



Future of Payments

From trading livestock to waving a plastic card, the way we pay has changed over time – and it's set to transform drastically in the next few years. We surveyed the nation, spoke to leading finance experts, and analysed our own transactional data to learn about the payment methods of yesterday, today, and tomorrow.

Get ready to travel through the world of payments and find out how we feel about the state of affairs today, and what payment methods will look like in years to come.

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The History of Payments

People have been paying for things ever since there were things to pay for – but the way we do it has evolved. From trading sheep to exchanging sequences of 1s and 0s, our preferred payment methods have come a long way.

Explore the history of payments to get an idea how our transactions have developed – and what they might look like in the future.

01 The History of Payments

Bartering and banknotes: Payments in the pre-card world

Before contactless payments, the world of goods ran on negotiations – think ‘my pig for your bale of hay.’ The first coins appeared between 700 and 500BC, circulated in India, China, and surrounding areas, but it wasn’t another 1,000 years until paper notes entered into the mix.

Before cash caught on, banknotes and cheques were among the most common way to document and make high-value transactions, while coins were the choice payment method for the average Joe.

640BC

First coins believe to have been minted in Lydia (Asia Minor)

1659

Earliest known cheque is written in Britain

1661

First paper money circulated in Sweden – they were credit notes that could be exchanged for silver coins

1694

Bank of England established to help raise money for King William III in the war against France

1793

The first £5 note is written

1855

First UK printed banknotes that didn’t require signature from cashier

1950: The year everything changed

The idea of using a card to pay for goods dates back to the late 1800s, mentioned in Edward Bellamy’s novel Looking Backward. In 1914, special customers of the US bank Western Union were given a metal card that allowed them to postpone making payments. But 1950 was the year that things really changed.

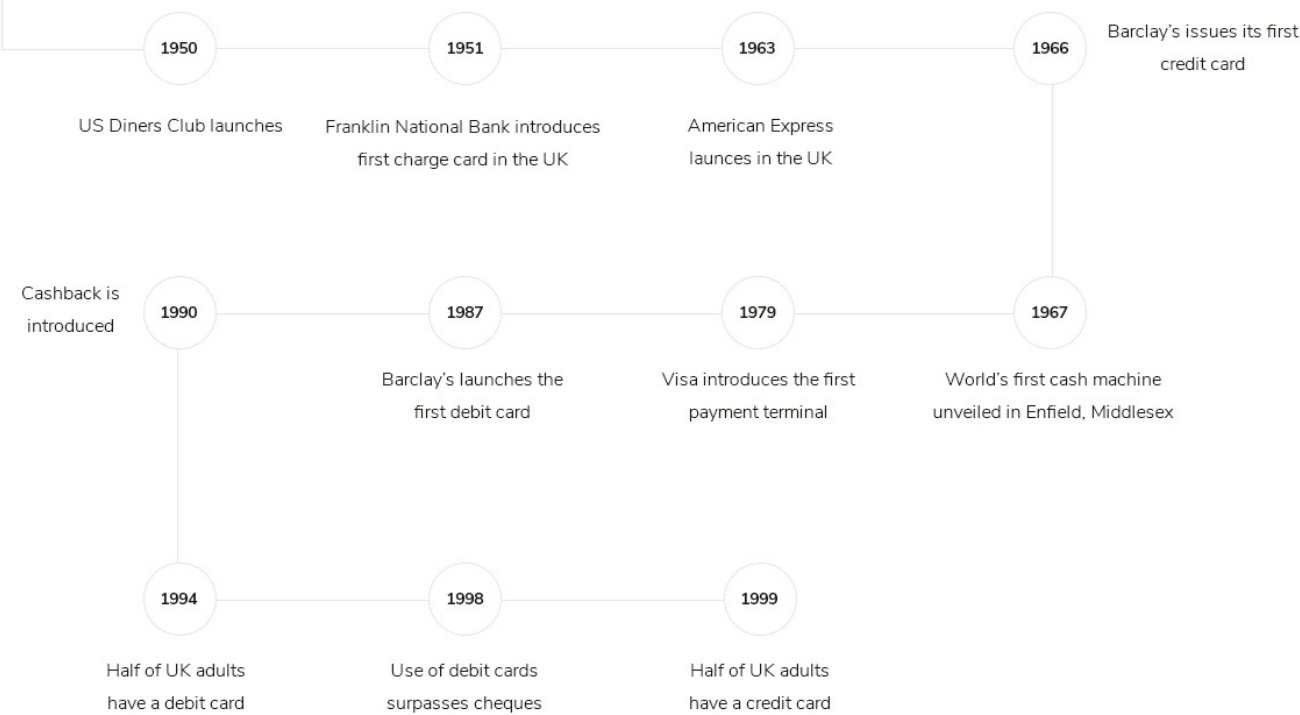
The US Diners Club released charge cards that allowed card holders to charge their meals to their accounts and settle the bill later. It began with 27 restaurants signing up to the scheme and had 20,000 members by the end of the year.

