Introduction

The mobile revolution is unstoppable. Over half of all consumers worldwide now own a smartphone – and they’re obsessed. More than one third check their phone within five minutes of waking up in the morning, and 20% of them check their phone more than 50 times a day. Across the globe, mobile devices dominate the total time spent online, leaving desktops and laptops in the dust.

When it comes to making purchases, as much as 11% of online shoppers now shop online via their smartphone on a weekly basis and, 34% say it will become their main purchasing tool. The stage is set for mobile payments to soar!

Some of the key highlights to expect by 2022 include:

- More than 2.7 billion people will use a mobile wallet app to pay in-store.
- 50% of wearable devices will be enabled for payments.
- More than one billion people will be using Apple Pay, Google Pay and Samsung Pay.
- More than 1.6 billion people will use QR code-based in store payment services, driven by adoption in key local markets.

These trends are hyper accelerating due to the impact of the COVID-19 pandemic on the way we shop. This is because more consumers are embracing online shopping and in-store contactless payments to avoid exchanging cash, touching card terminals and checkout machines. Consequently, the global contactless card transaction volume is set to leap by a massive 58% y-o-y in 2020.

In this report, you’ll learn about the current and future trends taking place in the world of mobile payments, along with the challenges to innovation, regional outlooks, and insights to takeaway. First, let’s dive in and discover how the COVID-19 pandemic is changing the way we pay for goods and services, plus the effects it’s having on the retail industry as a whole.

This report was made possible thanks to the research conducted by Kaleido Intelligence.
The mobile revolution is unstoppable. Over half of all consumers worldwide now own a smartphone—and they’re obsessed.
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Decoding the mobile payments ecosystem: a glossary of terms
Distance payments: buy something online and pay through your mobile phone

1. Mobile wallets
Stores your credit card or bank information and uses different technologies to pay online, or through a smartphone app

2. Card payments
Authorises the use of your credit or debit card to pay

3. Bank transfers
Use your bank’s mobile app to send money to someone else’s bank account directly

4. Carrier billing
Buy something on your mobile phone, get it billed to you by your mobile service provider

   Step 1: Send an SMS
   Step 2: Your mobile operator adds a charge for a premium SMS rate on your bill

5. Postpay
Buy something from a webshop now, receive an invoice after your goods arrive
Proximity payments: using your mobile device to pay in person

Also known as contactless payments, in-store payments, tap and go, wave to pay, and more

1. Near field communications (NFC)
   Wave your mobile phone over the Point-of-Sale device, or another mobile phone

2. Sound-based mobile payment
   Communicates your credit card information through sound waves

3. Magnetic secure transmission (MST)
   Uses internal magnets to mimic a credit card’s magnetic stripe

4. QR Code
   Scan a QR code to pay

5. Mobile point-of-sale (MPOS) device:
   A dedicated wireless smartphone, tablet, or reader that functions as a cash register or point-of-sale terminal
COVID-19 impact
1. Contactless is King
As evident from Q1 and Q2 of 2020, COVID-19 is changing the way we shop - undoubtedly forever. Consumers, in a bid to stop the spread of germs, are now conscious about touching POS keypads and checkout machines and are embracing contactless methods such as proximity payments and mobile wallets. Main players Apple Pay, Google Pay, and We Chat Pay are witnessing significant adoption across all global markets where these services are available. Largely due to two key factors:

- Retailers, merchants, and governments are discouraging the use of cash to limit human-to-human contact.
- Central banks and regulators are increasing contactless limits to decrease the need for touching POS keypads. Across major markets, there have been increases of anywhere between 50% and 200%.

And the proof is in the pudding, during the first three weeks of April, with the new increase in contactless limits, Visa observed a 50% reduction in the number of times cardholders needed to touch a checkout terminal to complete their transaction.

2. In-store spending is at a tipping point
COVID-19 has disrupted the retail sector, both online and in-store, albeit to varying degrees. Following the lockdown implementations, most markets reported a fall in overall retail spending. Although this fall was partially masked by panic buying immediately before the lockdown measures
came into effect, overall global retail was devastated as most non-essential stores (virtually all non-grocery outlets) were obliged to close.

- According to ONS, the UK retail spend in April 2020 fell by more than 23% y-o-y.
- In the US, the equivalent figure was 22%, in Spain, 31.6%, and in France 40%.

With countries having eased the lockdown measures in the second half of Q2 2020, retail is beginning to rebound in some markets. In June 2020, the UK retail sector reported total retail sales to reach similar levels as before the pandemic, with a fall of just 0.6% when compared with February, as non-essential high street shops reopened. Nevertheless, KPMG found that immediate pressure remains for high street firms, as many consumers choose to stay away from the shops while potential health risks linger.

3. The impact on online spending
Following the impact of social distancing measures, e-commerce sales rose sharply, due to consumers choosing to buy groceries online. In several markets, it’s likely that growth would have been higher but for the logistical difficulties in meeting demand: the leading online grocery stores simply did not have the resources (such as fleets and drivers) to cope and delivery slots were filled weeks in advance.

Nevertheless, in the UK, the net result was a 26% y-o-y increase in the value of e-commerce sales in April 2020. In the US, Nielsen data suggests an even sharper increase, of 45% y-o-y.

According to Kaleido Intelligence, a notable exception to the rule has been China. Where online sales over February-April 2020 were virtually flat (down 0.3%) on the corresponding period in 2019. Although there may be some reversion from online to offline as a result of supermarkets reopening, a minority of consumers remain wary of visiting stores and will instead continue to shop solely online.

4. The impact on m-commerce
For the foreseeable future, we expect online grocery sales to remain at or close to their current levels. Mainly due to supermarkets and retailers being mindful of the risk of future COVID-19 outbreaks, such as expanding their fleets and logistical infrastructure to cope with the anticipated demand. Due to this increase in logistics, total m-commerce spend for digital services and physical goods purchases, is therefore set to reach USD2.66 trillion in 2020, with growth in online spend across sectors such as grocery offset by a fall in sales elsewhere. This upward trajectory will also continue to reach USD3.16 trillion in 2021 and USD3.79trillion in 2022.
Global trends
Let’s take a look at the other significant trends making waves in the industry and will likely be responsible for the way mobile money moves forward in the next five years.

