving disputes, which is fundamental to securing people's and businesses' trust.

"The success of open banking will rely on establishing trusted relationships, a brand promise, technology, processes, and security working seamlessly and in harmony," says Stoddart. "That's why it's key to address fundamental challenges such as fragmentation in API standardisation, fraud risk and dispute resolution.

We believe that by addressing these challenges, as we're doing with Mastercard Open Banking Solutions, we can support the development of an open banking ecosystem that will revolutionise how millions manage their financial futures both locally and globally."

New payment methods can transform small businesses

The gig economy is booming, but life as a gig worker can be challenging; the work can be volatile, there are often daily expenses, such as buying fuel for the car. For those who rely on gig work as their main source of income, any delay in receiving earnings can put a strain on personal finances. In a competitive landscape, gig workers will source work from platforms that allow them to access their earnings on demand.

For example, a popular ride-sharing app recognised that paying its workers weekly often wasn't enough to meet their needs. It implemented a real-time payment service powered by Mastercard Send™, enabling its workers to access and spend their earnings immediately.

Mastercard Send™ is just as beneficial to small businesses, which can face cash-flow issues. By leveraging the technology, small businesses can conveniently access their earnings on demand, helping them cover daily expenses, such as restocking their store, and helping their business grow.

"Real-time payments can be transformative for small businesses," says Stoddart. "Research shows companies using real-time payments enjoyed a 16 per cent increase in transactions and spent 46 per cent more than a control group over four months."[4]

Another key issue for businesses is payment risk. Companies need to monitor suppliers and customers to ensure trading partners are in a fit and proper condition. This is a huge job involving a vast number of credit risk reports, law enforcement lists and media sources.

A better approach is to use a single procurement platform, such as Mastercard Track™. This streamlines procurement by monitoring more than 4,500 sanction and enforcement lists. For suppliers it offers a single portal for credit risk ratings for customers. Preferred payment methods are managed by Mastercard Track™. Using a platform such as Mastercard Track™ ensures maximum compliance with legal duties and frees up staff to focus on core commercial activities.

And finally

Behavioural analytics, innovative new applications and faster payment solutions are all destined to change our financial fortunes as both individuals and small businesses. What's interesting is how new partnerships are essential to deliver pioneering products, often partnerships that meet customer needs and would not have been thought possible just five years ago.

This era of collaboration will underpin further innovation as the financial sector is disrupted by new, creative ideas designed to boost both companies' bottom lines and our own financial wellbeing. Technology is profoundly changing our relationship with our money at pace.

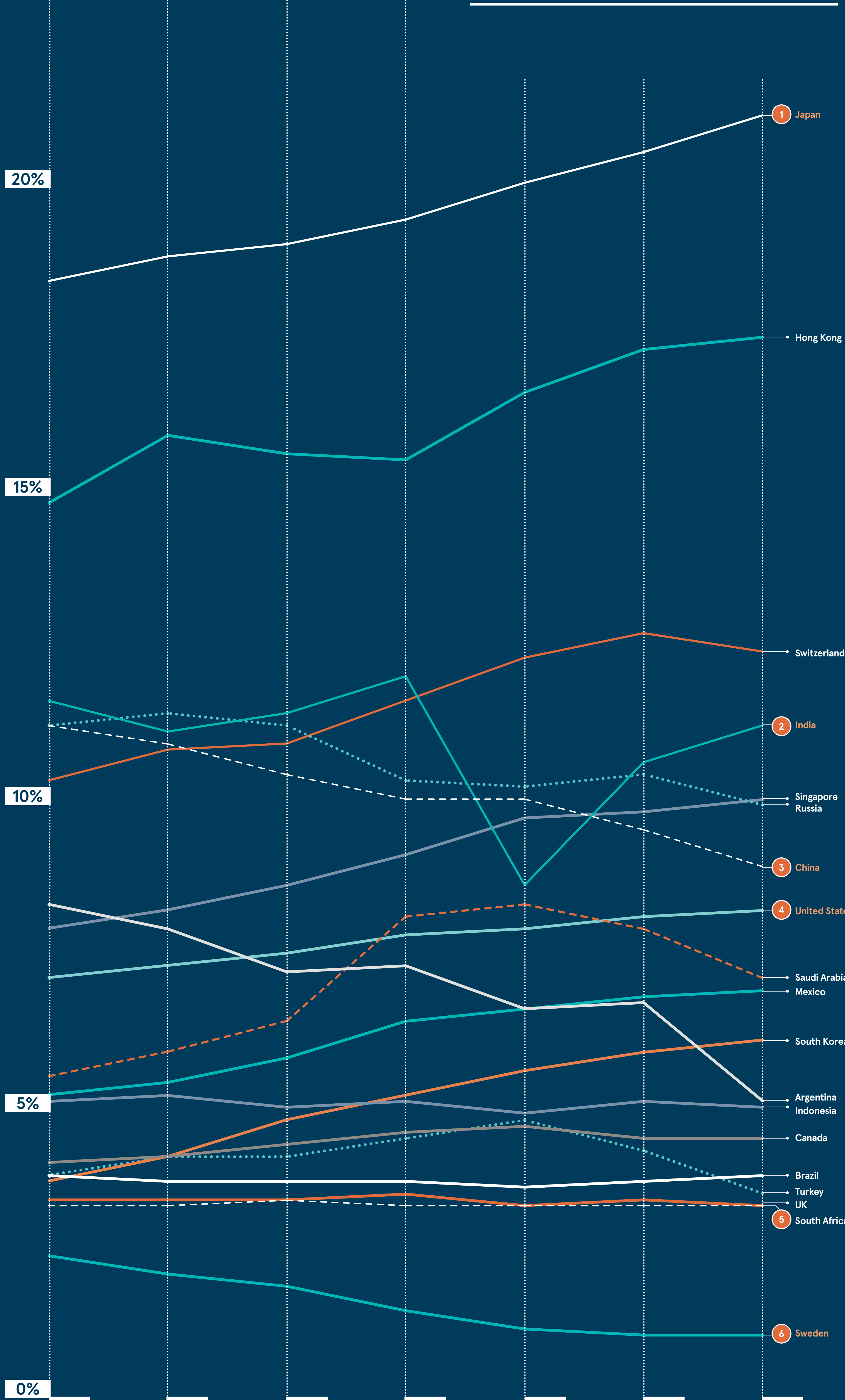
[1] NuData Security is a Mastercard company
[2] Vocalink is a Mastercard company
[3] www.ilo.org/global/topics/labour-migration/lang--en/index.html
[4] www.mastercard.us/content/dam/mccom/en-us/documents/mastercard-send-debit-lift.pdf
[5] Tranfast is a Mastercard company

CASHING OUT

Despite ongoing reports that the end of notes and coins is near, a cashless society has yet to materialise. In many countries, the amount of cash in circulation is actually on the up, though the factors behind this trend - both social and economic - are complex. Digital payments have surged over the years, but the fact remains that cash is still king in many parts of the world.

CASH IN THE GLOBAL ECONOMY

This graph shows currency in circulation as a percentage of GDP. In monetary economics, this is a crude measure of the demand for notes and coins in a country. Simply put, it is the amount of money issued by a monetary authority minus the amount that has been removed from the economy. It is important to note that these figures fail to highlight the amount of money that is held by coin collectors, held in reserve within the banking system or stored under mattresses.

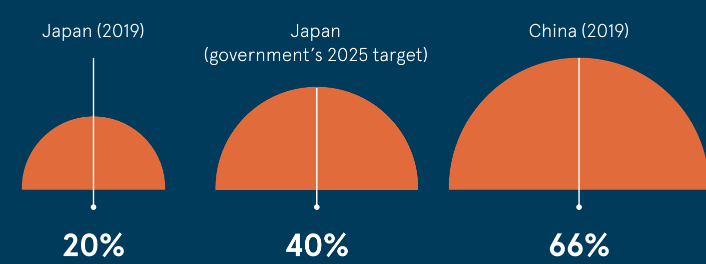


Bank for International Settlements 2019

1 JAPAN

Historically low interest rates, an ageing (and declining) population, and low rates of crime have prompted the Japanese to hoard significant amounts of cash, with few incentives for the public to deposit their savings into a bank account. The government expects signficant growth in cashless payments, albeit from a low base.

