Open APIs for mobile money

Exploring the landscape, use cases and commercial benefits

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Executive Summary

In 2022, bill payments rose by 36% year-on-year, becoming the third most common transaction. Some of this growth was driven by greater integration between mobile money providers (MMPs) and other companies.

Fast-growing open Application Programming Interface (API)-enabled ecosystem transactions are driving the mobile money industry, with mobile money providers (MMPs) increasingly being connected to third-party service providers. In 2022, bill payments rose by 36% year on year, becoming the third most common transaction after person-to-person (P2P) transfers and combined cash-in and cash-out (CICO) transactions. Some of this growth was driven by greater integration between MMPs and other companies. Mobile money-enabled international remittances grew by 28% year on year, bulk disbursements by 23% and merchant payments by 17% after almost doubling in 2021.[1]

The widespread uptake and use of mobile money has led to integration with a variety of third-party service providers such as energy companies, merchants and government departments. In this context, open APIs provide mobile money customers with more choices and financial empowerment. Customers can access a variety of additional financial services that meet their needs and complement core services, such as CICO and P2P. However, mobile money open APIs have been implemented differently across providers: there are different specifications and commercial models. Many providers still use proprietary (or closed) APIs. Others are transitioning to open APIs, using industry standards such as the GSMA Mobile Money API Specification.[2]

Due to the growth of open APIs, the GSMA carried out research to expose the landscape and highlight the commercial benefits of open API use cases to MMPs. This report presents findings from in-country primary research with mobile network operator (MNO)-led and non-MNO-led MMPs in 53 countries. It includes indicators of the commercial sustainability of MMPs offering open APIs globally (Figure 1).

This report is intended for MMPs and third parties invested or interested in using MMP open APIs.

Figure 1: Key findings and recommendations

### Open API growth

Mobile money open API growth

MMPs are increasingly being connected to third party service providers. This is driven by the double-digit growth of open-API-enabled ecosystem transactions, such as bill payments, merchant payments, international remittances and bulk disbursements.[3]

Aggregators and vendors influence and facilitate growth

Aggregators such as Flutterwave, Paystack and Onafriq recently received significant investment (>$100m). They have changed the dynamics of the market as they play a key role in easing integration between MMPs, fintechs and third parties – particularly for payment API use cases. Mobile money technical infrastructure vendors such as Ericsson, Comviva and Huawei support and impact how MMPs assess and use open APIs.

GSMA Mobile Money API Specification supports growth

The GSMA Mobile Money API Specification and Compliance Verification Service is used across the industry by MMPs and third parties looking to integrate services.[4] It provides a credible industry standard, useful documentation and enables cost mutualisation. One third of MNO-led MMP respondents offering open APIs claim to have used or been inspired by the GSMA specification.

Open API landscape

Open API readiness varies

The overall trend is toward use of more open APIs. However, the readiness for open APIs differs significantly from one market to another. This is due to varying degrees of technical comprehension, digital infrastructure and regulation. Therefore, MNO-led MMPs' operating companies (OpCos) often have different approaches to APIs, with third-party partners adopting a 'by country' approach to integrations.

Divergent API strategies

Fintechs expressed a desire for the mobile money ecosystem to be as open and standardised as possible with MMPs focusing on building a robust infrastructure. However, some MMPs see their APIs as a differentiator and want to make the most of their investments in proprietary APIs.

Concentration of API users

The MMP landscape is highly concentrated: as of 2022, only six MMPs accounted for a majority of the 401 million 30-day active mobile money users globally. Among these six providers, open APIs are offered across 36 different country deployments. A further 14 identified MMPs with 24 different country deployments globally also offer open APIs.

Open API use cases and commercials

Prevalent open API use cases

Consistent with previous GSMA research,[5] three open API use cases are offered most often by responding MMPs:

- Merchant payments
- Bill payments
- Bulk disbursements

Open API monetisation model

For the three most prevalent open API use cases, the most prominent open API monetisation model is transaction-based. Revenue sharing and free-of-charge models are the next most-cited options by more than a quarter of responding MMPs.

Improved commercial KPIs

A large majority of responding MMPs claim to have seen improvements in commercial KPIs since they started offering open API use cases. About 20% claim to have seen the average value of transactions double. Open APIs also contribute to other commercial benefits (notably brand image as well as revenue and cost reduction) and impact the growth of consumer demographics (micro, small and medium enterprises (MSMEs) in particular and rural users).