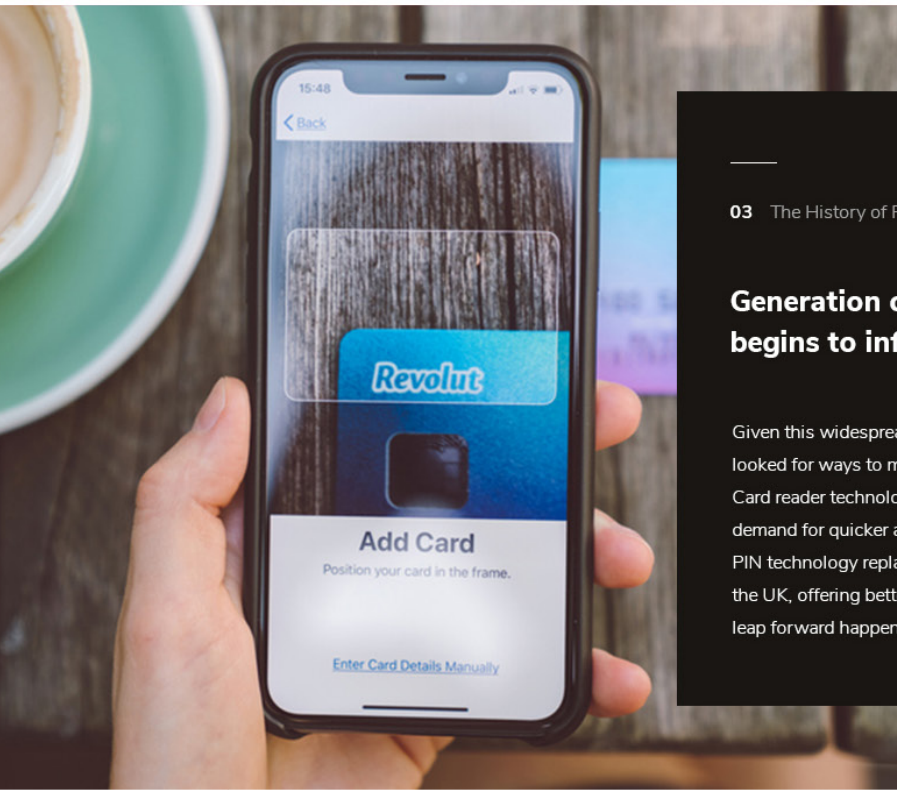
Though initially aimed at restaurant patrons, the concept of giving people cards that represented credit caught on,

and banks began to adopt their own version of the practice. The first UK charge card was released by Franklin National Bank in 1951, later followed by American Express in 1963 and Barclaycard in 1966.

From the late 1980s and beyond, people began to embrace debit and credit cards as their choice way to pay. By 1994, half of UK adults had a debit card. Four years later, debit payments had surpassed cheques.

As more people got used to the idea of paying for things using plastic instead of cash, the industry began to develop products and technologies to suit this new consumer demand.





03 The History of Payments

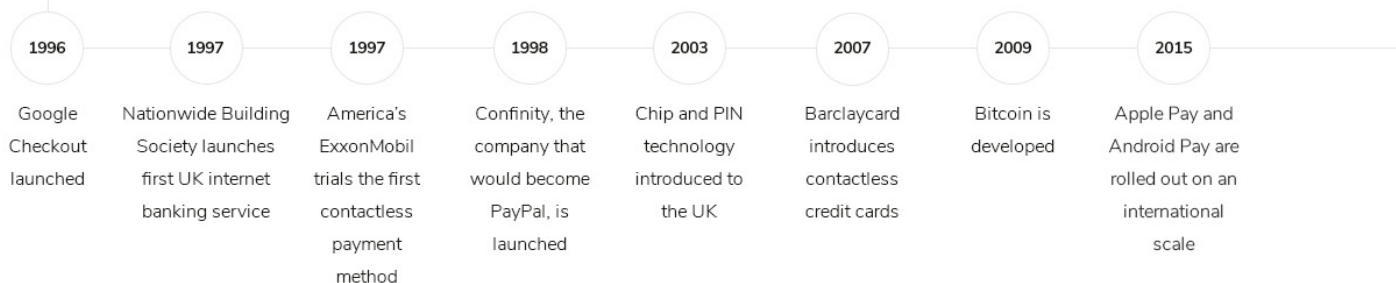
Generation contactless: Technology begins to influence payments

Given this widespread popularity, banks and businesses looked for ways to make it easier for us to spend on plastic. Card reader technology began to develop alongside the demand for quicker and safer payments. In 2003, Chip and PIN technology replaced the old swipe-and-sign method in the UK, offering better security for consumers. But the true leap forward happened when contactless came in.

ExxonMobil, a US petrol company, was the first to experiment with the contactless concept in 1997, allowing customers to wave a Speedpass card in order to pay for their petrol. The UK banks caught up quickly, with Barclaycard introducing contactless credit cards in 2007. A few years later, Transport for London got on board. In 2015, contactless travelled from our cards to our phones with the launch of Apple Pay and Android Pay.

Alongside contactless, the popularity of online shopping, and therefore online banking, began to take hold. Thompson Holidays facilitated the first electronic transaction as far back as 1981, but it wasn't until the late 1990s that things really took off with the launch of Google Checkout and, shortly afterwards, PayPal. By 2001, more than 100 million card payments had been made online.

Fast-forward to 2009 and the development of bitcoin, the first decentralised cryptocurrency, and payment methods were launched into a whole new chapter, moving from the physical tools in our wallets to 1s and 0s on our servers.



Making safe payments: Card security

The Consumer Credit Card Act was passed in 1977, marking a revelation in legislation protecting consumers from fraud. Technology hurried to follow suit, with the introduction of the magnetic stripe in 1987.

Chip and PIN authentication made payments even more secure, using a microchip to store card data and a 4-digit PIN code to authorise transactions.

Experts predict that payment technology will continue to balance convenience with security, developing into methods that our pig-trading ancestors would likely find fascinating and baffling.