CASHLESS PAYMENTS AS A SHARE OF TOTAL CONSUMER TRANSACTIONS



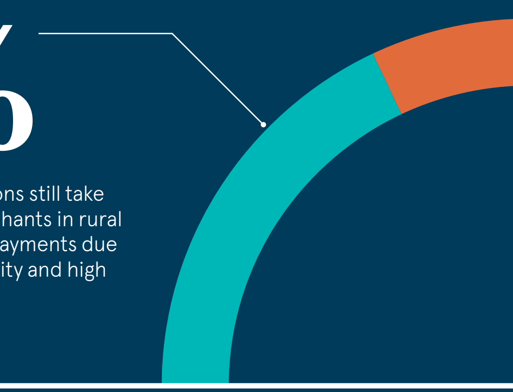
eMarketer 2019

2 INDIA

The dip in circulated money supply in 2016 is attributed to India's "demonetisation", which made all lower-denomination banknotes illegal in an attempt to crack down on black market activities and drive digital payments. And while the latter has certainly increased, so has the amount of cash in circulation.

72%

of India's consumer transactions still take place in cash, with many merchants in rural areas not able to take digital payments due to a lack of network connectivity and high transaction charges

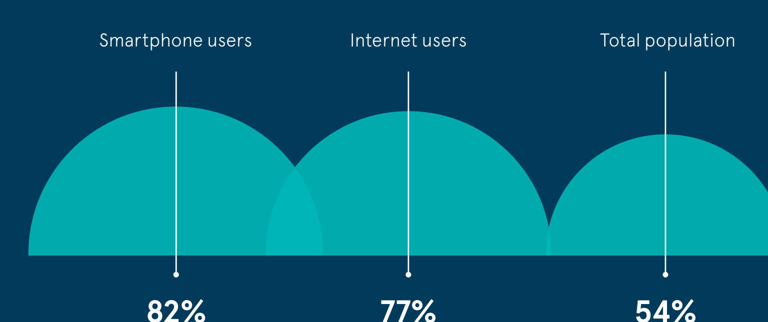


Credit Suisse 2020

3 CHINA

China, which in the early 80s was still largely a cash economy, is now home to the largest number of mobile payment users in the world (over half a billion). But while the major cities rely on digital payments, internet penetration across the whole country is still low, and half of the nation still don't use their mobiles to pay for goods.

PERCENTAGE OF THE FOLLOWING GROUPS THAT USER PROXIMITY MOBILE PAYMENTS IN CHINA

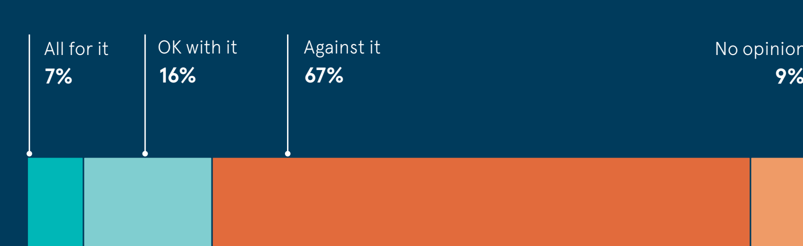


eMarketer 2019

4 UNITED STATES

The US remains behind much of the developed world when it comes to modern payment tech, such as biometrics, mobile wallets and even chip and pin. Mature tech infrastructures have some part to play, but a key reasons is consumer attitudes and an established preference for cash.

PERCENTAGE OF US ADULTS WHO SUPPORT/DON'T SUPPORT A CASHLESS SOCIETY



Civic Science 2019

5 SOUTH AFRICA

South Africa has one of the most mature banking ecosystems across Africa, and digital payments are growing fast, with mobile POS payments up 51 per cent in 2019 (Statista). Meanwhile, the distribution of ATMS across the country is much lower than other regions, which could go some way to the low level of cash in circulation.

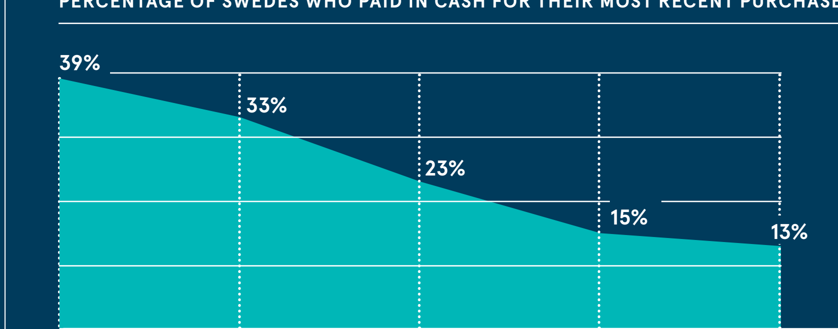
NUMBER OF ATMS PER 100,000 POPULATION

Pymnts.com 2019

6 SWEDEN

With many cafés, restaurants and retailers only taking card payments, Sweden is touted to enter the cashless era first . Instant P2P transfers are now ubiquitous with the most well-known app, Swish, boasting over 7.4 million private users, compared with a national population of just over 10 million.

PERCENTAGE OF SWEDES WHO PAID IN CASH FOR THEIR MOST RECENT PURCHASE



Riksbank 2018

FUNDING

VC funding uncertain as interest wanes

As investors seek bargains in the post-COVID-19 landscape, challengers in the payments sector are having to work hard to secure funding and justify lofty valuations

Joe McGrath

JOHANNES EISELE/AFP via Getty Images

A trader reacts during the opening bell at the New York Stock Exchange as global markets crashed in late-February

> On the venture capital side, their attitude right now is 'family first'. They are looking after their own investments

Success stories in the payments sector such as PayPal, Square, Stripe and TransferWise are indicative of the huge disruption the sector has seen over the past decade.

Investors have been bullish on the return potential from payments challengers, supported by impressive growth predictions by market analysts.

In September 2019, consultants at McKinsey & Company published their forecasts for the sector. Analysts projected that revenues would continue growing at a steady 6 per cent each year, between 2018 and 2023. Globally, this means revenues would grow from $1.9 trillion in 2018 to $2.3 trillion by 2023, with the most significant growth occurring in the Asia-Pacific region from $0.9 trillion to $1.2 trillion.

However, the forecasters at McKinsey warned: "A downturn, even one far less pronounced than the [2008] Great Recession, would adversely affect investment and mergers and acquisitions (M&A) capital." Nine months on and this exact scenario has started to play out.

Fintechs that were hoping to secure investments for the first time have found backers are more reluctant to part with their cash, while many of the traditional sources of lending have also dried up.

Venture capitalists (VCs), once the cheerleaders for disruptive payment companies, have made a substantial retreat from new investments.

"On the venture capital side, their attitude right now is 'family first'," says Dr Louise Beaumont, chair of techUK's smart data, open banking and payments working groups. "They are looking after their own investments."

Investors in the market say that VCs are likely to maintain this position for some time, which means some fintechs may disappear from the payments landscape altogether.

George Barrow, a fund manager with Polar Capital's financials team, explains: "I would expect VCs to become more circumspect, which will put pressure on certain capital intensive fintech models and those with long pathways to profitability."

Beaumont adds that while VC firms are looking after their existing investments, corporate venture funds, which tend to look for value opportunities, are sitting on their cash piles and playing the waiting game.

"Corporate venture is really interesting in that it seems to have stalled," she says. "They are drawing down hundreds of billions of dollars from revolving facilities from banks."

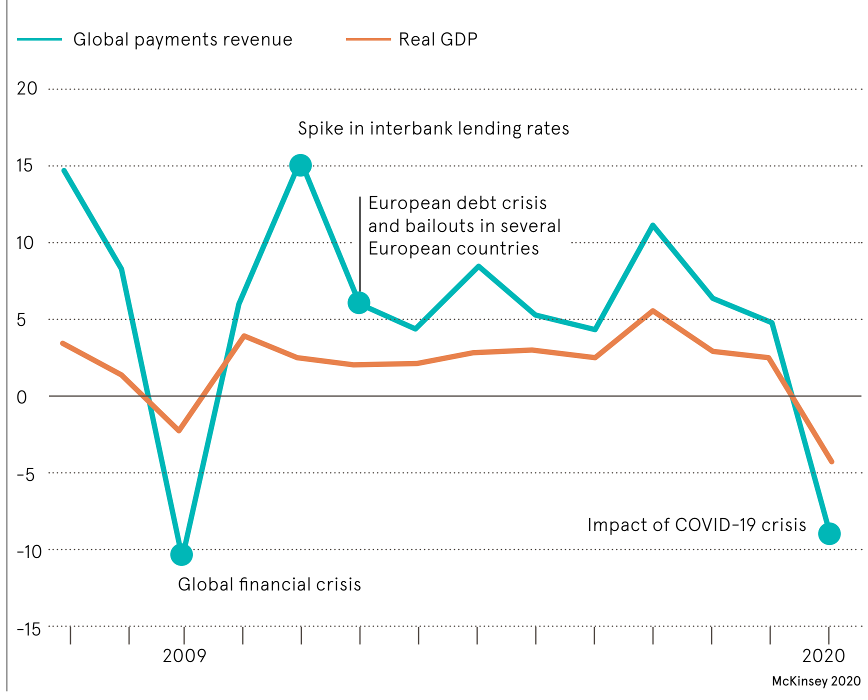
These funds may have watch lists or be waiting for distressed opportunities, Beaumont explains. But the bargain hunters are not limited to corporate venture firms in the current climate.

