



**Beyond the basics:**  
How smartphones  
will drive future  
opportunities for  
the mobile  
money industry





## GSMA Mobile Money

---

The GSMA represents the interests of mobile operators worldwide, uniting more than 750 operators with over 350 companies in the broader mobile ecosystem, including handset and device makers, software companies, equipment providers and internet companies, as well as organisations in adjacent industry sectors. The GSMA also produces industry-leading events such as Mobile World Congress, Mobile World Congress Shanghai, Mobile World Congress Americas and the Mobile 360 Series of conferences.

For more information, please visit the GSMA corporate website at [www.gsma.com](http://www.gsma.com)

Follow the GSMA on Twitter: [@GSMA](https://twitter.com/GSMA) and [@GSMAPolicy](https://twitter.com/GSMAPolicy)

The GSMA's Mobile Money programme works to accelerate the development of the mobile money ecosystem for the underserved.

For more information, please contact us:

Web: [www.gsma.com/mobilemoney](http://www.gsma.com/mobilemoney)

Twitter: [@gsmammu](https://twitter.com/gsmammu)

Email: [mobilemoney@gsma.com](mailto:mobilemoney@gsma.com)

### About this report

---

Authored by Belinda Baah and Nika Naghavi, GSMA

Published September 2018

THE MOBILE MONEY PROGRAMME IS SUPPORTED BY THE BILL & MELINDA GATES FOUNDATION, THE MASTERCARD FOUNDATION, AND OMIDYAR NETWORK

BILL & MELINDA  
GATES *foundation*



 ON  
OMIDYAR NETWORK™

---

# CONTENTS

Introduction	2
Part 1. Digital inclusion in emerging markets: The evolution of mobile internet and smartphone access	3
Part 2. Smartphones and apps: How the mobile money industry has responded	8
Conclusion	13

---

# INTRODUCTION

Technology is changing the way we access a range of products and services, from viewing digital content to paying for goods and services via our mobile phones. The proliferation of mobile internet and smartphone access in emerging markets is creating new and exciting opportunities to narrow the digital inclusion gap and an opportunity for mobile money providers to leverage the added benefits of smartphones.

Today, mobile money's ability to reach customers beyond the brick-and-mortar of traditional banks is unrivalled, and the uptake of smartphones in emerging markets is creating significant potential for providers to extend these benefits even further.

The rich interface of smartphones is not only opening avenues for innovation in product and user experience (UX) design, but can also dramatically increase user engagement and boost activity rates among mobile money users. Smartphone apps have been the second-most offered channel among respondents to the GSMA's Global Adoption Survey of Mobile Money since 2014. While smartphones are the future of the industry, Unstructured Supplementary Service Data (USSD) remains the dominant channel for

accessing mobile money services — evidence that the industry is continuing to reach those at the base of the economic pyramid. However, most of the future growth in mobile internet and smartphone adoption is projected to come from this underserved segment, therefore providers should anticipate and create solutions that cater to the evolving needs of these customers.

This publication is part of a series of deeper insights into selected topics based on the findings of the 2017 State of the Industry Report on Mobile Money. We take a deeper look at how the gap in mobile internet and smartphone access has narrowed in recent years, and how the mobile money industry is leveraging the opportunities this presents.

# PART 1.

## Digital inclusion in emerging markets: The evolution of mobile internet and smartphone access

When we first wrote<sup>1</sup> about industry opportunities around smartphones back in 2014, there were material gaps in both mobile internet access and smartphone adoption in emerging markets. Since then, digital inclusion in these markets has improved significantly. Data use is on the rise, with mobile internet use growing in tandem. Smartphones have been a key enabler of this growth despite persistent barriers including affordability, low or limited digital skills, cultural values and social norms.

### The growth in mobile internet adoption across regions with high mobile money uptake

Mobile internet penetration<sup>2</sup> has grown astronomically over the last few years, from 29 per cent in 2013 to 43 per cent in 2017, and is projected to reach 61 per cent of the global population by 2025.<sup>3</sup> This means that 1.74 billion new users will come online by 2025, most of whom live in emerging markets where mobile technology is the only channel for most people to get online.

In Sub-Saharan Africa, mobile internet penetration has more than doubled in the last five years to 21 per cent, with 280 million new mobile internet subscribers estimated to come online between now and 2025.<sup>4</sup> South Asia has also seen significant growth in mobile internet adoption: penetration has doubled in just five years, and

approximately 470 million more users are expected to come online by 2025.<sup>5</sup>

Figure 1 charts the evolution of mobile internet penetration in regions with high levels of mobile money adoption, showing the rise in mobile internet uptake over the last five years alongside its projected reach of more than 50 per cent of global market penetration by 2025.

Although 3G will remain the dominant mobile broadband technology across Sub-Saharan Africa for the foreseeable future, 4G adoption is soaring. Six new 4G networks have launched in the first half of 2018 alone, bringing the total across the region to 120.<sup>6</sup> 3G

1 GSMA, 2014, "[Smartphones and Mobile Money. The Next Generation of Digital Financial Inclusion](#)".

2 Total mobile internet subscribers at the end of the period, expressed as a percentage share of the total market population.

