WHITE PAPER

Rising Power of Mobile Money

EMPOWERING FINANCIALLY UNDERSERVED WHILE GROWING YOUR BUSINESSES

NOVEMBER 2023

Contents

Introduction

April 2023 marked the 50th anniversary of the first mobile phone call. It was unusual at the time to hold a conversation while moving. Since then, mobile phones have changed the way we live and conduct business. Today, mobile phones are being used to pay bills and transmit money abroad.

Mobile money payments have gained popularity in recent years, as a convenient and secure way to transfer money. According to a recent survey, daily transactions via mobile money reached $3.45 billion in 2022.

Incredible figure! Who could have imagined this about 20 years ago? It is equally amazing to know that the Middle East and Africa (MEA) are not playing catch-up this time. Quite the contrary, they are leading the world regarding mobile payments, especially Sub-Saharan Africa, which is deemed to be the global leader in mobile money transfer services, which has brought widespread access to financial services.

These facts and expectations place an undue burden on us, the fintech companies whose core emphasis is the Middle East and Africa region. The report from the International Monetary Fund (IMF) called *"FinTech in Sub-Saharan African Countries: A Game Changer?"* highlights that fintech is emerging today as a technological enabler in the region, improving financial inclusion and serving as a catalyst for the emergence of innovations in other sectors, such as agriculture and infrastructure.

This new technology provides the most economical mobile money services to the financially underserved while also growing the merchants' and operators' businesses. So, if you are a merchant or a mobile network operator and are looking to boost customer retention and engagement and reduce fraud and payment declines, you will need to embrace mobile money platforms sooner or later.

This white paper presents a comprehensive and objective study of the mobile money market, including trends, opportunities, challenges, and risks posed on merchants and operators. It also compiles various data and evaluations from multiple market research companies that conduct research in this field.

With 1.4 billion people worldwide remaining unbanked, TPAY Mobile is working with mobile operators and industry stakeholders to help create a robust mobile money ecosystem, ensuring the sustainability of these services. Our strategic partnerships with the operators and the service providers have further strengthened our position, especially in the MEA market, enabling seamless transactions and secure digital payments. So, read our report, explore the potential, and grab the opportunities, and do not hesitate to contact us if you think you need a prominent player's help to grow your business.

With the rising use of mobile money, we are moving closer towards a cashless cashless world! And we are happy to have a share in this change.

Işık Uman
CEO, TPAY Mobile

01
MOBILE MONEY IN A NUTSHELL

What is Mobile Money and M-Wallet?

Twenty years ago, no one could have imagined that one day we would use our phones to take snapshots, watch movies and live TV shows, or even monitor our health. However, thanks to the recent technology breakthroughs, we can now pay for our online purchases via phone! Using our smartphones to transfer funds and make payments has become an efficient and common form of payment in the last decade. It is a safe and secure method that has grown in popularity, and it has become more secure than carrying around a physical card. This payment method is called "mobile payment."

When we talk about mobile payment, we refer to mobile money, money transfers, mobile wallets, and direct carrier billing. These are all various payment processing services performed via a mobile device and operated under financial regulations. The mobile money industry now has over 1.6 billion registered customers.[1] GSMA's State of the Industry Report on Mobile Money 2023, released recently, shows that mobile money services are growing fast worldwide.

Before going further, we should clearly distinguish between a mobile wallet and mobile money services. In this document, we will primarily focus on mobile money services, discussing mobile wallets solely to the extent that they are related to their convergence with these services. So, it must be 100% clear to the reader beforehand what this distinction means in the digital payments ecosystem and why our focus is not on mobile built-in wallets. GSMA, a representative body of mobile operators and organizations across the mobile ecosystem and adjacent industries, is the first to make that distinction satisfactorily. Since GSMA's mission is to support its members and industry stakeholders to increase the utility and sustainability of mobile money services and financial inclusion, any distinction of industry services they make is quite decisive. And if we follow their descriptive glossary, a service is considered a mobile money service only if it includes transferring money and making and receiving payments using the mobile phone, and if it is available to the unbanked, for example, people who do not have access to a formal account at a financial institution.

Mobile money services are usually owned and operated by financial institutions, telecommunication companies, or partnerships between both. The service must offer a network of physical transactional points, including agents outside of bank branches and ATMs, that make the service widely accessible to everyone. The agent network must be more extensive than the service's formal outlets.

Mobile banking or payment services (such as Apple Pay and Google Pay) that offer the mobile phone as just another channel to access a traditional banking product or credit card are not included in the "mobile money service" category.

On the other hand, a mobile wallet, also known as an e-wallet or a digital wallet, is basically a mobile application that, once downloaded on a smartphone, allows users to securely keep payment information

1 *"The State of the Industry Report on Mobile Money 2023," GSM Association, 2023 - www.gsma.com/mobilemoney*

on their mobile devices, such as credit card details, loyalty cards, and other financial information. Users can use their mobile devices to conduct many forms of digital transactions and payments without a physical credit/debit card or online banking.

Money can be deposited in a mobile wallet, which is typically tied to a user's bank account or credit card(s). Relying on a standardized platform based on the principle of openness, these wallets let consumers store all credit and debit cards belonging to various banks and financial institutions in their mobile wallet. They can make their payments online, in-store, or in-app. The system allows consumers to securely keep payment information on their mobile devices, such as credit card details, loyalty cards, and other financial information, to conduct many forms of digital transactions and payments.

Consumers might also have their bank account linked to their digital wallet. The consumer's financial details can be passed to merchants' terminals wirelessly via mobile phones' near-field communication (NFC) technology. Mobile wallets are typically owned and operated by technology companies, often giants in the technology industry. Some popular mobile wallets include Apple Pay, Google Pay, and Samsung Pay.

The digital wallet market is enormous. A new study from Juniper Research found that the total value of digital wallet transactions will rise from $9 trillion in 2023 to surpass $16 trillion in 2028, a rise of 77%.[2]

In the dynamic landscape of mobile finance, convergence between mobile wallets and mobile money services has emerged. While they historically served distinct purposes, their boundaries sometimes blur as they increasingly incorporate each other's functionalities.

This convergence is driven mainly by a desire to offer users more comprehensive and versatile financial solutions. Mobile wallet providers are expanding their offerings to include services traditionally associated with mobile money, such as person-to-person (P2P) transfers and bill payments. Likewise, mobile money services are enhancing their capabilities to accommodate digital payments and in-store purchases, bridging the gap between the digital and physical realms of finance. This opens up new partnership opportunities for payment aggregators to play intermediary roles.

Why is Mobile Money on the Rise?

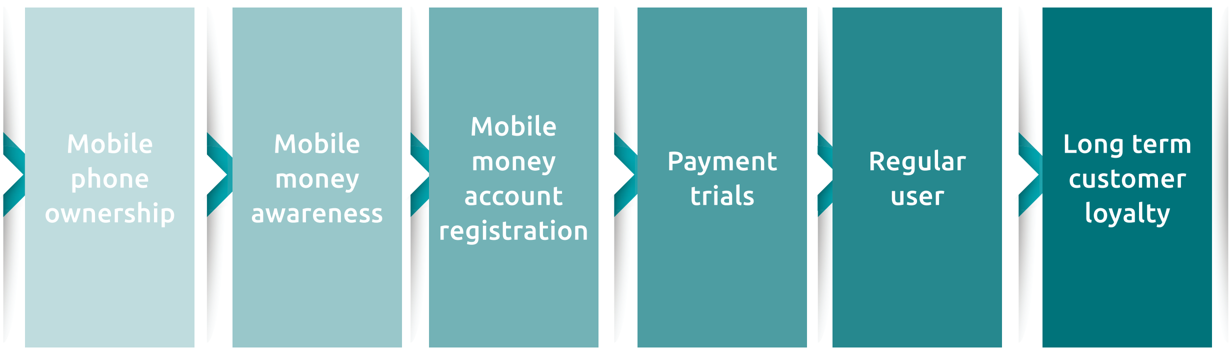
The past two decades have seen explosive growth in the availability and use of all mobile services. Both mobile wallet applications and mobile money services were adopted quickly by consumers for purchasing goods and services, either online or in-store.

Mobile money services are driving customers to move more towards cashless payments. A fast rise in the adoption of smartphones, growing internet penetration and surging government initiatives towards digital transformation in many countries fuel the demand for mobile money globally. Their convenience, ease of use, and security are the prime motives behind their rising popularity worldwide. When consumers make payments via mobile money to purchase a service/good online, their transactions are done in almost one click.

Mobile money services are convenient as they solve geographical problems by bringing an extended network of correspondent agents for cash-in and cash-out to everyone's palm. This solution often offers the cheapest and most convenient way to send money

Customer Journey in Mobile Money

Journey to the diverse use of mobile money usage



2 *"Digital Wallets: Platform Analysis, Key Trends and Market Forecasts 2023-2028," Juniper Research, July 2023 - https://www.juniperresearch.com/researchstore/fintech-payments/digital-wallet-research-report*

> Mobile money offers financial participation for unbanked customers, especially in emerging countries where the majority of the people don't have credit/debit cards or even a bank account.

abroad. International remittances are just one aspect of mobile money services. Nowadays, mobile money has become indispensable for remittances. It enables users to receive funds, especially from relatives working abroad, particularly in Europe and the Middle East.