1. **Proximity payments will experience massive growth**
   
   With the backing of powerful brands behind them, mobile wallets such as Apple Pay, Samsung Pay and Google Pay have created plenty of buzz around NFC payments. Market share for these 3 wallets in terms of total in-store wallet payment transaction value will reach 27% in 2022, up from an estimated 16% in 2020; as their user base exceeds 1 billion.11

   Across the world, consumers and merchants alike increasingly own NFC-enabled hardware as well. New smartphones these days contain embedded NFC chips, as do POS terminals that are shipped to retailers. The improved awareness, coupled with the widespread availability of technology, will see an explosion in demand for NFC payments soon.

   Moreover, in 2022, more than 2.7 billion people will use a mobile app to pay for in-store transactions. These transactions will exceed USD5 trillion in value in 2025, up from a global total of USD3.5 trillion in 2019. Additionally, due to the COVID-19 safety measures, proximity payments will jump 58% y-o-y in 2020, as consumers who were previously hesitant about contactless payments are becoming more interested in adopting methods that reduce human to human contact and the spread of infection.12

2. **A new era of wearable payment options**

   Payments via smartphones and the uptake of smart technologies have paved the way for consumers to transact through their wearable devices. In advanced economies, where customers are already in the habit of making contactless payments, wearables introduce an even more seamless shopping experience. Facilitated by proximity payment technologies such as QR codes and NFC, customers can check out without having to reach for a card or a phone.

   The potential of wearables in boosting the mobile payments market is therefore highly promising. According to ABI Research, global wearable device
 shipments are set to exceed 500 million by 2021. Moreover, Kaleido Intelligence forecasts that payment functionality will be included in 50% of wearable device shipments by 2022. And expects wearable payments to drive more than USD100 billion in transaction volume for the first time in 2025.

At present, wearable payments are understandably minimal. Not only have wearable devices yet to reach mass adoption, only a limited number of them have payment functionality built in. Juniper Research expects that while wearable payments will take several years to reach critical mass, the long-term opportunities are huge. As original equipment manufacturers increasingly integrate payment functionalities in IoT devices, market adoption for making payments through wearables will gain significant traction in the long term.

3. Millennials and generation Z are driving the push for a better customer experience
It should come as a surprise to no one that those under the age of 35 are more likely to embrace mobile payment technologies. As digital natives, younger consumers gravitate to mobile apps for their lifestyle needs, from shopping to banking. Almost 70% of them can imagine a future where all purchases are done online, while more than 50% of millennials worldwide report that they’re highly likely to use mobile banking services.

Yet, although they’re leading the way when it comes to mobile banking and payments, Millennials and Gen Z’ers are also more likely than other generations to visit a physical location for their banking needs.

The key to capturing their business is in delivering an outstanding user experience and 24/7 omnichannel support. In the book Gen Z At Work: How the Next Generation Is Transforming the Workplace, author David Stillman points out that for Generation Z, the line between physical and digital delivery aren’t simply blurred; they don’t exist at all.

The consumers of the future expect an identical experience, whether they’re in a bank branch or using their mobile phone. Not content to wait in line or to have limited features through their smartphone, the connected customer demands faster processes, personalized service, and round-the-clock customer care – across all customer touchpoints.

In the race to corner the market, the priority for all the players in the mobile payments ecosystem will be to create a platform that delivers an exceptional customer experience and engage the younger consumers, or risk becoming obsolete.

4. A need for speed is fueling the adoption of faster and innovative mobile payment feature
At the Mobile Shopping conference, Euromonitor observed that the topic of speed was “almost a mantra”, reflecting retailers’ concerns that slow speeds are negatively impacting conversion rates – particularly on smartphones and tablets.

A key finding was that swift, seamless checkouts were instrumental to success: leaders in mobile shopping have a checkout process that takes less than a minute to
complete. One example cited by Euromonitor was 1-800 Flowers, which originally had a checkout process consisting of 13 steps. Upon optimizing their checkout flow, the company saw its conversion rate increase between 40 to 140%, and recorded growth of 25 times its mobile revenue.\textsuperscript{18}

To facilitate swifter and more effortless transactions for customers, organizations are looking to enhance their mobile payment platforms. Express checkout, which allows mobile shoppers to purchase with a single click, is proliferating.

For example, in 2016 Facebook found that nearly one in four of their users in the US used one-click checkout on their mobile phones. The next year, PayPal announced that it had processed a 53% increase in mobile payments and attributed the growth to its One Touch checkout. PayPal states, 199 million consumers now use One Touch, and we predict the user base to reach 375 million by 2022, making it the most rapidly adopted product in the company’s history.\textsuperscript{19}

Biometrics are also playing an increasingly significant role in speeding up mobile checkouts. Following a 2016 pilot in The Netherlands, which found that 93% of participants wanted to use biometrics to pay\textsuperscript{20}, Mastercard launched Identity Check Mobile. Also colloquially known as “Selfie Pay”, the technology uses biometrics to verify a cardholder’s identity during the checkout process. Identity Check aims to reduce shopping cart abandonment by allowing cardholders to authenticate purchases using their smartphone’s fingerprint scanner, or by taking a selfie.

In the same year, Visa announced a collaboration with BioConnect, a biometric identity platform provider. The partnership allows Visa to introduce multiple
biometrics—including fingerprint, iris, face and voice recognition—to broaden its array of authentication capabilities. It will take some time until PINs and passwords on mobile apps can be eliminated, but one thing is certain: going forward, biometrics will become increasingly integrated into mobile payments.

5. Emerging markets drive mobile payments growth
Emerging markets demonstrated a stronger appetite for mobile payment technologies than advanced economies. This trend continues unabated: according to Nielsen, mobile-only banking was most popular in India, Indonesia, Mexico, and Turkey in 2017. Additionally, of the top 10 countries that use peer-to-peer (P2P) mobile payments, eight are emerging markets. There are several reasons for this. Firstly, emerging and developing economies are now home to 85% of the global population, as well as 90% of people younger than 30 years old – the biggest group of mobile-first consumers.

Secondly, the world is rapidly approaching a tipping point, which will see the global middle class undergoing unprecedented expansion. The European Commission predicts that the size of the global middle class is expected to grow by 4 billion in 2021 and reach 5.3 billion people in 2030. The bulk of this growth is expected to come from emerging markets, particularly Asia.

Finally, it is estimated that about 1.6 billion people in emerging economies remain unbanked or underbanked. These people struggle to meet bank account requirements due to their lack of funds, high banking fees, and a general distrust of traditional banking systems. Moreover, bank branches and ATMs are less widespread in the rural, developing parts of the world, making it extremely inconvenient for the population to access banking services regularly.