Market analysts say rival legacy firms and institutional investors alike are waiting for valuations to hit rock bottom so they can snap up the payment firms of tomorrow at a fraction of the price they previously would have paid.

"We can already see private companies and private investors sniffing around and checking up on a fair number of companies, ready to buy them out as soon as the price goes low enough," says Konstantin Bodragin, a business analyst at Brüc Bond.

ECONOMIC IMPACT OF COVID-19 IS COMPARABLE TO THAT OF THE 2008 FINANCIAL CRISIS

Analysis by McKinsey showing the correlation between global real GDP and payments revenues (%)



McKinsey 2020

"In financial services this is never a quick process, as there are strong regulatory breaks on these kinds of deals, but many small companies could find themselves in trouble. We can expect a large number of M&As in the coming months."

Incumbents of every industry, not just financial technology, will be looking for opportunities to capitalise on affordable acquisition.

Marwan Forzley, chief executive of payments platform Veem, agrees. "It is very plausible to see an increase in M&As of smaller finance providers leveraging technology by large financial consortiums," he says. "This activity was already happening pre-crisis, but at a higher price tag.

"Legacy payment institutions will be looking to use their balance sheets to make aggressive moves in the market. Incumbents, in all industries, are definitely doing their research."

As funding sources start to become fewer, investors are being far more choosey about where they deploy their capital. When cash was easier to come by, some fintechs were able to land funding by showcasing compelling products with a convincing disruptive narrative. In the post COVID-19 world, however, business plans are being scrutinised for profit trajectories and timescales for investment returns.

"Profitability was a widespread issue for the industry before, but the COVID-19 crisis is shining a very bright spotlight on it now," explains Bodragin.

"Simply put, many companies in the fintech space did not have realistic plans or business models to turn a profit. Their plans consisted mostly of waiting for further investment and hoping to grow large enough to crowd out the competition.

"Now, with COVID-19 raging, investors are going to sit on the fence and hold back their financing plans. Entrepreneurs will need to adapt, and only the companies run by adaptable and creative leaders have a chance of surviving this crisis."

However, the pressure on challenger payments companies to justify their valuations could have positive repercussions as the sector begins to emerge from the crisis.

George Davies, a partner at Hambro Perks, says while the pandemic has created a more challenging funding environment, it has pushed innovation to become a more important commodity than ever.

"It has a huge role to play in solving the issues borne out of the coronavirus pandemic and helping the world re-adjust following the crisis," he says. "Outstanding businesses will continue to be funded by far-sighted investors.

"Challenging circumstances often breed the best innovation; look at the companies that emerged following the Great Financial Crisis and have defined the period since."

Analysts agree that we should expect to see a great many casualties across the fintech landscape, during the crisis. However, there is also broad agreement that the market will see a smaller number of high-quality challengers emerging.

Within fintech, M&A activity has always been a key component and the current crisis will only reinforce that, according to Jeroen van Oerle, portfolio manager at Lombard Odier Investment Managers.

He explains: "Payments is a scale game. Either companies can grow organically or through M&A, which is much faster but comes with integration challenges. It is likely M&A is back on the agenda again with valuations coming down.

"A second component to M&A is how to finance it. Balance sheet focus is high and the listed market generally prefers low leverage. This will have an impact on M&A, even when valuations become more attractive."

CORONAVIRUS

Online shift is a boon for payments tech

The coronavirus pandemic represents a turning point for the payments industry, as those companies that have invested heavily in digital and mobile technologies thrive

Oliver Balch

Business has never been better at Azimo. The COVID-19 crisis may have sent the global economy into a tailspin, but this Amsterdam-based remittance service has seen transactions jump by nearly a third in recent months.

It doesn't take a rocket scientist, or even an economist for that matter, to explain why. Consumer spending has tanked, but people still need money for basic essentials. In times of economic crisis, this need is greater than ever, leading to a spike in money transfer demand.

But why fintech solutions? Again, the answer isn't tricky to pinpoint. While established players such as Western Union and Moneygram remain open for business, heading down to a bricks-and-mortar office has become significantly less attractive during lockdown.

So argues Michael Kent, Azimo's chief executive. Of course, he is quick to list the other advantages of a digital-based service; lower fees, quicker delivery, greater security, simpler app-based payments and more flexible collection options.

Yet the pivotal role of COVID-19 isn't lost on him. While it's very unfortunate that it has taken a pandemic for digital payments to scale, the offline-to-online switch has been long in coming.

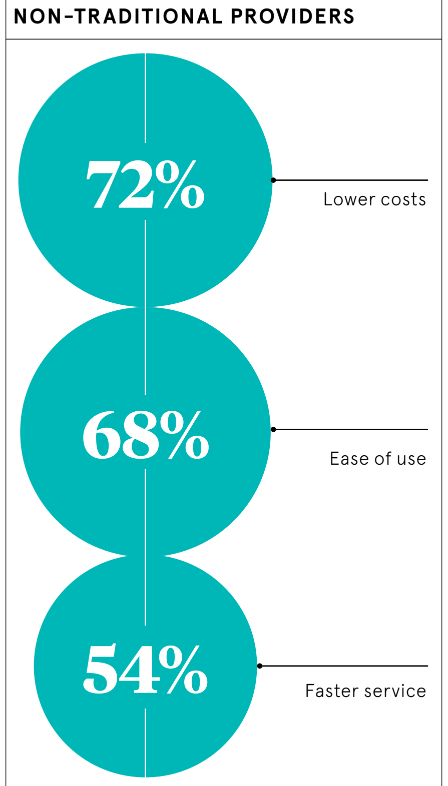
"There's been an accelerated shift in consumer behaviour, but we think we're riding a 15 to 20-year wave here with the digitisation of financial services," says Kent.

A similar mood of optimism is apparent among other digital transfer companies. WorldRemit, for example, reports that the COVID-19 pandemic has compounded the double-digit growth experienced in the run-up to the virus. Similarly, Remitly reported a 40 per cent growth in transaction volume between February and March.

Another beneficiary of the crisis is the cashless payments market. With consumers worrying about health risks of handling coins and bank notes, the appeal of contactless cards and mobile wallets provides an obvious alternative.

More than one in four (27 per cent) small businesses in the United States already report an increase in contactless payment services, such as Apple Pay, according to a survey by the Electronic Transactions Association. Even the US Treasury Department is now allowing unbanked individuals to receive their relief cheques via mobile payments services.

TOP THREE REASONS CONSUMERS TURN TO FINANCIAL PRODUCTS FROM NON-TRADITIONAL PROVIDERS



Capgemini 2019

Retailers are encouraging the trend towards cashless as well. Restaurant chain Burger King is prompting people to use an order-ahead app to pay for drive-through orders, for example, while Walmart has removed the need to press its "pay now" button before a contactless payment.

Other winners from the fallout of COVID-19 stem from fears over pending inflation and currency instability. One illustrative winner is Glint Pay, a multi-currency payments platform based on gold bullion, which reported a seven-fold increase in purchase activity during the first month of lockdown.

Gold's long reputation as a stable store of value makes it a popular default in times of crisis, Glint Pay's chief executive Jason Cozens points out. Hence, the decision by this UK fintech, which offers a prepaid debit Mastercard, to launch a new person-to-person transfer product mid-crisis.

"An ounce of gold would have bought a Roman toga 2,000 years ago and today it's worth £1,356, which is more than enough to buy a very nice outfit," Cozens calculates.

Despite its reputation for price volatility, some crypto-based payment providers are also seeing an upswing. Among them is Wirex, a UK mobile payments platform, which clocked around 60,000 new customers in the initial stages of the COVID-19 outbreak.

Pavel Matveev, Wirex's chief executive, says the firm's growth partially derives from the seamless transition offered by its Visa-like debit card, which can be topped up with either traditional or crypto currency. Helping nudge first-time consumers across the line is Wirex's reward offer to pay back up to 1.5 per cent of in-store purchases in crypto currency.