Considering the fact that there are still a lot of people in emerging markets who remain financially excluded, mobile money offers an excellent revenue-generating opportunity for telecom operators who require ARPU-boosting and increasing subscribers' loyalty by integrating the unbanked population into the system of financial services without opening a bank account.

From the merchants' point of view, it's a matter of providing customers (both bank account owners and the unbanked) with the best possible checkout experience. So, offering customers the most convenient and relevant payment capabilities is always critical. If this convenience comes from mobile money services, merchants should consider partnering with a payment aggregator and grabbing the mobile opportunity.

How Does Mobile Money Work?

As we all know, generally accepted communication protocols allow mobile phones to communicate with each other. By embedding keywords into text messages sent to specific numbers, mobile phones can transmit commands that tell mobile operators to add a given amount of money to the user's bill. When the bill is paid, the mobile operator transfers the amount designated to the recipient. That's the logic behind the transaction process.

However, the setup process and the payment flow of mobile money services depend on the type of service the consumer chooses. This is what happens in many of the services:

Consumers first need to visit the nearest mobile money service provider agent and present a mobile phone with a valid SIM card and an ID document.

There, they register for the mobile money (banking) service that allows them to store and transfer money through their mobile phones. After successful registration, the user receives a confirmation message and a service PIN sent by SMS. Once the consumer's mobile money account is created, he receives an account number. The account number is tied to the user's mobile phone number and can be used to send and receive mobile money. Users, on the other hand, need to download the relevant mobile app and activate the service.

To make mobile money payments, the user needs to fund their account. This can be done through depositing money at a mobile money agent or a bank transfer. Even consumers with no bank account get an alternative way of accessing some financial services, the transaction of which occurs through a SIM card. Registered users can pop in service outlets/agents anytime to deposit cash in exchange for electronic money in their mobile money account.

Once the e-money is stored, users can make payments via their smartphones through near field communication (NFC) technology or transfer money to mobile numbers of both registered and unregistered users, whether to vendors, family members, or friends. The users need to confirm the transaction using a PIN code. Mobile money services allow you to receive money as well. For this, the user must provide their mobile money account number to the sender. Once the sender initiates the transaction, the recipient will receive a real-time notification that the money has been deposited into their account and then will redeem it for cash by visiting the service agent. Alternatively, they can spend it by making an online purchase.

Users can check their account balance anytime using their mobile app. Withdrawing funds is another service that allows users to access hard cash from the funds held in their accounts. Users can usually withdraw in two ways: at any mobile money provider agent or through an ATM.

Mobile money services lift the most essential structural barriers that block financial inclusion, especially in Africa. No need to go to a distant financial branch, no need to pay high service costs, and no need to meet complicated requirements that put you off while opening a bank account.

How Ideal in Unbanked Countries?

In essence, mobile money offers financial participation for unbanked customers, especially in emerging countries where the majority of people don't have credit/debit cards or even a bank account. As mobile money services drive financial inclusion[*] around the world, they offer an incredible opportunity to reach billions of people who still do not have access to financial services.

In the case of Africa, for example, where regions such as East Africa have some of the world's highest mobile phone penetration, mobile money services are widely spread and used in everyday life. Offering alternative payment methods via a mobile device instead of traditional credit or debit cards brings financial inclusion to those who otherwise wouldn't have access to it. Because this payment method is not only convenient but also a secure alternative for unbanked people to purchase online or send money to their relatives and friends.

Therefore, the African continent has some of the most practical innovations concerning mobile money and mobile payments, bringing a digital transformation to what many might not consider to be digital-friendly.

According to the World Bank's estimates, nearly 800 million people live in extreme poverty across the world. Africa is home to more impoverished people than all other regions combined. Reducing poverty depends on helping poor people manage their money. Mobile money helps people take control of their money and financial lives.

Uganda's capital and largest city, Kampala, is just one of the many examples. You can go to a tiny little café in Kampala and ask for a vegetable samosa and a soda, then pay using your smartphone; use the QR code, scan it, and enjoy the convenience of a payment.

One of the most prominent and most successful examples of a mobile money service is M-Pesa. Due to its safety and convenience, it is a popular way to make payments across the African continent, both for the banked and the unbanked.

Started in Kenya in 2007 as a mobile money transfer service, M-Pesa now provides over 51 million customers in seven African countries with a safe,

secure, and affordable way to send and receive money, top-up airtime, make bill payments, receive salaries, get short-term loans, and much more.

Social Impact of Mobile Money

MIT economist Tavneet Suri has studied the financial and social impacts of Kenyan mobile money services and discovered[3] that a mobile money service, called M-Pesa, had a long-term impact on poverty in Kenya. According to Suri, an associate professor at the MIT Sloan School of Management, the spread of mobile money in Kenya increased daily per capita consumption levels of Kenyan households, lifting them out of extreme poverty, driving up savings, and helping women leave agriculture for jobs in business and retail.

The Kenyan experience is essential, Suri says, because it shows that mobile money services aren't just conveniences but do, in fact, have a positive impact on people's livelihoods.

A week after the MIT News coverage of the study, the Washington Post reporter Robert Gebelhof wrote[4] about the study by Prof. Tavneet Suri that it "offers good evidence that having a place to put money that's safe and easily accessible can make the lives of poor people considerably more efficient than cash-reliant economies."

Months later, this time, the New York Times reporter Tina Rosenberg, referencing Suri's research, wrote[5] that M-Pesa "helped women graduate from

(*) *Financial inclusion means that adults have access to appropriate financial services and can effectively use them to safely manage their money, save, and invest in their financial well-being. "Appropriate" services are provided responsibly and sustainably in a well-regulated environment.*

3 *"Study: Mobile Money Services Lift Kenyans out of Poverty," Rob Matheson, MIT News, December 8, 2016 - https://news.mit.edu/2016/mobile-money-kenyans-out-poverty-1208*

4 *"Here is Why Mobile Money is Dramatically Reducing Poverty in Kenya," Robert Gebelhof, Washington Post, December 22, 2016 - https://www.washingtonpost.com/news/in-theory/wp/2016/12/22/heres-why-mobile-money-is-dramatically-reducing-poverty-in-kenya/*

5 *"In Kenya, Phones Replace Bank Tellers," Tina Rosenberg, The New York Times, May 9, 2017 - https://www.nytimes.com/2017/05/09/opinion/in-kenya-phones-replace-bank-tellers.html?_r=2*

subsistence agriculture to small business, perhaps because having an M-Pesa account gives a woman her own money… and a greater sense of agency."

Closing the gender gap is an important task globally. However, according to 2021 figures,[6] women were 28% less likely than men to own a mobile money account in low- and middle-income countries. Increasing mobile phone ownership can improve mobile money adoption rates among women.

Where Does TPAY Mobile Fit?

Mobile finance as a business ecosystem is dependent on the interconnection of major stakeholders such as consumers, mobile network operators, agents, merchants (occasionally banks), and regulators. All these actors in the mobile payment ecosystem typically need a facilitator called a "payment aggregator" in the payment process. By establishing connections with diverse MNOs and financial institutions, TPAY positions itself as the connector, which is considered the most reliable payment facilitator in the META region, catering to each country's unique financial landscape. This extensive network empowers users with the freedom to choose from various mobile wallet/money options, fostering financial inclusion and contributing to the digitization of economies across these regions.

TPAY Mobile, as the leading mobile payment provider in the META region, plays a vital role in smoothly connecting merchants through its digital payment platform with the billing, authenticating and reporting capabilities of mobile network operators, mobile wallet providers and banks in some cases. By supporting merchants to accept mobile money services and wallets, TPAY helps them acquire new customers and convert them into loyal, paying customers. Thanks to the standardized technical APIs, TPAY sits in the middle as the connector and translates messages from the merchant and the telecom operator so that they can communicate.

In the dynamic ecosystem of mobile finance, another theme has emerged in recent years: convergence between mobile wallets and mobile money services. While they traditionally serve distinct purposes, their boundaries sometimes get blurred as they increasingly incorporate each other's functionalities.

This convergence is driven mainly by a desire to offer users more versatile financial solutions. Mobile wallet providers expand their offerings to include services traditionally associated with mobile money, such as person-to-person (P2P) transfers and bill payments. Likewise, mobile money services enhance their capabilities to accommodate digital payments and in-store purchases, bridging the gap between finance's digital and physical realms. This means more intermediary roles for payment aggregators such as TPAY, who can automatically verify legitimate users and ask the relevant party to charge users' mobile wallet/money accounts.

Founded in 2014 with the aim of transforming cross-border mobile payments, TPAY is today connected to 47 mobile wallets/money services across 15 countries for approximately 1,000 merchants, unlocking more than 200 million users. This is in addition to its mobile operator connections catering for Direct Carrier Billing (DCB). TPAY's technology drives financial inclusion and access throughout the Middle East, Türkiye, and Africa (META) – a region where many are unbanked, so credit and debit cards are not always a realistic prospect. TPAY allows users to make purchases by securely charging payments to their mobile numbers or mobile wallets. This process is facilitated through API integration, enabling local and global merchants to reach and accept payments from more than 700 million potential customers across the META region. Operators and mobile wallet providers can connect their subscribers to thousands of leading digital service providers through TPAY's mobile payments platform.

