

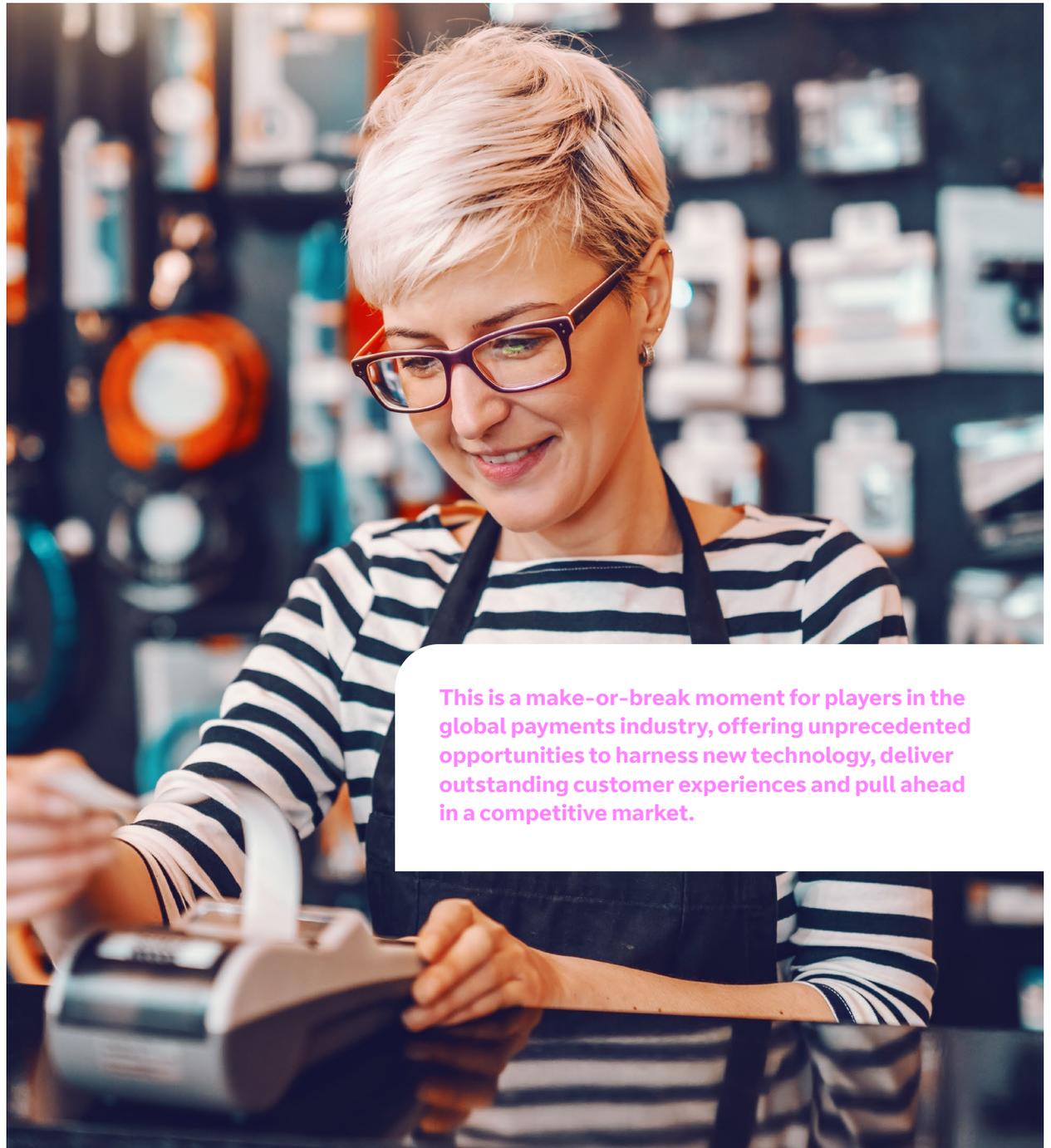


Exploring the future for financial payments in an uncertain world



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This is a make-or-break moment for players in the global payments industry, offering unprecedented opportunities to harness new technology, deliver outstanding customer experiences and pull ahead in a competitive market.

A market where it's all to play for

Consumers expect a secure and seamless transaction – with no exceptions. Expectations are sky high. They're not considering what's technologically possible; they're just expecting the ease of today's instant, always-on culture to be pulled through to their payments.