Even for the pandemic's winners, however, the bleak prospects for consumer spending mark a cloud on the horizon. History shows that spending drops sharply during a recession, US bank Wells Fargo notes, albeit with an upward surge when it ends.

"We were expecting people to spend more online, but when we checked the data, it's clear most people are looking to save money and cut their overall spending back," says Matveev.

Much will depend on the sectors to which payments providers are exposed. Those with a high reliance on hard-hit verticals, such as travel, leisure and accommodation, are in for a torrid time, while it's the opposite for those with a foot in COVID-19 growth markets, including food delivery and home entertainment.

Most of the sector's biggest players are spread across multiple sectors, providing them with something of a hedge. Despite a downturn in various key markets, for instance, blockchain payments processing provider BitPay saw demand in industries such as software, IT services and currency exchange jump 10 to 40 per cent in the first quarter of 2020.

"While the financial markets and the price of bitcoin have fluctuated, the number of purchased customer transactions through BitPay has remained unchanged," says Bill Zielke, the firm's chief marketing officer.

For Dutch investment company Finch Capital, the digital payments market is experiencing a best-of-times, worst-of-times scenario. As the firm observes in a report on COVID-19's impact on the fintech sector, the end of cash may be nigh, but headaches await.

According to the World Bank, for example, a drop in migrant workers' incomes could see the remittance market shrink by 20 per cent in 2020, the largest annual decline in the recent past century.

Grim as macro-economic conditions look, COVID-19's once-in-a-generation boost for digital solutions is pushing the payments market into a new era, says Nigel Green, chief executive of the Zurich-based financial consultancy deVere Group.

"Without question, this is a major turning point," he says. "And those payments companies that have invested in mobile and digital technologies will be the likely winners."

> **We were expecting people to spend more online, but it's clear most people are looking to save money and cut their overall spending**

Coping with crisis

Even for COVID-19's winners, the magnitude of the coronavirus pandemic has thrown up unprecedented challenges.

Despite an upsurge in payment volumes, for example, money transfer companies are facing difficulties in delivering payments. In countries such as Argentina, the Philippines and Senegal, for example, cash pick-up facilities are closed, while in many other markets opening hours have been cut back dramatically.

That said, regulators are green-lighting innovations to help keep money flowing. In Kenya, for example, small and medium-sized enterprises (SMEs) are now permitted to transfer KES150,000 (£1,200) a day via Safaricom's M-pesa mobile money service, more than double the previous level.

While the money transfer industry is hyper-aware of the challenges faced by customers, regulators and financial institutions alike have responded with "really smart, joined-up thinking", says Steve Moffat, director of payments at WorldRemit.

A similarly positive, albeit ad hoc, response is evident in the wider financial sector. A recent report by the International Chamber of Commerce (ICC), for example, highlights a rapid acceleration of digital solutions, such as the use of electronic signatures, blockchain-based solutions and automated processing.

Despite such advances, however, a level of institutional inertia remains, warns ICC secretary general John Denton. With SMEs in emerging economies facing a very real liquidity crisis, the ICC is calling on governments to speed the shift to digitalisation, including payment of emergency business relief packages via non-cash means.

"We are looking at mobile payments systems and digital wallets, as well as expanding the remit of credit card providers," says Denton. "These are the sorts of things we need to make businesses resilient and keep them liquid."

LOCAL E-WALLETS FOR LOCAL USERS

Full list of Alipay's current e-wallet partners

1. Chinese mainland — **Alipay**
2. India — **Paytm**
3. Thailand — **TrueMoney Wallet**
4. Republic of Korea — **KakaoPay**
5. The Philippines — **GCash**
6. Hong Kong — **Alipay HK**
7. Malaysia — **Touch 'n Go**
8. Indonesia — **DANA**
9. Pakistan — **Easypaisa**
10. Bangladesh — **bKash**

Preparing for a new world of payments

As payment systems, and what consumers expect from them, continue to evolve at a rapid pace, lockdown presents a unique opportunity for businesses to enhance their offerings

The payments landscape has evolved dramatically. A decade ago cash was still the dominant form of payment. Yet by last year, less than a fifth of retail transactions were made using cash and the shift to a cashless society has been accelerated even further during the COVID-19 pandemic, with many retailers refusing to accept it altogether.

The pace at which payments are transforming continues to increase. In a few short years, online payments have gone from being hailed as revolutionary to being dismissed as archaic if they do not encompass the growing array of features, rewards and security layers desired by consumers. The expectations of millennials, in particular, have forced fintechs constantly to re-evaluate how payment solutions can be more convenient, creative and secure.

> **Lockdowns around the world have given many organisations the time to step back and observe consumer behaviour in light of the pandemic**

Mobile technology is now at the forefront of the payment industry's evolution as the overwhelming majority of consumers rely increasingly on mobile apps for a variety of transactions and other banking services.

As digital natives, the younger generations who use online payment methods the most have already learnt to manage all aspects of their financial life on their smartphones. As a result, tech firms and financial institutions alike are racing to lead the drive towards mobile payments. Accenture predicts 64 per cent of consumers will use a mobile e-wallet service this year, up from 46 per cent three years ago.

E-wallets combine numerous features craved by consumers, most notably unprecedented simplicity and convenience, supported by mobile integration, use across multiple platforms and robust security. Crucially, in an age of globalisation, they also facilitate cross-border transactions, eliminate the need to have a bank account with a physical entity and allow for payments in local currency. Statista estimates there will be 1.31 billion proximity payment transaction users by 2023, up from 950 million last year.

"The way people pay for goods and services may have transformed significantly in the last decade, but that's nothing compared to the changes we're expecting to see in the next five to ten years," says Timea Benczik, payments director at online foreign exchange and contract for difference broker Exness.

"The arrival of blockchain has already been a game-changer as the technology underpinning cryptocurrencies, but its impact on payments is yet to be fully experienced. The anonymity, increased security and data veracity enabled by blockchain and cryptography will present many exciting opportunities in this space in the years ahead.

"Meanwhile, we also have the looming possibility of biometric payments becoming part of our everyday lives. But while biometric technology means a unique sense of security we cannot have through any other means of payments, the ethical concerns that come with it, particularly around privacy and personal data, need to be suitably addressed before it can reach widespread use.

"Personalisation will take the user experience of payment solutions to the next level, with artificial intelligence and big data the key drivers in collecting the transactional data of individual users and making it possible to build a unique user journey for each consumer."

Payments are, of course, the livelihood of businesses and failing to meet increasing demands can be detrimental. While the vast majority of fintech companies are generally keeping up with customer demands in this field, evolution of this scale within a business is no easy feat and requires heavy investment both in technology and skilled personnel.

"If there are businesses that are being held back from adapting as quickly as what would be ideal, this is most likely the reason," says Benczik. "This also depends on the industry. In the online brokerage world, for example, there is much more to consider when offering the best payment method for clients, including compliance and regulation. Brokers always look for trusted partners with low fraud ratings to ensure the highest level of know your customer."

Most organisations are going through a challenging period in light of the COVID-19 pandemic. Yet while the near-shutdown of the economy has undoubtedly been staggeringly disruptive, it has also propelled many companies forward when it comes to remote working and presented a unique chance to reassess, re-evaluate and restructure numerous parts of their business. This includes the opportunity to look at their payment systems.

Electronic transactions have risen sharply with the introduction of social distancing, especially in the initial stages when people feared cash was able to transmit the virus and governments in countries such as Belgium and Italy made statements encouraging cashless payments. Italy, in particular, is a traditionally cash-centric country, but has seen the volume of ecommerce transactions increase by 81 per cent, according to McKinsey & Company.

The reliability of digital payments, thankfully, has experienced little interruption, earning plaudits for the robustness of infrastructures globally and spikes in public trust. However, the economic crisis resulting from the pandemic is certain to impact the payments industry, with the Office for Budget Responsibility warning UK GDP could fall by 35 per cent in the coming months.

An economic recession will affect revenues right across the payments ecosystem, though the upside is that when the world economy does resume, the same systems, and probably new ones, will be relied upon to facilitate recovery.

"Lockdowns around the world have given many organisations the time to step back and observe consumer behaviour in light of the pandemic," says Benczik. "Given the unfortunate, yet almost certain, economic consequences that will follow, as well as the social behavioural changes we're likely to see, companies have a solid timeframe in which they can plan, transform and adapt to the new reality that is to come.

"These behavioural shifts are likely to become more prevalent over the long term, including around payments, so it would be sensible for businesses and retailers of all sizes to use this time to ensure they can compete when it comes to providing customers with a variety of payment options.

