



MEF

MOBILE MONEY REPORT



**PURCHASES, PAYMENTS AND
BANKING AROUND THE WORLD**



FOREWORD

'Mobile is eating the world.' So said Andreessen Horowitz's Benedict Evans in October 2014. His words certainly came to mind when I read this year's MEF Mobile Money Report.

We originally used phones to make calls, send messages, check emails, browse the Internet and pay for digital content. Today, we use them to manage our entire lives: to play games, chat, check our finances, purchase products and order services. The list goes on. Just look at the increase in users ordering food and drinks – a number that has more than doubled since 2014.

So mobile is truly eating the world. This raises the question: do we still need laptops and PCs? I am writing this foreword on a Mac. But I could easily do it on my smartphone. The fact is, many consumers today have never owned a PC, and never will. Chinese users are at the forefront of this ongoing trend. Through our cooperation with Alipay, we have seen Chinese consumers are heavily 'engaged' with their smartphones and love to purchase products via mobile, even outside of China.

Clearly, the migration from desktop to mobile can only accelerate. The always connected smartphone becomes more powerful with every new release. So my message to all businesses around the world is: if you neglect to offer services and products through the mobile channel, you will lose – not only your customers but also your business. However, be careful in how you design the mobile experience. Merely copying and pasting from Web to mobile formats will not work.

This is especially the case when it comes to payments. People use smartphones in public places, so merchants should be careful how they ask users to enter sensitive information. And they should ensure a fast checkout by using mobile wallets (Apple Pay, Android Pay, MasterPass, etc). Without this, abandonment rates will be much higher than on the Web.

Working in the payment industry for more than 20 years, I have been fortunate to witness the development of financial services worldwide. More and more users in markets including Africa, Asia and Latin America now have access to basic financial services. This development would not have been possible without mobile phones. Indeed, the key figure of this year's report shows that financial inclusion has arrived – and is steadily growing. This is a very encouraging sign in an otherwise turbulent 12 months.

So what can we expect for the future? I think this year's report underlines some key trends that demonstrate mobile will continue to 'eat the world' over the coming years. As a global payments technology company, Wirecard will support all these exciting mobile money trends and I'm sure we'll see these developments reflected in future editions of MEF's annual study. Until then, please enjoy reading the MEF Global Mobile Money Report.



CHRISTIAN VON HAMMEL-BONTEN
EVP GLOBAL PRODUCT STRATEGY

wirecard

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ABOUT THE SURVEY



EXECUTIVE SUMMARY

The distance required to 'do' shopping has shrunk remarkably in the last decade. It used to require a bus or car journey. Then it merely needed a walk to the desktop PC. Now, shoppers can reach into their pockets to buy pretty much anything from anywhere in the world.

Who can resist that level of convenience? Barely anyone. MEF's annual consumer survey of nearly 6000 consumers in nine countries, found 78% of people surveyed had made a purchase by mobile in the previous six months. The figure is four per cent up on the figure for 2014, which suggests that all but the most tech-phobic consumers have now embraced the m-commerce habit.

Clearly, the key challenge for stakeholders now is to grow the quantity of purchases made on mobile. And that appears to require a two-pronged approach. The first centres on improving the payment flow inside mobile shopping carts. The research revealed this is still a problem, with 58% of people saying they have abandoned a transaction before checkout.

Second, mobile merchants must heed shoppers' privacy concerns. The study revealed 31% of payment 'abandoners' did so because they were asked for too much sensitive information.

As shopping goes mobile, so does banking. According to the research, almost all aspects of mobile banking showed significant growth in 2016. 61% used their mobile phone to bank. Within this, 44% use apps to check their balances. The report suggests it may not be long before apps could replace branch banking. It revealed 28% prefer branches against 26% for apps.

MEF's study tracks the mobile money behaviours in both developed and emerging markets and this year one market undoubtedly stood out. China. This mature economy, which is also a mobile-first one, has emerged as the world's premier mobile payments market. The study reveals 88% of China's citizens currently make mobile transactions. This compares with 66% in France. And it's also top for in-store mobile transactions, with 38% of Chinese consumers paying this way – nearly double the global average.



M-COMMERCE





78% OF PEOPLE HAVE MADE A PURCHASE BY MOBILE

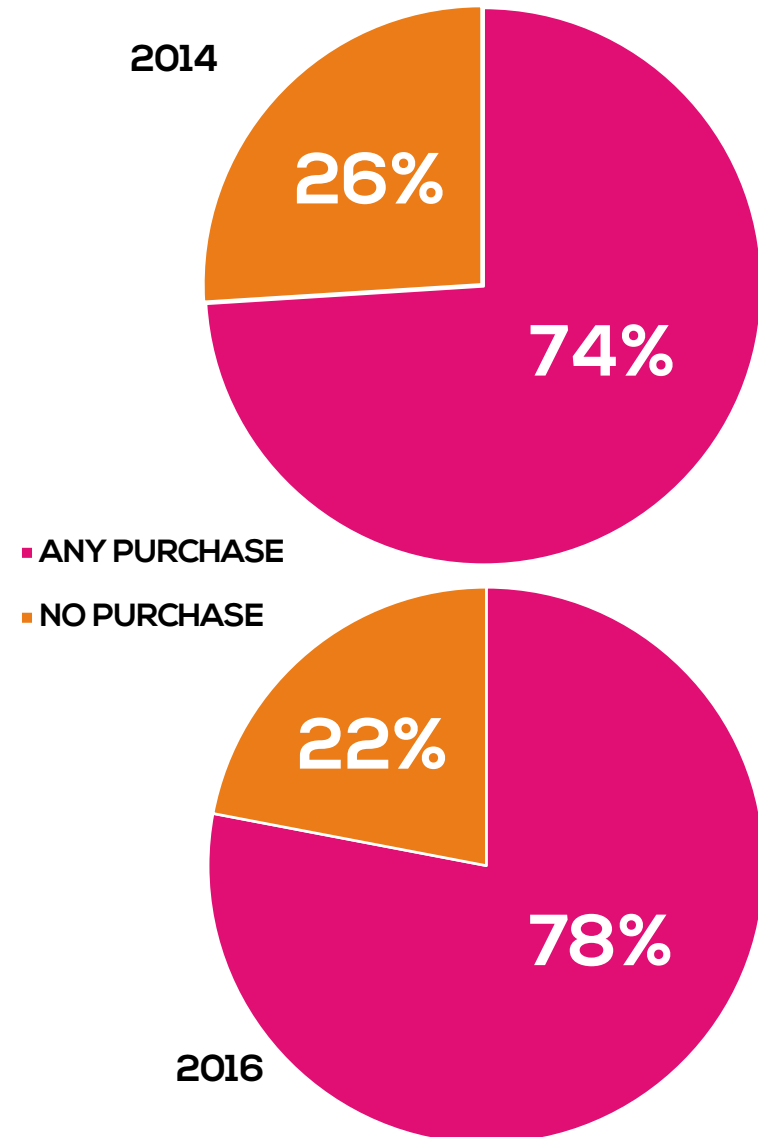
PURCHASES OF PHYSICAL GOODS, MOBILE APPS AND FOOD/DRINK ALL RISE

It's official: shopping is going mobile. Few readers will be surprised by this. Consumers in mature markets are switching their shopping habits from desktop to smartphone, while their counterparts in developing markets are discovering digital commerce for the first time from mobile devices. The study reveals that 78% of people said they had made a purchase by mobile in the previous six months – that's up four per cent on the figure for 2014.

Needless to say, there is significant nuance behind this number. Consumers paid for physical goods more than any other product type: 36% of people have purchased physical products via mobile – a rise of a third on the number year on year (24%).

This makes perfect sense since e-commerce as a whole is growing (and mobile is stealing share from desktop). Recent industry numbers back this up. According to data from Adobe Digital Insights, mobile shopping hit \$24 billion in the holiday period from November 1 to December 20. Adobe said mobile devices accounted for 31% of online retail sales, with the rest coming from laptops and desktops. In 2015, mobile contributed 28%. In 2014, 19%.