And they expect cast iron security throughout.



It's a tall order, but the rewards for companies that can deliver are huge; the payments market is predicted to continue to grow steadily until 2027 offering revenue opportunities exceeding \$100 trillion.

Currently, payment providers are jostling for position in a fragmented and shifting marketplace. There's a keen competitive landscape as companies undertake joint ventures to achieve global expansion in response to geopolitical pressures or consolidate to grow rapidly through digitisation. In a positive macroeconomic environment, technology is advancing at pace, generating a plethora of payment channels and payment methods. Contactless and digital payment options are growing in popularity, fuelled by the rise of e-commerce, but – as yet – there are no clear winners.

The pressure is on existing and new players to keep pace – or be left behind.

So how can you move at pace towards the new digital world, offering seamless and secure transactions that meet challenging customer expectations – all while differentiating your business from the pack?

The Coronavirus effect

The Coronavirus pandemic has changed the financial landscape and the payments industry must keep pace, offering robust and reliable services – both through intense short-term disruption and through the lengthier process of adapting to new ways of living.

An initial fall in consumer spending as a whole – particularly in sectors like travel and tourism, accommodation, and food and drinks – started a slowdown in the overall growth of payment card transaction values and volumes that's expected to extend through to at least 2023, reflecting rising rates of unemployment and a looming global recession.



On the other hand, lockdown measures that saw consumers staying at home to stay safe caused online purchases to skyrocket, pushing up debit and credit card transactions. As a result, e-commerce began performing more strongly than forecasts had predicted. Consumers fearing virus transmission moved away from cash, leading to card payments in the UK and Europe overtaking cash for the first time ever and ATM business to decline sharply. This also boosted the use of digital payment tools such as mobile wallets and triggered a significant increase in mobile payments. An increase in the contactless transaction limit across Europe further supported this change in payment patterns.

As the payments industry moves beyond the initial phase of rapid reaction to the Coronavirus, it continues to look for ways to swiftly process vast amounts of low-value payments on demand. It's a fertile environment for new technologies and providers are working hard to stay competitive, using cooperation, partnering and acquisitions to find the innovation they need. This must continue, if the industry is to justify consumer trust and support life as we now know it.