"Generation after generation of consumers become increasingly demanding of digital services and this will not slow in a post-COVID world when people will want even more perks, creativity, security and control in the way they pay for things.

"Some of the key trends we've seen brewing include introducing social media platforms as a gateway to pay for a product or service, for example through the simple click of a buying button on the social media page of the business they are purchasing from. This behaviour has already been observed among the current generation, so the younger demographics that are true digital natives and even more inclined to interact on social platforms will almost definitely expect this."

For more information please visit www.exness.com

exness

FINANCIAL INCLUSION

How tech is fighting financial exclusion

From improving access to cash through to flexible loan arrangements, technology is helping ease the financial burdens of some living from paycheque to paycheque

Ben Edwards

Westend61 via Getty Images

As the world moves towards a more digital future, millions of consumers without access to finance are at risk of being left further behind.

There are around 1.3 million unbanked adults in the UK, according to the Financial Conduct Authority (FCA), while the 2019 *Access to Cash Review* shows that more than 15 per cent of people with an annual income under £10,000 rely entirely on cash to make payments.

Yet while technology could potentially make financial inclusion more challenging, some businesses believe tech is the answer to improving access to finance.

Take Pockit. It is trying to fill the vacuum left by high street banks by providing mobile banking to those on low incomes, allowing them to make digital payments while still being able to withdraw cash. “The high street banks make it incredibly difficult for people to access basic current accounts if they don’t have a photo ID and a good financial history,” says Virraj Jatania, chief executive of Pockit.

Jatania says the coronavirus pandemic has underscored the need to make digital payments more accessible for financially vulnerable people given the constraints on cash usage during the health crisis.

“The cash economy has many limitations, which were exposed by the virus outbreak as many stores would not accept cash payments and many elderly were told to self-isolate without the means to shop for essentials online,” he says.

The pandemic also risks plunging millions into financial distress as businesses lay off staff and some self-employed or recently hired workers miss out on government support.

Digital debt advisers such as Tully, which was originally set up as a personal finance management tool to help those on low and unpredictable incomes get a grip on their finances, are expecting to see increased demand for their services as the economic impact of the pandemic grows.

“Our main purpose is to help people with long-term financial difficulties, but in response to the current crisis we set up a solution that enables creditors to refer customers who are going through short-term difficulties and want to check their eligibility and apply for payment relief,” says Olly Betts, chief executive of OpenWrks, the company behind Tully.

Tully uses open-banking technology to enable people who are struggling financially to smooth out their debt repayments by adjusting what they pay each month based on their current income level. Betts believes COVID-19 could encourage banks to adopt this concept more broadly across the industry and shift away from fixed monthly repayments.

“If ever there was a catalyst or a time for it to be possible, it is now,” he says. “Just imagine if your bank gave you a slider so you could notch down your loan repayments to 90 per cent for a couple of months, that could make a real difference. It might mean paying more over time, but given the changing nature of incomes that people are going to experience, not just because of the global pandemic but with the rise of the gig economy and that style of working, having the flexibility to manage your budget with variable payments would be great.”

Another area where those on low incomes have often been overlooked is access to suitable savings products. Around one in four UK adults has no savings, according to the FCA.

“There’s always a push to advise those on low incomes to save, but there’s very little understanding of the reality of people who live paycheque to paycheque,” says Jatania.

Pockit has tried to solve this by offering a different type of savings account that also helps improve users’ credit scores, potentially giving them better access to finance in the future. Customers set a savings target, which Pockit then locks away as a 0 per cent loan. As customers repay the loan each month, they grow their credit score and at the end of the loan period they get to unlock their savings pot.

Other companies are also working on ways to improve access to finance for those on low incomes. Glasgow-based Soar has built a digital banking platform for credit unions and community banks, which have often struggled to compete with the likes of payday lenders, despite offering lower interest rates.

“Traditionally the process of applying for a loan through a credit union is not very digitalised and is fraught with paper-based exercises, so it just takes ages to get a decision, whereas going through a payday or other high-cost lender, people generally get results in minutes,” says Andrew Duncan, chief executive of Soar.

Soar’s technology means credit unions can now match that by speeding up the decision-making process and, through the Faster Payments Service, disburse loan funds in a matter of minutes, helping steer people away from more expensive payday lenders.

Soar is also teaming up with payments platform Modulr to offer credit union members a payments account that will allow them to make online transactions with a virtual debit card, which means users can participate in the digital economy without having to open a bank account, says Duncan.

Another problem credit unions have faced is appealing to younger customers who lack access to finance. Enter fintech company Nivo, which has created a messaging platform that allows users to communicate with their credit union through a smartphone app.

“Credit unions are still very relationship-orientated organisations, so while a lot of people will try and build technology that, if they can help it, won’t touch a human being at all, that’s not compelling to credit unions because they still want to have relationships with people while also being digitally accessible,” says Mike Common, chief executive of Nivo.

Common also has an eye on Nivo’s future potential as a channel for personal finance management tools to distribute financial advice powered by artificial intelligence directly to customers.

“One of the problems at the moment with people who are more financially excluded is that finance can be quite boring, but if you can deliver people relevant personalised insights in a fun and gamified way, you can make finance more engaging,” he says.

1.3m

unbanked adults in the UK, with one in five of those living in London

4.1m

UK adults are defined as being in financial difficulty

3.1m

have high-cost loans

57%

of the adult population have no cash savings or savings of less than £5,000, rising to 67 per cent in Northern Ireland

71%

have no investments at all

Financial Conduct Authority 2018

15%

with an annual income under £10,000 rely entirely on cash to make payments

Access to Cash Review 2019

Residents in Madrid celebrate the April Fair at their balconies during the Covid-19 Pandemic; Spain has vowed to roll out a universal basic income "as soon as possible"

Joaquin Corchero / Europa Press via Getty Images

BASIC INCOME

Virus fallout could usher in the UBI era

As governments the world over continue to grapple with the devastating economic and social consequences of the coronavirus pandemic, the argument for a universal basic income has begun to gather speed

Oliver Pickup

Guy Standing says he is struggling to keep his feet on the ground, pun unintended, presumably. The professor of development studies at the School of Oriental and African Studies, University of London, is the world's pre-eminent authority on universal basic income, or UBI, a model for providing every person with an unconditional sum of money, regardless of employment status or resources.

Indeed, promoting the concept of UBI, which is designed to enable a baseline standard of living and address wealth inequality, has been his life's work. And now, aged 72, after struggling to be heard for the best part of half a century, he is suddenly inundated with media interest and his decades-long toil is vindicated.

Hordes of others, crucially across the political divide, are joining the UBI conversation, owing to the financial dire straits many millions of people are in because of the COVID-19 pandemic. "I had eight interviews yesterday, from eight different countries; it's just mad," a weary but willing Standing, who last year, at the behest of former shadow chancellor John McDonnell, wrote a basic income report designed to inform the Labour election manifesto, reveals over Skype from Geneva.

"It's hard to keep up with all the requests, but it feels like a pivotal moment. I would say the probability of basic income being implemented has gone from 20 to 50 per cent. It's time for humility, though, rather than having a 'I told you so' attitude."

The COVID-19 outbreak and its fallout, which experts agree will be long and painful, has shifted policy proposals that a month or two ago were dismissed as radical and fringe, such as UBI, into the mainstream.

"I believe the economic crisis that is going to come will cause more death and misery than the coronavirus outbreak itself," says Standing, who co-founded Basic Income Earth Network in 1986. He predicts "widespread chaos" if prime minister Boris Johnson's government "throws lots of money wildly into job-retention schemes", mostly because the cash won't reach "where it needs to get".

Attitudes towards UBI are changing rapidly. For example, at the end of March, a 170-strong, cross-party group of parliamentarians called for UBI to be introduced in the UK. That was before Spain, in mid-April, became the first country to agree to rollout nationwide UBI. Many other countries, including Japan, Australia, the Netherlands, New Zealand, Brazil and Singapore, have expressed their intentions to follow Spain's lead.

UBI is generating great interest in America, too, with Democrats and Republicans increasingly viewing it as a viable solution to the significant economic challenge.

"Every day that goes by without UBI means more preventable deaths and more unnecessary suffering," argues New Orleans-based author Scott Santens. "UBI is important everywhere, but it is especially important in the United States, where before this pandemic even began to overwhelm what we call our safety net, 13 million people living under the poverty line were already getting no assistance whatsoever from the federal government.