Read on to learn more about **how we pay for things today**, and what the **future of payments** will look like...



1997
Consumer Credit Card
Act passed



1987
First UK debit card
incorporated magnetic
stripe



2003
Chip and PIN technology
launched in the UK

Expert insight

“Evolution, not revolution”

“The UK market has been historically on the leading edge for early adoption of new payment technologies: for example, contactless cards for in-store payments met a strong success in the UK far before most other markets. The UK has also had a strong track record of biometrics use for both law enforcement and commercial use cases. It will likely be a leading market for the fast adoption of mobile payments using biometrics, wearables, and new peer-to-peer technologies.

“One reason for our success in adopting new payment technologies in the UK has been our step-by-step approach. For example, we introduced credit cards which initially required to be embossed and slip signed, we then moved on to a magnetic stripe on the back of the card to replace, where possible, embossing.

“The next step was to insert a first-generation payment chip into the card but signature was still required. We then introduced a PIN to replace signature, we now have contactless cards that can be just tapped for a payment to take place and in the near future we will replace the PIN with a biometric form of authentication.

“Each move is a small step down a long path of improvement but one that takes into account both sides of the payment process by ensuring each change is relatively small and easy to understand. It’s about evolution, not revolution.”

Howard Berg, SVP of Banking and Payment at Gemalto



The Way We Pay Today

Whether you need to hop on the bus, buy a coffee, settle your water bill, or make a down-payment on a car, the way we pay for things today is different from the methods we used 20 years ago – after all, can you even remember the last time you sat down to write out a cheque?

We've pulled together data from a variety of sources to create a picture of what the payment landscape looks like today. Explore survey results and expert opinions to find out whether you fit the bill in terms of the way you handle your daily transactions, and what this means for the wider world of payments.

Payments today

The way we pay for things today is more complicated than simply choosing a favourite method and sticking with it. Depending on the circumstances and size of the transaction, we tend to opt for different tools to get the job done.

We asked Brits to pick their most used payment methods



When money changes hands, we don't always look at every method as being equal. It turns out, Brits trust certain payments method more than others:

We asked Brits to pick their most trusted payment methods



Payment Cheat Sheet	
Cash	Coins and notes
Chip and PIN	Debit or credit card – inserted into card reader
Contactless card	Debit or credit card – tapped onto card reader (suitable for transactions £30 or less)
Peer-to-peer payments	Online payments via applications such as PayPal
Bank transfer	Electronic payment executed via your bank, from one account to another
Cheque	Specific form ordering transfer of money from one account to another
Apple Pay/Android Pay	Contactless payment via an app
Facial recognition payment	Advanced technology linking your bank account to your facial features
Biometric	Advanced technology linking your bank account to your fingerprint
Cryptocurrencies	A digital currency that is built using cryptography to secure, create, and transfer assets
Retina scan	Advanced technology linking your bank account to your eye
Wearables	Contactless payment via an app on your smartwatch or wearable

Cheque



Contactless card



Bank transfer



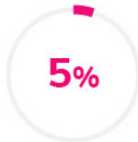
PayPal, chatbots, and peer-to-peer payments



Cryptocurrencies



Apple/Android Pay



Face recognition



Retina scan



Biometric



Wearable technology and smartphones



None of the above



Expert insight

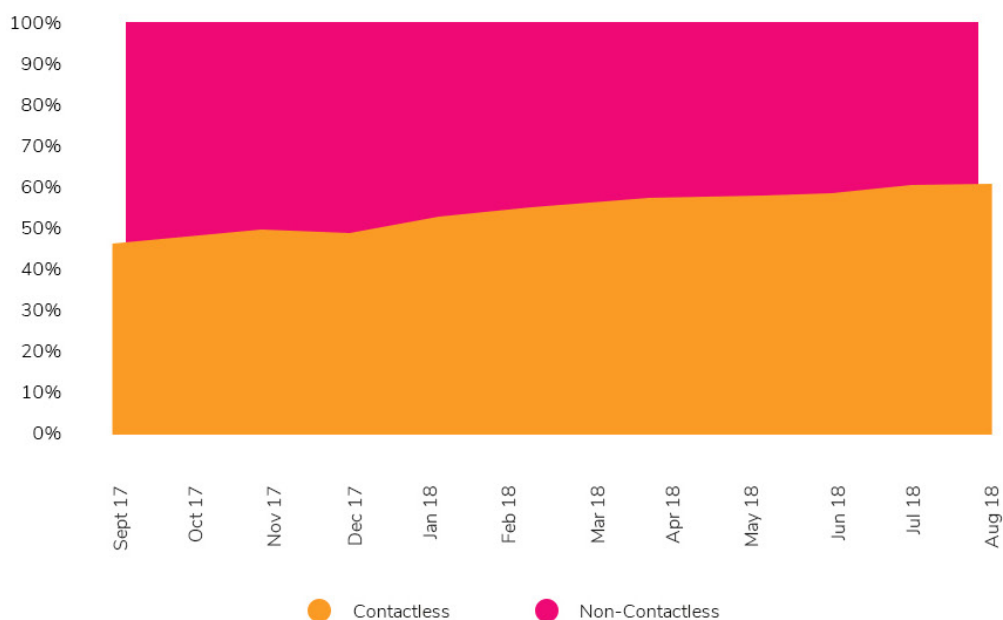
Why aren't we embracing newer payment technologies?

"More reassurance and support is needed to persuade certain generations to change the way they are paying. Millennials are always the quickest to jump on new trends, but little is done to support the generations before them to keep up – meaning this slows down innovation when the numbers adopting new ideas don't support the budgets required for full roll-out."