Open API industry recommendations

Awareness

The industry could benefit from improved awareness and training on open APIs. A key challenge is that MMPs have differing expectations for open APIs. Some want open API specifications to be developed quickly. Other MMPs are not always convinced of the business opportunity for certain use cases.

Industry and regulatory support

Robust technical specifications are one of the criteria to drive the expansion of digital financial services (DFS). The industry could benefit from support to develop an enabling regulatory environment to better highlight the business opportunities offered by different open API use cases.

Simplification and use cases

The industry could benefit from strengthened open API specifications: MMPs want open APIs to be even more user-friendly and are interested in receiving more support. Some express interest in collective efforts to develop new unproven use cases.

Source: GSMA Mobile Money Metrics; GSMA primary research; 2023 GSMA primary research with MMPs in 53 countries.

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3 GSMA. (2024). GSMA Mobile Money Metrics
4 GSMA. (2024). GSMA Mobile Money API
5 GSMA. (2021). Mobile money API industry report

01

Introduction
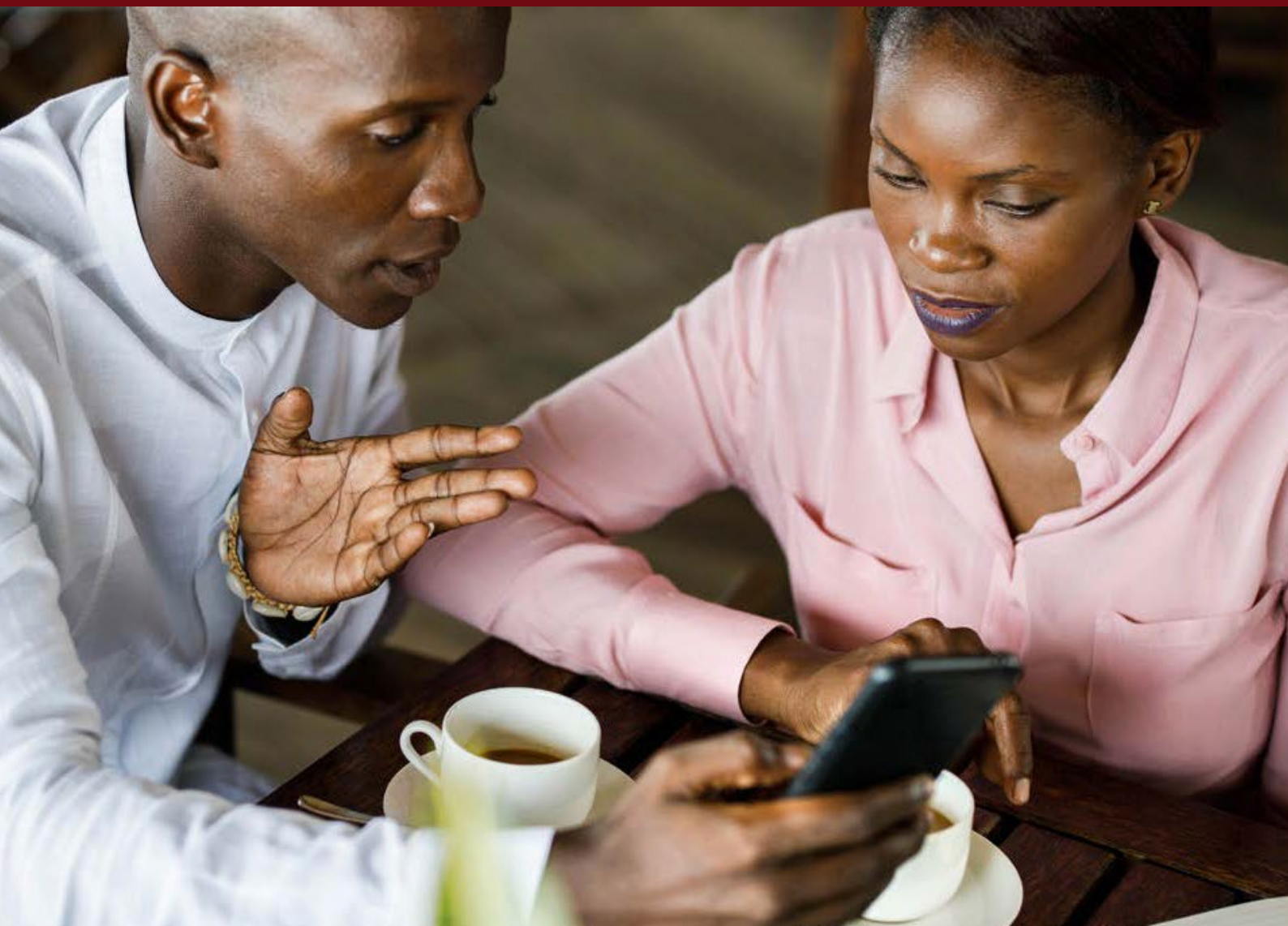
Access to mobile money is critical for the financial inclusion of unbanked across low- and middle-income countries (LMICs). It can be a key enabler in reducing poverty and improving prosperity, as well as increasing resilience against economic and climate-related shocks. Across the world, mobile money services are growing. As of December 2022, there are 1.6 billion registered mobile money accounts.[6]