"I've always wanted to get UBI implemented to save lives, prevent suffering and upgrade everyone's wellbeing through a vastly improved system oriented around prosperity and human thriving. Right now, all of those things have gone up an order of magnitude in importance. I'm happy to see more people finally taking UBI as seriously as it always should have been, but at the same time, it's hard to celebrate anything, when the stakes are now higher than they've ever been."

Sir Thomas More, the London-born Renaissance humanist, hinted at the manifold benefits of an unconditional basic income in his controversial 1516 masterpiece Utopia, about an imaginary, ideal island state. And although there have been some small UBI pilots, notably in Finland and India, the transition from theory to practice has been hard to navigate, not least because questions linger around how such schemes should be funded.

Now, however, at a time when an estimated 1.7 billion adults are unbanked and without access to a bank account, blockchain technology, which promises immutability, decentralisation and transparency, could be the answer to building a UBI mechanism at scale. Dozens of organisations are seeking to both deliver and finance UBI through blockchain tech.

"From a practical standpoint, blockchain offers the possibility of financial inclusion to everyone," says Yoni Assia, chief executive of investment platform eToro. "In contrast to the traditional finance system, it provides a frictionless way to transfer wealth to those who need it.

"Take, for instance, when the US government announced it will issue money to all citizens via so-called helicopter drops. It has to work with a variety of different banks that each have their own processes and infrastructure to transfer money. It can also only reach those with a bank account. If everyone were given a crypto 'Fed wallet', though, they could instantly credit people with tokens to use to purchase goods and services."

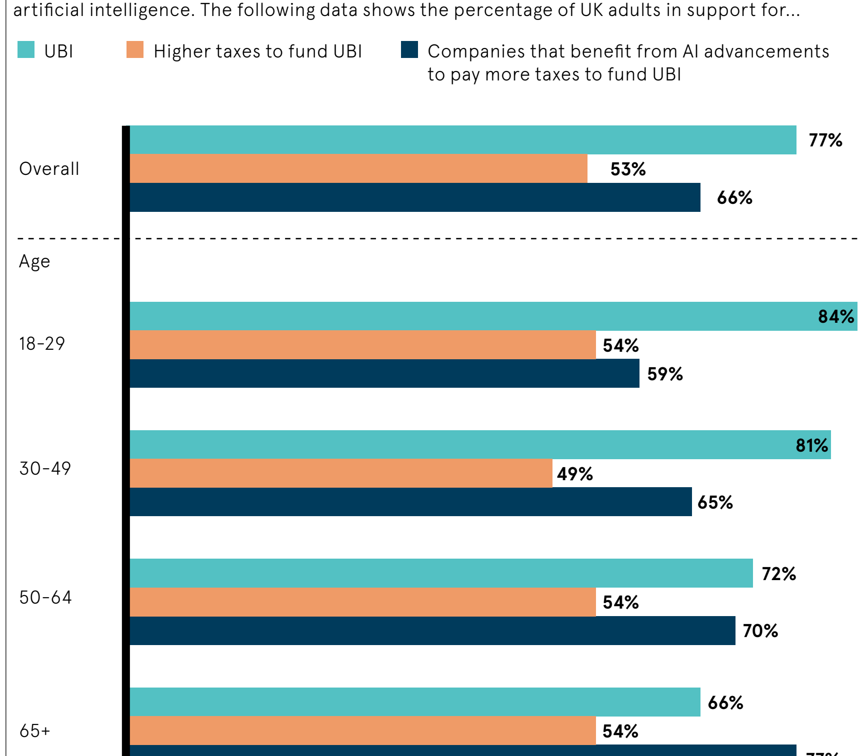
A project exploring blockchain-backed UBI is GoodDollar, a decentralised, not-for-profit organisation supported by Assia's eToro. "Theoretically, everyone can receive a GoodDollar token into a crypto wallet, not needing to jump through the regular hoops of opening a bank account and effectively helping to reach the unbanked," he says.

Assia, who believes "wealth inequality is a critical challenge of our time", concludes: "The current global crisis highlights the need for a new economic order, and I believe it will inevitably advance and accelerate efforts to deliver UBI."

SUPPORT FOR UNIVERSAL BASIC INCOME

Gallup/Northeastern University 2019

UBI has been suggested as a way to help people who lose their jobs because of advances in artificial intelligence. The following data shows the percentage of UK adults in support for...



Five advancements in UBI

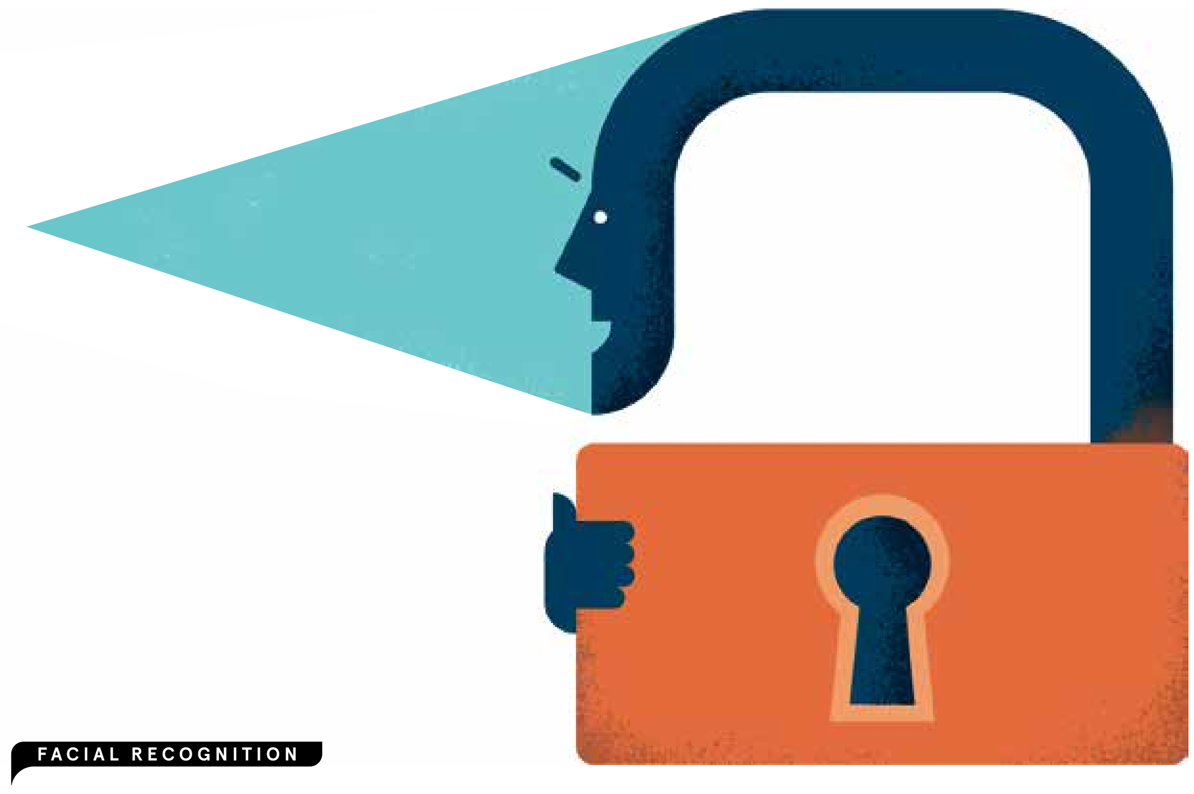
01 Spain to roll out UBI "as soon as possible"
In the most significant breakthrough in the 500-year history of universal basic income (UBI), in early-April Spain's centre-left government became the first nation to unveil plans for some form of guaranteed income. "We're going to do it as soon as possible," said Nadia Calviño, Spain's minister of economic affairs.

02 UK could "certainly consider" UBI
Prime minister Boris Johnson was open minded about UBI earlier this year, though a parliamentary debate concluded it was not "the best method to tackle the extraordinary situation". However, considering two million people in the UK have become unemployed since the start of the pandemic, it is likely UBI will be debated in parliament again soon.

03 UBI case "strengthened immeasurably" in Scotland
Nicola Sturgeon, the first minister of Scotland, showed her support for UBI on the day COVID-19-stricken Johnson was moved out of intensive care at London's St Thomas' Hospital. Responding on Twitter to a think tank's case for basic income guarantee, she wrote: "I've long been interested in [the] concept of UBI but [the] current situation strengthens [the] case immeasurably."

04 Brazil approves basic income emergency measure
In early-April, Brazil's president Jair Bolsonaro sanctioned a law that institutes an emergency basic income unconditionally. All adults will receive R$600 (£92) a month. Payments will continue for three months, though might be prolonged, depending on the continuation of the economic crisis wrought by the COVID-19 pandemic.