The search for the ultimate easy transaction experience

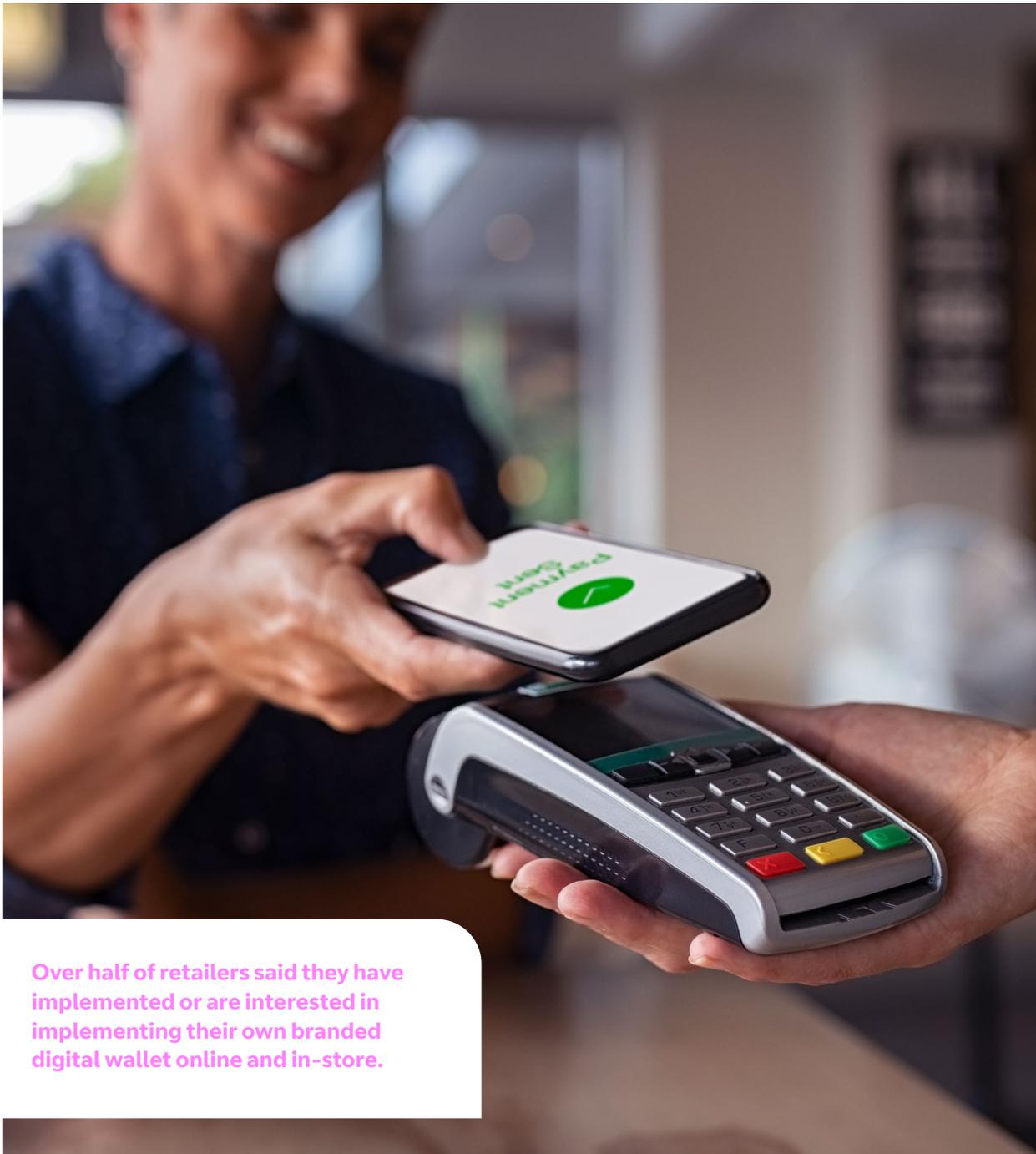
Today's world revolves around the convenience of connectivity. As a new generation joins the market, the average consumer now has a smartphone in their hand and an increasingly affordable mobile internet service to rely on. The phenomenal rise in internet connectivity is productive ground for both established payment providers and new market entrants to support and promote the popularisation of mobile payment. At the same time, the always-connected society has created a surge in online shopping, putting pressure on payment providers and retailers to deliver a transaction that's as fast and as frictionless as possible.



The challenge of making transactions easy and secure is being met by innovation from a mix of sources. Big tech companies such as Amazon, Apple and Google are examples of giants active in this space, and have the capability to threaten any traditional payment providers who are slow to respond to the digitisation of the industry, thanks to their agile ability to innovate through early API implementation. New, digital-native fintech entrants are also shaking things up with new technologies and payment channels. Although there are signs that these fintechs are struggling to secure funding during this economic downturn, their innovation is still making it to market, thanks to partnership with or acquisition by established providers seeking to keep pace and preserve market share.

Joint ventures are proliferating as a fast way of achieving a ubiquitous solution set that can deliver economies of scale and competitive differentiation in a rapidly evolving environment. From digital wallets and mobile payments, through to wearable tech and connected devices, rapid developments continue in technologies designed to deliver faster payments in more convenient, customised and accessible ways.

By 2024, 60% of in-store and online merchants will accept multiple noncard retail payments operationalised by direct-from-bank schemes and eWallets, forcing change in traditional card models.



Over half of retailers said they have implemented or are interested in implementing their own branded digital wallet online and in-store.

The mobile wallet makes its mark

Mobile wallets – encrypted software that stores credit card, debit card, reward card or voucher information on a smartphone – are a prime example where joint enterprise is helping to nurture take up.

The way Apple is developing its financial products gives an indication of future possibilities for the market. It's using its technology to meet the different transaction preferences of different generations and to build bridges between all forms of transaction. In partnership with Goldman Sachs, Apple offers the Apple Card. This can take the form of a physical card for older cohorts, working in traditional credit card format, but for younger people, it offers wider potential, giving them the ability to pay from any of their Apple devices. In the future, it may morph from a credit card into a bank account, meaning the consumer can set rules up as to whether the wallet makes a debit payment direct to a supplier or places a transaction on the credit card. At the moment, Apple is pushing users towards using the mobile wallet by offering greater cashback rewards to use Apple Pay through their mobile devices.