Alongside the rise in physical good purchasing from mobile, there was a big spike in mobile shopping for food and drink. The study revealed 26% have bought food and drink from the phone in the previous six months – more than double the 2014 figure. One plausible reason for this is the rapid rise of food ordering apps. Europe's Just Eat, for example, now has over 16.6 million users and over 63,900 takeaway restaurants. Meanwhile, one of the US's bigger players – GrubHub - has 7.69 million active diners and quarterly revenues of around \$140 million.





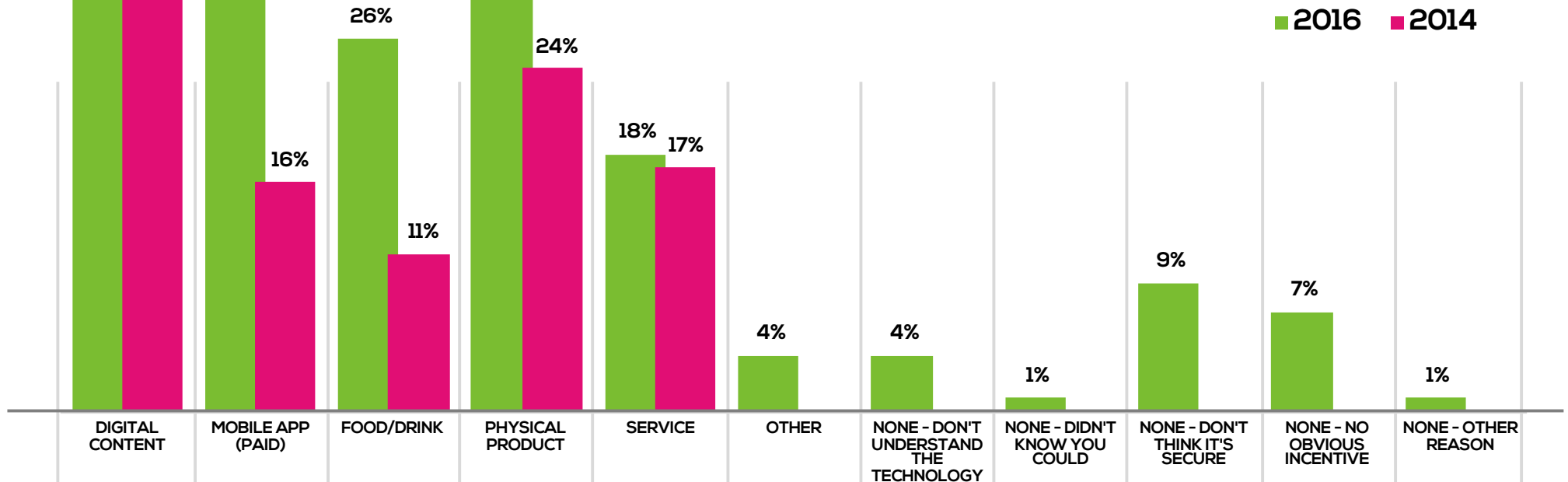
ALMOST ONE IN THREE BUYS MOBILE DIGITAL GOODS BUT OVERALL SPEND FALLS SEVEN PER CENT IN TWO YEARS

Perhaps surprisingly, mobile shopping for digital content has fallen in the last two years. The study reveals 30% of people said they bought digital goods in the previous six months. In 2014, the number was 37%.

Business models for consuming digital content via subscription or freemium apps are arguably driving this trend. According to 2016 research by AppsFlyer, just 5.2% of users spend money on in-app purchases (though among paying users, the average spend is \$9.60 a month).

And consider the impact of subscriptions. Every customer of Spotify, for example, is replacing potentially dozens of individual music track purchases with a single recurring monthly payment. The same goes for Netflix and video.

WHAT TYPES OF ITEMS AND SERVICES HAVE YOU PURCHASED VIA MOBILE PHONE IN THE LAST SIX MONTHS?



MOBILE PAYMENTS





CHINA LEADS THE WORLD IN MOBILE TRANSACTIONS

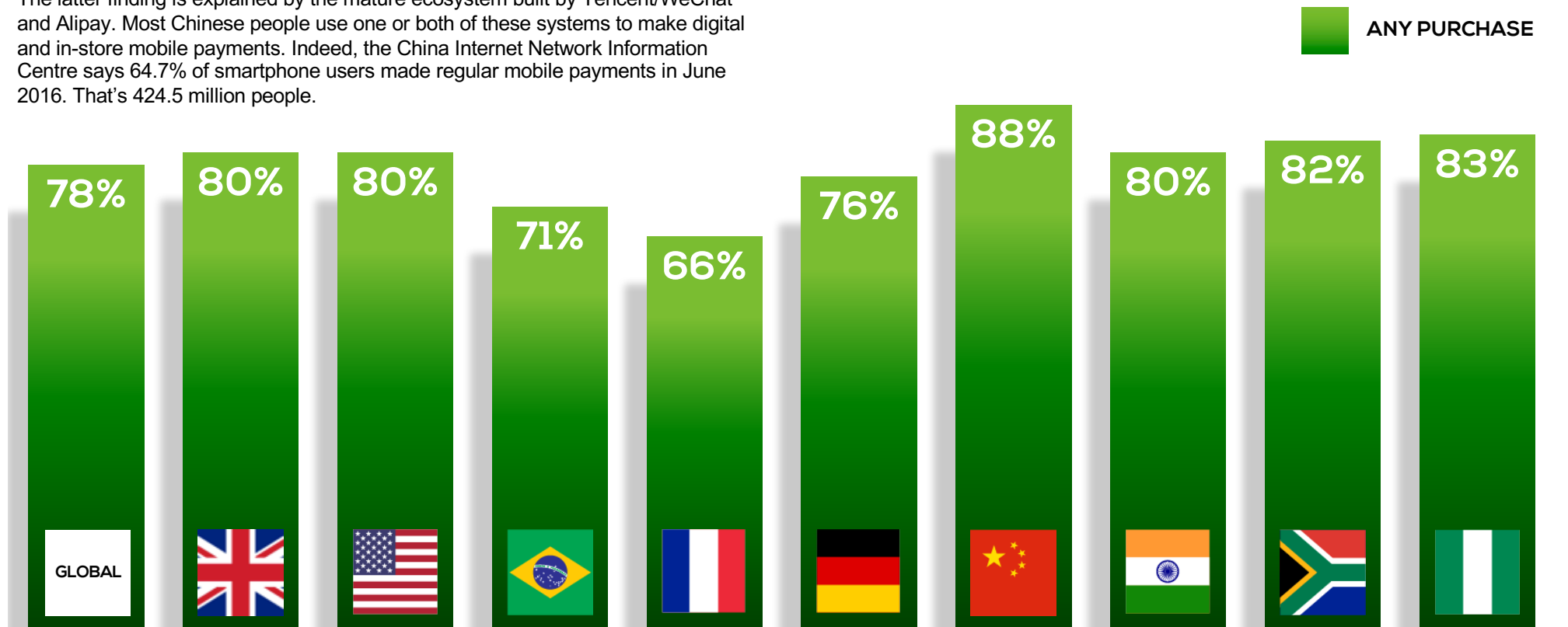
NEARLY NINE IN TEN CHINESE CONSUMERS HAVE MADE A PURCHASE FROM THE PHONE

China's unique status as a mature economy, which is simultaneously a mobile-first nation, has made it the world's foremost m-commerce region. The research reveals 88% of China's citizens currently make mobile transactions. This compares with 66% in France, for example.

Chinese consumers lead the world across a number of m-commerce related activity. 47% make purchases via an app (where the app provider has a record of the card details). The global average is 31%. Meanwhile, 38% of Chinese shoppers use a mobile wallet in a shop. Here, the global figure is just 18%.

The latter finding is explained by the mature ecosystem built by Tencent/WeChat and Alipay. Most Chinese people use one or both of these systems to make digital and in-store mobile payments. Indeed, the China Internet Network Information Centre says 64.7% of smartphone users made regular mobile payments in June 2016. That's 424.5 million people.