Yet at the same time, mobile penetration in the developing world has reached approximately 80%. In fact, households in emerging markets are more likely to have access to mobile phones than to toilets or clean water. Therefore, as mobile phone penetration in these markets is particularly high, this is perfect for established fintech players and start-ups to thrive in providing innovative, affordable mobile banking solutions to underserved populations.
Given these demographics, it's clear why developing markets are driving mobile payments. Not only are mobile payments used by two thirds of low- and middle-income countries today; there remains no better way for consumers in remote areas to access financial services than through mobile methods.

We're also seeing an unexpected increase in the adoption rate of QR-code based wallets and services in emerging markets. Countries in Latin America, South East Asia, and Africa are now rolling out common and standardized QR code payments in a bid to move towards a cashless society. India is one standout case, where big players such as Visa, Mastercard, American Express, and the National Payments Corporation of India have collaborated to develop an interoperable QR code acceptance solution.

In comparison, QR wallets are not popular in Western markets, especially amongst European customers and merchants. However, there is an increasing demand from Chinese tourists to popular European tourist destinations for QR code payments; consequently, we are witnessing Alipay and WeChat Pay partnering with merchants in Europe to enable such payments for Chinese tourists. This means that European merchants have the unique opportunity to become a first mover and boost in-store sales, as and when the travel market recovers from the impact of COVID-19.

6. Payments players will increase investments in security
Consumers not only expect a frictionless mobile payment experience, they also demand the same level of security offered by more formal financial services. A 2018 IBM survey found that globally, consumers ranked security as the highest concern when logging in to money-related apps on their mobile phone.
Customer satisfaction aside, companies are obliged to avoid the often-calamitous financial consequences of security violations. According to IBM, the global average cost of a data breach is now USD3.62 million. With the EU’s General Data Protection Regulation (GDPR) in effect, companies found to be in breach face even heavier penalties: up to 4% of annual global turnover or EUR20 million, whichever is greater.

Again, biometrics are likely to increase in popularity as a result. IBM’s global survey also found that 67% of respondents are comfortable using biometric authentication, while 87% would consider using different types of biometric authentication in the future.

These conclusions are supported by other, more region-specific studies. A 2017 survey by Visa found that 84% of European consumers – both baby boomers and millennials – expressed confidence in biometrics as a secure form of authentication, up from 59% the year before. In the US, a survey revealed that not only do consumers want to use biometrics, they also consider biometric authentication more secure than passwords. 42% said they wouldn’t even use a banking or payment app that doesn’t offer biometric authentication.25

7. Regulations continue the shift from cash to mobile
Across the world, governments are now waking up to the huge costs, risks and inefficiencies that come with cash transactions. They recognize that shifting to digital payments curtails expenses for banks, governments and merchants; boosts financial transparency and combats the black economy, and promotes access to formal credit and savings instruments, thereby stimulating economic growth. Simply moving to electronic payment methods can result in countries saving more than 3% of their GDP.26

Furthermore, a recent study by Visa, found that increasing digital payments could result in direct net benefits of USD470 billion per year. On average, these net benefits represent just over 3% of a city’s current GDP – which translate to an additional economic activity of USD12 trillion between 2017 and 2032!
As a result, regulators are scrambling to build a sustainable electronic payments ecosystem and enact measures to drive mobile money uptake. In Taiwan, for example, the government has set a target to have 90% of mobile phone users using mobile payments by 2025. To meet this goal, the government is planning initiatives to promote the adoption of mobile payments, such as subsidizing transaction fees to make in-store mobile payments more attractive to customers.

India is another country making huge strides in moving to electronic money. In a bid to crack down on black money and curb corruption, the Indian government launched a massive campaign in 2016 to shift from cash to digital payments. It has since introduced a slew of measures to drive adoption, including lifting duties on all payments made through POS and biometric-based payments.

Meanwhile in Europe, Merchant Machine reports that a significant proportion of consumers are showing an increasing willingness to go completely cashless and the Nordic countries are paving the way. For instance, the Danish government has proposed moving towards electronic money for most transactions. And in Sweden, cash is already largely phased out. Cash is now used in barely 20% of transactions – well below the global average of 75%. 

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![Consumer willingness to go completely cashless, select European markets](chart.png)
Simply moving to electronic payment methods can result in countries saving more than 1% of their GDP every year.
Challenges to the industry
1. Low B2B uptake
Despite flourishing success at a consumer level, mobile payments have barely made a dent in B2B sectors. Safety is, without a doubt, the biggest barrier to adoption. Research has consistently found that only 10-30% of corporate professionals would use mobile payments in their organization, citing security as the chief concern. It’s important to note that cybersecurity concerns exist for B2C customers as well, but it appears that for them, the risk is more acceptable — likely due to the lower value of transactions. For example, a 2015 global survey of over 900 cybersecurity experts found that only 23% of respondents believed that mobile payments are secure in keeping personal information safe. Yet, despite acknowledging the potential security risks, more than 40% of respondents still used mobile payments, while less than 10% preferred to use cash.

Another significant point to take note of is that B2B organizations aren’t averse to electronic payments. Despite the nascence of the market, it is estimated that the global B2B ecommerce market will be worth USD 20.9 trillion by 2027. Clearly, B2B customers are willing to purchase online; they’re just skeptical about the viability of the mobile platform.

2. Fraud is evolving at a rapid clip
Wherever there’s a lucrative opportunity, fraudsters won’t be far behind. In the US, mobile payments not only account for a disproportionate amount of fraud for m-commerce merchants, they’re also the most expensive type of fraud. Today, mobile payment fraud alone accounts for an average of 27% of online sales, a significant increase from 18% in 2018.

As mobile payments become increasingly popular, fraud is only likely to grow. Despite companies and regulators implementing tighter controls to protect mobile payments, cybercriminals are becoming increasingly sophisticated, and fraud is evolving at a faster pace.

For example, the EMV technology introduced by Europay, Mastercard and Visa has been successful at countering
fraud at the physical point of sale. However, as EMV chip cards have become more prevalent and the introduction of 3D Secure 2.0, it’s simply resulted in fraudsters migrating to the card-not-present (CNP) environment. A 2018 China UnionPay survey found that 60% of consumers in China have been exposed to some form of mobile payment fraud. 30% of these cases involved QR codes, doubling in frequency from 2017. Additionally, Juniper Research predicts that by 2023, companies will spend USD9.6 billion on fraud detection and prevention.