Laura Rettie, personal finance expert at [money.co.uk](https://www.money.co.uk)

How do we really pay?

Our survey respondents might think that cash and chip and PIN rule the payment world, but the data tells us otherwise – card usage actually surpassed cash way back in 2004, and our data indicates that contactless conquered the scene in November 2017 and has been growing in popularity ever since:



A closer look at contactless

It's clear that we're keen to choose contactless for certain transactions – but when are we most willing to pay this way? It seems we use contactless to pay for more things every day, but spend less money on contactless transactions overall. This makes sense, given the current UK limit for paying with contactless is £30.



Contactless vs. non-contactless

(as of August 2018)

Non-Contactless

39%



Contactless

61%

Contactless

23%



Non-Contactless

77%

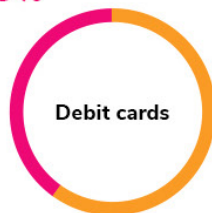
We also have different spending habits based on whether we're using our credit cards or our debit cards. We tend to use our debit cards for more low-value contactless transactions, whereas we're more likely to use other methods (such as chip and PIN or online payments) to put higher-value purchases on our credit cards.

Debit cards vs. credit cards

(for the period September 2017 to August 2018)

Non-Contactless transactions

40%



Contactless transactions

60%

Contactless transactions

36%



Non-Contactless transactions

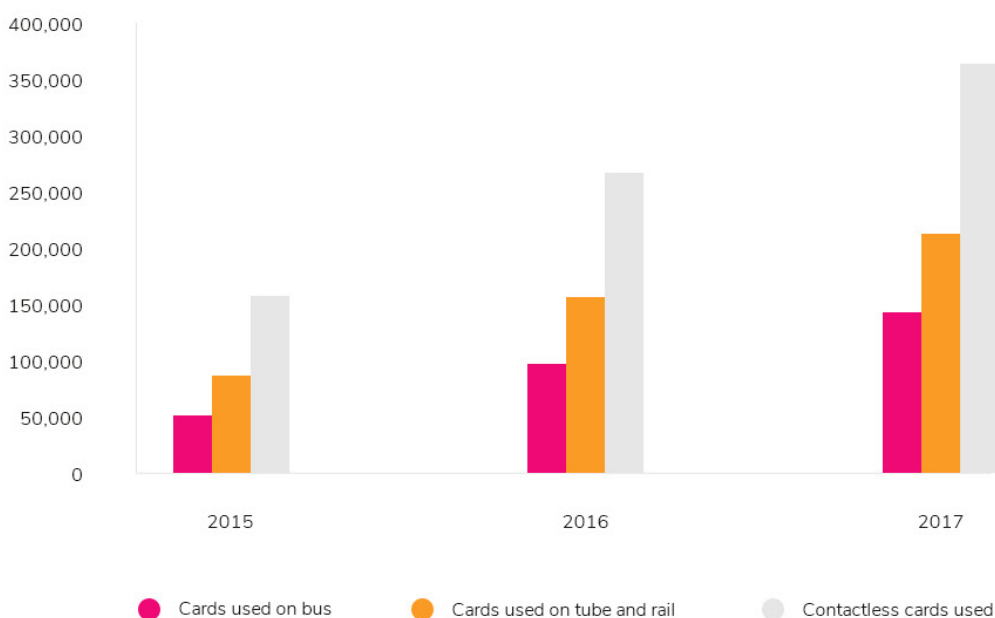
64%

Using contactless to get around the capital

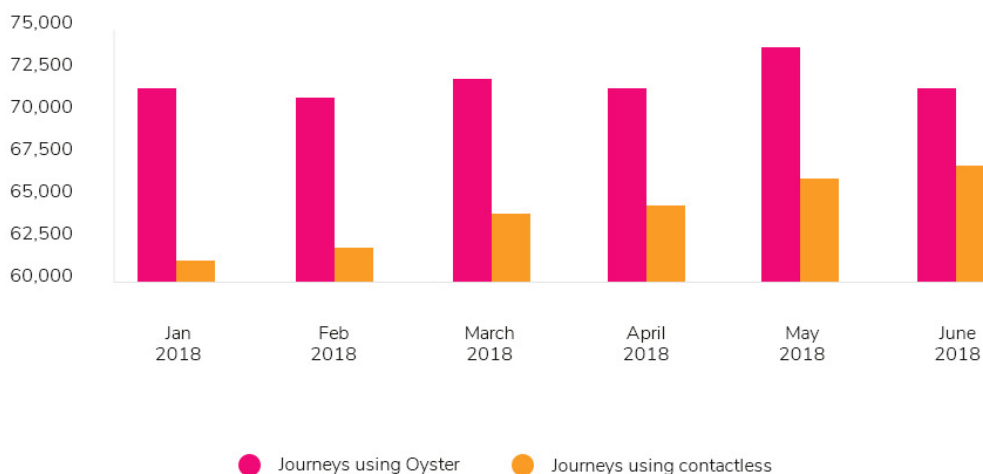
Since Transport for London brought contactless payments onto buses, rail, and Tubes, passengers have taken it on board.

The latest data shows that more people are using contactless to pay for their journeys each year, to the point where contactless payments were set to overtake the use of Oyster Cards after June of this year.