3 GSMA, 2018, "[The Mobile Economy 2018](#)".

4 GSMA Intelligence, Mobile Internet (%): Market penetration of mobile internet & population data

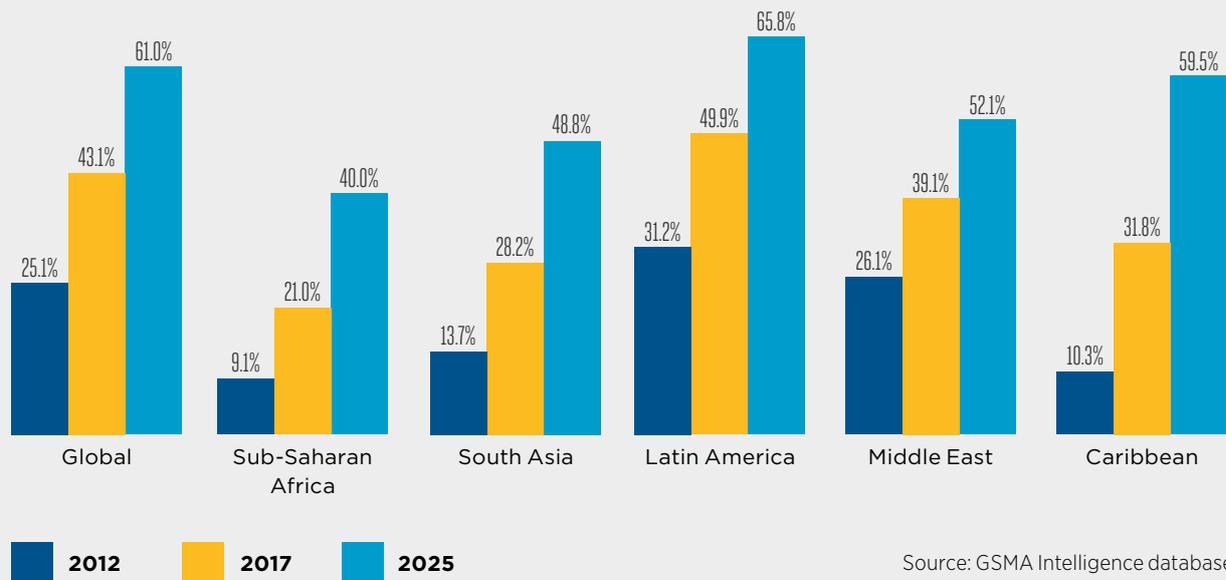
5 Ibid.

6 GSMA, 2018, "[The Mobile Economy Sub-Saharan Africa 2018](#)".

penetration is projected to reach approximately 60 per cent by 2025, a sharp increase from today's levels (34 per cent).<sup>7</sup> Increased availability of mobile broadband will in turn drive demand for more digital content and the

devices that can support it. In this context, mobile money services can no longer rely on the USSD channel alone to keep pace with demand from tech-savvy users of today and the future.

**FIGURE 1 MOBILE INTERNET PENETRATION (MARKET PENETRATION BY UNIQUE SUBSCRIBERS)**



Source: GSMA Intelligence database, 2018

## Smartphone adoption is on the rise, with emerging markets in the lead

At the end of 2017, global smartphone adoption reached 59 per cent, and is projected to rise to over 79 per cent by 2025.<sup>8</sup> By then, three in four mobile connections will operate on smartphones, with the rest on basic/feature phones and data-only devices (e.g. cellular tablets, dongles and MiFi routers/hotspots).<sup>9</sup> The story is similar in emerging markets, where smartphone adoption stands at 55 per cent and is projected to reach 78 per cent by the end of 2025. Adoption has been particularly strong in regions where mobile money is prevalent: in South Asia, smartphone adoption reached 43 per cent by the end of 2017, while in Sub-Saharan Africa it reached 34 per cent in the same period. By 2025, smartphone adoption in these regions is projected to reach 74 per cent and 67 per cent, respectively<sup>10</sup> (see Figure 2).

Data on the number of smartphones sold across Sub-Saharan Africa is especially noteworthy. Jumia, one of Africa's biggest e-commerce platforms operating in 14 countries in Middle East and North Africa and Sub-Saharan Africa, reportedly sold over 250,000 smartphones in Kenya in 2017, with smartphones accounting for 97 per cent of all phones sold.<sup>11</sup> Jumia also saw smartphone sales increase over 70 per cent between 2016 and 2017 in Uganda, where the average price of a smartphone handset fell significantly between 2015 and 2017, from an average price of \$167 to just \$83.<sup>12</sup>

<sup>7</sup> GSMA Intelligence, 3G market penetration data.

<sup>8</sup> GSMA Intelligence, percentage of connections, excluding licensed cellular IoT, smartphone data.