Trust is the foundation of consumer relationships with business providers. The fact that security is often cited as the biggest concern for both B2B and B2C consumers who are hesitant about paying through mobile methods speaks for itself. For mobile payments to reach their potential, it’s crucial that the customer feels assured that security is top priority, if not already airtight. To this end, every member in the payment’s ecosystem—from regulators to payment service providers—has a role to play.

3. Inadequate infrastructure for in-store mobile payments

For all the hype and investment in marketing and promotions, in-store mobile payments via NFC have yet to achieve mainstream adoption in most markets. Apple Pay, which accounts for nearly 90% of all NFC transactions globally, has yet to reach more than 6% of users.

Part of the problem lies in the lack of supporting infrastructure. Although 16 million NFC-ready terminals were shipped in 2016, most of them weren’t activated for contactless payments. Furthermore, 90% of these terminals were sent to Europe or North America only.

Clearly, it’s going to take years before the transition to worldwide adoption of NFC-capable terminals is complete.

The real question, however, is this: why isn’t it moving at a faster pace? The answer is a classic chicken-and-egg dilemma.

Retailers who embrace mobile payments must be prepared for significant upfront investment costs and integration challenges, as their businesses deploy entirely new systems. It also affects internal activities, such as loyalty schemes, advertising and promotions, data
analytics, inventory management, and more. Without being certain that customers are going to pay through mobile, it makes sense that retailers would be hesitant to invest in NFC solutions.

On the other hand, the day has yet to come where shoppers can reasonably expect to pay only through their smartphone wherever they go. The lack of assurance that their digital wallet can reliably replace their physical one will discourage customers from changing their payment methods.

4. Inconsistent experiences across the range of mobile wallets

The plethora of mobile wallets available offers consumers freedom of choice – in theory. However, the multitude of different options is more likely to confuse. Most of the major mobile wallets have different authentication methods, work with different payment service providers, and are accepted at different stores.

P2P payments aren't a seamless experience, either. Consumers can pay each other instantly, but only if both parties are using the same wallet or service provider. For example, there's no way to send money directly from one person's PayPal account to another's Samsung Pay wallet. Moreover, many mobile payment solutions are limited to a national level, preventing two individuals from making a cross-border transaction. This lack of interoperability fences off a lot of the potential of mobile payments, which consumers naturally expect to work anytime, anywhere.

Unsurprisingly, customers are turned off by the entire concept of mobile payments as a result. Consumers don't need a dozen wallets that use different technologies and provide different experiences; they want one that works everywhere, consistently. Until a clear standard emerges as the winner, mobile payments won't be able to truly take off.

However, now that all new EMV terminals are NFC-ready, and consumer awareness is growing thanks to the brand popularity behind mobile wallets such as Google Pay and Apple Pay, we expect that retailer acceptance will gradually, and inevitably, grow by 2025.

5. Lack of incentives for adoption

Almost half of all consumers who haven't tried Apple Pay say that the main reason they haven't done so yet is because they're satisfied with their current payment methods. And there's little wonder as to why: paying with plastic is incredibly easy, after all. Simply replacing the act of waving one's card over a reader with a tap on their mobile phone instead isn't a compelling enough reason for customers to make the switch.

Moreover, ingrained habits are difficult to break, and it takes time for new habits to form. Researchers from University College London examined the new habits of 96 people over the space of 12 weeks and found that the average time it takes for a new habit to stick is 2 months of daily integration.
Even at stores which offer mobile payments, customers don’t consistently pay through their mobile wallets – often because they simply forget to do so. Marianne Berry, managing director at Auriemma Consulting Group, explained: “Reaching for the phone instead of the wallet isn’t an automatic reflex, even for mobile pay enthusiasts.”

Some customers simply need a nudge to start trying out mobile payments, while others have already tried mobile payments, but aren’t motivated to do so permanently. To entice them to switch, merchants and payment services need to offer incentives to consumers. For example, mobile wallets can sweeten the deal by integrating loyalty programs with major retailers, or through tying exclusive bonuses and coupons to mobile payments.

Additionally, incentivizing customers not only encourages them to use mobile payments in general, it also allows businesses to stand out from the pack by offering personalized rewards. The key lies in adding value outside the transaction itself. Given a good enough reason from favorite brands to pay via their smartphone, mobile payments will soon become second nature for consumers.

![Market outlook: mobile wallets as a proportion (%) of total ecommerce transaction value 2019-2025](image-url)
Regional trends
The adoption rate of mobile payments is unevenly paced from one part of the world to another. From broad socio-economic patterns to unique cultural influences, we look at some of the most prominent trends underlying the mobile payments evolution in each region.
Asia-Pacific (APAC)

Popular mobile payment apps

- Smartphone users: 2.41 billion (2020), 2.91 billion (2022)
- Mobile wallet users: 1.37 billion (2020), 1.71 billion (2022)
- M-commerce users: 1.15 billion (2020), 1.68 billion (2022)
Overview
As the most populous region in the world, APAC is home to more than half the world’s total mobile subscribers. This surge of mobile users directly correlates to engagement in mobile financial services, as APAC is expected to witness the highest growth in the global mobile payments market. Poised to acquire a share of 42.5% in the global market by the end of 2024, APAC will be the leader of the pack by a large margin.

Consumers in the region already demonstrate high willingness to use mobile payments and exceed the global average when self-reporting their participation in mobile banking activities. For example, more than half of them have paid a bill or checked their bank account balance on their mobile phone. Consumers in APAC are also the most willing to use mobile-only banks, which do not have physical locations and are serviced entirely via a mobile app.

Disparities based on economy size
In the last edition of our report, we found that APAC was very much a mixed bag in terms of mobile usage. More advanced economies, such as Singapore or Japan, consumed the most amount of mobile data, while in developing nations, high costs of mobile broadband usage kept traffic low.

This trend still holds true today. On GSMA’s frequency score of one (never) to five (every day), developed countries in APAC had a 2.1 score for using their mobile phones for financial services, while developing countries in APAC scored 1.2.

Large unbanked or underbanked populations
More than half of the world’s unbanked population live in APAC. In fact, just three countries—India, China, and Indonesia—together account for almost 40% of unbanked adults globally.

Mobile technology has been a boon for these consumers, allowing them to participate in activities such as online commerce, microloans, or P2P payments, without having to sign up for a bank account. Spurred by the inadequacy of formal institutions in meeting their financial needs, consumers from developing economies actively seek out alternatives to traditional banks. In doing so, they inadvertently “leapfrog” over those in advanced markets by adopting mobile money at a much faster pace.