The rise of contactless



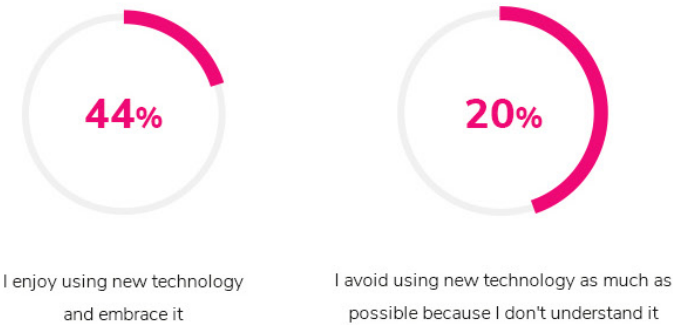
Contactless vs Oyster



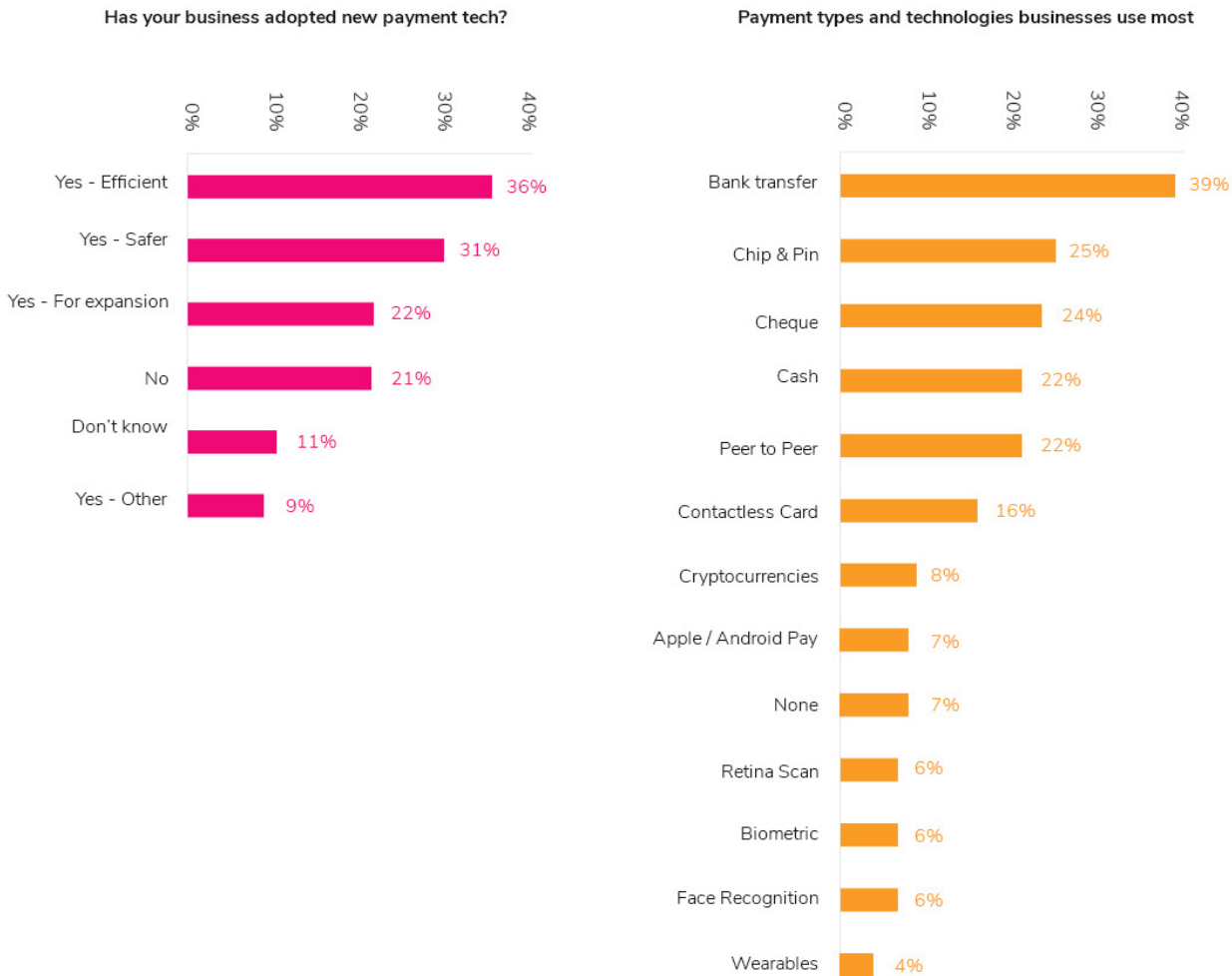
Technology and payments today

The data indicates that we're willing to embrace contactless in more avenues of life – but what about other types of new payment technology?

How do consumers feel about using new payment technologies?



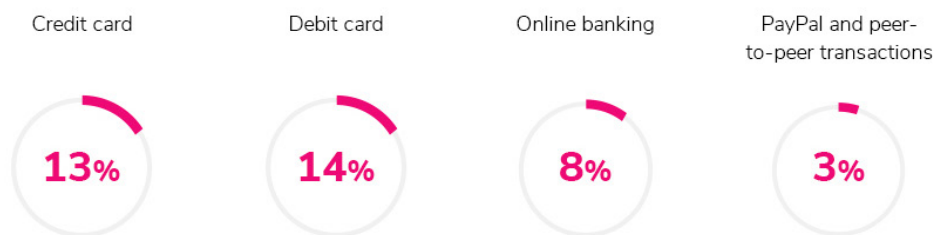
How do businesses feel about using new payment technologies?