As a new generation comes online that doesn't expect to shop or pay for things like their parents did, big digital native companies are taking centre stage, establishing themselves in all areas of consumer life and transactions.

Making data deliver for customer experience

Consumers are aware they're sharing their data with providers and expect them to use it to deliver a customer-centric experience across the customer lifecycle – and the collaborative-joint venture approach is critical here, too. Players that process large chunks of payments control most of the data and insights around the transaction and are building analytical capabilities to harness them.

There's widespread recognition of the importance of integrating mission-critical payments systems with analytical applications to better understand customers, assess financial risk and drive growth, and providers are already searching out ways to bring together disparate data across multiple functions and systems to create new services.



However, by focusing their efforts within their individual businesses, payment providers are only able to access data and insights for their part of the transaction.

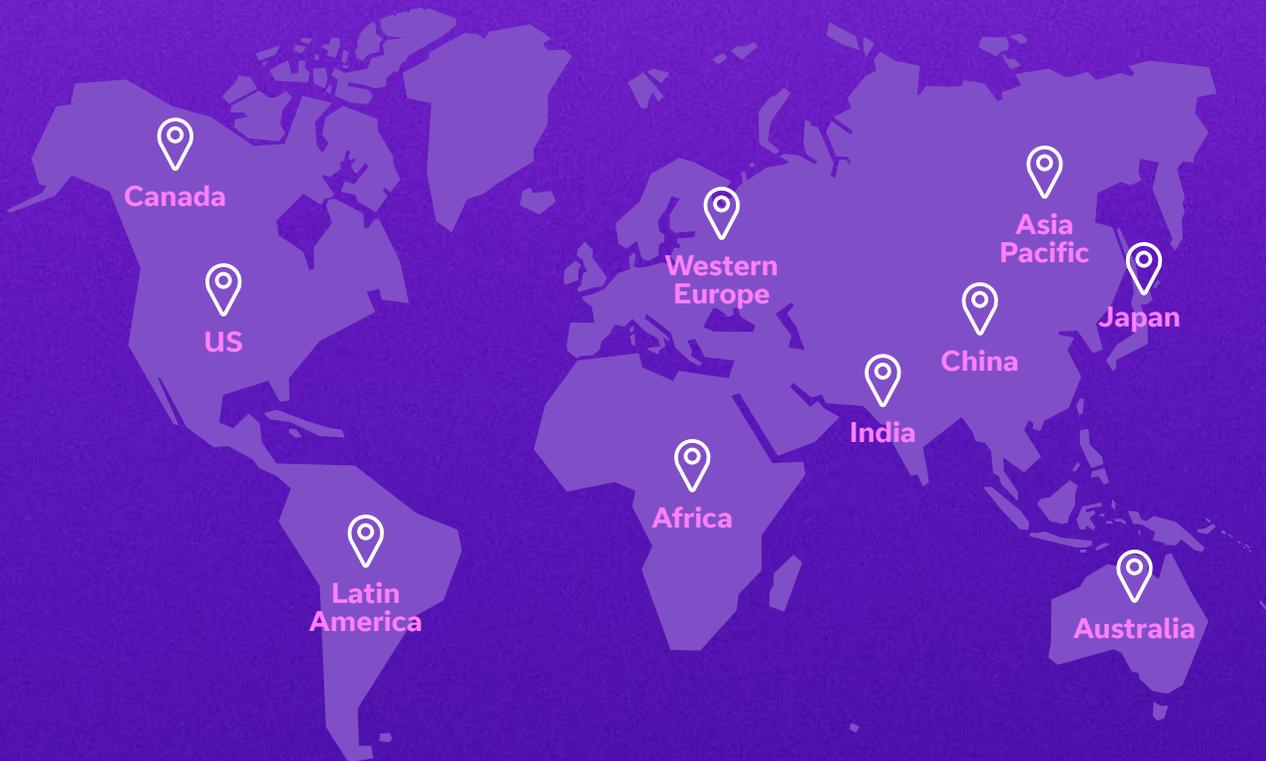
To extract maximum value from data across the whole transaction, providers need to come together to create the most suitable ecosystem and overcome the barriers of siloed transaction data.