Having such extensive connections with telecom operators & wallet providers, particularly in the

6 *"The Global Findex Database 2021," Aslı Demirgüç Kunt et al., The World Bank Group, 2022- https://www.worldbank.org/en/publication/globalfindex/Report*

> TPAY's extensive network empowers users with the freedom to choose from various mobile wallet/money options, fostering financial inclusion and contributing to the digitization of economies across these regions.

META region, TPAY has showcased remarkable performance within the mobile money/wallet industry. That performance did not go unnoticed. In September 2021, TPAY became the gold winner in the "Fintech & Payments" category of the "Future Digital Awards 2021" and was awarded "Best Mobile Money Offering" by Juniper Research, following its extensive application and judging process. 2021 was a year where the "Future Digital Awards" had a record number of applications, making the winners' selection more challenging than ever.

The Future Digital Awards, which recognise organisations that make outstanding contributions to their industry and are positioned to make a significant impact in the future, previously included winners like Amazon, IBM, Google, Stripe, and Adyen.

TPAY Mobile was also the 2022 Grand Globee winner in the Disruptor Awards under the category "Disruptor Products, Solutions, and Innovations in FinTech, Financial Services, Payments, and Banking."

Both awards acknowledge TPAY's innovation in the payments space and recognize that its simple but transformative technology drives financial inclusion and access throughout the META –a region where many are unbanked.

TPAY is in partnership with Zain Cash. In Iraq and Egypt, users can seamlessly utilise Zain Cash service to manage their funds and conduct transactions securely. Zain Cash service provides the customers of the leading telecommunications company in Iraq with the ability to have an electronic wallet on top of a mobile SIM card; this service enables the customer to make financial transactions through mobile phones (bill payment and money transfer) and use financial services (cash-in/cash-out, transfer money from wallet to another) easily at any time. Since its inception, Zain Cash has facilitated billions of transactions for individuals, businesses, government entities, and charity organisations and continues to enable communities.

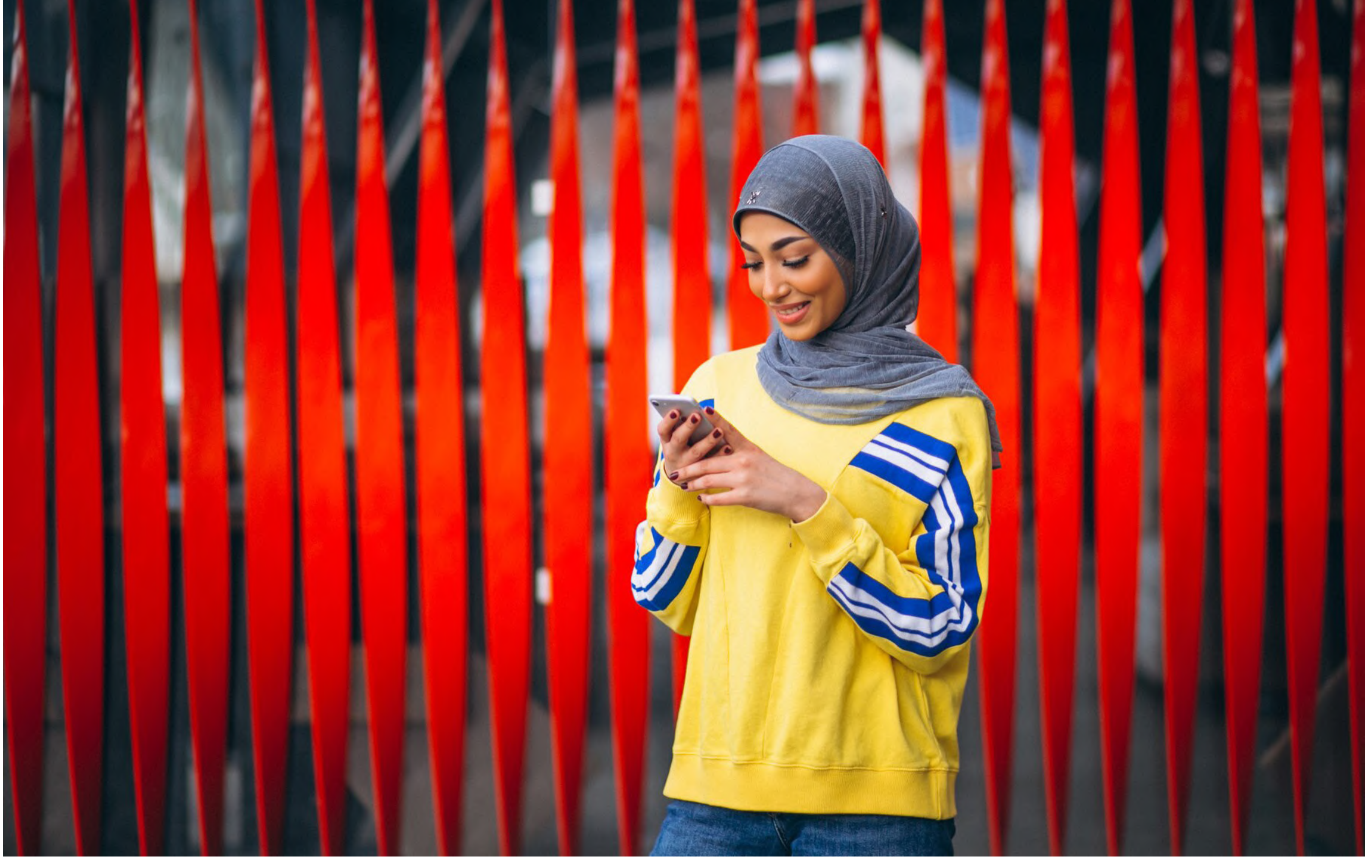
Enabling mobile payment in Iraq via Zain Cash for digital service providers was highly demanded by TPAY's partners as a way to avail a convenient payment method to their subscribers in Iraq. TPAY's role includes integrating digital services with Zain Cash to ensure a smooth and seamless payment journey. TPAY smoothly settles the payments with Zain Cash and executes cross-border transactional settlements with its partners. In Iraq, cash is still considered the king of payment methods; however, digital payments are projected to grow at (CAGR 2023-2027) 14%[7], reaching $17.69 billion by 2027.

Through its partnership with Meeza in Egypt, TPAY Mobile gains access to a remarkable array of 24 mobile wallets, encompassing both operator-specific and bank-based wallets. Meeza's partner involvement underscores TPAY's commitment to expanding its reach and offering users a holistic financial ecosystem. The inclusion of operator-specific wallets from various MNOs, as well as bank-based wallets from established financial institutions, amplifies the platform's ability to cater to its users unique preferences and needs. This partnership furthers financial inclusivity and showcases the collaborative efforts driving innovation and modernization within the digital payment landscape in Egypt and beyond. TPAY provides digital service providers with not just direct carrier billing but also direct wallet billing options. This gives them access to approximately 10 million mobile wallet users in Egypt.

TPAY has a large presence and expertise in Africa, where mobile wallets have tremendous potential. In addition to Egypt & Iraq, TPAY is present in 14 African countries, with connections to 22 distinguished mobile wallets, such as Airtel Money, MTN MOMO, Free Money, Safaricom M-Pesa, Orange Cash, Vodafone Cash, and many more.

By establishing connections with a diverse set of MNOs and financial institutions, TPAY Mobile positions itself as a comprehensive payment aggregator that genuinely caters to each country's unique financial landscape. This extensive network empowers users with the freedom to choose from various mobile wallet/money options, fostering financial inclusion and contributing to the digitization of economies across these regions.

7 "Digital Payments – Iraq," Statista Market Insights, Apr 2023, - https://www.statista.com/outlook/dmo/fintech/digital-payments/iraq



02
GLOBAL MOBILE MONEY MARKET

Market Size and Growth

The number of consumers owning a mobile phone has surpassed those having access to financial services globally. Over the past seven years, almost 2 billion people have gained access to the internet on a mobile phone. By the end of 2022, 57% of the world's population was using mobile internet. As a result, not just digital wallets and direct carrier billing (DCB) but also mobile money services like transferring money and making and receiving payments using a mobile phone have become feasible options for consumers. Traditional payment methods, like credit cards and cash continue to decline.

Mobile money services, having a different functionality from digital wallets, are mainly targeted at unbanked people. These services* offer a network of physical transactional points, which can include agents outside of bank branches and ATMs, making the service widely accessible to people. These agents are the backbone of the mobile money industry.

Although the first mobile money services were designed by mobile network operators (MNOs) to facilitate domestic P2P payments (remittances) to friends and family members living in other parts of the country, adoption and usage have spread beyond that. The use case of remittances that defined the mobile money space for years today is only a part of the story. In 2021, about 3 in 4 mobile account owners in Sub-Saharan Africa used their mobile money account to make or receive at least one payment that was not P2P[8], such as private sector wage payments, payments for the sale of agricultural products, government payments, and borrowing etc.

Increases in transaction values year over year have been driven not only by new consumer uptake but also by an increasing range of mobile money use

(*) Please note that mobile banking or payment services (such as Apple Pay and Google Pay) that offer the mobile phone as just another channel to access a traditional banking product are not included in "mobile money services." Likewise, payment services linked to a traditional banking product or credit card, such as Apple Pay, Google Pay and Samsung Pay, are not included.