Payment security today

Beyond convenience and affordability, new payment technology can also bring more security to our transactions. According to our survey, 39% of Brits have been a victim of payment fraud or hacking – new payment technology could be the key to cracking down on fraud in order to protect consumers and businesses alike.

Have you ever been a victim of fraud/hacking on any of the following accounts?



Has this made you trust this form of payment less?



Expert insight

Criminals can check out

"With scammers becoming more sophisticated, new ways of paying will hopefully slow down criminal activity and give consumers more confidence about paying for things remotely or online."

Laura Rettie, personal finance expert [money.co.uk](https://www.money.co.uk)

We might be a bit sceptical about using new payment technologies, but it's clear that contactless has won a place in our daily routines – and it was introduced to our wallets just over a decade ago. So how will we be paying in 10 years' time? Find out, with the **Future of Payments**.



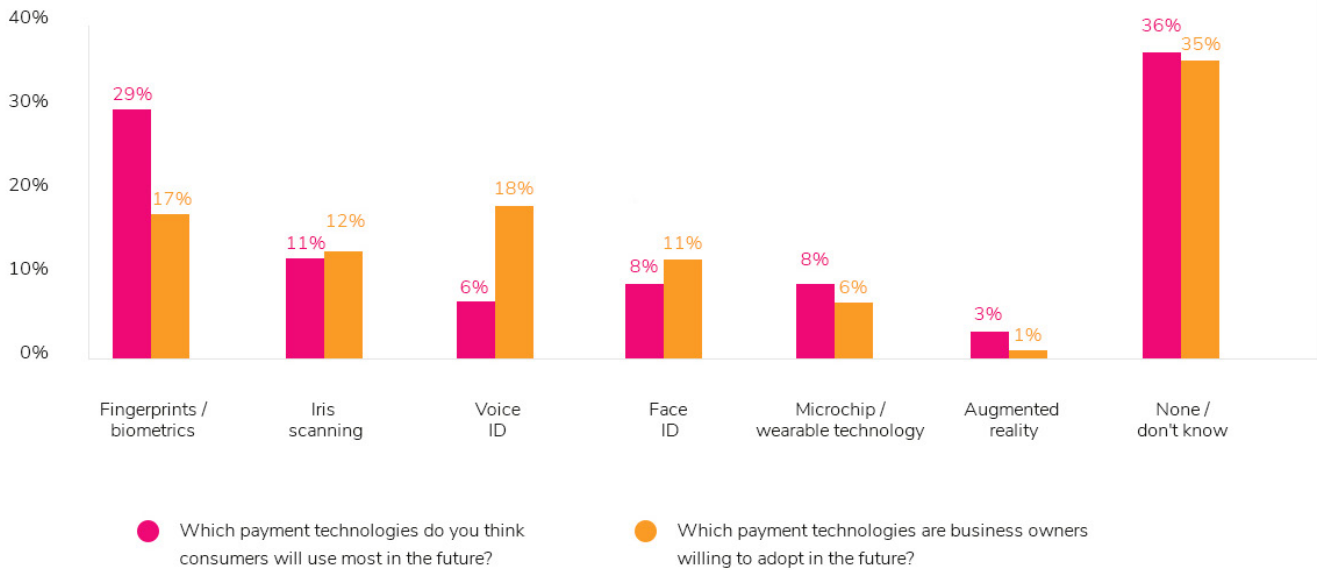
Payments of the Future

Treat your friends to dinner with the press of a fingerprint. Buy your next home using cryptocurrency. Just say 'yes' to a robot and walk away with your shopping. There are lots of things we'll be spending our money on in the future – but how will we be paying for them?

We surveyed consumers and interviewed leading experts to find out what the future of payments could look like. Explore some of the emerging payment technologies and find out how consumers and business owners feel about the ways we'll handle transactions in the future.

The types of payments we'll use in the future

The future of payments is as wide open as your imagination. However, research indicates biometrics – our physical features – will be the next avenue payment technology could embrace. Our survey respondents seem to agree that some of the most likely possibilities include linking our bank accounts to our bodies.



Payment Cheat Sheet

Fingerprint scanning

Your fingerprint is linked to your bank account, meaning you can authorise a transaction with a single touch.

Iris scanning

Your iris is paired to a bank account, allowing you to pay for things with the blink of an eye.

Voice ID

Your bank is linked to your unique vocal tone, allowing you to use your voice to carry out transactions.

Face ID

Your bank account is linked to your facial features, meaning you can pay for things by simply showing your face.

Microchip/wearable technology

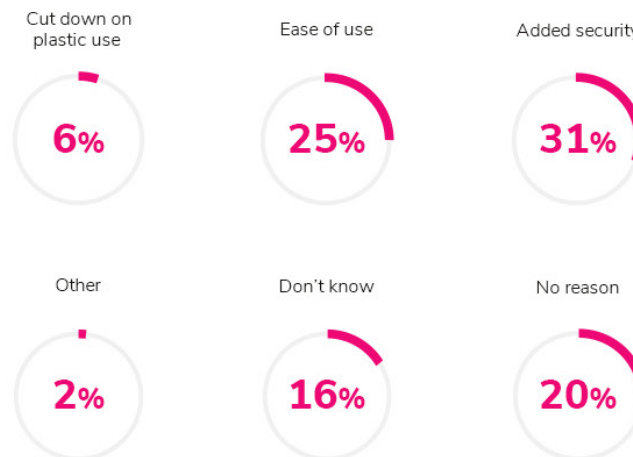
Your payment details are stored on a microchip, which could be embedded in your skin or a wearable piece of technology, such as a watch or bracelet.