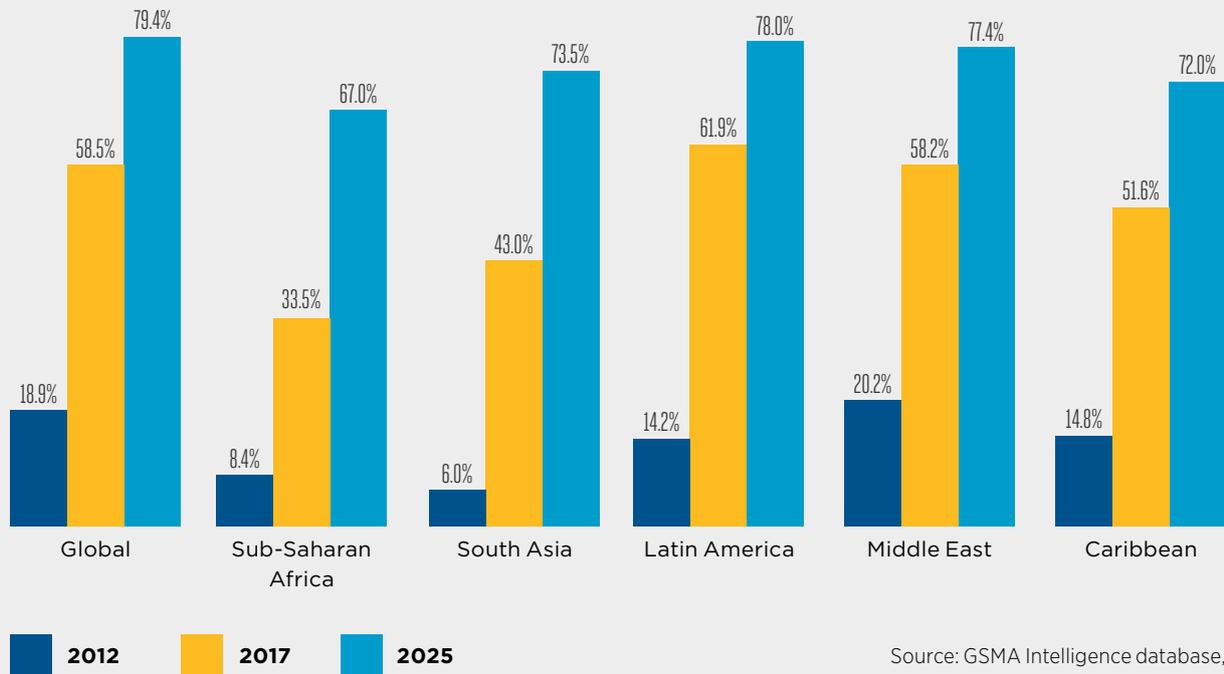
<sup>9</sup> GSMA, 2018, "[The Mobile Economy 2018](#)".

<sup>10</sup> Ibid.

<sup>11</sup> Jumia Kenya Mobile White Paper, 2018, "[Smartphones: The gateway to a better life](#)".

<sup>12</sup> Jumia Uganda Mobile Report 2018: <https://www.jumia.ug/mobile-report/>

**FIGURE 2 GLOBAL AND REGIONAL SMARTPHONE ADOPTION**  
(SMARTPHONES AS A PERCENTAGE OF CONNECTIONS, EXCLUDING LICENSED CELLULAR IOT)



## Smartphones and data are becoming more affordable, particularly in emerging markets

Although affordability is still a barrier, the increased availability of basic smartphones, thriving second-hand markets and the emergence of device financing schemes are all helping to make it easier to access and own a smartphone. By 2020, the average cost of a smartphone in Kenya is only expected to drop from \$118 to \$109, and India from \$115 to \$97.<sup>13</sup> However, the entry price point for some lower-end smartphones is already \$40 for the mass market<sup>14</sup> and in Ethiopia, the Chinese company Transsion Holdings is manufacturing handsets that cost as little as \$10.<sup>15</sup>

Low-cost smartphones have inherently limited capabilities that make them less suited for sophisticated apps that require more memory space and use a lot of

data. Tech giants like Google and Facebook have recently seized opportunities in emerging markets and offer ‘lite’<sup>16</sup> versions of their apps to capture a wider addressable market - an approach mobile money providers in emerging markets could also take to address the limitations of low-cost smartphones.

Access and use of mobile broadband is also gaining momentum in emerging markets, driven by more attractively priced data tariffs and increasingly affordable smartphones. The cost of mobile data plans in lower income countries is falling: the average cost of a 500 MB mobile broadband connection has dropped approximately 17.3 per cent, from 12.1 per cent of monthly income in 2017 to 10 per cent in 2018.<sup>17</sup>

13 GSMA, 2017, [“Accelerating affordable smartphone ownership in emerging markets”](#).

14 Ibid.

15 Financial Times, 2018, “African economy: limits of ‘leapfrogging’”.

16 ‘Lite’ apps are smaller, stripped-down versions of applications that consume less data, often save on battery life and require less memory than usually required – ideal for low-cost smartphones.