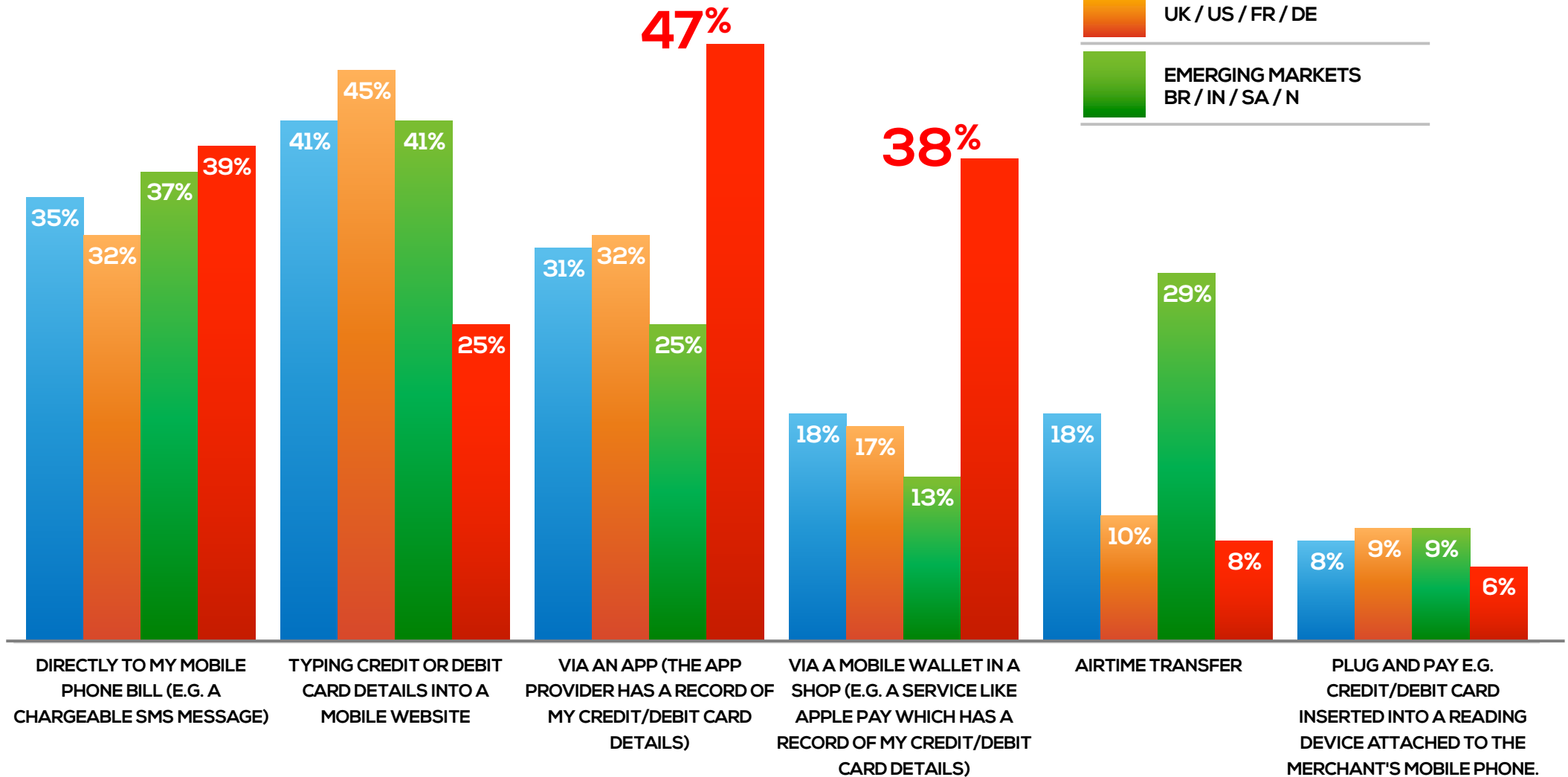
WeChat has popularised payments inside its messaging platform, with people purchasing everything from taxis to insurance inside a chat session. And both WeChat and Alipay have popularised payment from a QR code at retail. The two giants are also building out NFC in-store payments, and face competition from Apple Pay and Samsung Pay. Huawei and Xiaomi are also building their own NFC payment wallets.





CHINA LEADS THE WAY ON APP AND MOBILE WALLET PAYMENTS

HOW HAVE YOU PURCHASED ITEMS OR SERVICES VIA A MOBILE PHONE IN THE PAST SIX MONTHS?





NEARLY SIX IN TEN PEOPLE HAVE ABANDONED PAYMENTS

CHECKOUTS ARE STILL TOO COMPLICATED, LENGTHY AND INTRUSIVE

M-commerce experts have lamented 'payment abandonment' since the market began. They still do. Every day, mobile merchants miss out on significant revenue because shoppers fail to check out. Some people simply change their minds about a purchase. But many more find the payment process too complicated, time-consuming or intrusive to continue.

To repeat, this is nothing new. But the problem endures. The research reveals 58% of people have started to pay for something via mobile, only to abandon it before the end. 31% said this was because they were asked for too much sensitive information. 21% said the process was too long. 22% cited technical or connectivity issues.

The US appears most affected, with 66% of US respondents confirming they have abandoned purchases. Indeed, data from Barilliance said the cart abandonment rate during the US's crucial Black Friday-Cyber Monday weekend was 78.1% on mobile.

The industry is addressing this. The most obvious fix is one-click ordering, though this can only work for trusted retailers with repeat custom. Amazon 1-Click is the primary example – and some estimates say it is worth as much as \$2.4bn to Amazon.

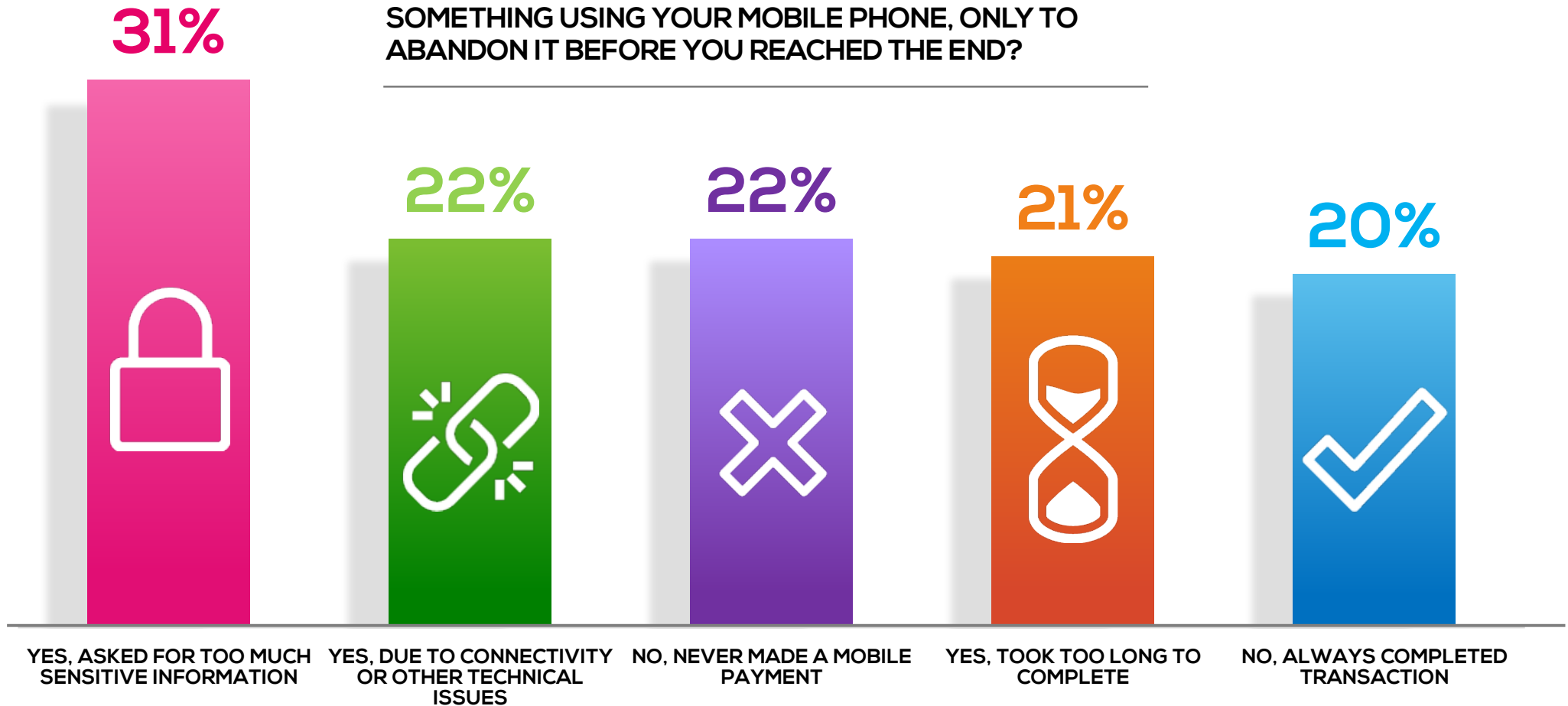
Apple Pay and Android Pay also solve the problem by storing card details safely inside the device (so the merchant doesn't have to ask for them). The shopper can then check out with a PIN or even a fingerprint. The details are transferred via an encrypted token so no attacker could intercept them. In 2016, Apple Pay made further strides when it became available on desktop and mobile sites (it was purely inside apps before).