Ecosystem transactions often enabled by open APIs, such as bill and merchant payments, bulk disbursements and international remittances, have been critical to the growth of the mobile money industry. Much of this growth has been driven by greater integration between MMPs, third-party service providers and private sector companies.[7]

In 2020, the GSMA found that sustained growth of the mobile money industry was driven by providers hosting many payment APIs.[8] Despite this, a majority of surveyed MMPs had not yet exposed their APIs publicly. Subsequent GSMA research in 2021 showed that a majority of surveyed third-party service providers consume MMPs' mobile money payment APIs, particularly merchant payment and bulk disbursement APIs and show strong interest in consuming further open API use cases.[9]

Across LMICs, there are different models of mobile money API usage. Some providers offer 'closed' (proprietary) APIs while others offer 'open' (publicly exposed and available to anyone) APIs. Open APIs drive the commercial sustainability of mobile money providers enabling partnership opportunities, and portfolio and revenue diversification. Feedback from the industry suggests that there is a knowledge gap in understanding the mobile money open API landscape and related commercial benefits. Understanding this is important as it can offer the industry evidence on how open APIs contribute to provider and ecosystem growth.

Consequently, the GSMA looked at who in the mobile money industry is using open APIs and their contribution to commercial success. Between September and December 2023, key informant interviews and surveys were carried out with senior executives from MNO-led and non-MNO-led MMPs in 53 countries, as well as technology solution providers, multilateral organisations and think tanks.

This research was also carried out because the GSMA Mobile Money programme has developed an Open API Specification (OAS). The OAS supports the mobile money industry in adopting open APIs for portfolio and revenue diversification purposes, promoting its innovation and competitiveness.[10]

This report is intended for MMPs and third parties invested or interested in using MMP open APIs. It focuses on MMPs and their use of open APIs, open API use cases offered, and the commercial performance of open APIs. The report covers the:

- Background to mobile money open APIs
- Use of mobile money open APIs
- Benefits and challenges of mobile money open APIs
- Commercial benefits of mobile money open APIs
- Commercial benefits of three mobile money open API use cases: merchant payments, bill payments and bulk disbursements

This report provides an understanding of the mobile money open API landscape and commercial benefits to MMPs offering open API use cases. It is designed to equip stakeholders with the knowledge and ability to enhance conditions for the commercial sustainability of MMPs offering open APIs. Overall, this report aims to enable stakeholders to improve customer adoption, regular and diverse use of their mobile money services, and improve financial inclusion in the process.

6 GSMA. (2023). State of the Industry Report on Mobile Money
7 Ibid
8 GSMA. (2020). Mobile money API industry report
9 GSMA. (2021). Mobile money API industry report
10 GSMA. (2024). GSMA Mobile Money API

02

Background on mobile money open APIs

The case for APIs

A decade ago, the requirement for MMPs to adopt open APIs emerged as the DFS sector faced a different landscape. Concerns arose about the dominant 'walled garden' approach (developing proprietary services and APIs) hindering the growth of DFS and limiting financial inclusion. Recognising the relative constraints around regulation, infrastructure, capabilities and investment at the time, MMP collaboration with third parties, such as fintech start-ups, became necessary for client-focused use cases.