Augmented reality

You use virtual reality technology to shop, meaning you can physically browse a store and make transactions from your sofa.

According to our survey, there are several motivating factors for embracing alternative payment methods. Some people consider security and convenience to be important, while others are simply willing to embrace a new way of doing things.

Reasons we'd embrace alternative payment methods



Expert insight

What do payment technologies need?

"To the consumer, the main demands of any payment process is that it needs to be simple, multi-channel (laptop, phone, tablet, etc.) fast, and yet secure. Business owners need an authentication process that meets not only their security requirements but also one which is as invisible as possible to the consumer and certainly does not slow down the payment process."

"It is therefore up to the payment industry to determine how new technology can help meet the needs and demands of consumers and business customers."

"Today contactless transactions are becoming the norm and, when combined with next generation biometric cards, could enable contactless limits to be increased or even removed. Other biometrics such as facial recognition may also have a role to play and, of course, outside of its smart phone application, facial recognition is becoming the norm at E-Passport Gates."

Howard Berg, SVP of Banking and Payment at Gemalto

The changing payment landscape

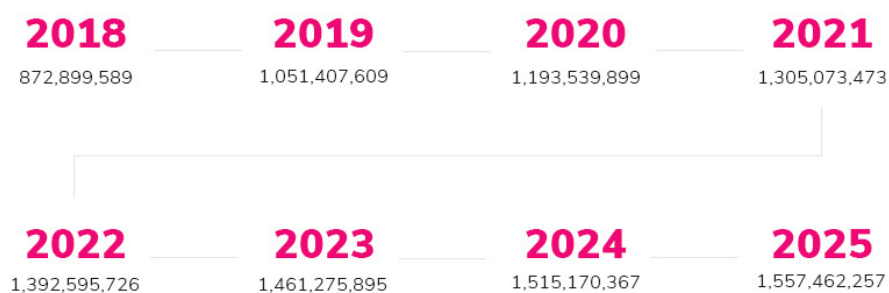
Just as online banking has all but squelched the cheque, new technologies will have an impact on today's payment landscape. We spoke to experts about what these new technologies mean for the methods we use today, and asked people how they feel about saying goodbye to the systems we're familiar with using.

The future of paying for transport

Based on recent Transport for London data, contactless payments were set to become the most common way of paying for transport by the end of 2018, with people using contactless to make more than 872m journeys on London busses, trains, and Tubes.

According to our forecast, this set to continue to grow, with over 1.5bn journeys made using contactless by 2025.

Contactless journeys made

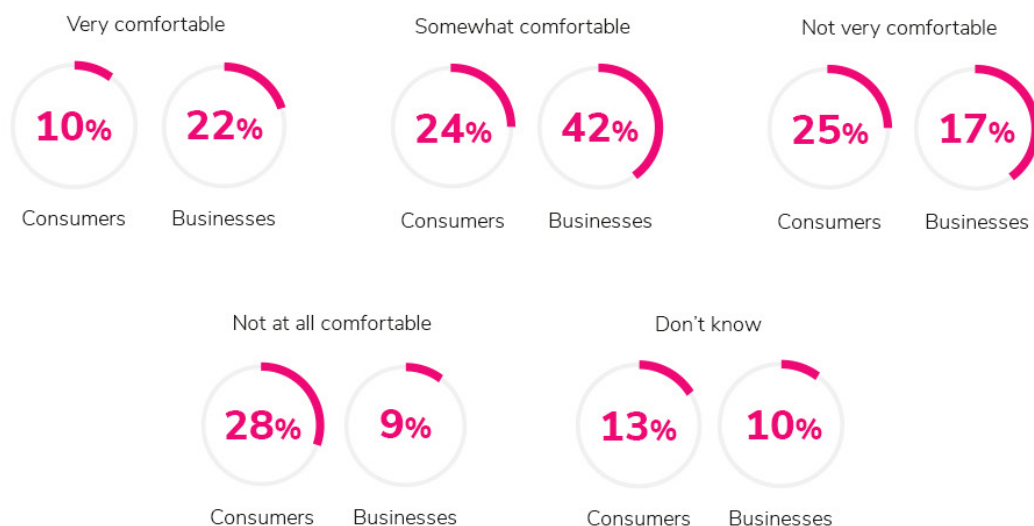




The Future of Cash

Way back in 2004, card payments overtook the use of cash, and our data indicates we've been using it less and less ever since. But most of us aren't ready for it to disappear altogether.

Consumers vs businesses: How do you feel about the prospect of a cashless society?



Experts on cash

"Cash will be the first to go – it's filthy, easy to lose or steal, and not convenient."

Laura Rettie, personal finance expert at [money.co.uk](https://www.money.co.uk)

"The emergence of contactless cards and now mobile payments and wearables was motivated by the goal to further simplify the user experience and to enable digital payments for small value transactions instead of cash. The future trend is going completely cashless, while preserving people's privacy during the payment process."

Howard Berg, SVP of Banking and Payment at Gemalto

Plastic in numbers

£33.12
£24.91

Avg. spend on card

The Future of Cards

According to our research, cards aren't going anywhere fast. After conquering cash payments way back in 2004, in the short-term it's set to continue to grow as our choice way to pay. But how much longer will we be using plastic for?

£684,393,232
£1,180,168,408

Spent on card

£20,662,430
£47,368,300

Card transactions

● December 2017

● December 2020

Experts on plastic

"With it being so easy to pay for things with technology like Apple Pay on your mobile phone, cards will fast be made redundant too. Shopping online these days is so easy with ways to store your card details so you don't have to dig them out each time you want to pay for something. It's only a matter of years before we won't need to carry wallets."