Another intriguing fix for cart abandonment is to offer a 'pay later' option. Here, shoppers can order without paying and settle later. Typically, intermediaries handle the transaction so that merchants can be paid immediately. The Netherlands' Klarna is active in this space, while Wirecard and Commerzbank launched a pre-financing option of this type in 2016.





HAVE YOU EVER STARTED TO PAY FOR SOMETHING USING YOUR MOBILE PHONE, ONLY TO ABANDON IT BEFORE YOU REACHED THE END?





PER CENTAGE OF PEOPLE USING 'CHARGE TO BILL' DOUBLES IN TWO YEARS

A THIRD OF PEOPLE MAKE PAYMENTS FROM THE PHONE BILL

In 2016 more than a third of people paid for items directly from the phone bill. That's more than double the equivalent number for 2014 (14%). And it appears that consumers all over the world have embraced the carrier billing habit. The research shows a around a third of users in all the countries surveyed pay this way, with Nigeria top at 42%.

The numbers are encouraging for the 'carrier billing' industry, which has worked for many years to encourage this alternative payment method. Carrier billing presents a convenient alternative to credit and debit card payments. In most cases, the payment completion process is faster. It also presents under 18s and unbanked customers with a genuine payment option for digital goods. But carrier billing has its challenges. It works best when it's available across all (or most) operators in a territory. This is not always the case.

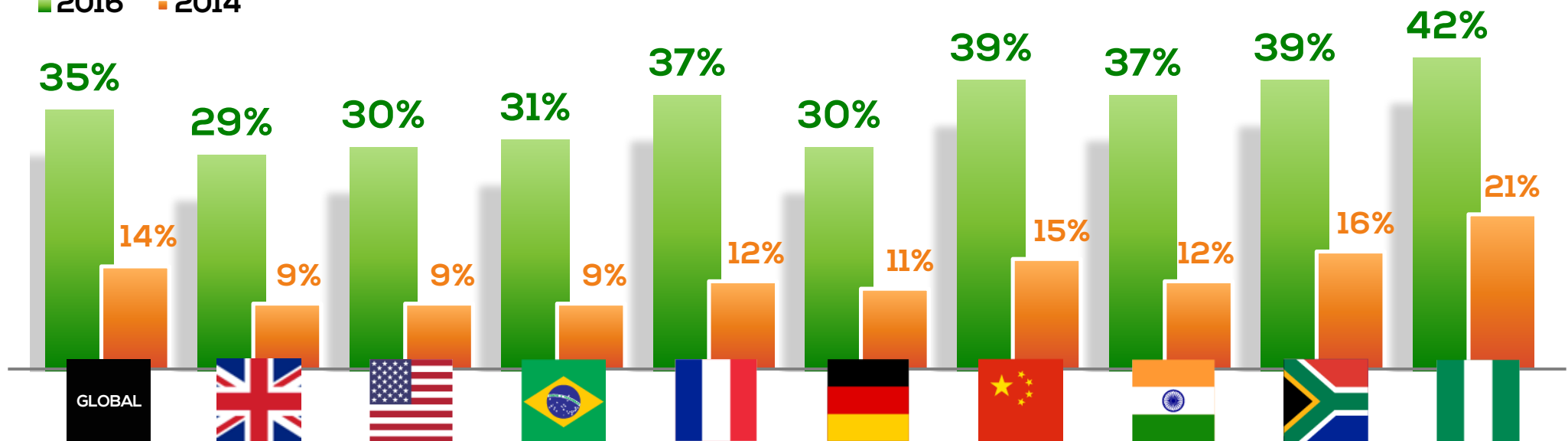
In 2016, the market undoubtedly made great strides. Notably, Apple began to support carrier billing on its app store. It did so discreetly, and with little publicity. But the option is now available with selected carriers in Belgium, Germany, Japan, Norway, Russia, Saudi Arabia, Switzerland, Taiwan, and the United Arab Emirates.

Meanwhile, there was industry consolidation among the providers of charge to bill. In 2016, Austria's DIMOCO acquired Italy's Onebip, while Bango acquired US-based BilltoMobile from Korea's Danal. These two companies, along with the VC-backed Boku, DoCoMo Digital and others, can offer content providers hundreds of global connections. And these companies' own numbers reflect growth in the market.

The question now is how high the market can aim. Some analysts have made bold claims. A report by Ovum said mobile operators could command a \$142bn mobile billing market by 2020. But it did caution this would only happen if stakeholders committed to realistic revenue shares, universal connections and consumer marketing.