The next goal for payment providers is to harness customer data to drive an advanced layer of omnichannel and transaction services. The defining factor will be the personalisation of services, and these will emerge in all areas of life. From augmented customer self-service options and agent assisted conversations in the contact centre, to businesses interpreting data and using proactive communications to head off queries – understanding data and applying insights will transform the customer experience.

With so many new entrants to the market spawning so much innovation and so many different payment channels, the customer experience on offer is already improving in leaps and bounds. However, the pressure is still on retailers and payment providers to embrace innovation to deliver a seamless omnichannel experience that considers the payment services preferred by local consumers. However, to maintain customer trust, it'll be essential that every advance is underpinned by robust security.

Payment trends around the world

A key element for payments industry players is to understand the status of key payment markets and which payment services are preferred by local consumers. There are wide global differences in level of maturity and roll-out of services.



Africa

With a large, unbanked population and limited digital payment infrastructure, transactions are mostly made in cash at point of sale.

Australia

Credit and debit cards are proliferating, buy-now-pay-later payments are standard, and digital and mobile wallet use continues to grow.

China

A largely cashless society, with digital and mobile wallets the preferred payment method online and instore.

Western Europe

More debit than credit focused and generally slower to adopt digital payment methods, although use of mobile and digital wallets is increasing.

US

An advanced market for digital and mobile payment with a surge in digital and mobile wallet use expected over the next five years.

Asia Pacific

Payment technology sophistication varies across APAC, however consumers are gravitating towards mobile and digital wallets.

Canada

Credit is favoured over debit both online and instore and there's a migration to digital cards.

Japan

Remains cash-based at point of sale, but online transactions are overwhelmingly made with credit cards.

Latin America

Cash continues to dominate at the POS and is a popular way to complete an electronic purchase.

India

Cash is still king for instore payments, with digital and mobile wallets mainly used for eCommerce purchases.

Digital disruption turns the spotlight on cyber security

Consumers worry about the security of their transactions – rightly so in many cases – placing a heavy burden on payment providers to both reassure and protect. As new technology, new payment methods and the Internet of Things expands consumers’ digital exposure, the threat vectors are multiplying. Consumers are ready for all the convenience of digitisation, but don’t want to acknowledge the vulnerabilities it brings, expecting retailers and payment providers to step up to close the loop on security.

Consumers’ fragile trust in payment systems is under a constant barrage of assaults, from Denial of Service attacks, social engineering and phishing scams, malicious banking apps and other malware that compromise payment transactions and result in fraudulent payments. From the provider’s point of view, it’s a continual cycle of playing catch up. As providers shut down one vulnerability, cyber criminals open up another, attracted by the valuable data on offer.

At the same time, the growth of online transactions is increasing the surface area for potential attacks, making more people more vulnerable – particularly those who don’t really understand digital technology. Payments providers must tread carefully, as this situation has the potential to exacerbate this crisis of digital trust amongst consumers, but some promising technologies are emerging.





Blockchain

Blockchain technology has the potential to reduce fraud within the payments industry by providing a single indisputable truth that answers the question: how can we be sure this person, asset or transaction is genuine? It generates a complete and immutable record of asset transfers in a digitally shared ledger, so the entire sequence of a transaction can be traced. No-one can alter the data in a blockchain because any transactions that are out of sequence are immediately visible. It allows verified contributors to store, view and share digital information in a security-rich environment, delivering tamper-proof digital records. Blockchain offers the transparency in payments needed to maintain consumer trust.

We believe blockchain has huge potential both within the payments industry and in the wider economic sphere – but that it won't deliver on its promise in isolation. It's less about what you do, and more a question of how you do it. Our first focus is on providing the indisputable infrastructure essentials for blockchain innovation: a resilient and scalable global network, robust security and integration with other cloud services and resources.

With BT, finance companies can access blockchain and distributed ledger services, confident that the services are secure and compliant with all financial legislation.

We are also actively innovating in the blockchain arena and have most recently developed an analytics dashboard for blockchain services that's currently in trials.

It incorporates open source intelligence with advanced graph analytics to automatically categorise addresses. Ideal for crypto-asset tracking and enterprise blockchain management, it determines the source and destination of funds.

To date, we have filed approximately 25 blockchain patents with more pending and are developing ways of using blockchain for trust and identity management. By investing in making accessing services easy and secure we're helping customers to encourage end-user adoption of digital services that offer huge potential for an improved customer experience.