17 The Economist Intelligence Unit, 2018, [“The Inclusive Internet Index 2018: Executive Summary”](#).

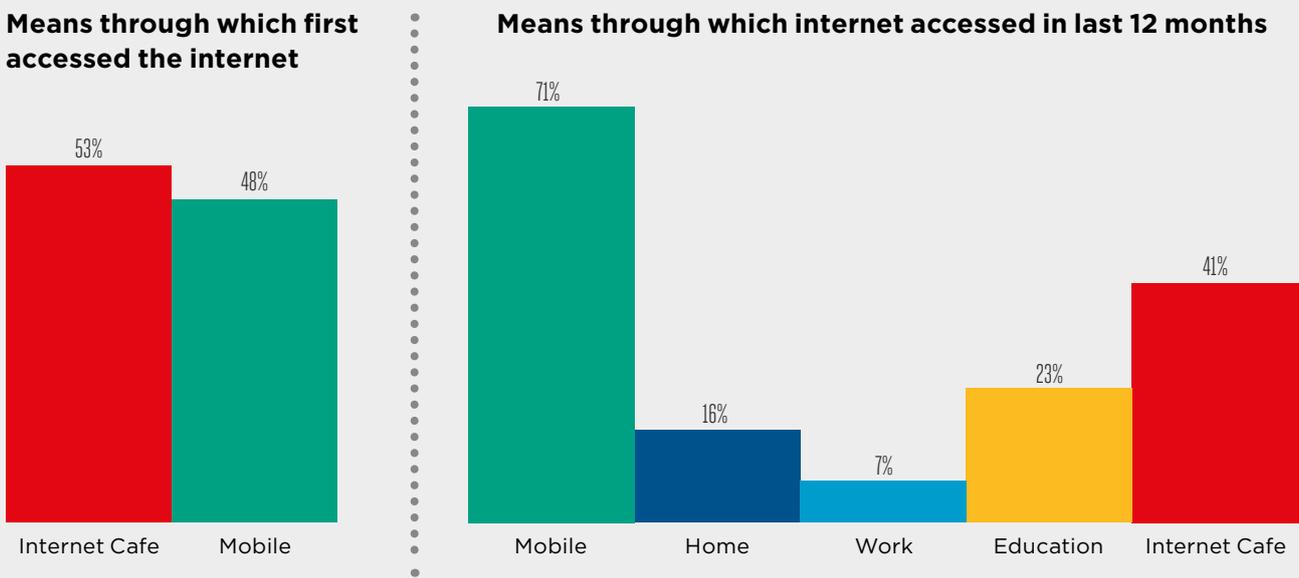
# What does this mean for the mobile money industry?

The proliferation of mobile internet and smartphone adoption across emerging markets is creating exciting new opportunities for mobile money providers keen to leverage the benefits of smartphones. To understand the size of this opportunity (i.e. the addressable market), it is necessary to analyse the connection between mobile internet use, smartphone ownership and mobile money adoption. That is, the percentage of the adult population in emerging markets who own a smartphone *and* subscribe to use mobile data on their smartphones, and how much data they use. This data could be analysed against mobile money usage to help study the opportunity size and to inform how mobile money could be integrated as a use-case for

this demographic. Unfortunately, there is not currently enough comprehensive data at either the regional or global level to reveal how these metrics overlap.

However, we do know that across emerging markets, mobile phones are allowing users to leapfrog fixed internet connections, especially in Sub-Saharan Africa where mobile technology is the first and only form of connectivity available to most users.<sup>18</sup> Research conducted by ICT Africa found that in three countries — Ghana, Kenya and Tanzania — 71 per cent of respondents had accessed the internet through a mobile phone in the previous 12 months, 48 per cent for the first time (see Figure 3).<sup>19</sup>

**FIGURE 3 HOW THE INTERNET IS ACCESSED IN GHANA, KENYA AND TANZANIA**



Source: Research ICT Africa, South Africa Survey, in Strategy and PWC, May 2016, “Connecting the world: Ten mechanisms for global inclusion”.

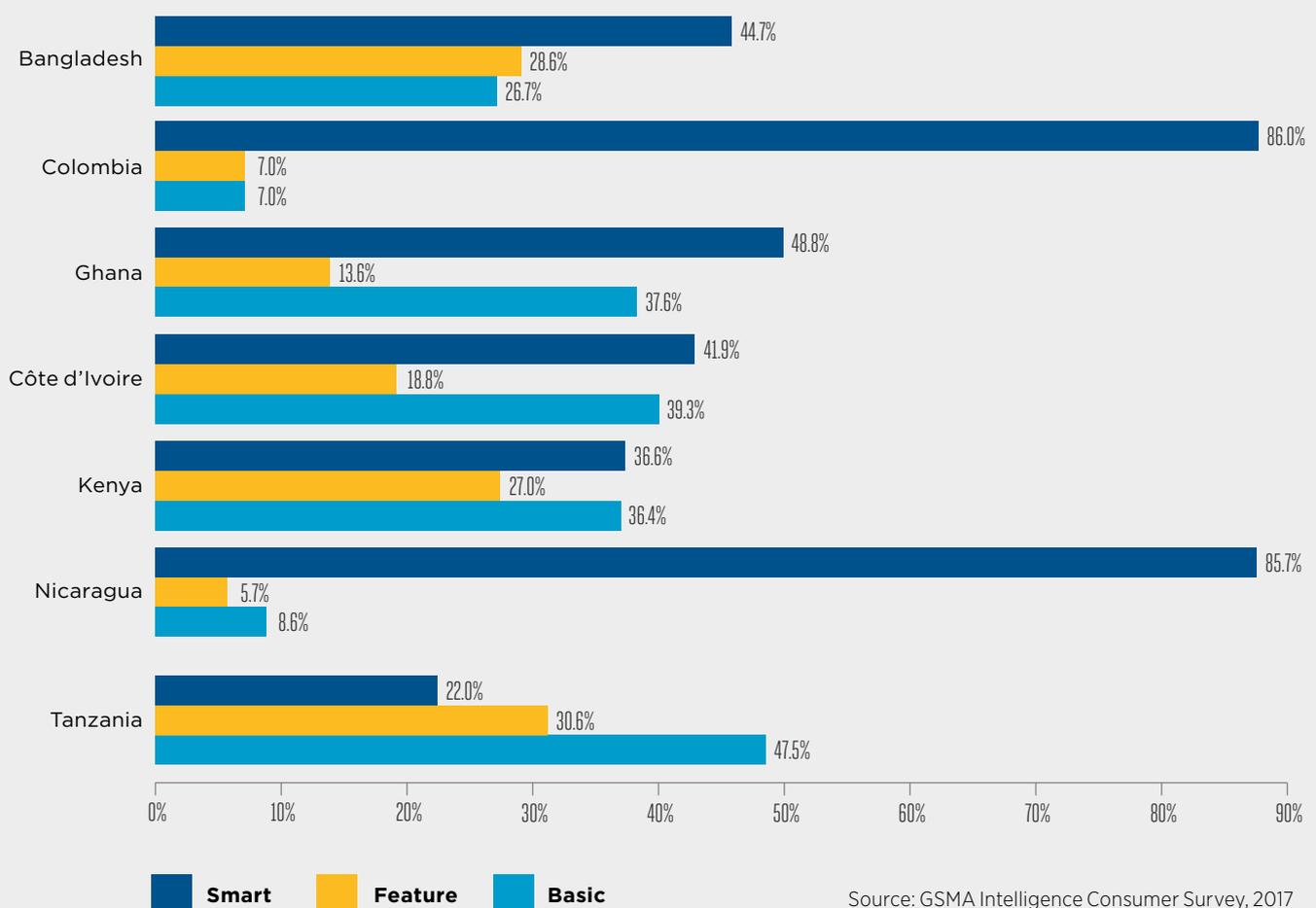
18 GSMA, 2017, “[Mobile Economy Sub-Saharan Africa 2017](#)”.