8 *"The Global Findex Database 2021," Aslı Demirgüç-Kunt, Leora Klapper, Dorothe Singer, Saniya Ansar, p. 3, World Bank Group, 2022 - https://www.worldbank.org/en/publication/globalfindex/Report*

cases. The GSM Association's (GSMA) figures tell us that, in 2012, ecosystem transactions such as bill payments, bulk disbursements, merchant payments, and international remittances accounted for less than 10% of overall transactions.[9] Ten years on, this has jumped to 20%, a clear sign of diversification.

The COVID-19 pandemic was instrumental in pushing the mobile money market beyond expectations. Global daily transaction values exceeded $2 billion a day in 2020,[10] and mobile money became a part of a new daily routine for millions around the world.

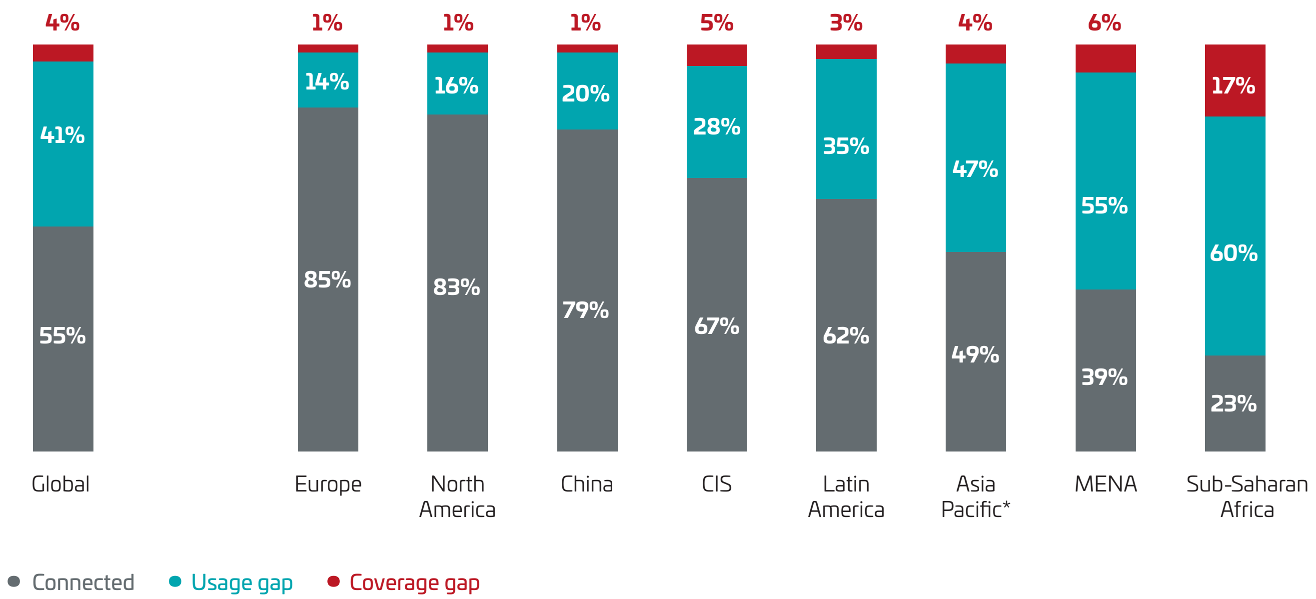
Mobile also plays an integral role in reducing the financial exclusion gap. Looking at the growth of mobile money accounts in a post-pandemic world, GSMA's 2023 report on mobile money[11] highlights that registered global mobile money accounts grew from 1.4 billion in 2021 to 1.6 billion by the end of 2022 – more than double the number of registered accounts (772 million) in 2017. (Let's remember that when we talk about "mobile money account owners," we talk about the people who use a mobile money service to make payments, buy things, or send and receive money.)

This jump can be attributed partly to regulatory changes in Sub-Saharan Africa, specifically in Nigeria and Ethiopia, where mobile money adoption has risen rapidly.

Mobile money services are growing fast across the world. Even faster than predicted as digital services continue to rise in popularity. The same GSMA report indicates that global daily transactions via mobile money reached $3.45 billion in 2022, exceeding the $3 billion amount predicted in 2021. The total transaction value for mobile money grew globally by 22% between 2021 and 2022, from $1,045 trillion to around $1.26 trillion. Cash-in, cash-out, and P2P transfers were the bulk of the transactions, but there has been more noticeable growth regarding our digital lives.

Global Mobile Internet Penetration, 2022

Percentage of Population



* *Excludes Greater China*
Source: GSMA Intelligence, World Bank

9 *"The State of the Industry Report on Mobile Money 2022," p. 6, GSMA, Mobile Money Programme's Data & Insights team, 2022 - https://www.gsma.com/sotir/wp-content/uploads/2022/03/GSMA_State_of_the_Industry_2022_ExecSummary_English.pdf*

10 *"The State of the Industry Report on Mobile Money 2021," p. 20, GSMA, Mobile Money Programme's Data & Insights team, 2021 - https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2021/03/GSMA_State-of-the-Industry-Report-on-Mobile-Money-2021_Full-report.pdf*

11 *"The State of the Industry Report on Mobile Money 2023," p. 5, GSMA, Mobile Money Programme's Data & Insights team, 2023 - https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2023/04/GSMA-SOTIR-2023_Web-1.pdf*

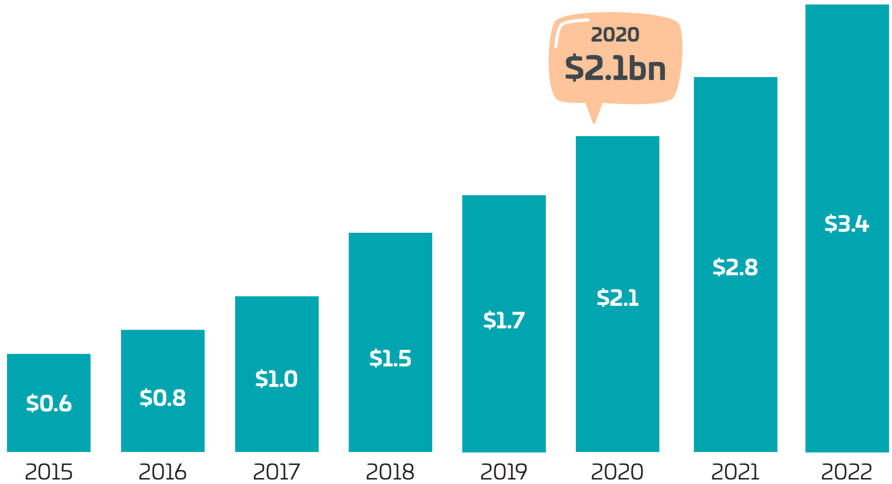
As we began to recover from the economic consequences of COVID-19, the world witnessed further turbulence and even recession. The war in Ukraine disrupted the chances of global economic recovery from the COVID-19 pandemic, at least in the short term. The economic sanctions imposed on several countries during the war resulted in a severe jump in commodity prices and supply chain disruptions. Unfortunately, this led to higher inflation rates across goods and services and affected many markets globally. The issues of energy pricing and security have become extra challenges in the current context.

Nevertheless, there are high expectations that the global economy will gradually recover from the pandemic and the war. Some markets are just doing fine. Jupiter Research recently put forward that the worldwide mobile money market size is expected in 2023 to reach $1,58 trillion[12]. In its report published in May 2023, Juniper estimates that the mobile money market will be around $2.09 trillion in 2027, representing a growth rate of 32.8%.

The latest GSMA report on mobile money says that there are 315 live mobile money deployments across the globe, with P2P transfers and cash-in/cash-out transactions still among the most popular use cases. Bill payments using mobile money seem to have grown by 36% year-on-year, faster than any other use case.

Total Mobile Money Value Processed Daily for (2015-2022)

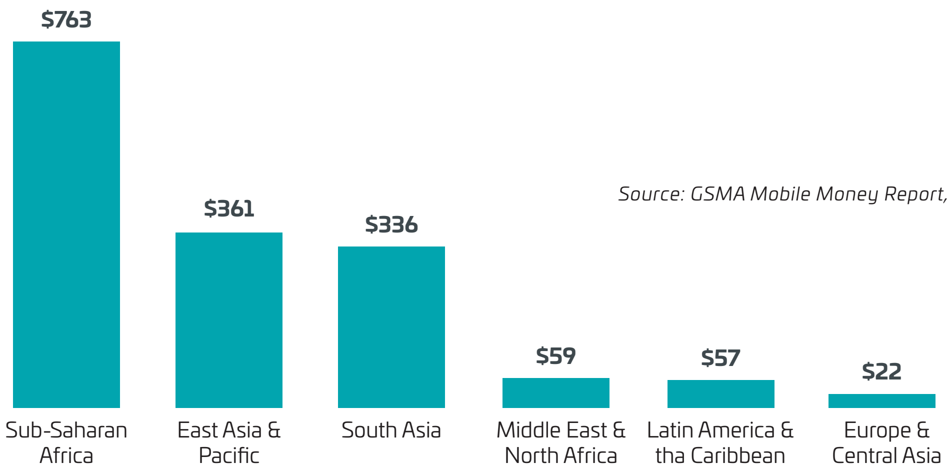
In Billion USD



Source: GSMA, 2023

Registered Mobile Money Accounts by Region (2022)

In Million USD



Source: GSMA Mobile Money Report, 2023

12 *"Mobile Money in Emerging Markets: Trends, Strategies & Market Forecasts (2023-2027)," Cara Malone, Damla Sat, Juniper Research, May 2023 - https://www.juniperresearch.com/researchstore/fintech-payments/mobile-money-trends-report*

Pandemic as a Catalysing Agent: Rwandan Case

COVID-19 did not affect the world equally. Those severely harmed were already the most vulnerable and financially excluded populations in low-income countries. The pandemic created new development challenges and intensified existing ones, especially for the global south. Many of the difficulties stemming from the pandemic were tackled with mobile money tools, giving way to the prompt of financial inclusion in general, with a significant rise in digital payments.