PAYMENT MADE DIRECTLY TO MY MOBILE PHONE BILL

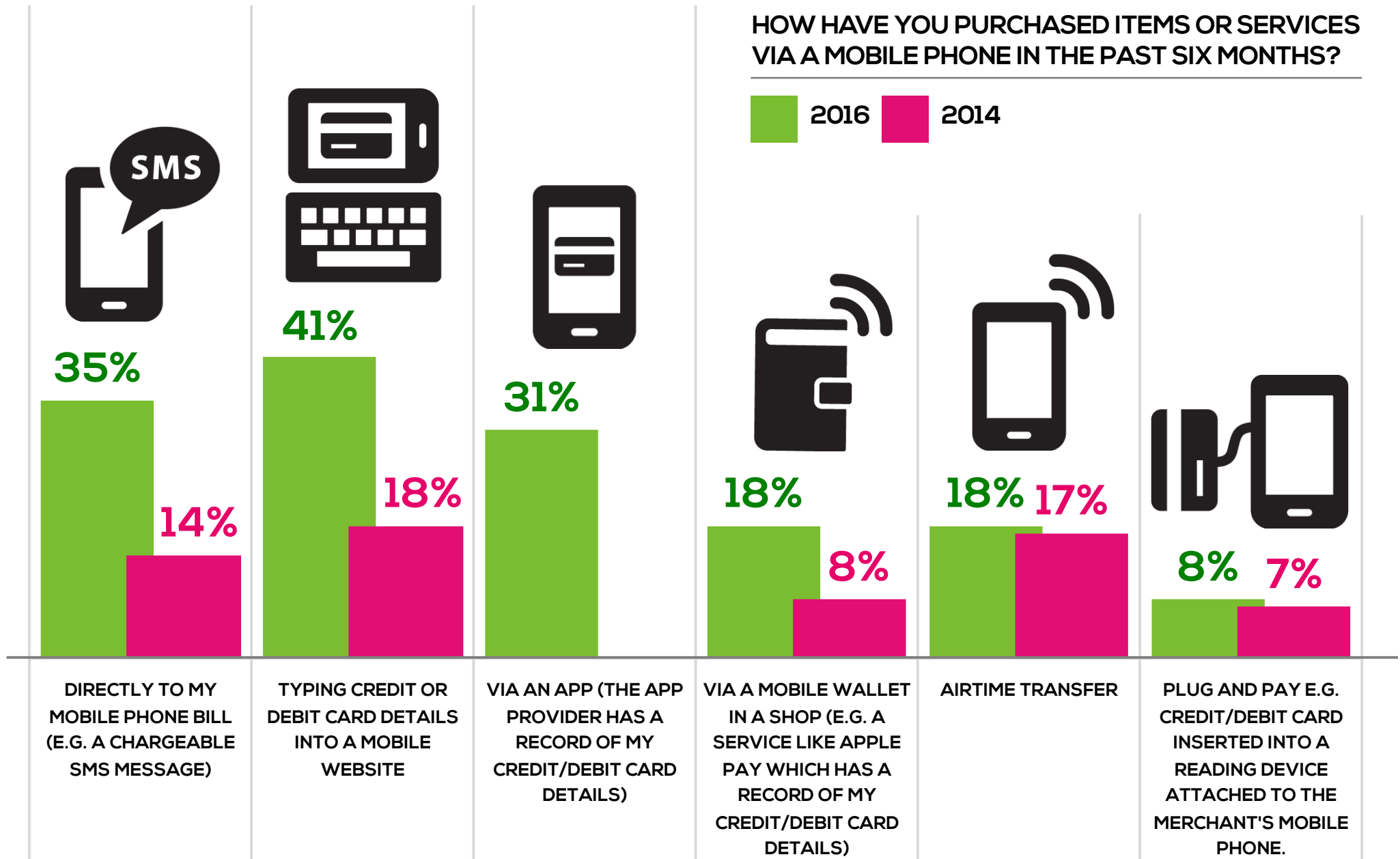
■ 2016 ■ 2014





HOW HAVE YOU PURCHASED ITEMS OR SERVICES VIA A MOBILE PHONE IN THE PAST SIX MONTHS?

2016 2014





18% OF PEOPLE HAVE MADE AN IN-STORE MOBILE PAYMENT

APPLE PAY AND ANDROID PAY FUEL AN 'EARLY ADOPTER' HABIT

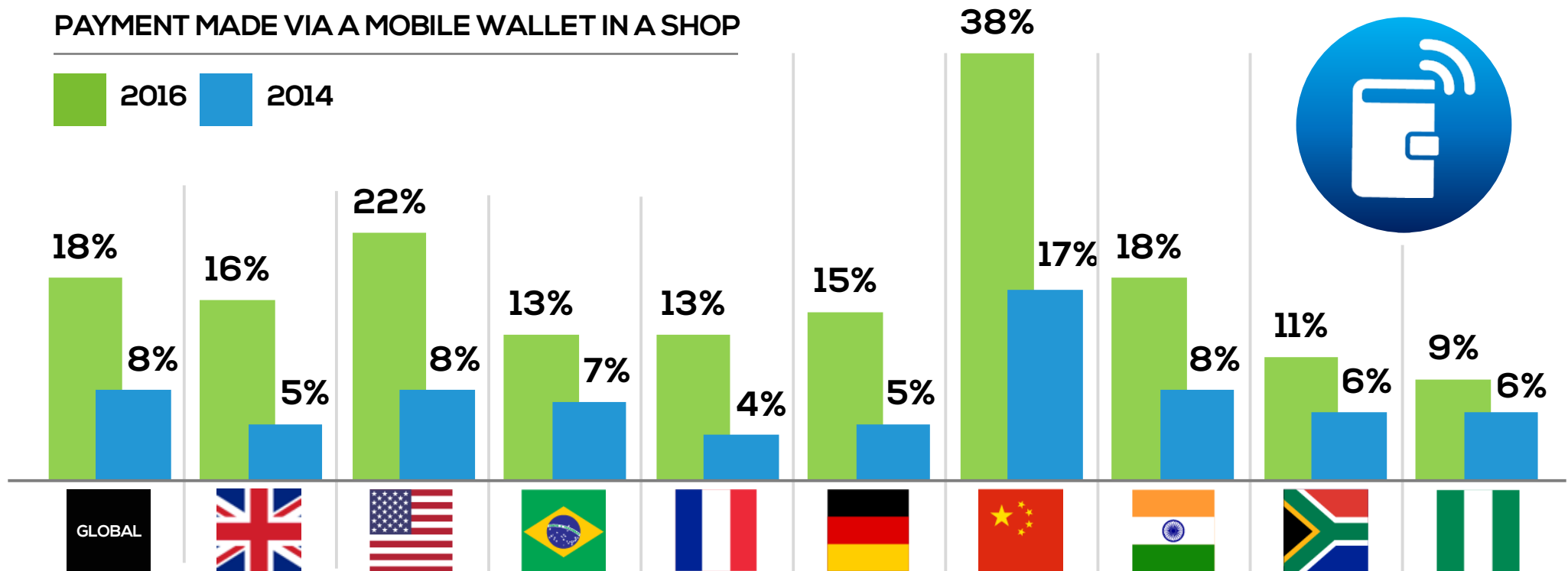
The mobile phone has supplanted so many different items. It's cannibalised the alarm clock, the watch, the camera, the MP3 player, the diary, the map and much more. But what about the wallet? Well, that's presented more of a challenge. Efforts to make the phone a 'store of value' for purchases in a shop have struggled to gather momentum.

However, in 2016, this changed – to a degree. The research reveals nearly two in five people made an in-store mobile payment in 2016. In 2014, the number was eight per cent. Apple Pay was surely a key factor. The service puts a virtual card inside the iPhone, which can be used for contactless purchases in-store.

However, it has hardly entered the mainstream. A study by PYMNTs in 2016 found only one person in 20 who can access the feature actually uses it. But the fact that the company took Apple Pay into so many new countries in 2016 must have made a difference. It ended the year in 13 countries including Russia, Japan and China. And alongside Apple Pay, there was the similar Android Pay, which is now in nine countries.

But the bigger story of in-store payments centres on China. The research reveals 38% of Chinese consumers have made a payment this way – nearly double the global average. This is due to the immense popularity of mobile wallets Tencent/WeChat and Alipay. They have clearly found a way to migrate digital spending into physical stores