19 Research conducted by ICT Africa.

Meanwhile, the results of a consumer survey by GSMA Intelligence revealed that in several markets where mobile money has scaled, mobile money users are more likely to own a smartphone than feature and basic phones (see Figure 5),<sup>20</sup> signalling a huge untapped opportunity for mobile money providers in these markets. In Bangladesh, where mobile money is going from strength to strength - registered mobile money accounts increased over 30 per cent year on year between December 2016 and December

2017, and active 90 accounts grew by over 80 per cent in the same period<sup>21</sup> - smartphones were the device of choice for almost 45 per cent of those surveyed. In Côte d'Ivoire, where the percentage of adults with a mobile money account leapt from 24 per cent to 34 per cent between 2014 and 2017,<sup>22</sup> over 50 per cent of those surveyed used a smartphone device. In Nicaragua, where smartphone use dominates, over 80 per cent of survey participants reported using a smartphone.

**FIGURE 4 PERCENTAGE OF HANDSET OWNERS BY PHONE TYPE (MOBILE MONEY USERS)<sup>23</sup>**



20 A *basic mobile phone* has a small screen and a keyboard, with one number and several letters per button. It does not allow you to browse websites or use mobile applications (apps) such as Facebook, WhatsApp or YouTube. A *feature mobile phone* allows you to browse websites or use social media applications, such as Facebook. It tends to have a small screen and a keyboard, with one number and several letters per button. A *smartphone* allows you to go on the internet and to download and use applications (apps), such as Facebook, WhatsApp or YouTube. It has a large touchscreen display and functions with operating systems such as Android, Apple iOS, Blackberry OS or Windows Mobile.

21 GSMA Mobile Money data.

22 World Bank, 2017 Global Findex Database, mobile money account (% age 15+) data.

23 Base: all those asked and who answered yes to using mobile money to send or receive money.

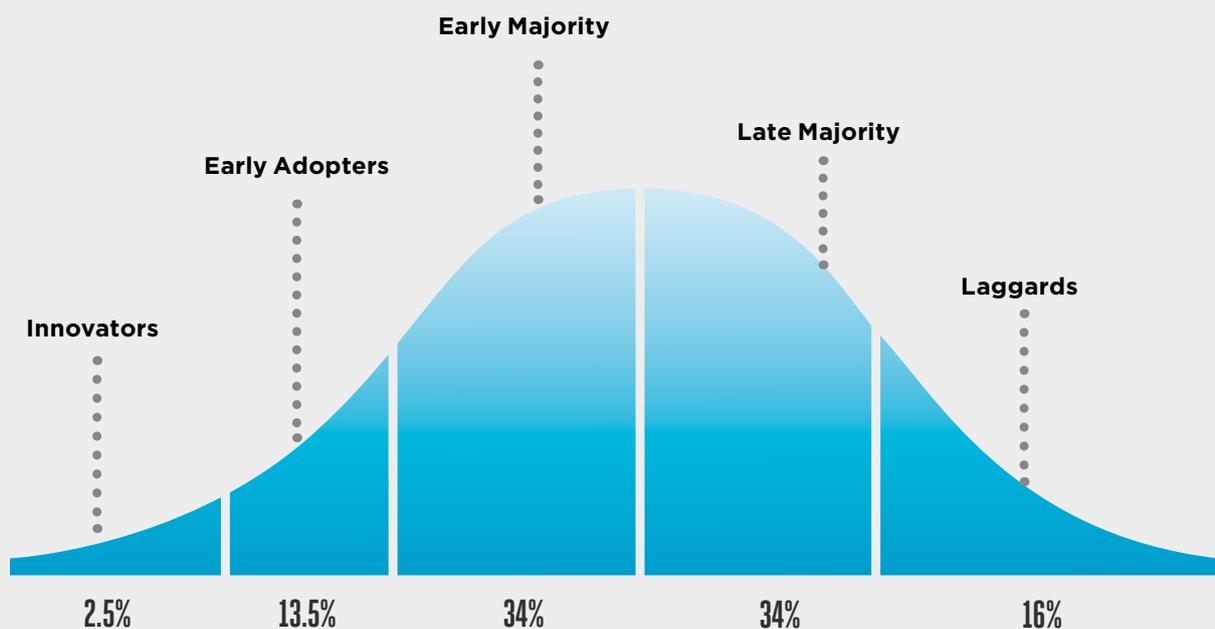
# PART 2.