With over 300 million monthly active accounts, mobile money providers became an integral part of the national COVID-19 response in many markets, offering a secure and ready channel to efficiently disburse pandemic relief payments to the public. This expansion of financial services enabled millions of first-time users across low- and middle-income countries (LMICs) to access digital financial services.

In Rwanda, a landlocked country lying south of the Equator in east-central Africa, for example, the number of mobile money transfers doubled in the week after a lockdown was imposed in March 2020.[13] According to data collected by the country's telecommunications regulator (Rwanda Utilities Regulatory Authority -RURA) and analysed by Cenfri, an independent African impact agency, after a rapid increase in the first week of lockdown, this high level has remained as the "new normal," with slower but continued growth up to the end of April. In the first week of January, the total value of funds sent via a P2P transfer was Rwandan Franc (RWF) 7.2 billion ($7.6 million). In the last week of April, the value of transfers between individuals had risen to RWF 40 billion (over $42 million) – an increase of over 450%.

Utilising national ID numbers, the data analysts were also able to identify the number of unique subscribers sending a P2P transfer, which doubled from 600K in the week before lockdown to 1.2 million in the week after lockdown. In the final week of April, 1.8 million individuals sent a P2P transfer.

The decisive measures taken during the pandemic by the Rwandan government and providers to grow the use of digital payment systems had a significant effect on the expansion of mobile money. On March 18, the National Bank of Rwanda (BNR) instituted a set of rapid economic policy changes[14] to encourage the use of digital transaction channels and contactless mobile payments due to the COVID-19 outbreak. The conducive actions to mitigate the economic impact of the COVID-19 pandemic that would be in place for three months included:

13 *"When Digital Payment Goes Viral: Lessons from COVID-19's Impact on Mobile Money in Rwanda," Isabelle Carboni and Hennie Bester, May 19, 2020, cenfri.org - https://cenfri.org/articles/COVID-19s-impact-on-mobile-money-in-rwanda/*

14 *"National Bank of Rwanda Press Release," March 18, 2020 - https://www.bnr.rw/fileadmin/user_upload/NBR_measure_COVID-19_Pandemic.pdf*

- Zero charges on all transfers between bank accounts and mobile wallets
- Zero charges on all mobile money transfers
- Zero merchant fees on payments for all contactless point-of-sale (via mobile) transactions
- An increase in the limit for individual transfers using mobile money wallets.

The results of the actions were impressive. Despite the coronavirus crisis affecting large segments of the Rwandan economy, leading to a slow GDP growth of 2.3% from 8.8% (in 2018/19), the virus acted as a kicker for the country's drive towards a cashless economy.

"The COVID-19 outbreak provided an opportunity to accelerate the adoption of digital payment," BNR Governor John Rwangombwa said in a statement[15] he made in November 2020 while releasing the bank's annual report. To encourage the adoption of digital payments, BNR announced it worked with financial service providers to remove charges on some digital payments.

"This increased the level of retail e-payment to GDP, from 34.6% at the end of June 2019 to 54% at the end of June 2020," Rwangombwa said. This directly impacted the percentage of counterfeit banknotes per denomination, to drop from 0.001% to 0.00001%.

Rwanda was not an exceptional case. The combination of relaxed mobile money regulations, reduced transfer prices, and massive cash transfer programs was also implemented in Kenya (by the Central Bank of Kenya, CBK) and Nigeria (by the Central Bank of Nigeria, CBN). Analysis by the Nigeria Interbank Settlement Scheme (NIBSS) shows that the use of mobile money grew by almost 15%[16] between February and March 2020 when the virus was first reported in Nigeria.

Further, providers like M-Pesa in Kenya and Paga in Nigeria offered free transfers up to $10 and $15, respectively.[17] Ghana's monetary body also eased some requirements on mobile money, allowing citizens to use existing mobile phone registrations to open accounts with the major digital payment providers.[18]

In summary, encouraging steps for the adoption of digital payments and the cooperation between regulatory bodies and the financial service providers led mobile money to provide economically very viable services to the world's financially underserved. Clearly, Africa has turned to mobile payments as a way to combat COVID-19. This induced a permanent change in customer behaviour. Many first-time users all across the world are now using these mobile money services for their needs in daily life. Today, mobile money services often have the largest population penetration and geographical reach. As put forward in an article[19] on June 30, 2022, by the UN Capital Development Fund (UNCDF), mobile money services are the best candidates for customisation to deliver humanitarian and social cash transfers.

15 *"COVID-19 Drove Rwanda's Cashless Economy, Drop in Counterfeits," KT Press, November 10, 2020 - https://www.ktpress.rw/2020/11/COVID-19-drove-rwandas-cashless-economy-drop-in-counterfeits-bnr-report/*

16 *"Coronavirus Pandemic Fuels Mobile Money Transactions in Nigeria," VOA, June 8, 2020 - https://www.voanews.com/a/COVID-19-pandemic_coronavirus-pandemic-fuels-mobile-money-transactions-nigeria/6190756.html*

17 *"The COVID-19 Crisis is Boosting Mobile Money," The Economist, 28th May 2020 - https://www.economist.com/middle-east-and-africa/2020/05/28/the-COVID-19-crisis-is-boosting-mobile-money*

18 *Bank of Ghana Monetary Policy Press Release, March 18, 2020 - https://www.bog.gov.gh/wp-content/uploads/2020/03/MPC-Press-Release-March-2020-3.pdf*

19 *"Did the COVID-19 Pandemic Accelerate Growth of Mobile Money?" June 30, 2022, uncdf.org - https://www.uncdf.org/article/7823/did-the-COVID-19-pandemic-accelerate-growth-of-mobile-money*

> Many senders favoured mobile money for its efficiency, speed, safety and cost-effectiveness. Mobile operators have the lowest average cost for sending remittances, at 4.5%, while banks have the most, at 11.8%.

International Remittances

During the COVID-19 pandemic, many diasporas sent more funds via mobile money to friends and family than ever before. As a result, mobile money-enabled international remittances registered a significant annual growth rate – a 65% increase from 2019 to 2020, impacting the lives of millions around the world. Then, in 2022, it grew by 28%. The industry was able to move 21 billion worth of international remittances (IMT) in 2022. According to the World Bank's latest "Migration and Development Brief,"[20] total remittance flows to LMICs increased by 8% in 2022 and amounted to $647 billion, exceeding earlier estimates of $626 billion.[21]

On a global scale, total remittances transferred in 2022 almost reached $831 billion and are projected to increase to $840 billion in 2023. "Remittances have become a financial lifeline in many economies through the pandemic and will become even more so in the foreseeable future," says[22] Dilip Ratha, lead author of the World Bank Group report and the head of the Global Knowledge Partnership on Migration and Development (KNOMAD): "We have stepped up collaborations with source and recipient countries to improve data and leverage remittances to mobilize private sector capital through diaspora bonds and improved sovereign ratings."

Many senders favoured mobile money for its efficiency, speed, safety and cost-effectiveness.

According to the World Bank's Remittance Prices Worldwide Database, the global average cost of sending $200 to LMICs was 6.2%[23] in the fourth quarter of 2022. Banks were the most expensive channel for sending remittances, with an average cost of 11.8%, followed by post offices (6.3%). With an average cost of 4.5% sending a remittance via mobile operators is the cheapest, as the money transfer operators get 5.4%. Despite their economic importance, mobile transactions account for less than 1% of total transaction volume. This shows how great the opportunity is. But more work seems to be needed to ensure mobile money gets adopted by businesses and consumers. It is clear that a significant part of this work must focus on the user experience.

In any case, we can say with 100% assurance that mobile money is leading the pathway to reach the target 10 of the UN Sustainable Development Goals of 3%[24] set by the United Nations for remittance transaction costs by 2030.

Regarding regional trends: remittance flows to Sub-Saharan Africa increased by 6.1% in 2022 to $52.9 billion.[25] Regional growth in remittances in 2022 was largely aided by strong volumes in Ghana (11.9%), Kenya (8.5%), Tanzania (25%), Uganda (17.3%), and Rwanda (21.2%). Remittances to Nigeria, accounting for about 38% of total remittance inflows to the region, grew by 3.3% to $20.1 billion.