PAYMENT MADE VIA A MOBILE WALLET IN A SHOP





TRUST IS A BARRIER TO MOBILE PAYMENTS ADOPTION – ESPECIALLY IN MATURE MARKETS

USERS WOULD RATHER HAND A CARD TO A WAITER THAN STORE CREDENTIALS IN AN APP

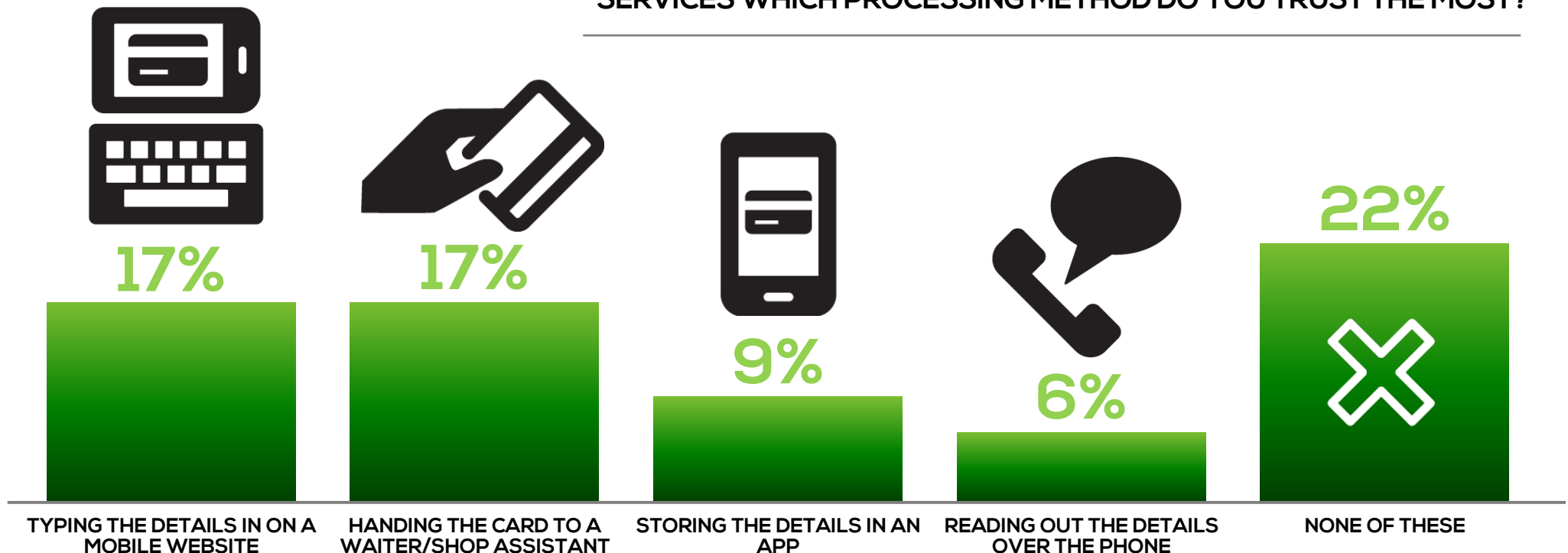
Mobile payments are fundamentally safe. They are certainly safer than most 'analogue' forms of payment. Yet the study shows that most people believe the opposite. For example, 17% of respondents say they trust handing a card to a waiter/shop assistant the most of all card payment scenarios. Just nine per cent trust storing details in an app the most.

However, it is relatively easy for our fictitious waiter to steal card details. By contrast, most app-based payments are handled by intermediaries that tokenise the card credentials. Here, the actual card numbers are turned into a random string that can only be recognised by the card network. They are useless to any attacker.

It may be fair to say that people's thinking on security is muddled. The problem is one of perception. This is undoubtedly fuelled by widespread hacking stories, which relate to criminals stealing data from company servers. This is obviously worrying, but has no direct correlation to the mobile channel itself.

It's a similar story with privacy. The research said 31% of shoppers have abandoned a purchase because they were asked for too much sensitive information.

WHEN USING A CREDIT/DEBIT CARD TO PURCHASE ITEMS OR SERVICES WHICH PROCESSING METHOD DO YOU TRUST THE MOST?



MOBILE BANKING





MOBILE BANKING MOVES TO THE MAINSTREAM

NEARLY HALF OF RESPONDENTS NOW USE A BANKING APP

Almost all aspects of mobile banking showed significant growth in 2016. 61% used their mobile phone to bank, with one in two (48%) preferring apps to do so. Within this, 44% use apps to check their balances (28% in 2014), while 29% pay a bill this way (2014: 20%) and 22% send money to someone else (2014: 16%).

It appears that the migration of banking activity from branch to desktop is now rapidly heading to mobile in developed markets. A report for the British Bankers' Association revealed Brits access their banking apps more than 7,610 times a minute – or four billion times a year. Our research says just 28% prefer branch banking against 26% for apps.

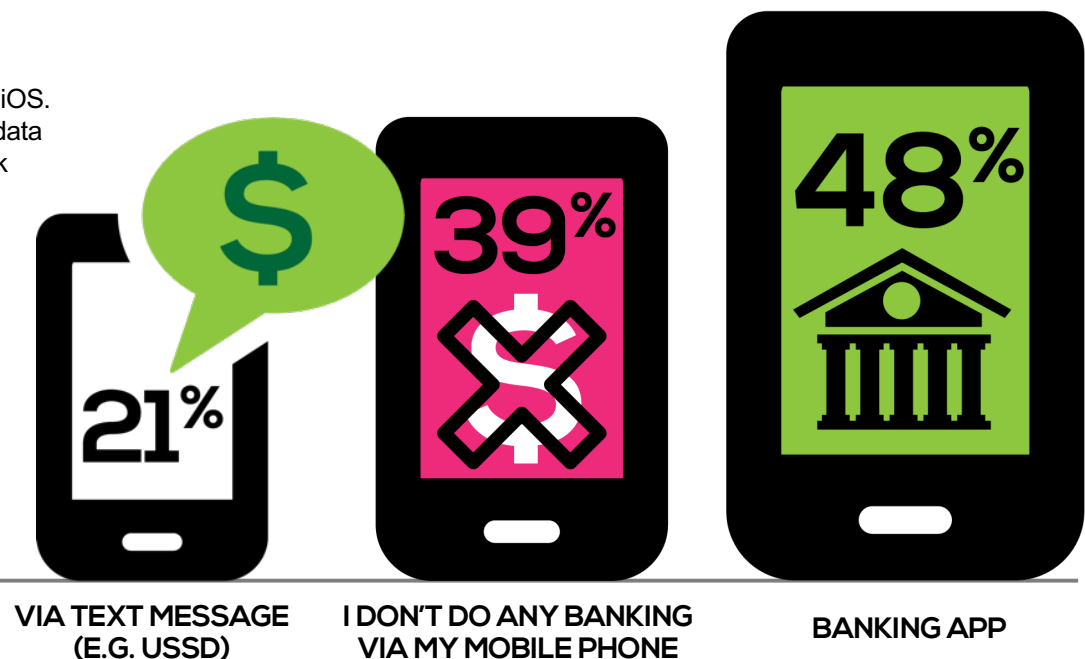
It's safe to predict this drift to mobile will continue. A cohort of new mobile-first and occasionally mobile-only banks have been launched in mature markets. They include Number26, Fidor, Monzo, Tandem, Starling, Hello, Atom and others. These new banks hope to capitalise on new regulations such as the European Union's PSD2 that make it easier for new entrants to offer banking services. They say they can create new tech infrastructure to offer faster and more intuitive services for customers.

Mobile operators are among the new banking entrants. In 2016, Telefonica launched the O2 Banking app in Germany as a free download for Android and iOS. The operator said it would marry mobile banking services with voice, text and data to offer something that's more affordable and useful than most 'traditional' bank services. Telenor Serbia also runs a bank, and Orange has acquired banking licences too.

In emerging markets, there's a similar thirst for mobile banking although – of course – the basis for such services is very different. Mobile banking in regions like Kenya, Zimbabwe and Tanzania mostly excludes traditional banks. Instead, users use agents to turn cash into mobile currency they can use to pay family/friends or settle bills. This is usually done by text or the USSD message channel. The research reveals 21% of all respondents had banked via text/USSD.

This channel continues to develop. In 2016, Tanzania, for example, became Africa's first country with full interoperability for peer-to-peer (P2P) money transfers across any operator. And 'traditional' banks stepped up their efforts to compete too. Ecobank signed a Memorandum of Understanding with Mastercard to roll-out mobile financial services across 33 African countries.