## Smartphones and apps: How the mobile money industry has responded

While reaching the underserved is critical to realising the full potential of mobile money, it is equally important to acknowledge that in the early days, uptake in mobile money followed a traditional pattern of technology adoption (see Figure 6): primarily attracting urban, salaried, and younger tech-savvy users with a bigger appetite for trying new products or technology. It is therefore unsurprising that in the initial stages, most mobile money users who are going to migrate from using USSD (basic or feature phones) to smartphones

will fall into this demographic. However, this is not to say that mobile money providers should only leverage the smartphone channel for the innovators and early adopters. While providers cannot directly influence the rate of adoption of mobile internet and smartphones, they can intelligently anticipate and build an interface that caters to the needs of the underserved of the future. After all, the majority of future growth in mobile internet and smartphone adoption is projected to come from this segment.

**FIGURE 5 LIFECYCLE OF TECHNOLOGY ADOPTION**



Source: Rogers, E. M., 1962, 'Diffusion of Innovations'

## Apps remain the industry's second-most offered access channel

Increasingly, mobile money providers are leveraging the growth in mobile internet access and smartphone adoption to build an active user base. Apps have been the second-most offered channel of respondents to GSMA's Global Adoption Survey of Mobile Money since we began including a question on access channels in 2014. Globally, the percentage of providers offering a mobile money service through a smartphone app has increased from 38 per cent in 2014 to 73 per cent in June 2017.

This figure masks stark differences across regions, however, which range from 55 per cent in Sub-Saharan Africa to 75 per cent in South Asia and 80 percent in Latin America and the Caribbean. A quarter of respondents to the 2017 Global Adoption Survey of Mobile Money reported building smartphone apps/smartphone strategy as one of their top three strategic priorities for the following year, indicating that there are more opportunities for growth in this area.

**FIGURE 6 PERCENTAGE OF SURVEY RESPONDENTS OFFERING MOBILE MONEY APPS (JUNE 2017)**



Source: GSMA Global Adoption Survey of Mobile Money 2017

Our survey also included questions about the channels available for customers to access mobile money services, which are arguably more meaningful. For instance, despite the prevalence of smartphone apps, usage remains low, at just 20 per cent on average. In fact, over three-quarters (76 per cent) of providers reported that over 85 per cent of their transactions are still conducted via USSD.

Nevertheless, the number of customers actively using

an app to access mobile money services rose by more than 60 per cent between September 2016 and June 2017. Also, as of June 2017, 27 providers reported having over 1,000 30-day active accounts and more than 18 per cent of total transaction volumes (on average) were from their apps – an increase from only eight providers and 15 per cent of total transaction volumes in 2015. This is a sign of both growth in smartphone app use and the gradual shift toward technical channel access of mobile money services.

# Better UX engages customers and encourages mobile money use

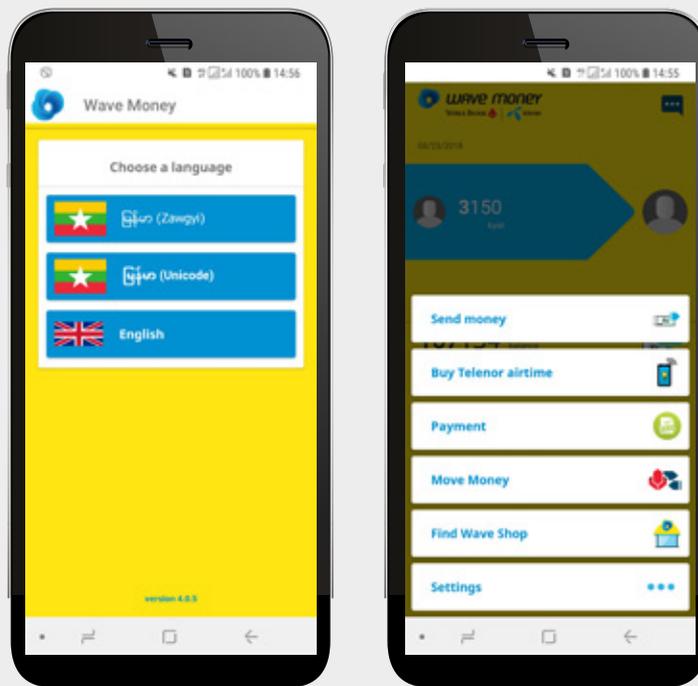
The potential of smartphones to drive innovation in product and user experience (UX) design, and even to support a transformation of the mobile money business model, has been on our radar since 2014.<sup>24,25</sup> Offering smartphones as a mobile money access channel does not mean mobile money will take off in markets where providers are struggling, but simple, intuitive apps can help to encourage use and greater customer engagement. For instance, research by CGAP showed that in a focus group in Kenya, low-income, first-time users learned how to navigate a smartphone on their own in just 20 minutes.<sup>26</sup>

The capacity of smartphones to hold more content in more accessible, user-friendly ways can significantly increase a provider’s ability to share information and educate customers. This, in turn, creates more engaged users who do not have to rely on physical channels such as agents or call centres for basic information on how to use the service or to reset their password.