Laura Rettie, personal finance expert at money.co.uk

"I think plastic will drastically increase, however I still think we will heavily rely on this in developing countries as a payment method and it won't totally disappear in the next ten years."

Dr Abul Naser, Senior Lecturer of Accounting and Finance at London Met University

"Despite rapid and very advanced innovations on mobile, wearables or ecommerce solutions, I am convinced those innovations will be complementary and not replace Europay, MasterCard and Visa (EMV) card payments, as EMV will remain the only universal and interoperable solution to pay anywhere, anytime in the world... Card-based payments are unlikely to disappear as for many consumers they represent the most logical form of payment in certain situations."

Howard Berg, SVP of Banking and Payment at Gemalto



The Future of Cryptocurrencies

Despite the fact bitcoin has been around since 2008, cryptocurrencies still aren't anywhere near becoming a mainstream payment method. Only 1% of survey respondents said they use and trust them – but experts have mixed opinions about whether they'll take off.

Experts on crypto

"Payment solutions require trust to be built and shared between merchants, consumers, and payment services providers. Such trust is hard to establish and needs to be proven in the long run.... There is data today to predict if cryptocurrencies can and will achieve the necessary level of trust in their ecosystem."

Howard Berg, SVP of Banking and Payment at Gemalto

"Blockchain technology isn't popular yet but it will get really popular. We had these similar thoughts with the iPhone – now look at it."

Dr Abul Naser, Senior Lecturer of Accounting and Finance at London Met University

"Cryptocurrencies have a long way yet to become mainstream. Cryptocurrencies have a very bad reputation from the level of criminal activity they have been associated with and their purpose is widely misunderstood."

"Alternative currencies may eventually face so many government regulations before they are widely accepted that it may eventually void the very reasons cryptocurrencies were invented in the first place. I suspect we'll see something else invented to take its place in the future – a mash-up of what we currently have and cryptocurrencies perhaps."

Laura Rettie, personal finance expert at money.co.uk

Visualising payments in the future

There's no question the technology we use to pay for things will continue to develop – so how does this factor into our daily routines? We took input from our survey respondents and our payment experts to visualise what our transactions could look like in the future.

Biometrics: Use your DNA to pay

"There have already been trials of linking biometrics to pay for goods so we can't be far off rolling out a system that links our finances to our physical features."

Laura Rettie, personal finance expert at money.co.uk



"Biometrics will take over PIN code for cards in the medium term and biometrics will also become commonly used in new areas such as authenticating wearables and other devices (IR vein network detection, iris scan, voice, etc...).

"What we are saying here is that your digital identity could become your payment token. Once you have authenticated yourself then the payment becomes simply an offshoot of the 'purchase' process."

Howard Berg, SVP of Banking and Payment at Gemalto

Sensory detail in retail: Cashless supermarkets

"In the future, I envision the ability to pay for things without even taking your phone or credit card out of your pocket. Stores will be able to sense what you've taken, and the simple fact that you have your phone in your pocket will confirm your identity."

"This is similar to the cashless supermarkets that Amazon has been trialling. You just take what you want from the shelf and walk out the door, and the supermarket knows who you are and what you took."

Rodolphe Ardant, CEO of Spendesk



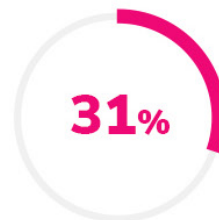
The future of payment security

Advances in technology and security go hand-in-hand – the more advanced our payment tech is, the more difficult it will be for criminals to infiltrate the transaction process.

Almost one third of consumers and business owners agree that new technology will lead to safer payments:



of consumers would embrace new technology for added security



of business owners say they feel safer using new payment tech, as it means they have less cash on the premises

Expert insight

Streamlining security

"The use of new technologies such as device tracking, behavioural biometrics and physical biometrics enable both the industry and the consumer to meet these requirements in a way that puts minimum burden on the consumer or any two parties in a payment transaction."

Howard Berg, SVP of Banking and Payment at Gemalto

"[Biometric payment technology] would certainly make things very secure and convenient down the line – if a little scary to think of the awful consequences if somebody really wanted to get to your money, though."

Laura Rettie, personal finance expert money.co.uk

Sources

Evolution of Card Payments: [Paymentsense](#)

History of Cards: [UK Card Association](#)

The History of Payments in the UK: [BBC News](#)

The History of Cash: [Independent](#)

History of Money: [Wikipedia](#)

Cryptocurrency: [Wikipedia](#)

History of Money: [Finder](#)

Contactless Payment Information on Transport: [Transport for London](#)

Oyster Card Data: [Transport for London](#)

Paymentsense Transactions Data: Provided by Paymentsense (2015-2018 data)
Survey conducted by OnePoll on behalf of Paymentsense of 2,000 adults living across the UK between 17/10/18 and 19/10/18.

Methodology

Future payment forecasts are based on [Paymentsense](#) transaction data gathered via [credit card machines](#) and [card readers](#) (gathered between 2015 - 2018) from over 70,000 businesses in the UK. Future transport forecast is based on [Transport for London data](#) (gathered between 2014-2018). All projections are calculated based on consumer patterns, to create a predicted trajectory for growth over the next few years. All survey data is based on feedback from a survey of 2,000 adults living across the UK (gathered between 17/10/18 and 19/10/18).