Despite a shared interest in integrating with many partners, integration challenges emerged from the technical and infrastructural differences between MMPs and start-ups: each MMP sought to integrate with many start-ups; each start-up sought to integrate with many MMPs. An incentive for developing open APIs was to sustain ecosystem innovation and broaden the benefits of DFS for stakeholders and customers. MMPs, then dominant in DFS, faced minimal competition from banks due to low smartphone penetration, basic use cases and regulatory leniency. Today, they face a more varied and competitive industry due in part to regulatory shifts and ongoing innovation.

The role of aggregators[11]

The introduction of aggregators has reshaped DFS market dynamics, helping to streamline integration between MMPs and third parties. These entities, often linked with all MMPs in a market, serve as go-to solutions for numerous fintechs – saving time and gaining preference over direct integration with MMPs. International in scope, aggregators not only validate MMP's business models but also facilitate their expansion. However, for some MMPs, compliance with aggregators' terms, conditions and technical requirements can sometimes be a challenge.

Fintech start-ups in Africa received the most investment over the past three years when compared to other industries.[12] The largest funding rounds (>$100m) were often for payment aggregators such as DPO Group, Flutterwave, Interswitch, Onafriq and Paystack. While mastering payments, aggregators may encounter challenges in handling more intricate use cases, such as credit scoring. Challenges may also emerge through competition from national switches in some markets.

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11 Aggregators typically connect the systems of payment instrument providers (e.g. MMPs or banks) to third party systems (e.g. utility companies, businesses or government agencies) and may provide value-added-services such as payment success notifications, reconciliation or receipts
12 Africa the Big Deal. (2024). 2023 – Fintech, Energy and the rest

Consensus among industry respondents leans towards embracing more open APIs for their inherent value, but market readiness remains a challenge. Respondent discussions often lacked a clear distinction between open and closed APIs. However, many emphasise a preference for integrating one platform with multiple APIs.

Market trends

Additional market dynamics can shape the way MMPs evaluate open APIs or seek support when developing them. Technical infrastructure vendors, such as Comviva, Ericsson and Huawei, often play a key role in partnering with MMPs and influencing their technical decisions. In such instances, vendors can have preferred or predefined open APIs. Vendors have also enabled MMPs to achieve compliance with the GSMA Mobile Money API Specification and Compliance Verification service.

Several fintechs advocate for an open, interoperable mobile money ecosystem, urging MMPs to prioritise building robust infrastructure over consumer-focused products, services and marketing. MMPs, including Airtel Money, MTN MoMo and EasyPaisa, are increasingly divesting from GSM operations and becoming stand-alone financial services providers. Some large MMPs invest in proprietary APIs and view them as differentiators. Other MMPs use fintechs' APIs for sophisticated uses such as recurring payments. Similarly, lending, which requires direct debit functionality, is considered by MMPs to be challenging to implement. This is because it requires bespoke APIs, rather than the use of industry-standard open APIs or aggregators.

Market readiness

Consensus among industry respondents leans towards embracing more open APIs for their inherent value, but market readiness remains a challenge. Respondent discussions often lacked a clear distinction between open and closed APIs. However, many emphasise a preference for integrating one platform with multiple APIs. The distinction between an MMP's open and closed APIs is not necessarily binary: it can depend on who is granted access, the associated restrictions and the necessary developer approvals.[13] While some players such as EasyPaisa adopt a mix of open and closed APIs, most respondents recognise the efficiency and speed open APIs bring. They anticipate the trend toward more open APIs to persist, while some note the potential impact on traditional CICO networks.

The timing to implement open APIs is likely to differ by market, based on differences in readiness and maturity, as well as infrastructure robustness, agent network density, smartphone penetration and comprehensiveness of regulation. Therefore, large MMPs are likely to show diverse approaches to open APIs across their country operations. In turn, this may mean third parties seeking integration do not have a single approach to MMP groups but rather a by-country approach.

13 CGAP. (2015). Partnership: Missing Ingredient to Mobile Money APIs

03

Use of mobile money open APIs

Organisations in the telecommunications and financial services industries were the most likely to consider the use of APIs a strategic priority.