05 Twitter chief backs UBI
Jack Dorsey, chief executive of Twitter, announced he would make available $1 billion to fund COVID-19 relief efforts around the world. "After we disarm this pandemic, the focus will shift to girl's health and education, and UBI," he wrote. More high-profile tech leaders are expected to follow suit.



FACIAL RECOGNITION

Facial recognition continues to divide opinion

Data is the most valuable commodity of the modern era. Global tech giants thrive on collecting it and making a profit from it. So the march towards facial recognition payments may seem unstoppable. However, the idea that our faces are being harvested and stored digitally is raising far more than a few eyebrows. Here are the pros and cons

Emily Hill

Pros

Of course, there are many pros when it comes to facial recognition payment, especially from the industry's point of view. After all, devotees of the iPhone are already using it if they have the latest model, making it already the new or latest normal.

"It appears consumers are becoming more accepting when they are trading biometrics for convenience in the private sector in terms of faster and more secure payments," says Gus Tomlinson, general manager of identity fraud at GBG, a global leader in identity data intelligence. "Most prominently, we have seen Apple enabling facial recognition to unlock phones, the first step in extending strong authentication to access apps."

When it comes to giving out your facial characteristics, why would you worry if you've already given away your thumbprints to your phone, photograph album to Instagram, contacts book to Facebook and so on?

"Currently, convenience still beats other concerns," says John Erik Setsaas, vice president of innovation and identity, at digital identity fintech Signicat. "People use Google for mail, maps, documents and searching, even though we know Google collects information and creates a profile."

But when it comes to facial recognition payment we're in unregulated territory as legislation lags behind the latest technology.

The industry should, perhaps, be looking to France where the first standard regulation applicable to biometric systems at work was introduced. It prescribes specific requirements for processing biometric data to control information systems in the context of business tasks.

This is in stark contrast to the situation in India where the world's largest biometric identification programme comprehends roughly a billion registered users (the entire population is 1.3 billion) and facial recognition privacy concerns are very serious.

"Upon its creation, Aadhaar was largely viewed as a well-intentioned initiative that could stem government waste and protect citizens' identities," Tomlinson explains. "Today, many view it as a mass-surveillance tool that infringes privacy rights."

Currently, the European Union's General Data Protection Regulation is meant to prevent abuse of our privacy. Geoff Anderson, senior partnerships manager at Digital Catapult, urges companies using biometric payment technology to get ahead of potential future problems. "The appeal of biometrics is obvious: it's easy to use, almost impossible to lose your facial characteristics and also quite sci-fi," he says. "We're at the relatively early stages of the biometrics life cycle, so what we do now will really set the agenda for its future use."

Cons

There is obviously a lot of excitement around facial recognition technology and its implications for the future of payments, and rightly so. But it's important to temper enthusiasm with caution. It is vital, therefore, the industry concentrates on the privacy concerns that are most pertinent, so the risks to the consumer don't exceed potential gains.

"While the benefits are endless, businesses must also consider the risks that arise from deploying face recognition systems as they need to take appropriate steps to comply with the law," says Tamara Quinn, partner at international law firm Osborne Clarke. "Facial recognition and video surveillance are covered by a complex web of regulations, which isn't easy to navigate, plus there is reputational risk if companies aren't seen to be taking privacy seriously."

It's also important to understand the potential for fraud. Customers might think that because their face is unique, they don't have to worry as they would if relying on a password or PIN number to authorise payments.

Last year, it was revealed that the biometrics data of more than a million people had been exposed from a database owned by the biometric security company Suprema. This included facial recognition collected by London's Metropolitan Police.

"Combined with the personal details, usernames and passwords, the potential for criminal activity and fraud is massive," according to one of the researchers who brought the situation to light. So biometrics is not immune from the difficulties faced when it comes to fraud.

"Biometrics is not fool-proof and, just like your credit card, details can be stolen and cloned," says Anderson. "A picture of your face can enable anyone to steal your identity. Until the reliability and security of biometrics can be proven, it should only be an opt-in choice for users. What absolutely must not happen is a rush to implement biometrics as the de facto means of authentication; let's not run before we can walk."

An invasion of privacy?

Anyone interested in payments technology should take note of a court case launched in Cardiff concerning automated facial recognition used by the state. This is the first major legal challenge in the UK regarding facial recognition privacy concerns and was brought by office worker Ed Bridges, who believes he had his image captured by police while he was shopping in 2018.

"By the time I was close enough to see the words 'automatic facial recognition' on the van, I had already had my data captured by it," he told the BBC. "That struck me as quite a fundamental invasion of my privacy." Mr Bridges is supported by the civil rights group Liberty.

"It is just like taking people's DNA or fingerprints, without their knowledge or their consent," says Megan Goulding, a lawyer working on the case.

Understandably, this has prompted negative headlines and it seems a balance must be struck between the use of biometrics by the state and its potential benefits in the payments sector.

"The technology will, as technology does, continue to be developed," says Andrew Hartshorn, information law specialist at law firm Shakespeare Martineau. "I think its use is likely to be curtailed going forwards, or rather used in limited circumstances, where use is more focused, with less scope for widespread invasion of privacy."

Bridges has appealed a ruling that stated South Wales Police did not breach his human rights by using the tech.

PAYMENTS SOLUTIONS

Why sex startups face uphill payments battle

Finding a suitable payments provider is a vital initial step for any startup conducting an online business. When your core product is controversial to some, however, things can get a little tricky

Katie Deighton

"Sex toy sales skyrocket during the coronavirus pandemic" is perhaps one of the lesser-spotted humorous headlines to come out of the COVID-19 lockdown. As social distancing splits up some couples, embargoes casual sex and drives people to seek respite from relentless stress or boredom, vibrator retailers are experiencing a boom.

Despite the circumstances, this rise in demand is welcome good news for startups in the sextech arena. Their path to growth has been littered with fights to market their products on Facebook, to advertise on the New York subway and to be taken seriously at tech conferences such as the Consumer Electronics Show.

They've also had to battle to sell their products online. Because while launching a sextech website is fairly uncomplicated, integrating a payments provider into an ecommerce platform isn't.

PayPal, for instance, allows the sale of "certain types of adult products and content" but "prohibits the use of... services for the sale of materials that depict criminal behaviour or the sale of sexually oriented content or products to minors". Equivocal policies such as these effectively close the door to much of the sextech world.

Soumyadip Rakshit, co-founder of sexual health firm MysteryVibe, spent months negotiating for the services of Apple Pay. While Apple was happy to facilitate the sale of what are technically medical devices, it took issue with MysteryVibe's "play" page, which depicted various sexual positions.

"We had three options: we could remove the page, we could adapt it or we could just not have Apple Pay," he says. "The truth here was the 'play' page was illustrated with hand-drawn watercolours, so we could justify it as art. But when we launched our app on Google Play, they said we can't put up pictures of vibrators. So, we changed them to line diagrams."

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Rakshit has spent years finding such workarounds to payments providers' policies. He's found the companies are generally agreeable to work with and notes they work on a case-by-case basis. He also believes their decisions don't have anything to do with ethics or morality.

"It's completely commercial," he says. "If [payments providers] are saying 'no' to money, there has to be a really good reason. And the really good reason is they might lose a lot of audience if they didn't say 'no'."

But reaching a friendly compromise with a payments provider becomes more difficult the closer a sextech company moves towards porn.

Sex club Killing Kittens has been building out an app for its paid-for subscriber community for the last few years. While free from porn, the platform facilitates online dating with a chat functionality that, given the uninhibited nature of Killing Kittens's real-life parties, invariably contains uninhibited language.

None of the big payments providers will touch the app. Stripe was interested, but only if Killing Kittens censored its entire raison d'être: sexually explicit content. Senior connections Killing Kittens' founder Hadleigh Bolt had made at PayPal went all the way to the head office in San Francisco to debate the case, only to come back with bad news.

He questioned their conclusion. Why would they work with a sex toy manufacturer but not Killing Kittens? Their response: the sale of a sex toy is fine, but if you encourage people to use it, we won't allow it.

The brand has consequently spent a lot of time patching together a payments system that's build around numerous providers with various clearing banks for it to operate seamlessly across multiple currencies. It's been frustrating, but completely necessary. For Bolt, the options were either build something new or "don't take money and lose the business".

He sympathises with the policies of payments providers to the extent that he doesn't believe there's much point in arguing against them. "[Sextech] is a small part of the global economy, so why would they want to run the risk? There may be people that come through who aren't as professional as us. If they were done [prosecuted] for human trafficking and PayPal took a payment which allowed that, PayPal are liable. It's not worth it for them."