Massive growth driven by a cashless China
By a large margin, China continues to be the biggest revenue generator in APAC. That’s no surprise, considering that the country already has more than 61% of the global mobile payment user base. The numbers, however, are still astounding: the mobile payments market in China alone has surged to USD5.5 trillion, making it more than 50 times larger than that of the US55. It’s also expected to continue growing at a CAGR of 35% until 2022.

Chinese consumers are using their mobile devices to pay for virtually everything they need. The phenomenal growth of mobile wallets such as WeChat Pay and AliPay has made it possible for Chinese consumers to replace their physical wallets, and even their formal bank account, with their smartphone. In other words, cash is quickly heading out of the door. Both payment options now account for 93%
of China’s mobile payments market and it provides an excellent example for other countries looking to innovate their payment systems.

As the undisputed global powerhouse of online retail, China produces a vast amount of m-commerce activity, which accounts for the lion’s share of distance mobile payments in the country. In fact, two-thirds of all digital purchases in China are now made on a mobile device.

Proximity payments, however, are where China stands out on a global scale. Chinese consumers use their mobile devices to pay for everything from bus rides, to meals, to wealth management investments. Even street beggars in China are accepting donations through QR codes.

However, this witnessed a decline in 2020 to $2.9 trillion in transaction value, as consumers became reluctant to visit stores for shopping after the pandemic; in fact, retail sales plunged by around 15-20% in 2020. Reports show that merchants in China are giving away billions of yuan in shopping vouchers to encourage consumers to return to stores and boost spending.

**Chinese shoppers are paving the way for facial recognition payments**

However, even QR codes which are being widely adopted in MENA and LATAM, could soon become a thing of the past in China, with the future of in-store payments becoming face-recognition technology-based.

All major wallet services including WeChat Pay and Alipay have implemented this tech, and consumers can already sign up for facial payment by registering images of their faces to their wallet account. Facial scans have become the future of smartphones, as is evident from the popularity of Face ID.

Facial payment services will offer a superior and safer checkout experience as consumers won’t have to reach for a mobile device or card. These services were launched as early as 2017 and according to Alipay, some 1,000 convenience stores have already installed facial payment technology.
Europe

Popular mobile payment apps

- [Visa]
- [Mastercard]
- [American Express]
- [Discover]
- [PayPal]
- [Sofort]
- [Apple Pay]
- [Google Pay]
- [Samsung Pay]
- [iDeal]

Smartphone users
- 2020: 787 million
- 2022: 862 million

Mobile wallet users
- 2020: 186 million
- 2022: 268 million

OEM Pay users
- 2020: 173 million
- 2022: 253 million

M-commerce users
- 2020: 335 million
- 2022: 395 million
Overview
As the world’s most highly penetrated mobile region, Europe is witnessing accelerated growth in mobile payments. According to our research mobile in-store transactions reach USD96 billion in 2019 and are predicted to see a 165% increase in 2020 to reach USD260 billion as a result of increased contactless payments and raised payment limits across most European markets.

In 2017, Visa’s Annual Digital Payments Study concluded that mobile banking has become second nature to 62% of Europeans. Visa also reported that more than two-thirds of Europeans have used a digital wallet, authorized tokenization of their payment details, or paid through mobile. Moreover, almost half the respondents have used a smartphone or tablet to make P2P payments.

Proximity payments to witness biggest growth
The proliferation of NFC-ready smartphones, along with increasing consumer awareness, and the popularity of contactless payments, will drive interest and traction in proximity payments. Also, contactless infrastructure is well-developed in Europe, with nearly all POS terminals contactless-enabled.

Visa Europe found that engagement in contactless payments coincide with greater adoption of mobile payments. Contactless payment users are more interested in in-store mobile payments, shopping through retailers’ apps, and using a mobile device to pay for a meal.

Consequently, mobile proximity payments are set to witness high growth, with Mastercard reporting that mobile contactless transactions doubled in Q1 2020 – spearheaded by COVID-19. By 2022, Europe will account for nearly USD460 billion mobile transactions, equating to 22% of total transactions in the region: up from 14% in 2019.

One potential obstacle to the growth of proximity payments in Europe is the popularity of contactless card payments. In Europe, contactless card payments are already so widely used, and so convenient to execute, that consumers won’t feel the need to switch to a tap of their mobile phone instead. Simply offering another way to pay isn’t enough; customers need to be motivated by value-added services beyond the payment experience, such as loyalty schemes.

Wearable payments growth on the upward
Wearables, such as smartwatches and wristbands, have witnessed moderate growth in all European markets. According to IDC, shipments of wearable devices in Europe grew 154% y-o-y to 13.4 million units in 2019, with watches and wristband account for nearly 48% of the total devices shipped.

In 2019, Mastercard reported that transactions increased eightfold compared to 2018. Growth was led by the Netherlands, which accounted for 33% of all European wearable payments in 2019, followed by the UK (18%), Switzerland (8%) and Russia (7%).

Rising interest from all generations
Mobile penetration rates have already reached saturation levels in Europe. So, although millennials are by far the trailblazers in mobile payments, other generations aren’t going to be left behind. Since 2016, more than half of European consumers in all age brackets have been using mobile banking. With consumers aged 55 to 64 years old displayed the highest growth rate at 33%.

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Middle East and North Africa (MENA)

- Smartphone users: 652 million in 2020, 903 million in 2022
- Mobile wallet users: 109 million in 2020, 195 million in 2022
- OEM Pay users: 19 million in 2020, 33 million in 2022
- M-commerce users: 125 million in 2020, 195 million in 2022

Popular mobile payment apps:

[Icons for popular mobile payment apps]
Overview
The Middle East and Africa (MENA & SSA) is currently the smallest segment of the global mobile payments market. With its relatively low mobile penetration rate and cash-reliant society, mobile payments have simply not had a suitable environment to flourish.

Mobile shopping in the Middle East is on the rise, with 56% of shoppers saying mobile will become the primary way of purchasing online. In 2022, the total in-store proximity payments via contactless and QR-code services in the Middle East and Africa will reach USD54 billion. In comparison, m-commerce usage will equate over USD80 billion in transactions.