In 2020, GSMA research highlighted that the sustained growth of the mobile money industry was driven by providers hosting a large number of payment APIs.[14] Despite this growth, a majority of surveyed MMPs had not yet exposed their APIs publicly. Subsequent GSMA research in 2021 showed that a majority of surveyed third-party service providers consume mobile money payment APIs: 64% consume merchant payment, bulk disbursement and account access APIs; less than half consume other use cases. Many indicated demand for further mobile money open API use cases, primarily international remittances (54%) and recurring payments (56%).[15]

As of 2022, MMPs were increasingly being connected to third-party service providers via open APIs. Supply-side research behind the GSMA's State of the Industry Report on Mobile Money 2023 showed that bill payments, offered by around 97% of surveyed MMPs, grew 36% year on year. On average, MMPs are integrated with 176 billers. Furthermore, mobile money-enabled international remittances grew by 28% year on year, bulk disbursements by 23% and merchant payments by 17%, after nearly doubling in 2021.[16]

More businesses were found to be accepting mobile money payments. The number of monthly active merchants grew by 48% between September 2021 and June 2022.

The trend toward open API use cases is supported by research carried out in 2022, with 850 developers indicating an increasing reliance on open APIs – a trend they expect to continue. Organisations in the telecommunications and financial services industries were the most likely to consider the use of APIs a strategic priority. These two industries report monetising more APIs than organisations in other industries.[17]

The percentage of adult mobile money users carrying out certain mobile money ecosystem use cases, often enabled by open APIs, in the last 12 months in nine LMICs is high, particularly for bill and merchant payments [18] (Box 1). In many cases, this has grown year-on-year. For example, in Nigeria, the use of bill payments grew by four percentage points (pp) between 2022 and 2023, salary disbursements and online merchant payments grew by 5pp, and in-person merchant payments by 15pp.[19]

14 GSMA. (2020). Mobile money API industry report
15 GSMA. (2021). Mobile money API industry report
16 GSMA. (2023). State of the Industry Report on Mobile Money
17 RapidAPI. (2024). 2022 State of APIs
18 GSMA Consumer Survey 2023
19 GSMA Consumer Survey 2022 and 2023

Box 1: Adults who have performed each use case in the last 12 months, by country (percentage of adult mobile money users in 2023)[20]

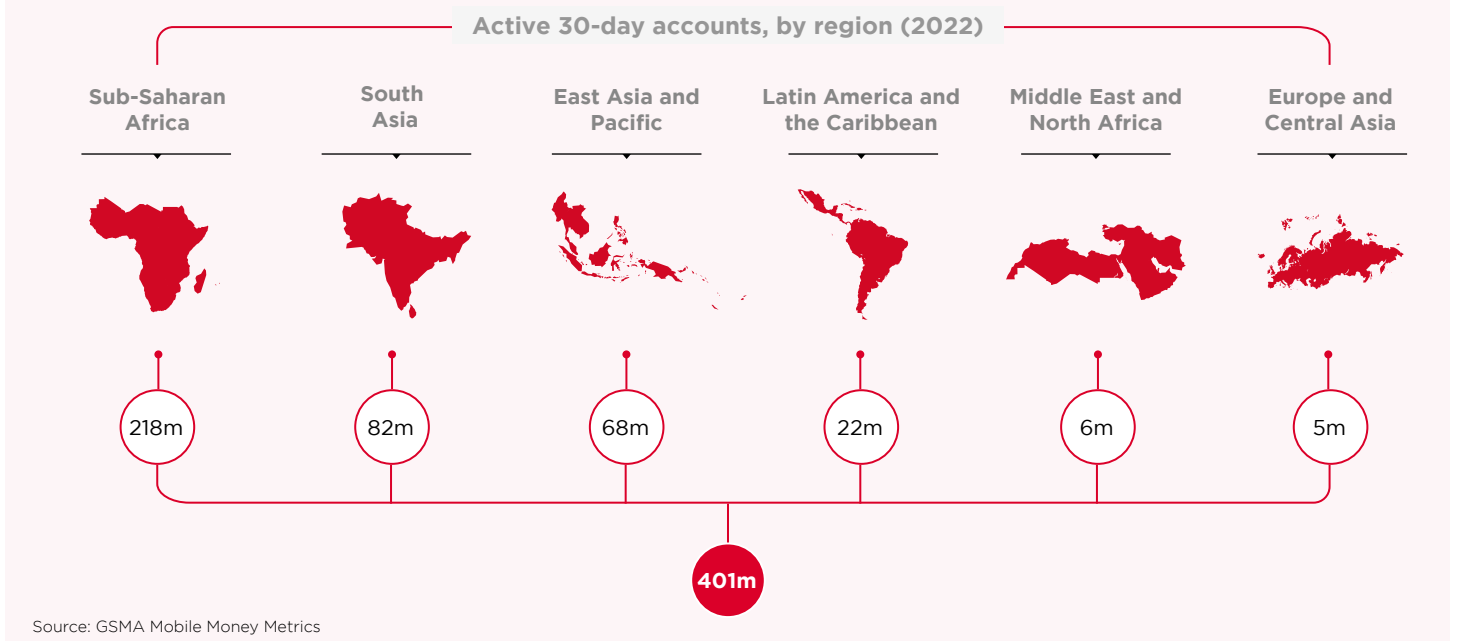|		Africa					Asia			
		Ethiopia	Kenya	Nigeria	Senegal	Uganda	Bangladesh	India	Indonesia	Pakistan
Bill Payments	Pay for bills	26%	65%	37%	36%	37%	21%	44%	37%	41%
Disbursements	Receive payments from government, local authority or charity	7%	14%	10%	11%	8%	14%	16%	8%	10%
	Receive my salary or wages	11%	33%	21%	13%	18%	12%	24%	14%	16%
Merchant payments	Get paid by a customer or client	20%	50%	46%	30%	24%	15%	30%	16%	23%
	Pay for services	18%	59%	29%	20%	14%	13%	19%	21%	14%
	Pay in a physical shop or in person	29%	75%	47%	28%	13%	13%	56%	46%	13%
	Pay online (via a website or app)	14%	25%	29%	14%	5%	14%	47%	51%	15%
International remittances	Receive money from a different country	12%	15%	17%	34%	13%	28%	22%	6%	16%
	Send money to a different country	2%	9%	11%	17%	7%	20%	10%	6%	16%