Smartphones also eliminate other barriers, such as character count limitations (182 on a USSD menu and 160 with SMS<sup>27</sup>) when sending information to customers. This is crucial when engaging and onboarding customers and sharing information on the terms and conditions of more sophisticated financial services such as credit, savings and insurance.

Better access to smartphones is making it easier and more affordable to create and disseminate locally relevant content.<sup>28</sup> For example, mobile money providers can offer their services in local languages, which is less feasible with USSD or SMS. Wave Money in Myanmar currently offers its users the option of three languages: English and Burmese, which both use Unicode, and Zawgyi, the non-Unicode Burmese typeface (see Figure 7). Smartphones can therefore narrow the access gap to mobile money services for those in markets where English is spoken as a second language. There are also clear cost savings for providers: one SMS in English would be roughly equivalent to between three and six messages in Burmese.

**FIGURE 7 WAVE MONEY’S LANGUAGE SELECTION FUNCTIONALITY**

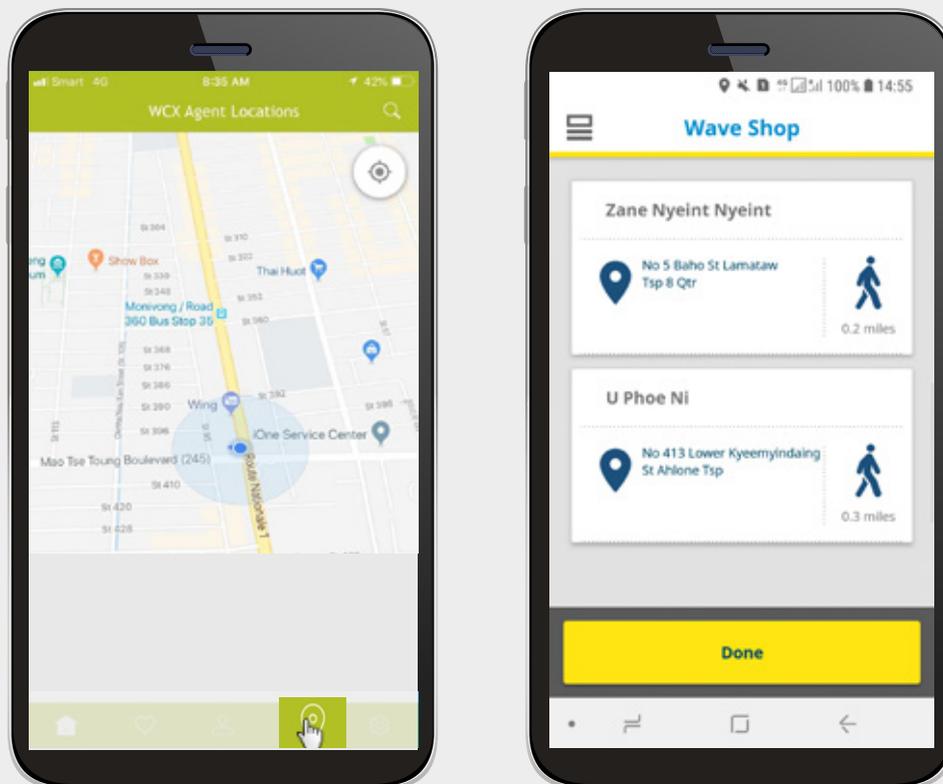


24 GSMA, 2014, “Smartphones and Mobile Money. The Next Generation of Digital Financial Inclusion”.  
 25 GSMA, 2018, “Rethinking business: What greater smartphone uptake means for the future of mobile money”.  
 26 CGAP, 2017, “The impact of smartphones on financial inclusion”.  
 27 Infobip, “What is the difference between USSD and SMS?”.  
 28 GSMA, 2015, “Mobile for Development Impact. Approaches to local content creation: Realising the smartphone opportunity.”

Beyond offering mobile money services in local languages, providers are also leveraging the rich UX of smartphones to customise services to their local market. For example, Wing Money in Cambodia and Wave Money in Myanmar both have agent locator functionality, but they use it differently based on the needs of their

customers. While Wing Money uses the usual map to show the proximity of agents to the user, Wave Money's agent locator feature only shows the address of the closest agent, accounting for the fact that customers in Myanmar tend not to utilise map reading.

## FIGURE 8 AGENT LOCATOR FUNCTIONALITY BY WING MONEY AND WAVE MONEY



Smartphones also have the potential to simplify more complex mobile money use cases. For instance, using a smartphone camera to scan a QR code - a feature not currently possible on USSD - simplifies the merchant payment experience, eliminating the need for customers to manually enter the merchant number. Using QR codes also enables providers to expand their acceptance network or merchant network to retailers that do not have access to a smartphone, as they can use the printout of the merchant's QR code identifier instead.