Large unbanked or underbanked populations
In 2016, the World Bank reported that the Middle East remains the most financially excluded region in the world, despite being a middle-income region. The rate of unbanked adults in the region is four out of five adults, with only 18% having access to a formal bank account. Meanwhile, GSMA's latest report finds that overall, 60% of the MENA region lacks access to formal financial services.

As we’ve mentioned, a large unbanked or underbanked population means significant opportunity for the growth of mobile money accounts. For example, GSMA reported that mobile money is starting to reach scale in Egypt, where there are now more than 5 million mobile money accounts. In the coming years, we expect to see more countries in the region using their mobile devices to access financial services.

Cash is still king
One of the region’s biggest setbacks to mobile payments lies in the fact that MENA consumers are famously reliant on cash. In fact, despite the double-digit growth of e-commerce in the region, cash on delivery remains the dominant payment method.

Multiple sources cite security as the top concern for using online payments, although consumers indicate strong interest in mobile payment apps. In Nielsen’s global survey of consumer shopping habits, 49% of MENA consumers said they would be more likely to use or increase their use of mobile payments if security features are enhanced.

A gap in knowledge is set to close
At the 2016 Electronic and Mobile Payments in the Arab World Conference, financial industry players from MENA gathered to discuss how to lead the region’s transition into a world of electronic and mobile payments, rather than be left behind by it.

While growth for QR code payments outside China and India has been slow, it’s gaining momentum in Africa with markets launching services and QR-code payment standards. In 2019, Ghana and Saudi Arabia followed Singapore and India to launch a QR-based national mobile payments system. Meanwhile in 2020, Union Pay and Network International executed their first pilot QR code-based payment transaction at a merchant outlet in the UAE.

With payment vendors including Visa and Mastercard working with regulators around the region to launch interoperable QR-code based wallet services, and having launched services in Kenya and Nigeria, QR code payments look set to gain traction in Africa and the Middle East. Kaleido Intelligence predicts that USD38 billion transactions will be made via QR code in this part of the world by 2022.
North America

Popular mobile payment apps

294 million 333 million
2020 2022
Smartphone users

227 million 288 million
2020 2022
Mobile wallet users

192 million 242 million
2020 2022
OEM Pay users

221 million 261 million
2020 2022
M-commerce users
Overview
North America accounts for one of the largest segments of the global mobile payments market, and the outlook for 2022 looks positive. While historical use of credit and debit cards have limited growth of mobile payments, the market has seen tremendous growth, especially OEM Pay adoption in the last 3-4 years. In fact, mobile proximity payment users are predicted to reach over 300 million in 2025 up from just 45 million in 2016.

Although cash is still used by most North American consumers on a regular basis, it’s steeply declining due to the ongoing COVID-19 pandemic. According to Mastercard, over half (51%) of Americans are now using some form of contactless payment, driven by 2 key factors: 50% worry about the cleanliness of signature touchpads and 72% choosing to skip signatures all together. The survey also found that 56% of US consumers would choose to continue using contactless payments post-COVID-19.

Meanwhile, Visa saw that as of March 2020, 31 million North Americans tapped a Visa contactless card or digital wallet, up from 25 million in November. The report also showed that overall contactless usage was up 150% since March 2019.

This means that despite lagging key global markets, the US looks set to rapidly scale adoption and spend via contactless payment devices including mobile. With a growing OEM Pay customer base, it’s predicted that nearly USD350 billion mobile contactless transactions will be made in the US in 2022, according to Kaleido Intelligence.

A wealth of options—yet no obvious choice
From mobile wallets offered by tech giants, to apps backed by traditional banks, to propriety mobile payment systems from retailers such as Walmart and Starbucks, the options available to North Americans are plentiful. While this is generally a good thing, too much choice can be crippling. With no outstanding option to choose from, consumers are understandably overwhelmed by the sheer breadth of options available. And much like their European counterparts, North Americans have no incentive to switch to mobile payments when cards will work just as easily. Banks and retailers must do more to convince customers of its value, showing them a safer and faster way to pay.

A mixed bag for NFC payments adoption
When it comes to deployment of NFC-ready terminals, North America is experiencing mixed results.

For instance, contactless payments in Canada are skyrocketing. As of 2016, 75% of retailers in the country accept contactless payments, while 10% of all domestic transactions are contactless and growing at a rate of 1% a month.

It’s a different story in the US, which has been trailing behind other markets in facilitating NFC payments. However, mindsets are slowly shifting over recent years. At the beginning of 2016, there were only about 2.4 million NFC terminals in the US. Contact cards—whether with a chip or an old-fashioned magnetic strip—still rule the roost.

To understand why, it’s necessary to consider the challenges faced by all parties:

Banks
The failure of past pilot projects around contactless payments has led US banks to be more cautious. For instance, Chase and US Bank discontinued their
contactless cards a few years ago, after unsuccessful test runs.

Furthermore, unlike other markets which have seen contactless payments take off rapidly—such as the UK or Australia—the US banking system is fragmented and complex. There are thousands of card issuers and merchant acquirers across the geographic spread of the country. Deploying any new technology thus poses inherent challenges, requiring every player in the payments ecosystem to collaborate intensively.

As a result, when EMV-chip cards were rolled out, migration in the US happened much later than in the rest of the world. For instance, the UK started issuing EMV-chip cards in 2003, while it took the US another decade to begin the transition. And now that contactless payments are the norm in most markets, US banks are experiencing a similar delay in implementation. For example, as of November 2017, American Express only issues contactless cards to US customers upon request, while Discover and SunTrust do not issue contactless cards at all.66

US merchants were wary at first
The limited number of merchants accepting NFC payments is one of the reasons that the market was off to a slow start compared to their European cousins. For instance, Apple Pay, the leader in proximity payments in the US, was only accepted by only 36% of merchants in 2016.67

Why did most retailers not jump on the bandwagon sooner? Forrester’s 2017 survey found that upgrade costs were the biggest challenge reported by both small and large businesses in the US. Concerns over integration difficulties and uncertainty over how to get started were also cited as barriers. And finally, lack of consumer demand: 24% of large companies, and 39% of small companies said that their customers aren’t asking for digital wallet solutions.68

However, following the success of mobile wallets from big players such as PayPal – OEM Pay services have seen rapid growth in the last 2 years. We are even witnessing several US retailers adopting QR-code based wallet payments from well-known brands such as Target and Walmart, Starbucks and Macy’s. With Starbucks users now exceeding 25 million!69

Consumer mindset is changing
As mentioned above, most US consumers are overwhelmed by the number of different mobile payment options available yet enticed by none. But even if they do have a mobile wallet such as Apple Pay, consumers often don’t know whether the retailer accepts NFC payments or not, since mass adoption has yet to take place.