20 "Remittances Remain Resilient But Are Slowing," Migration and Development Brief 38, p. vii, World Bank, June 2023 - https://www.knomad.org/publication/migration-and-development-brief-38

21 "Remittances Brave Global Headwinds," Migration and Development Brief 37, p. 1, World Bank, November 2022 - https://www.knomad.org/publication/migration-and-development-brief-37

22 "Remittances Remain Resilient But Likely to Slow," The World Bank Press Release, June 13, 2023 - https://www.worldbank.org/en/news/press-release/2023/06/13/remittances-remain-resilient-likely-to-slow

23 "Remittances Remain Resilient But Are Slowing," p. 8.

24 Indicator Web Platform, United Nations Sustainable Development Solutions Network - https://indicators.report/targets/10-c/

25 "Remittances Remain Resilient But Are Slowing," p 4.

Growth in remittances to the Middle East and North Africa deteriorated in 2022 after a strong 12.2% growth in 2021. Flows to the region fell by 3.8% to $64 billion in 2022, driven mainly by a drop in flows to Egypt and downturns in flows to Algeria and Jordan. Meanwhile, remittance flows to the Maghreb countries experienced a slight rise (except for Algeria), offsetting some of the decline.

Share in Emerging Markets

Mobile's integral role in reducing the financial exclusion gap in LMICs enables individuals and households to lift themselves out of poverty by helping them better manage their cash flow and handle risks. However, the majority of the population in emerging economies today does not fully participate in the formal financial system. McKinsey estimates[26] highlight that 2 billion individuals and 200 million small businesses in emerging economies today lack access to formal savings and credit. That's why mobile money means a feasible gateway into vast and largely untouched markets to reach these individuals and small businesses.

According to a recent report published in May 2023 by Jupiter Research,[27] the total value of the mobile money market in emerging markets was $555 billion in 2021. It is expected to exceed $870 billion in 2026, representing a growth of almost 60%.

The growth is said to be driven by the transition of mobile money vendors, such as M-Pesa, to the PaaP (Payments-as-a-Platform) model, which enables mobile money vendors to offer their consumers access to third-party services such as e-commerce; creating extra revenue streams without mobile money operators having to develop additional services themselves.

Emerging markets, which the Jupiter report covers, are split over four key regions: Africa & the Middle East, the Indian Subcontinent, Latin America and the Rest of Asia Pacific.

The research predicts that by 2027, there will be 411 million users of sophisticated Mobile Financial Services (MFS) within emerging markets. This 40% increase will result from providers offering various services, such as microloans and microinsurance, to satisfy growing user demand.

26 "Mobile Money in Emerging Markets," Philip Osafo-Kwaako et all, McKinsey Report, March 12, 2018 - https://www.mckinsey.com/industries/financial-services/our-insights/mobile-money-in-emerging-markets-the-business-case-for-financial-inclusion#/

27 "Mobile Money in Emerging Markets: Trends, Strategies & Market Forecasts (2023-2027)," Cara Malone, Damla Sat, Juniper Research, May 2023 - https://www.juniperresearch.com/researchstore/fintech-payments/mobile-money-trends-report

> SIM card penetration rate in the Middle East and North Africa (MENA) region exceeded 103% in 2021 and by 2025 it is expected that the region will have a smartphone adoption rate of 84%.

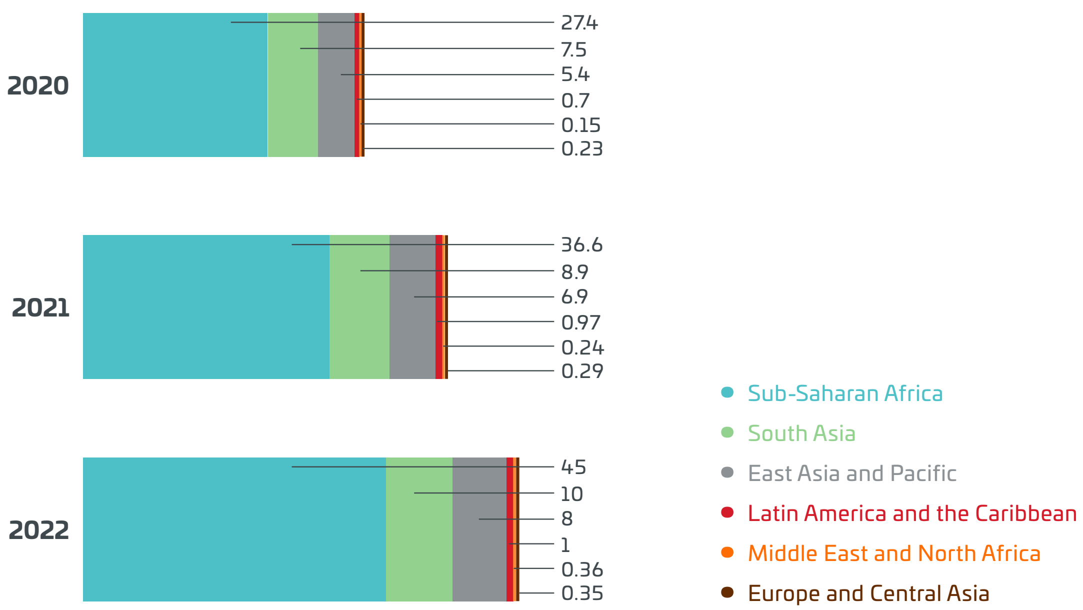
Juniper researchers remarked:[28] "Vendors must implement sophisticated MFS in an effective way, or they will lose ground to rising competition. This can be best achieved through new approaches, such as leveraging operators' existing data to enable alternative credit scoring, allowing much greater lending opportunities."

MENA & Sub-Saharan African Markets

Since the countries brought the pandemic under control, a priority for governments in the Middle East & North Africa (MENA) and elsewhere was to drive economic recovery and promote sustainable development. Digital services and technologies are crucial to realising this objective. The MENA region has some advantages in this context. Mobile ownership is one of them. According to the GSMA,[29] the SIM card penetration rate in the MENA region exceeded 103% in 2021. By 2025, the region is expected to have a smartphone adoption rate of 84%. In particular, the Gulf Cooperation Council (GCC) countries (Saudi Arabia, Kuwait, Bahrain, Oman, Qatar and the United Arab Emirates) have the highest and most advanced mobile and smartphone usage and infrastructure. For instance, in the United Arab Emirates, the smartphone penetration rate has reached 96%, and operators in

Mobile Money Transactions Volume by Region (2020-2022)

In Billion Transactions



Source: Statista 2023

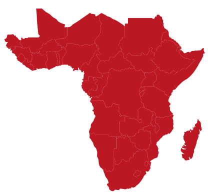
28 Juniper Research Press Bulletin, May 15, 2003 - https://www.juniperresearch.com/press/press-releases/mobile-money-transactions-to-exceed-2-trillion

29 ""The Mobile Economy Middle East & North Africa 2022," p. 6, GSMA, 2022 - https://www.gsma.com/mobileeconomy/wp-content/uploads/2022/05/GSMA_MENA_ME2022_R_WebSingles.pdf the GCC Arab states are among the global leaders in 5G, with some of the world's first and fastest next-generation mobile networks. 5G connections in this part of MENA are set to reach 41 million (49% of total connections) by 2025. These figures all favour the growth of the mobile money industry. While Sub-Saharan Africa and East Asia & the Pacific account for most of the world's mobile money accounts, this ecosystem grows rapidly in MENA, with adoption rising faster than in any other region. The MENA is also home to some of the wealthiest and most advanced economies in the world (such as Qatar, the United Arab Emirates and Israel), and also home to some of the world's poorest economies.

Remittances are essential for the countries that receive them, as they primarily affect their gross domestic product (GDP). An example of a MENA country that relies heavily on remittances is Egypt, with its over 100 million population. Despite being relatively more affluent overall than much of Africa, many Egyptians go overseas. A lot of them go to the GCC, as well as Jordan. In 2022, Egypt received more than $28 billion[30] in remittances.

In 2022, mobile money transaction values[31] grew fastest in the Middle East and North Africa (45%), sub-Saharan Africa (22%), East Asia and Pacific (21%.) The rise was 53% in transaction volume in MENA, in which there are 31 live mobile money services.