Tokenisation

Tokenisation, too, offers fraud-busting potential by replacing sensitive data in the transaction with non-sensitive data tokens – random strings of characters. Tokens are used to represent cardholder's information, such as a 16-digit card number or bank account details during the payment process, so data can travel without the card details being exposed. The merchant doesn't see or store the credit card number, which highly protects both customers and the system from fraudulent activity.

Biometric identification

Biometric identification uses human characteristics that are unique to the individual and don't change significantly over time as confirmation of identity. The most well-known are fingerprint, iris or retina scans, facial structure and voice recognition, but there's also development happening around individual behaviours, such as how an individual uses a computer mouse or keyboard.

The rise of biometric authentication ticks two main boxes: it improves anti-fraud protection and improves the customer experience. From a fraud point of view, it removes buyer anonymity meaning providers can connect transactions to the individual with certainty. Keeping authentication at the point of transaction reduces the amount that needs to be provided on the network that could slow the transaction down by vital nanoseconds. So, from a customer point of view, it narrows down the security they need to go through to one brief action and makes transactions as swift as possible.

However, once authenticated in this 'one shot' way, the device is then completely open, and this is a weakness if the device is then taken by an attacker.

The next step in biometric authentication is to move to continuous authentication, where both behavioural and physiological biometrics are continually collected from device sensors to form a profile of the genuine user; even if a fraudster gained access initially, they'd soon be locked out.

There's a whole range of biometrics that can be continuously authenticated, from the individual's face and touchscreen behaviour, through to location data, keystroke dynamics and surrounding Bluetooth devices. To increase accuracy, several measures are combined to produce a score. Research shows that biometrics can also detect the user's 'mood', by monitoring their heart rate, keystrokes and facial expressions. As a result, if the biometrics detect a negative mood (such as extreme anger or intoxication), then the payment could be temporarily suspended until the user is in a more balanced mood.

We believe continuous biometrics, and the boost to security they bring, could be the key to increasing user confidence in conducting financial business on their smart devices – and could see the end of explicit knowledge-based authentication mechanisms such as PINs and passwords.

We've conducted research into continuous authentication approaches on mobile and desktop and have developed a demo system that feeds continuous biometrics to a server for authentication, then displays the results on a webpage of trusted devices.

To date, we've filed two patents in this area, one linking the use of continuously authenticated devices to what's shown on smart home devices, and one using biometrics to infer the mood of the user, to restrict transactions if necessary.

Security and trust go together in the payments' environment. As consumers increasingly recognise the benefits of sharing their data, they'll turn to providers that can back up their offerings with robust security. If payments security is ever breached, the consequences for the consumer-provider trust relationship would be severe.