However, we’ll see a future shift in the embracement of NFC payments as 38% of consumers now see it as a need, compared to 30% before COVID-19. Retailers have been making lengthy strides to accommodate demand and now more than 60% of Visa’s US transactions occurring at a contactless-enabled merchant location.

There’s no doubt that the US is slowly moving towards a day when NFC payments will be ubiquitous. However, US banks and retailers must still do more to convince customers of its value, showing them a safer and faster way to pay.
Latin America (LATAM)

- **Smartphone users**: 541 million in 2020, 544 million in 2022
- **Mobile wallet users**: 25 million in 2020, 93 million in 2022
- **OEM Pay users**: 24 million in 2020, 70 million in 2022
- **M-commerce users**: 152 million in 2020, 215 million in 2022

Popular mobile payment apps:
- Apple Pay
- BBVA Movil
- Móvil
- Opay
- Tamee
- Coyn
- Payway
- Payme
- Orange Pay
- Paymaya
- PaySA

Map of Latin America highlighting geographic distribution.
Overview
Latin America has long lagged the rest of the world in mobile money but, today, that story is rapidly changing in select markets, namely Brazil, Mexico and Chile. Though young, the mobile payments industry in Latin America is exploding. For instance, active mobile money accounts grew more than 10-fold from 2011 to 2016. Live mobile money services in the region also saw a threefold rise from 10 to 33 in this period. And according to Mastercard, Latin America saw a 17-fold increase in the number of contactless transactions in 2017, with a 13-fold increase in the volume of spending.

The outlook for the future is extremely promising as well: mobile payment users in the region will reach almost 93 million by 2022. Additionally, 20% of businesses in the region already have NFC-enabled POS terminals.

In comparison, online sales are booming in Latin America [Brazilian e-commerce association ABComm saw online sales up by 30% in the first 5 weeks of COVID-19 lockdown] and expects the behavioral shift towards m-commerce to accelerate in 2020.

Large millennial population and COVID-19 impact on cash
With 30% of the Latin American population aged between 20 and 35 years old, not only are these millennials decidedly mobile-first consumers, they also spend more time online than do the global average and are demonstrating strong signs of being ready to embrace mobile payments!

According to a Mastercard survey, following the impact of COVID-19 on in-store payments, Latin America is also witnessing a shift in consumer behavior and reliance on cash payments. The survey found 66% of consumers in Brazil, Colombia, Costa Rica and the Dominican Republic are now using cash less often, or not at all.

Growth of mobile internet subscribers
Latin America is still relatively underpenetrated in mobile phone ownership, which means that plenty of growth is expected in the coming years before it reaches saturation levels of 80% or more.

According to Kaleido Intelligence, overall transaction value via mobile proximity payment services in Latin America will reach USD 40 billion in 2022. In other words, the consumer base for mobile payments in Latin America is poised for massive growth.
As regulators begin to roll out structured programs and incentives to drive adoption, global mobile payments will skyrocket as a result.
Key takeaways
A global outlook
The global mobile payments market is poised to grow at a phenomenal pace, even more so due to the influence of COVID-19. Researchers estimate that total m-commerce spend will reach USD 3.8 trillion in 2022. By 2022, there will be more than 2.7 billion mobile payment users in the world.

Trends and influences to watch out for
Proximity payments are anticipated to experience massive growth. The segment is expected to climb at a CAGR of 21.9% between 2016 and 2024. Due to COVID-19, 38% of US consumers now see contactless as a basic need or feature of payments up from 30% a year ago - a significant growth as US consumers were previously wary of proximity payments.

Wearable devices have high potential for boosting the mobile payments market over the next 5 years, with transaction values approaching USD 100 billion of the first time in 2025. By 2022, over 500 million wearable devices will be shipped worldwide, and more than 50% of them will have payment functionality.

In order to beat out the competition, all players in the mobile payments ecosystem will have to prioritize delivering an exceptional experience that engages Millennial and Generation Z customers. In short, payment providers need to have an omnichannel strategy that results in faster, processes, personalized service, and 24/7 support.

Fast and frictionless transactions are essential to capturing the business of today’s connected customer. Merchants should enhance their mobile payment platforms with one-click checkout functionality in order to speed up the process. Biometrics, increasingly seen as more secure and convenient than passwords, will be integrated into payment authentication more frequently as well.

Emerging markets continue to adopt mobile payments at a faster pace than advanced economies. Two-thirds of low- and middle-income countries today use mobile payments to serve their unbanked populations.

With both consumers and regulators demanding upgraded safety, investments in security features such as biometric authentication will become a top priority for all merchants and payment providers.

Governments around the world are pushing for a shift from cash to safer, contactless electronic payments. As regulators begin to roll out structured programs and incentives to drive adoption, global mobile payments will surely skyrocket as a result.

Barriers to adoption
Despite the burgeoning growth of B2B ecommerce, enterprises are strongly resistant to adopting mobile payments due to concerns about security. However, as the mobile payments market continues to mature, and buyers demand more convenience, we expect the B2B sector to catch up.

Payments fraud is evolving at a rapid clip and is only expected to grow as the mobile payments market presents an ever more lucrative target. The introduction of the EMV chip and 3DS 2.0 has simply resulted in fraudsters innovating and moving to the card-not-present environment.
Today, mobile payment fraud accounts for an average of 27% of annual sales, a significant increase from 18% in 2018. If mobile payments are to successfully reach mainstream adoption, every player in the payment’s ecosystem must play their part to make the environment a more secure one.

Regional trends
APAC will experience the highest growth rate, thanks to its large, mobile-ready population, which also account for 40% of unbanked adults in the world. The region is poised to gain 42.5% of the global mobile payments market by 2024, making it the largest regional segment. China also continues to be the biggest revenue generator in APAC, growing at a CAGR of 35%. In 2021, almost 80% of Chinese consumers will be using proximity mobile payments. While thousands of merchants are already trialing Face Pay technology, where consumers pay directly using facial recognition during checkout.

As the most highly penetrated mobile region in the world, Europeans are already well-accustomed to mobile payments. In the EU, Mobile in-store transactions reached $98 billion in 2019 and are predicted to see a 165% increase by 2021 to reach $260 billion as a result of increased usage of contactless payments and raised payment limits across most European markets, driven by COVID-19.