Source: GSMA Consumer Survey 2023.

Concentration of mobile money users

As of 2022, there were 401 million mobile money users globally who were active on a 30-day basis – many of whom performed open API-enabled transactions. This was 13% higher compared to 2021. Most of these users are in Sub-Saharan Africa (218 million), followed by South Asia (82 million) and East Asia and Pacific (68 million) (Figure 2).
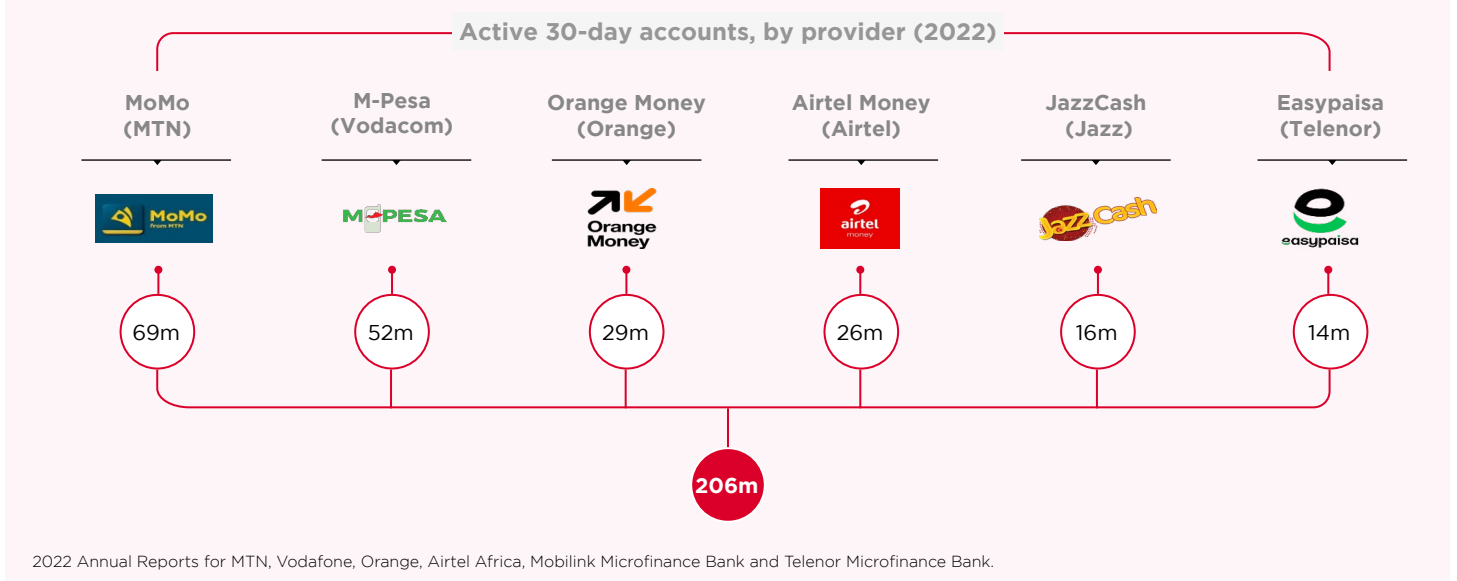
Figure 2: Total 30-day active mobile money accounts in 2022, by region[21]