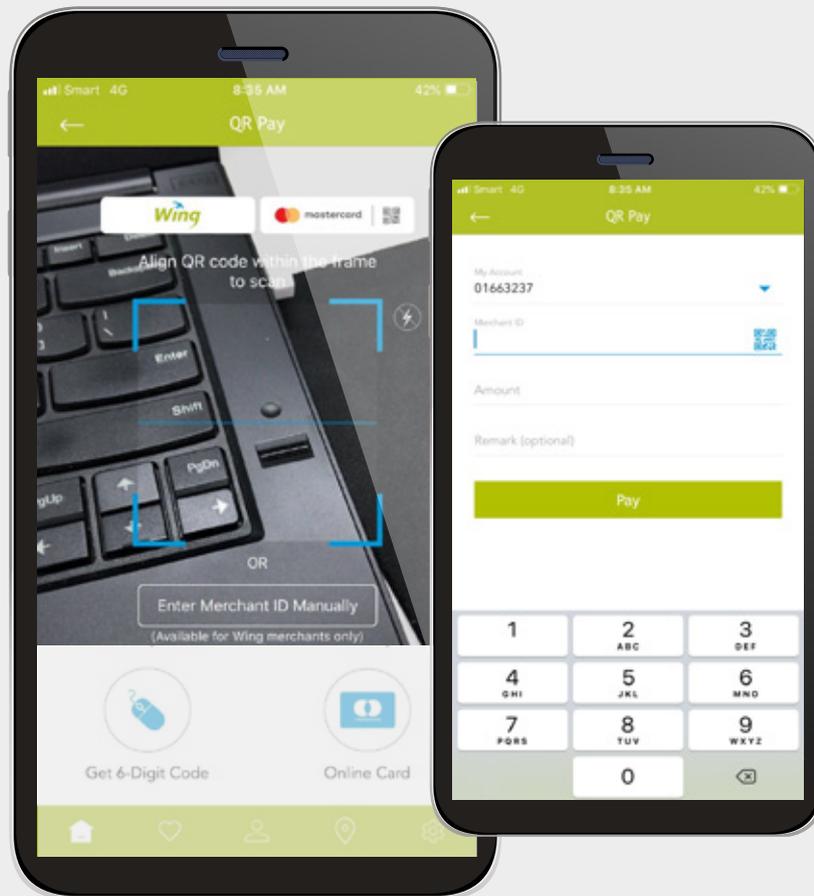
QR codes have been spreading fast across China, using

offline experiences to bring transactions online. China's two biggest tech giants, Tencent's WeChat Pay and Alibaba's spinoff Alipay, which control almost all the country's \$16 trillion mobile payments market, both rely heavily on QR technology.<sup>29</sup> It has even gained traction among low-value merchants like small retailers and street vendors.<sup>30</sup> In Cambodia, Wing Money has integrated a similar feature into its mobile money app called QR Pay. This feature allows Wing Money users to scan a QR code with their smartphone and make payments to local merchants and MasterPass merchants worldwide.

29 Financial Times, 2018, "[China's fintech's global future is arriving now](#)".

30 CNN, 2017, "[Why China can't get enough of QR codes](#)".

## FIGURE 9 WING MONEY'S QR PAYMENT FUNCTIONALITY



Safaricom in Kenya has gone a step further, using the smartphone channel to integrate its M-Pesa mobile money service with a conversational social platform. By analysing customer behaviour patterns, Safaricom identified the social interactions that occur once payments are made. With this knowledge came the development of 'Bonga', which, according to Shikoh

Gitau, Safaricom Alpha's Head of Product, is focused on "pay, play, and purpose... the three main things our research found people do on our payment and mobile network."<sup>31</sup> Bonga is still in the test and pilot phase, but it shows the potential of smartphones to encourage greater engagement and interaction among mobile money users.

31 Tech Crunch, 2018, "[Safaricom rolls out Bonga social networking platform to augment M-Pesa](#)".

# CONCLUSION

Over the last five years, digital inclusion across the developing world has improved significantly, fuelled by sharp growth in mobile internet and smartphone adoption. Emerging markets are leading growth in both mobile data use and uptake of smartphones, driving demand for digital content, services and products. Although affordability remains a barrier, better availability of basic smartphones, thriving second-hand markets and the emergence of device financing schemes suggest that the costs of data and smartphones will continue to drop.

---

Mobile money continues to deliver on the promise of reaching those at the base of the economic pyramid. However, as the gap between availability, accessibility and use of digital services in emerging markets narrows, mobile money providers should anticipate and create solutions that can keep pace with demand

from the underserved. Providers have a tremendous opportunity to leverage the sophisticated capabilities of smartphones and offer a diverse suite of products and services, which will ultimately boost customer engagement and mobile money use.



For more information on GSMA Mobile Money, visit  
[gsma.com/mobilemoney](http://gsma.com/mobilemoney)

**GSMA HEAD OFFICE**

Floor 2  
The Walbrook Building  
25 Walbrook  
London EC4N 8AF  
United Kingdom  
Tel: +44 (0)20 7356 0600  
Fax: +44 (0)20 7356 0601