MENA currently makes up the smallest regional segment, due to its low mobile penetration rate and cash-dominant society. Moreover, financial industry leaders agree that there is an information gap in the region, which makes it difficult to truly understand consumer needs with regards to mobile payments. However, MENA is ripe for innovation and payment vendors including Visa and Mastercard are working with regulators around the region to launch interoperable QR code-based wallet services. Around USD 38 billion QR-code based transactions will be conducted in the region in 2022.

The infrastructure to support NFC payments is still lacking in many markets, especially outside Europe and North America. Due to lacking consumer demand, retailers are understandably hesitant to invest in NFC solutions, which entail upgrade costs and integration challenges. Yet adoption cannot grow without retailer support. Nevertheless, since the COVID-19 impact on the use of cash, it’s only a matter of time before retailers upgrade their infrastructure to accept NFC payments in-store.

The inconsistent experience among the various mobile payment options in the market are confusing and overwhelming for the average consumer. Until a clear standard emerges, mobile payments will continue to face resistance to adoption.

Mobile payments must offer a clear advantage to cards in order to drive adoption. At present, they simply offer an alternative way to pay, which isn’t a compelling enough reason for consumers to switch. Merchants and payment services must do more to convince customer of its value, showing them a safer and faster way to pay. Along with offering personalized rewards, exclusive bonuses, and other incentives in order to entice customers to pay via their mobile devices.
The mobile adoption rate in North America currently lags APAC but has potential to grow substantially in the coming years. Consumer awareness is on the rise, and the population is highly optimistic about mobile technologies. Despite skyrocketing usage in Canada, uptake of NFC payments in the region remains low overall due to the USA’s complex banking system, massive geography, and tepid retailer support. However, looking at the way contactless card payments in the USA have taken the slow, yet steady path to mainstream adoption, we’re confident that mobile payments will follow the same route.

Mobile payments in Latin America is rising and is set to continue experiencing high growth. 3 key factors are responsible: the emergence of QR-code services, the influence of COVID-19 on cash payments, and a hefty proportion of millennial consumers, who are eager to embrace digital payments. Active mobile payment users in the region will reach 215 million by 2022.
By 2022, there’ll be more than 2.7 billion mobile payment users in the world.
How can merchants get involved?
**Keep it simple**
Setting up your store for mobile payments is relatively quick and simple. Now that you know the regional trends and challenges, all you need is to decide on the right payments mix for your business. The key is to keep it simple, you won’t need to integrate a dozen ways to pay if the top 5 will cover 95% of your audience base, and having a payment service provider to walk you through the options is a great starting point. For instance, as a global payments platform, Payvision can advise you on which mobile payments are the most popular in the regions and markets you’re operating in.

**Don’t let go of tradition just yet**
Jumping on the mobile payments bandwagon doesn’t mean you need to let go of traditional payment methods such as credit cards just yet. The influence of COVID-19 is ensuring that paying by cash is swiftly heading for the door, but not everyone has made the transition to linking their credit cards to mobile wallets and wearables. It will take time for consumers to adopt these payment methods. By offering a happy medium with offering a mix between traditional and proximity methods, will mean that you’ll never miss out on a sale and be ready for when the mobile payment market booms.

**Ensure data influences your decisions**
Once you’re set up with mobile payments, a whole world of data will be ready and waiting. The data collected through the point-of-sale will give an invaluable insight into your most popular products, incentives that are driving usage, and the campaigns that are giving you the most bang for your buck. By checking into what’s working well and what’s not, will help you in understanding your mobile user’s preferences and ensure that you make smart, impactful decisions further down the line.
About Payvision

Payvision is a global payment processor that’s driven by a passion for technology and simplifying payments. With our secure technology, we power transactions for businesses across the globe. We know our way around the latest techniques in artificial intelligence, omnichannel strategies and advanced fraud prevention. The dedication to our clients shows – this is where we truly make a difference. By enabling an intuitive and flawless customer experience on all channels, we bring a unique beat to payments.

Founded in 2002 and headquartered in Amsterdam, the Netherlands, Payvision has grown into an international team with global knowledge and offices in North America, Europe and Asia. In 2018, ING bought Payvision, allowing us to offer an unstoppable combo of both the fintech and banking worlds put together. This partnership means cutting-edge technology and a startup mindset backed by ING’s expertise and global network.

Find out more about how Payvision takes the hassle out of payments at payvision.com.

About the author

Phoebe is the B2B Content Writer for Payvision. With 7 years of experience in tech scale-ups, Phoebe specializes in content writing and communication and has worked with several brands across various industries to help breathe life into their stories. Phoebe graduated from Middlesex University London with a Master’s degree in Digital Marketing and Social Media Strategy in 2014.

Phoebe’s LinkedIn profile
Appendix

1. Deloitte
2. We are Social
3, 4. PwC
5. Kaleido Intelligence
6. US Census Bureau
7. INE
8. Banque de France
9. Kaleido Intelligence
10. Kaleido Intelligence
11. Kaleido Intelligence
12. Kaleido Intelligence
13. Bahas
14. LivePerson
15. Nielsen
16. Stillman and Stillman
17. Koenigseker
18. Rimsevica
19. PayPal
20. Mastercard
21. Lagard
22. World Bank
23. GSMA
24. Kaleido Intelligence
25. EyeVerify
26. Kaleido Intelligence
27. Chaun and Kao
28. The Hindu Business Line
29. Inscoe
30. Henley
31. Association for Fianancial Professionals
32. Nielsen
33. ISACA
34. LexisNexis Risk Solutions
35. American Express
36. Visa USA
37. Caixin Global
38. Seeking Alpha
39. PYMNTS
40. Webster
41. PYMNTS
42. Transparency Market Research
43. Nielsen
44. GSMA
45. Demirgüç-Kunt, Asil, et al
46. eMarketer
47. Allied Market Research
48. Nakamura
49. Evans
50. Lim
51. The Guardian
52. Visa
53. PwC
54. Kaleido Intelligence
55. Bell
56. CGAP
57. GSMA
58. Scharwatt
59. Hamif fdsf
60. Go-Gulf
61. Kassem
62. Wendel
63. Kaleido Intelligence
64. Forrester Research
65. GoMedici
66. Chai
67. Fingas
68. Forrester Research
69. Kaleido Intelligence
70. GSMA
71. Prensa Libre
72. Kaleido Intelligence
73. El Financiero
74. Gavilanes
75. Telefonica