Active 30-day accounts, by region (2022)

Sub-Saharan Africa	South Asia	East Asia and Pacific	Latin America and the Caribbean	Middle East and North Africa	Europe and Central Asia
218m	82m	68m	22m	6m	5m

401m

Source: GSMA Mobile Money Metrics

In 2022, six mobile money group companies accounted for 52% of the 401 million active 30-day users (Figure 3). These include MoMo (MTN), M-Pesa (Vodacom), Orange Money (Orange) and Airtel Money (Airtel) – each with a substantial international user base, as well as JazzCash (Jazz) and Easypaisa (Telenor), both of whom have significant market presence in Pakistan. [22] However, these deployments represent a small number of the 315 live mobile money services globally in 2022.

Figure 3: Total 30-day active mobile money accounts in 2022, by provider[23]

Active 30-day accounts, by provider (2022)

MoMo (MTN)	M-Pesa (Vodacom)	Orange Money (Orange)	Airtel Money (Airtel)	JazzCash (Jazz)	Easypaisa (Telenor)
69m	52m	29m	26m	16m	14m

206m

2022 Annual Reports for MTN, Vodafone, Orange, Airtel Africa, Mobilink Microfinance Bank and Telenor Microfinance Bank.

21 GSMA. (2024). GSMA Mobile Money Metrics
22 GSMA. (2024). GSMA Mobile Money Deployment Tracker
23 Source: MTN. (2023). FY22 Integrated Annual Report; Vodafone. (2023). FY23 Annual Report; Orange. (2023). 2022 Integrated Annual Report; Airtel Africa. (2023). Annual Report and Accounts 2022; Mobilink Bank. (2023). Annual Report 2022; Telenor Bank. (2023). Annual Report 2022.
Note: The six mobile money providers were selected to illustrate the concentration of active mobile money users among large multinational providers and providers in highly populous countries. M-Pesa figures cover Africa including Safaricom, excluding Ghana

Open API use in large mobile money providers

Five out of these six mobile money groups offer open APIs; Orange is an exception as it does not offer open APIs.[24] Open API offerings are not always consistent across all OpCos: of the 58 OpCos, 36 offer open APIs (Figure 4).[25]

Figure 4: Distribution of open APIs in large mobile money providers, by provider[26]

	Footprint	#OpCos	Open API	Open API launch	#OpCos with Open APIs
MoMo (MTN)		17 countries	Yes	2015	14 countries
M-Pesa (Vodacom)		8 countries	Yes	2015	6 countries
Orange Money (Orange)		17 countries	No	n/a	n/a
Airtel Money (Airtel)		14 countries	Yes	2021	14 countries
Jazz Cash (Jazz)		1 country	Yes	2021	1 country
Easypaisa (Telenor)		1 country	Yes	2017	1 country

Source: MTN, Vodafone, Orange, Airtel Africa, Mobilink Bank, Telenor Bank

24 APIs are often not binary (open or closed) but rather sit on a continuum of 'openness'. Orange Money offers an open API however, it is considered elementary (limited APIs and functionality) and may not be plug-and-play (requiring sign-up) meaning, based on this study, they are considered to not be open
25 In some instances it was not possible to determine through primary and secondary research if an MMP OpCo offered open APIs, meaning more OpCos than shown in this figure may have open APIs
26 GSMA primary and secondary research. (2023); Airtel Africa. (2022). Annual Report and Accounts 2022; Benjamindada. (2021). Airtel Money launches developer portal to provide open APIs; Center for Financial Inclusion. (2017). Telenor opens mobile money APIs for third party developers; Dignited. (2018). MTN unveils UGX 1 billion fund for innovators; JazzCash. (2024). API References; MoMo. (2023). MoMo Hackathon 2023; Orange. (2024). Orange Money Web Pay; Payments Journal. (2015). M-Pesa to open API to Developers. Note: The six MMPs represent 52% of the 401 million 30-day active mobile money users globally according to data from GSMA Mobile Money Metrics, MTN, Vodafone, Orange, Airtel Africa, Mobilink Bank and Telenor Bank. M-Pesa (Vodacom) includes M-Pesa Ethiopia and Vodafone Cash in Egypt and Ghana

Open API use in other mobile money providers

In addition to these six dominant players, many other MMPs offer open APIs. Our primary research has highlighted 14 providers with operations in 21 countries (Figure 5). These providers represent a portion of the remaining 48% of the 401 million 30-day active mobile money users globally in 2022.