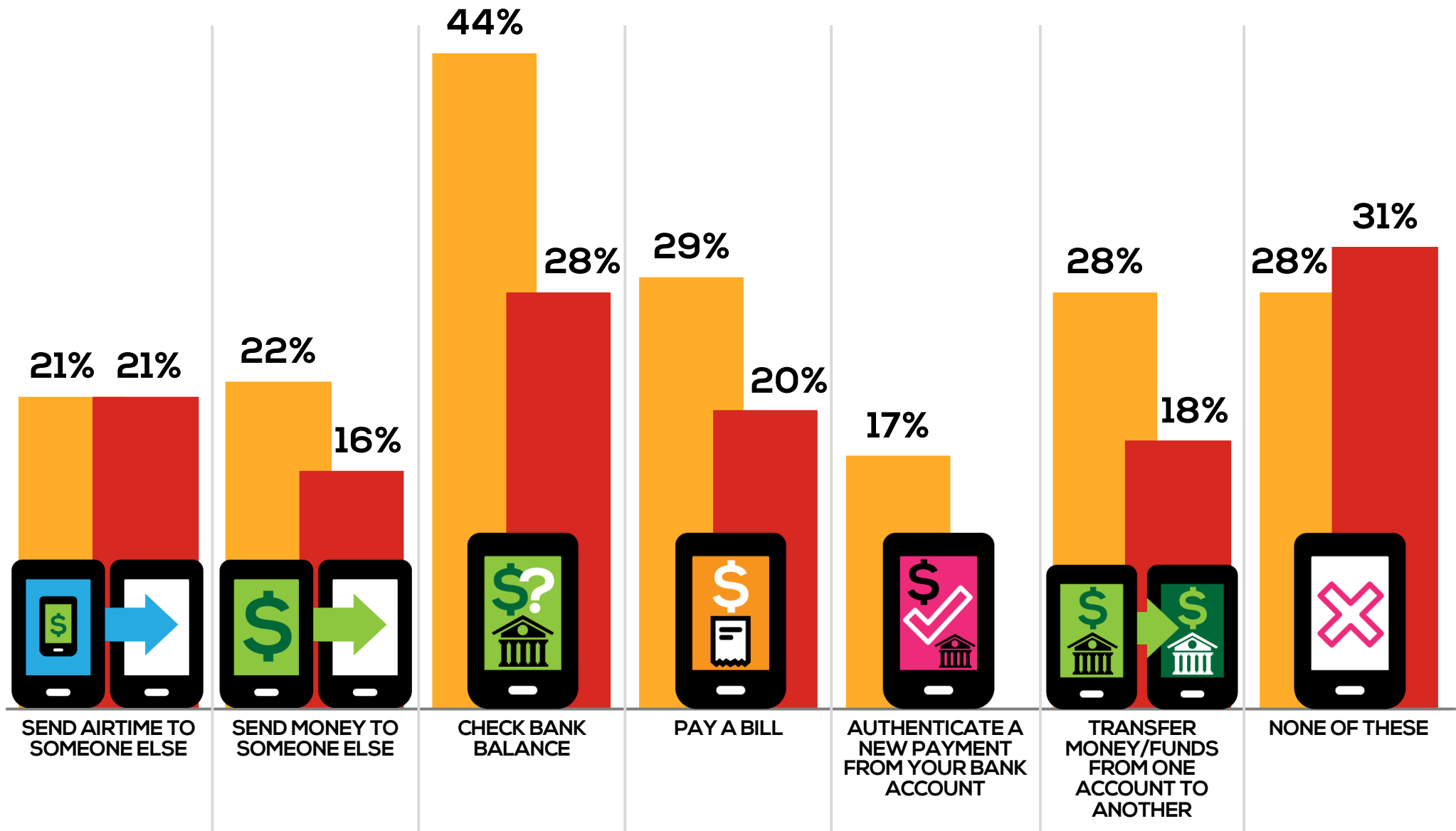
WHAT TECHNOLOGIES DO YOU USE TO CARRY OUT BANKING TRANSACTIONS - E.G. TRANSFER MONEY OR CHECK BALANCE - VIA YOUR MOBILE PHONE?





IN THE PAST 6 MONTHS, HAVE YOU USED YOUR MOBILE PHONE TO...?