Others in the industry are less resigned to take the rules as they come. Former ad agency executive Cindy Gallop launched the "social sex" video platform Make Love Not Porn to provide a space on the internet for real-world sex. Designed through the female lens and with all films moderated by a human from beginning to end, she maintains the content is not porn. Big payments providers refuse to work with her anyway.

For now, Make Love Not Porn runs off a payments provider that caters primarily to the adult industry, but the rates are "extortionate", Gallop says. She wants to change this not by lobbying the likes of PayPal at a micro level, but by blowing her grievances right out in the public domain.

"The three huge disruption opportunities in tech today are sex, cannabis and blockchain," says Gallop. "Investors are flooding into the other two and what that means is these seasoned startups in cannabis and blockchain can afford to fund lobbyists, regulation change, public education initiatives and foundations. We need all of that in sextech, because we need a new legal definition of adult content.

"All the laws were written for porn, and terms and conditions are written for porn as well. Nothing has caught up with the internet, so nobody has driven a movement to re-examine that all-encompassing 'adult' clause in the light of sextech and sex education."

Gallop's more pressing aspiration is to partner with a fintech that will prove it can "process payments for legal, ethical, transparent sextech startups and make a [s***] tonne of money" in the process. Only when the cash generated becomes impossible to ignore will payments providers and clearing banks think about relaxing their sextech policies, she says.

Bolt, similarly, sees Killing Kittens as a willing groundbreaker for future sextech companies. "As society changes, we will already have shown this can be done," he says. "Stripe will say 'there's actually very good revenue to be done in this industry'. And the companies that come after us, in the next five to ten years, will have it easier."

BEHAVIOUR

How spending money can buy happiness

Behavioural economics can reveal useful insights into our motivations and feelings when parting with hard-earned money

Marina Gerner

Tristan Colangelo/Unsplash

Try to imagine life before lockdown – if you can. You're on your way back home from work and you pop into a shop. You weren't looking for anything in particular, but an hour later you find yourself walking out with a big smile and multiple bags in tow. What happened? Behavioural economists call it the effect of "shopping momentum".

We like to think we're rational consumers when it comes to our spending. After all, our financial decisions have a huge impact on our wellbeing. Think of an unforgettable holiday or a house bought at the wrong time. But in reality, we're emotional creatures, susceptible to biases and external factors.

Luckily, behavioural economics makes our irrationality more predictable. In the words of Nobel prize-winning economist Professor Richard Thaler, it's "economics done with strong injections of good psychology".

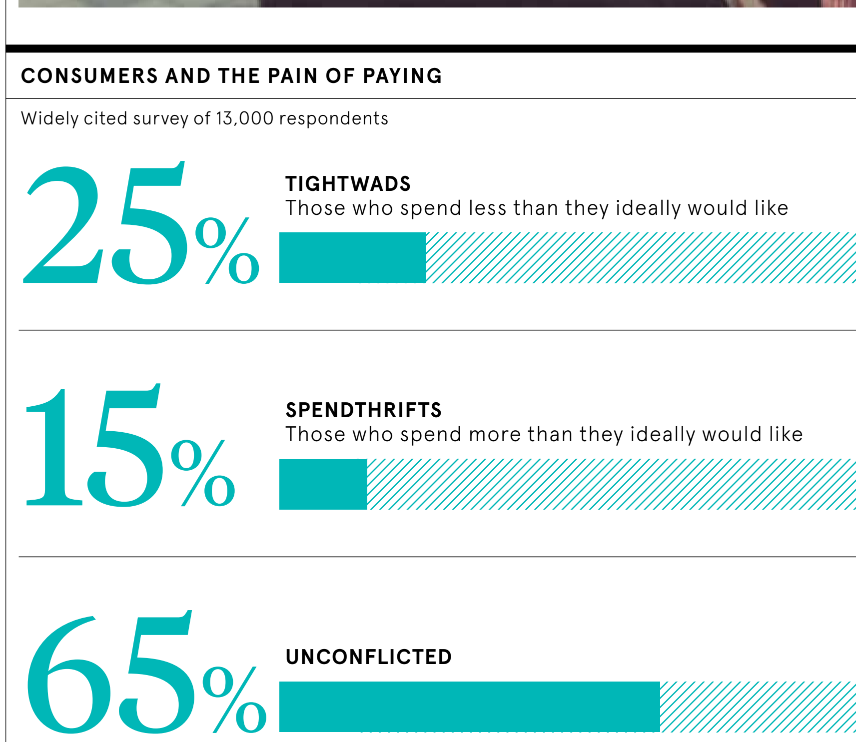
When considering paying for goods, researchers have found that buying one thing makes us much more likely to buy subsequent items, regardless of our previous deliberations. Browsing things to buy online or in a store, puts us in a mindset of "deliberation". But as soon as we buy one item, a cognitive shift to "implementation" occurs. "Our mindset changes from whether or not I should buy something to how do I buy this?" says Professor Ravi Dhar of the Yale School of Management, New Haven, Connecticut.

"If you want to resist the impulse," says Professor Dhar, "ask yourself what else you could do with the money." His studies show that people typically neglect to think of opportunity costs, or alternative things we could buy with the same amount of money. Those who do are more likely to choose the cheaper option or buy nothing at all.

Conversely, retailers can use framing techniques to get people to spend more. "Paying a lot for cashmere socks seems gross to many people," says Professor Dhar. If cashmere socks are presented among other types of socks, we're inclined to see them as socks first and consider their material second. But experiments have shown that if the same socks are presented alongside other cashmere goods, we categorise them as "cashmere" first and "socks" second, and we're willing to spend more.

There's another framing technique to increase spending. When buying a new backpack, for example, our tendency for "duration neglect" means we don't typically think about how long we're going to use it for. But if people are asked to consider how long an item is meant to last, they're likely to pay more.

Such framing techniques influence our pain threshold for paying. People are, generally speaking, loss averse and the idea of a "pain of paying" was coined some two decades ago by professors Drazen Prelec of the Massachusetts Institute of Technology and George Loewenstein of Carnegie Mellon University, Pittsburgh, Pennsylvania. Think of sitting in a taxi, staring at the meter creep higher and higher. It's painful.



Scott Rick et al, *Journal of Consumer Research 2008*

But what kind of a pain is it exactly? A brain imaging study led by Professor Nina Mazar, a behavioural scientist at Boston University, found that the pain of paying is not like a physical pain. It's more similar to distress or anxiety on a neural level; it can help keep our spending in check.

However, not all payments are equally painful. Research tends to revolve around three key factors. The first is payment method. Paying by card is less visceral and therefore easier than paying with cash. In one study, people were willing to pay twice as much to bid on tickets for a basketball game if they could pay by credit card rather than in cash. Contactless payments and phone payments make parting with money even easier.

The latest example of separating purchasing from paying are checkout-less Amazon Go shops, where people don't consciously pay at all. Hundreds of cameras around the store are able to detect what customers take off the shelves and automatically charge their Amazon account when they leave.

The second factor is our disposition. People who are tightwads and who make up about 25 per cent of the population, according to one study, experience more pain when it comes to paying than spendthrifts who make up 15 per cent.

"Tightwads experience a lot of distress when they make purchases, especially the optional kind, and that prevents them from spending the money they think they should spend on certain things, and they sometimes kick themselves afterwards," says Scott Rick, associate professor of marketing at the University of Michigan.

On the other side of the spectrum, spendthrifts hardly experience any pain at all. "They just can't stop themselves," says Dr Rick. Spendthrifts are largely insensitive to payment methods, but for tightwads, contactless methods and framing techniques, for example if a fee is described as "small", make a difference.

The third factor is whether we consider a product virtuous or frivolous. Buying fat-free yogurt feels different from buying ice cream with sprinkles. Only the latter gives us pangs of guilt.

Virtuous items are those we consider necessary and they're more likely to induce shopping momentum than vice items, which make us pause because of the momentary guilt. So buying milk leads to more subsequent purchases than buying ice cream.

But there's an effective way for companies to counter the guilt we feel when buying "vice" products. It's an age-old method: coupling vice products with charitable donations. In one study, 48 per cent of people were likely to opt into a donation when buying theme park tickets, but only 32 per cent did so when buying a six-month supply of toothpaste.

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So if a vice product is coupled with a charitable donation, people's guilt is balanced by the warm glow we experience when we give to charity and the moral satisfaction we purchase. Our pain of paying is assuaged, while both the company and charity benefit.