Mobile Money Growth (2022)

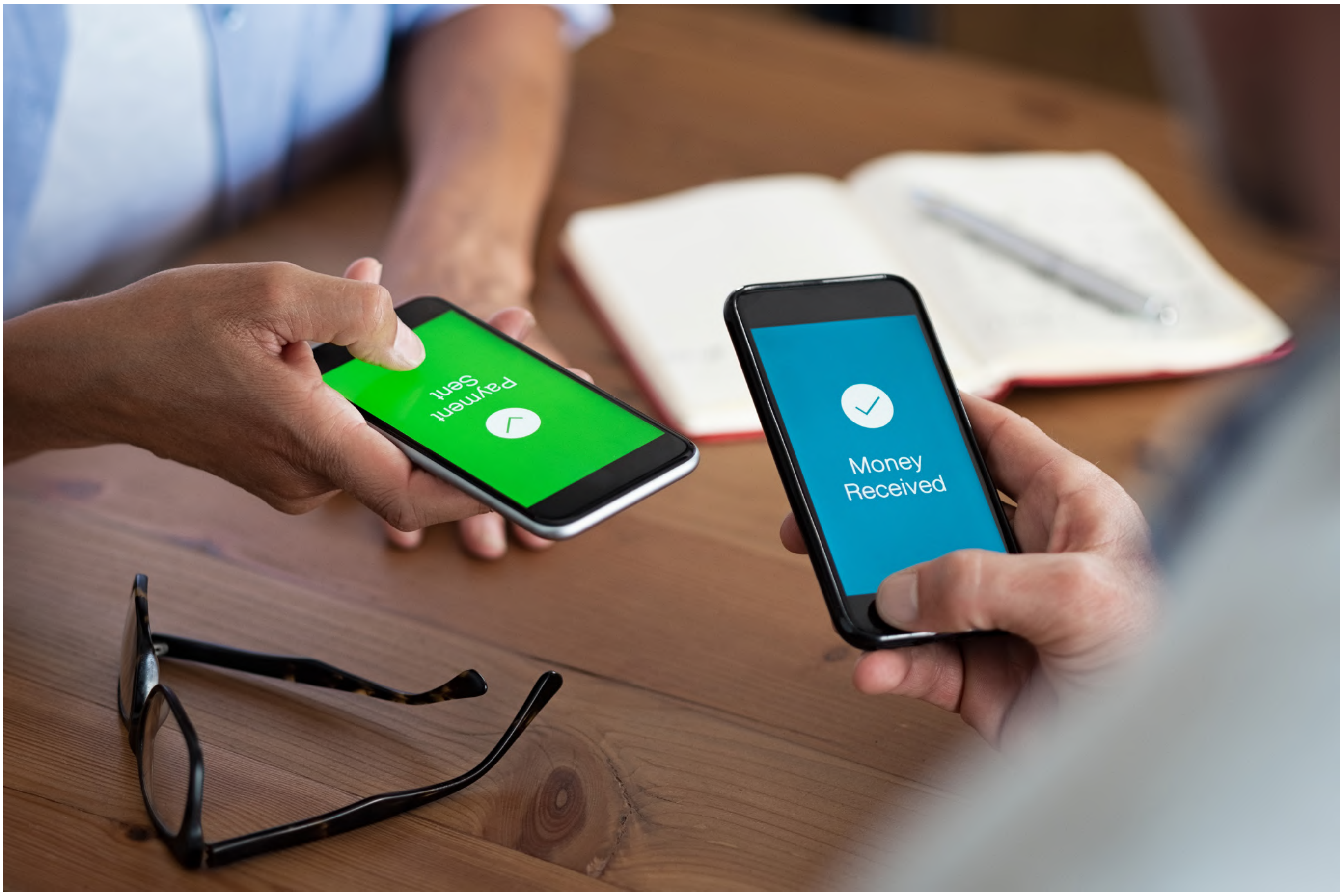


	LIVE SERVICES	REGISTERED ACCOUNTS	ACTIVE ACCOUNTS	TRANSACTION VOLUME	TRANSACTION VOLUME (US$)
GLOBAL	315	1.35bn ↑ 18%	346m ↑ 14%	53.9bn ↑ 21%	1.0tn ↑ 31%
SUB-SAHARAN AFRICA	154	605m ↑ 17%	183m ↑ 12%	36.6bn ↑ 23%	697.7bn ↑ 40%
MIDDLE EAST & NORTH AFRICA	31	59m ↑ 7%	5m ↑ 68%	242m ↑ 74%	13.7bn ↑ 49%

Source: GSMA Intelligence

30 "Remittances Remain Resilient But Are Slowing," p. 24.

31 "The State of the Industry Report on Mobile Money 2023," p. 9.



Registered regional mobile money accounts in the MENA grew to 59 million by the end of 2022, with a 7% increase from the previous year. The MENA recorded a total transaction value of $21 billion in 2022.

One specific region in emerging markets worth mentioning in detail is Sub-Saharan Africa. The region remains a forerunner in the mobile money field, accounting for more than 65% of the global market. Although Sub-Saharan Africa has lagged behind the rest of the world in access to financial services, some countries represent today one of the most successful global cases regarding the use of mobile money services. The Global Findex 2021 data[32] from the World Bank shows that 33% of adults in the region have a mobile money account -a share three times larger than the 10% global average. The same database also indicates that 15% of adults (and 39% of mobile money account holders) in Sub-Saharan Africa used one to save -the same share that used a formal savings account at a bank or other financial institution.

According to GSMA[33], registered regional mobile money accounts grew to 763 million by the end of 2022, a 17% increase from the previous year. The value of Sub-Saharan Africa's mobile money transactions edged up 22% to $832 billion in 2022 from $697.7 billion in 2021. With 154 live mobile money services, Sub-Saharan Africa has almost half of the global total.

In summary, combined Sub-Saharan Africa and MENA regions have been truly leading in mobile money markets. These two regions are in a strong position to further contribute to new innovations in the mobile money industry. However, in many areas of the region, more work is still needed to help give financially underserved communities access to safe, secure and affordable financial services.

32 "The Global Findex Database 2021," p. 11.

33 "The State of the Industry Report on Mobile Money 2023," p. 9.

03
OPPORTUNITIES & CHALLENGES FOR MOBILE MONEY

Key Market Trends

It has been encouraging to see that mobile money helps bridge economic opportunities, particularly in geographies with less mature access to traditional financial services. Conventional banking services in these geographies usually result in high operational costs, and these banks are difficult to set up in rural and remote areas. However, mobile-based solutions serve a diverse population across the world and help reduce operational costs, thereby contributing to financial inclusion by bridging economic opportunities.

There are several key drivers for the market to mature. Despite the positive outlook, all these market-driving factors inhibit several challenges as well as opportunities. Now, let's have a look at these factors in detail.

Mobile Penetration

It's a simple fact that the rising mobile subscriber base fuels the growth of the mobile money market. According to an analysis by Statista[34], the number of smartphone mobile network subscriptions worldwide reached almost 6.4 billion in 2022 and is forecast to exceed 7.7 billion by 2028. On the other hand, the GSMA's recent annual report on mobile internet connectivity shows[35] that as of the end of 2022, 57% of the global population (4.6 billion people) are now using mobile internet. The figures demonstrate how remarkable the growth of mobile adoption is globally. This continuing expansion of mobile adoption is fundamental to mobile money growth. China, India, and the United States of America are the countries with the highest number of smartphone mobile network subscriptions.[36] However, increasing mobile penetration in emerging markets makes a difference, sometimes more significant than in the developed world. Companies in these emerging countries come up with new innovative mobile-oriented functionalities and solutions to serve financially underserved populations a lot more conveniently, resulting in rising monetary transactions.

GSMA[37] showed that at the end of 2022 mobile broadband networks covered 95% of the global population and that providing coverage to the remaining 5% (coverage gap) remains a significant challenge. The global mobile internet usage gap is naturally higher. In fact, this gap has narrowed markedly in the last five years[38] – from 50% in 2017

34 "Number of Smartphone Mobile Network Subscriptions Worldwide from 2016 to 2022, with Forecasts from 2023 to 2028," Petroc Taylor, Statista, June 2023 - https://www.statista.com/statistics/330695/number-of-smartphone-users-worldwide/

35 The State of Mobile Internet Connectivity 2023," Matthew Shanahan, Kalvin Bahia, p. 4, GSM Association, October 2023 - https://www.gsma.com/r/somic/)

36 "Number of Smartphone Users by Leading Countries in 2022," Federica Laricchia, Statista, May 2023 - https://www.statista.com/statistics/748053/worldwide-top-countries-smartphone-users/

37 "The State of Mobile Internet Connectivity 2023," p. 4.

38 "The Mobile Economy 2023," p. 12, GSM Association, 2023 - https://www.gsma.com/mobileeconomy/wp-content/uploads/2023/03/270223-The-Mobile-Economy-2023.pdf to 41% in 2022 on average. In MENA, it is higher with 55%, while it is the highest in Sub-Saharan Africa with 60%.

Naturally, these high percentages demand urgent attention from all stakeholders. Expanding mobile network coverage and reducing the cost of mobile phones will be essential in reaching financially underserved populations. If the affordability barrier is overcome, as well as the lack of relevant content and services, mobile money adoption rates among women can improve. This can increase awareness of the benefits of mobile money. Nevertheless, the mobile internet gender gap in Sub-Saharan Africa today remains at 37%, and women in the region are now 30% less likely than men to own a smartphone.

Overcoming the affordability barrier helps bridge the digital divide, which remains a challenge in many parts of the world.

E-commerce Adoption

The fast adoption rate of e-commerce further contributes to the increased use of electronic payment mechanisms, including mobile money services. E-commerce expands the marketplace to national and international levels and acts as a significant tool in creating new job opportunities and promoting innovation in developing countries. Before the pandemic, cash on delivery dominated e-commerce payments in many parts of the world, especially in developing countries. This payment method is expensive, inefficient and time-consuming for both merchants and buyers. But, according to Statista, signs of change are promising. The Germany-based global data and business intelligence platform forecast[39] that by 2024, cash on delivery is going to be responsible for just 1.7% of total global e-commerce purchases.

As digital infrastructure and the security of digital payment platforms in developing markets improve, consumers become more trusting of online merchants and more comfortable with paying via mobile methods. This is particularly true for LMIC customers, who are generally more vulnerable to economic loss.