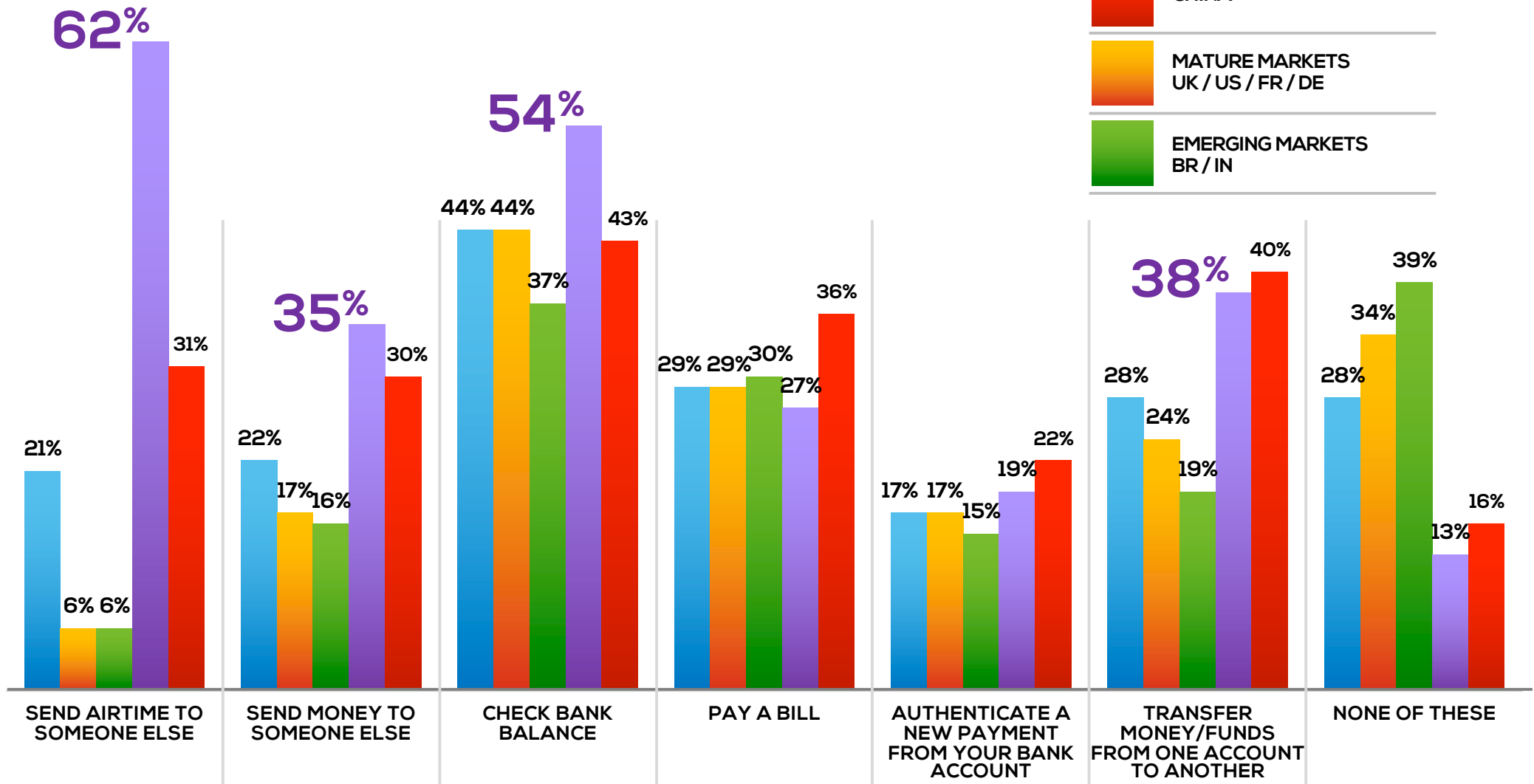
2016 2014





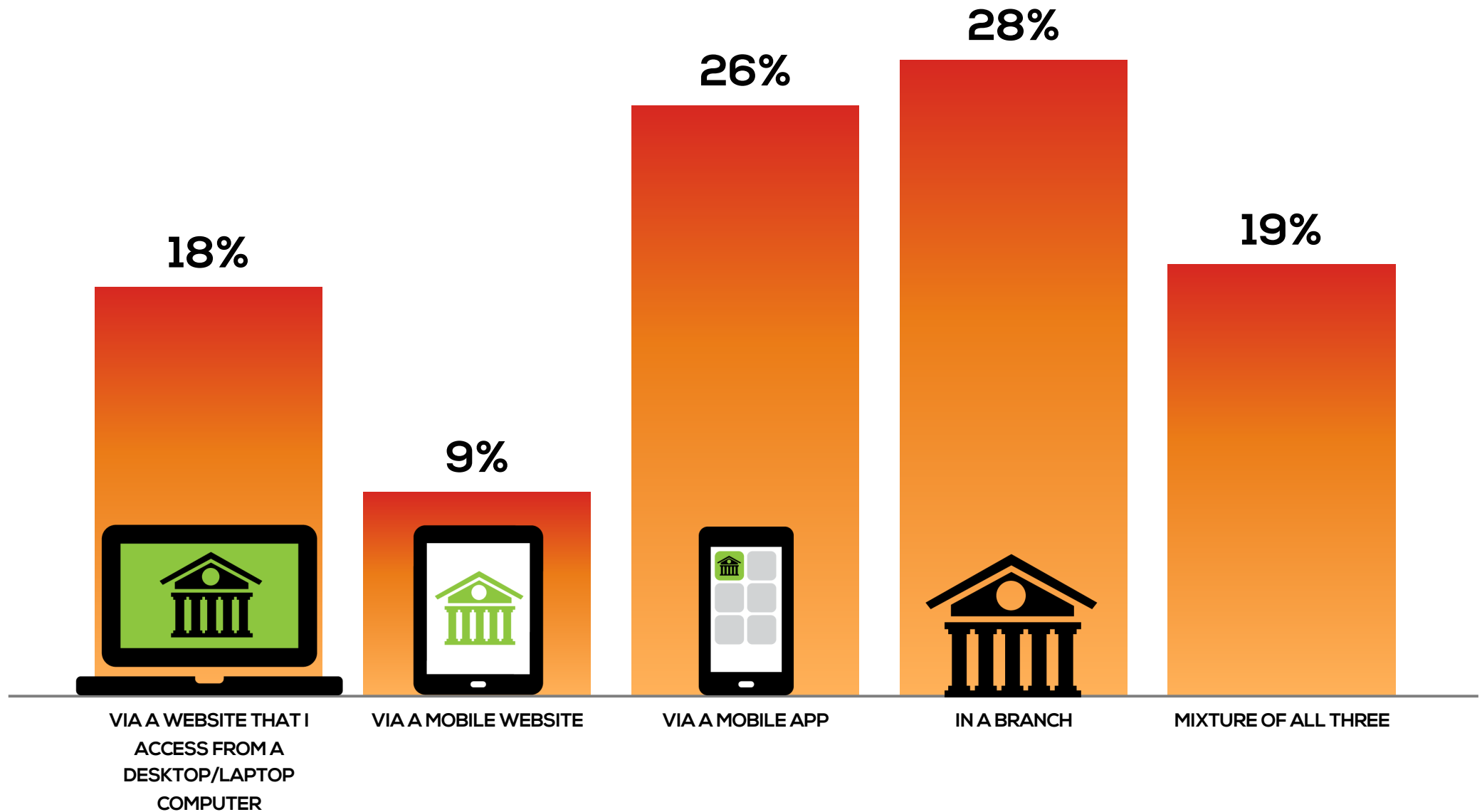
GROWTH MARKETS CONTINUE TO EMBRACE MOBILE BANKING

IN THE PAST 6 MONTHS, HAVE YOU USED YOUR MOBILE PHONE TO...?





HOW DO YOU PREFER TO DO YOUR DAILY BANKING?



A person with long dark hair, wearing a white and black striped shirt, is holding a silver credit card in their right hand and a silver smartphone in their left hand. They are standing over a dark, reflective payment terminal. The terminal has a screen and a small keypad with buttons labeled 'TD+', 'A/O+', and 'AD+'. The background is a bright, sunny outdoor area with some foliage. A warm, orange-yellow light flare is visible on the right side of the image.

ABOUT THE REPORT



ABOUT THE SURVEY

MEF's Mobile Money Report was commissioned by global trade body Mobile Ecosystem Forum.

The field study was carried out by On Device Research in Q2 2016. It questioned nearly 6000 mobile media users in 9 countries, namely: Brazil, China, France, Germany, India, Nigeria, South Africa, UK and US. The study digs deep into consumer trends and attitudes, providing insight and analysis on their wider industry impact. The report delivers insight that can help all stakeholders in the mobile ecosystem better understand and leverage the rich opportunities that mobile commerce, payments and banking provides.

ABOUT THE AUTHOR

Tim Green has been writing about mobile for 15 years, first as senior analyst with Screen Digest, then editor of Mobile Entertainment. Today, Tim watches the mobile payments space carefully via his Mobile Money Revolution blog, and also contributes to the MEF as features editor of the MEF Minute blog. Tim has written numerous reports, white papers and eBooks.

THANKS TO OUR PARTNERS



About Wirecard

Wirecard AG is a global technology group that supports companies in accepting electronic payments from all sales channels. As a leading independent supplier, the Wirecard Group offers outsourcing and white label solutions for electronic payments. A global platform bundles international payment acceptances and methods with supplementary fraud prevention solutions. With regard to issuing own payment instruments in the form of cards or mobile payment solutions, the Wirecard Group provides companies with an end-to-end infrastructure, including the requisite licences for card and account products.

Wirecard AG is listed on the Frankfurt Securities Exchange (TecDAX, ISIN DE0007472060, WDI).

For further information about Wirecard, please visit <http://www.wirecard.com/> or follow them on twitter @wirecard.



About On Device Research

On Device Research is a research company that gathers responses on mobile devices - so far we've sent over 2.3 million surveys across 53 countries.

By conducting research on mobile phones and tablet computers we can reach consumers wherever they are, at any time and in any location.

Mobile research also brings fresh, instant responses that accurately capture consumers' feelings, thoughts and opinions.

For more information visit www.ondiceresearch.com



QUESTIONNAIRE

What types of items and services have you purchased via mobile phone in the last six months? Please tick all that apply

Digital content

Mobile app - paid download

Food/drink in shop/café/bar

Physical product ordered from mobile website/app

Service

Other

None - don't understand the technology

None - didn't know you could

None - don't think it's secure

None - no obvious incentive

Have you ever started to pay for something using your mobile phone, only to abandon it before you reached the end? Please tick all that apply

Yes, asked for too much sensitive information

Yes, took too long to complete

Yes, due to connectivity or other technical issues

No, never made a mobile payment

No, always completed transaction

How have you purchased items or services via a mobile phone in the past six months? Please tick all that apply

Directly to my mobile phone bill (e.g. a chargeable SMS message)

Typing credit or debit card details into a mobile website

Via an app (the app provider has a record of my credit/debit card details)

Via a mobile wallet in a shop (e.g. a service like Apple Pay which has a record of my credit/debit card details)

Airtime transfer

Plug and pay e.g. credit/debit card inserted into a reading device attached to the merchant's mobile phone.

When using a credit/debit card to purchase items or services which processing method do you trust the most?

Storing the details in an app

Typing the details in on a mobile website

Handing the card to a waiter/shop assistant

Reading out the details over the phone

Tapping to pay in a shop/café via mobile wallet (e.g. Apple Pay)

Using a mobile wallet to pay via an app

None of these

In the past 6 months, have you used your mobile phone to...?

Send airtime to someone else

Send money to someone else

Check bank balance

Pay a bill

Authenticate a new payment from your bank account

Transfer money/funds from one account to another

None of these

What technologies do you use to carry out banking transactions - e.g. transfer money or check balance - via your mobile phone? Please tick all that apply

Via text message (e.g. USSD)

Banking app

I don't do any banking via my mobile phone

How do you prefer to do your daily banking?

Via a website that I access from a desktop/laptop computer

Via a mobile website

Via a mobile app

In a branch

Mixture of all three



ABOUT MEF

The Mobile Ecosystem Forum is a global trade body that acts as an impartial and authoritative champion for addressing issues affecting the broadening mobile ecosystem. We provide our members with a global and cross-sector platform for networking, collaboration and advancing industry solutions. The goal is to accelerate the growth of a sustainable mobile ecosystem that drives inclusion for all and delivers trusted services that enrich the lives of consumers worldwide. Established in 2000 and headquartered in the UK, MEF has Regional Chapters across Africa, Asia, Europe, Middle East, North and Latin America.



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