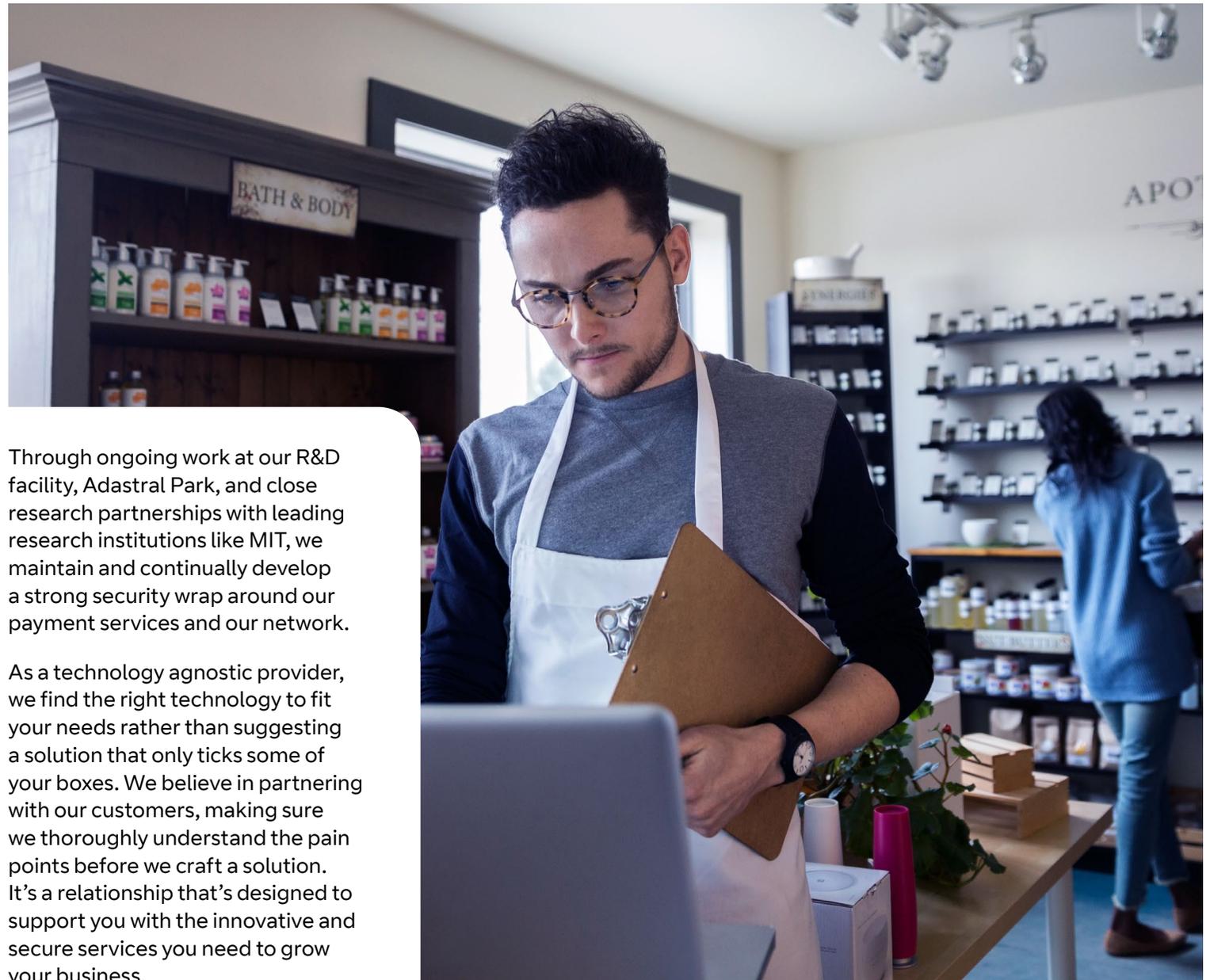


Your partner for a successful future

BT has a strong track record in the payments industry. Managing secure network infrastructure globally is at the heart of what we do and, as one of the largest direct debit submitters in the UK, we process over 100m submissions every year.

The BT Cardway service has been operational for 20 years and is used today by banks, card schemes, financial institutions, payment services providers, retailers and specialist transaction processors as a PCI-DSS compliant, secure payment network environment for payment card transactions. It's a scalable and flexible network that offers a wide range of connectivity options, from MPLS through to 5G, and has the capacity to transport billions of transactions each year. It's designed to meet future payment needs, too, offering seamless migration to faster, feature-rich IP transactions.

An ethos of continuous innovation drives the market-leading payment and financial services we provide today – and fuels the creation of those we'll offer in the future.



Through ongoing work at our R&D facility, Adastral Park, and close research partnerships with leading research institutions like MIT, we maintain and continually develop a strong security wrap around our payment services and our network.

As a technology agnostic provider, we find the right technology to fit your needs rather than suggesting a solution that only ticks some of your boxes. We believe in partnering with our customers, making sure we thoroughly understand the pain points before we craft a solution. It's a relationship that's designed to support you with the innovative and secure services you need to grow your business.

Conclusion

The payments environment is currently recalibrating. Consumers are looking for easy, instant and secure payments via contactless and digital channels, expecting providers to source the technology to make this possible. New entrants and new collaborations are shaking up the player space, and the future of the sector is wide open.

Innovative security to prevent fraud will be crucial to staying ahead, as the market settles. Although they're demanding the latest in speed and convenience, consumers will be quick to abandon providers and technologies that leave them and their data vulnerable. From the tamper-proof digital records delivered by blockchain, through the anonymity of tokenisation, and on to the frontiers of biometric identification, payment providers need to seize every opportunity to build security into their offerings.

Forging the right partnerships will also determine advantage. Providers need to seek out partners that have the research and development capabilities to turn the latest innovations into resilient and trusted services on a global scale. The future leaders of the payments industry are taking action now.



To find out about BT digital payment solutions contact: bt.card.payments@bt.com



Offices worldwide

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