The decisive shift towards cashless and digital payments in e-commerce activities observed in 2020 continued in 2021. The CPMI Red Book statistics[40] show that the total value of cashless payments grew to its highest level yet, both in advanced economies, emerging markets and developing economies. E-money payments grew most strongly (27%), followed at a distance by card payments and credit transfers (both 4%). E-commerce is not just a promising growth area for mobile money providers but also for mobile wallet providers.

Statista's figures suggest that mobile wallets accounted for roughly half of global e-commerce payment transactions in 2022, making it the most popular online payment method worldwide. Wallets are forecast to account for over 54% of global e-commerce payment transactions by 2026. Credit cards are projected to decline in the coming years.

Once mobile money providers have built consumer trust in a specific country, it means the conditions are mature enough for the partnership of mobile money players, payment aggregators and e-commerce players to expand the loyalty programs to regional and international levels. Such partnerships can create new revenue opportunities for mobile money players and consolidate their presence in the payments space.

Interoperability

Mobile money began its remarkable journey as an innovative proprietary solution that allowed people to send and receive money with other service users without needing a bank branch. In many countries, it was initially a stand-alone tool, not connected to a centralised third-party platform and largely separate from other sources of digital funds. However, this is changing today. Interaction of mobile money solutions with traditional banking services is on the rise.

Interoperability is essential for two main reasons. First, account-to-account interoperability makes person-to-person transfers the most common mobile money solution. Secondly, interoperability between mobile money accounts and bank accounts stimulates more payments in digital form rather than through cash conversions.

The growth in interoperability between mobile money providers and legacy banking institutions is a significant driver of broader mobile money growth. Mobile money providers are increasingly connected to local banks.

According to the GSMA, interoperability recorded exceptional growth in 2020 that continued into

39 *"Most Used Payment Methods in E-commerce Worldwide in 2022, with a Forecast for 2026," Raynor de Best, Sept 18, 2023 - https://www.statista.com/statistics/1111233/payment-method-usage-transaction-volume-share-worldwide/*

40 *"Red Book Statistics," Committee on Payments and Market Infrastructures Brief No 1, Marc Glowka, Anneke Kosse and Robert Szemere, p. 4, Bank for International Settlements, January 2023. - https://www.bis.org/statistics/payment_stats/commentary2301.pdf*

2021. And bank-to-mobile interoperable transactions were among the fastest-growing use cases in 2022, increasing 36%[41] yearly, while the value of transactions between mobile money providers (MMP) and banks rose by 47%.

Of the 95 markets where mobile money services are live, 48 have interoperability with either a bank or MMP. On average, MMPs with bank integrations are connected to 13 banks, as highlighted in another GSMA study.[42]

In 2022, the mobile money industry underwent several changes in terms of new services and strategic partnerships. In one of the most important recent changes, Safaricom's M-Pesa announced accepting merchant payments from its rival Airtel Money in Kenya. In other words, the subscribers of the rival company Airtel started paying for goods and services through Safaricom's M-Pesa, enabling a seamless transfer of money through merchants attached to different operators. The integration work included the ability of various IT systems to communicate and exchange data between the two rival networks for merchant payments.

In the coming years, we may see more steps like this. But let's not forget that the success of interoperability initiatives mainly depends on having appropriate governance structures and commercial models in place before the launch of the service. If mobile money interoperability is encouraged by supporting it with appropriate governance structures and business rules, commercially viable and sustainable models will find more ground to accelerate and succeed.

Government Initiatives and Regulations

Government initiatives to promote cashless economies are expected to drive the mobile money market. However, mobile money services are subject to varying regulatory frameworks in different countries, leading to compliance challenges for providers and potential limitations on certain services. Bearing in mind such possible challenges, governments should step in to ensure that regulation is flexible and has a tiered approach to take account of differences in business models and risks while promoting adequate and fair competition that supports innovation in the sector.

Innovation in new product development is also vital to drive continued growth. Governments have a critical role in designing regulations supporting innovation for the public good.

One example is the Kenyan government's (the State Department of Social Protection) partnership with Safaricom (M-Pesa) for initiatives[43] such as cash transfers to vulnerable populations affected by drought. Such initiatives improve the efficiency and transparency of social support programs.

Governments should also ensure that regulatory bodies act as catalysts for sector growth, developing the platforms needed for social and humanitarian cash transfers, payment of civil servant salaries, taxes, and other payments by mobile money.

The mobile finance industry continues to focus on use case diversification, encompassing a dynamic landscape of mobile money services, each developed to meet the distinct needs of users worldwide. Governments should design the regulatory framework to support such diversification.

Enhanced Security

Despite the benefits of mobile money systems, reports exhibit that the existing policies, procedures, regulations, and standards of MNOs are not always well-equipped to address security challenges. With such an impressive rise in mobile money solutions, a parallel need arises to ensure that the mobile money market is safe and secure for customers and service providers. Because mobile money services, too, are vulnerable to fraud through viruses spread by malware, which try to retrieve data and authentication information from various personal accounts. In such cases, the malware can then perform some money transfers from the user's account to a mule's account. Traditional anti-virus software products are typically incapable of detecting this form of attack.

Security issues are not limited to malware. There has been some news[44] that some well-known mobile money services in Africa have utilised money

41 "The State of the Industry Report on Mobile Money 2023," p. 6, GSM Association, Mobile Money Programme's Data & Insights team, 2023 - https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2023/04/GSMA-SOTIR-2023_Web-1.pdf

42 "Tracking the Journey Towards Mobile Money Interoperability: Emerging Evidence from Six Markets: Tanzania, Pakistan, Madagascar, Ghana, Jordan and Uganda", p. 9, Case Study, GSMA, 12 Jun 2020 - https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2020/06/GSMA_Tracking-the-journey-towards-mobile-money-interoperability-1.pdf

43 "Mobile Money for Good in new M-Pesa Partnership," Safaricom Press Release - https://www.safaricom.co.ke/about/sustainability/sustainability-stories/mobile-money-for-good-in-new-m-pesa-partnership

44 "Africa's Mobile Money Industry is Infiltrated by Crime," Guillaume Lepecq, Cash Essentials, July 7, 2020 - https://cashessentials.org/africas-mobile-money-industry-is-infiltrated-by-crime/

laundering, bribery, and ransom payment during kidnapping and extortion activities. Related Interpol report[45] notes that mobile money has proven to be a positive force for financial inclusion and economic development in many African countries. A more cash-based informal economy can sometimes present graver challenges to law enforcement. However, a lack of robust identity checks to verify users, combined with a need for more significant law enforcement resources and training on mobile money-enabled crimes, have created a financial system distinctly vulnerable to criminal infiltration.

To address these security challenges, providers should implement appropriate mobile money security and detection solutions with the capacity to analyse jointly the events linked to the network and the susceptible mobile money applications. These solutions' enhanced sophistication and security allow businesses to implement mobile money solutions with confidence that their platform will remain protected from fraud and maintain regulatory compliance standards. This, in turn, will play an instrumental role in accelerating financial inclusion.

Conclusion

Over the last decade, mobile money accounts have contributed to financial systems across the globe and even become critical in Sub-Saharan Africa. Data from the 2021 Global Findex[46] exhibits that 33% of adults in that region have a mobile money account. Virtually all mobile money account owners (98%) made a digital payment in that part of the world. Of those with a mobile account, two in three (68%) received a payment into their mobile money account. This share included about half of mobile money account owners who received a domestic remittance payment, 22% who received a wage payment, 13% who received a payment for the sale of agricultural products, and 8% who received a government transfer or pension payment.

These remarkable figures were not even imaginable ten years ago. When some mobile money providers launched their businesses in the region, they specifically targeted the domestic remittance market, promoting their services with the slogan "Send money home." Today, remittances are just a piece of the mobile money services market.

Today's industry is more digital and more integrated with the broader financial ecosystem. Opportunities for mobile money providers increase as business models and use cases evolve. Mobile money users today access an expanding range of financial services thanks to partner-driven transactions or ecosystem transactions (consisting of merchant payments, bill payments, bulk disbursements and international remittances).

With continued healthy growth, innovation, and widening financial access, the future holds great promise. As business and customer needs evolve, it is clear that the global mobile money industry must be agile and open to innovation, diversification and partnership opportunities without sacrificing the security investments required for the stability the infrastructure is built upon.

The future will see more ubiquitous payments, more convergence of mobile wallets and mobile money, advanced authentication methods, and increased collaboration for cross-border solutions, including multi-country schemes. However, as we have emphasised earlier in this report, it is clear that challenges such as regulatory complexities, interoperability issues and security threats must be addressed firmly by the industry actors. This way, it is hoped that regulatory bodies, the private sector and civil society can utilise their resources to enable the continued digitalisation of payments, inclusively, to empower people and close the gap between the banked and unbanked. In fact, it is more of a social goal than a technological objective.

45 *"Mobile Money & Organized Crime in Africa," A Report by Interpol & ENACT, June 2020 - https://enact-africa.s3.amazonaws.com/site/uploads/2020-06-23-interpol-mobile-money-in-africa-report.pdf*

46 *"The Global Findex Database 2021," Aslı Demirgüç-Kunt, Leora Klapper, Dorothe Singer, Saniya Ansar, p. 106, World Bank Group, 2022 - https://www.worldbank.org/en/publication/globalfindex/Report*

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