Some large MNO-led MMPs do not provide open APIs, such as Maroc Telecom's MT Cash in Morocco and Moov Money in Western Africa. e& (Etisalat) provides open APIs in the MENA region but not in their Afghanistan subsidiary.[27]

Figure 5: Distribution of open APIs in other identified mobile money providers, by provider[28]

	Region	Footprint	#OpCos	Open API
Afrimoney (Africell)	Sub-Saharan Africa	Angola, Democratic Republic of Congo (DRC), Gambia, Sierra Leone	4 countries	Yes
Fortis		Nigeria	1 country	Yes
Now Now		Nigeria	1 country	Yes
Telebirr (Ethio Telecom)		Ethiopa	1 country	Yes
Wizall Money		Burkina Faso, Côte d'Ivoire, Mali, Senegal	4 countries	Yes
Zeepay		Ghana, Côte d'Ivoire, Ethiopia, Zambia	4 countries	Yes
Anon	South Asia	1 country	1 country	Yes
Mobitel		Sri Lanka	1 country	Yes
MiCash (Nationwide Micro Bank)	East Asia & Pacific	Papua New Guinea	1 country	Yes
PayMaya		Philippines	1 country	Yes
Wave Money		Myanmar	1 country	Yes
Wing		Cambodia	1 country	Yes
Digicel	Latin America and the Caribbean	Haiti, Jamaica	2 countries	Yes
E-Kyash		Belize	1 country	Yes

27 GSMA primary and secondary research; e&. (2023). Etisalat by e& attains TMF Silver Certification Open API
28 GSMA primary and secondary research. (2023); Africell. (2023). Afrimoney among first services to adopt new mobile money industry technical specification; Belize Bank. (2023). Merchant Guide; Developing Telecoms. (2023). All four Sri Lanka telcos launch three Open Gateway APIs; Digicel. (2024). MonCash Business; Digicel. (2024). Sandbox; E-Kyash. (2024). E-Kyash; eSewa. (2024). Payment API Documentation; F6S. (2024). Zeepay; GSMA. (2023). How the GSMA Mobile Money API can benefit the mobile money ecosystem; PayMaya. (2024). Sandbox Credentials and Cards; Radio Finance. (2020). Zeepay's Takyi-Appiah: "The concept of WhatsApp is not proprietary anymore"; Tech in Africa. (2023). NowNow secures seed funding of $13 million in order to expand its services throughout Africa; Wave Money. (2020). Wave Money is the first fintech company in Myanmar to launch an open API linking merchants and customers; Xnap. (2020). Liquid Group and Wing Partner Up for Cross-Border Payment in Cambodia. Note: The MMPs listed exclude the six large organisations in Figure 4: Airtel Money, EasyPaisa, JazzCash, MoMo, M-Pesa and Orange Money.

Source: 2023 GSMA primary research with MMPs in 53 countries, desk research. Note: Aside from the six large MMPs shown in Figure 4, this is not an exhaustive list of MMPs offering open APIs. It is representative of MMPs responding to our research and serves as an indication of the widespread use of open APIs in the mobile money ecosystem in 2023

Non-use of open APIs

The main obstacle to MMPs adopting open APIs is technical limitations, especially for providers with smaller user bases (Figure 6). About 60% of respondents not offering mobile money open APIs attribute this to current system constraints. This is the case across MMPs of differing sizes. For instance, most providers with under 50,000 users do not offer open APIs for this very reason. The largest participating MMP, with around 10 million active 30-day users, responded similarly.

Moreover, 30% of respondents do not offer open APIs due to legal reasons and because they have plans to develop open APIs in future. At least 20% cited a lack of capacity and preferred partners, while 10% were risk-averse or had other priorities.

Figure 6: Reasons for not offering mobile money open APIs[29]

% of mobile money providers who do not offer open APIs

Current system will not allow for open APIs	60%
Legal reasons (data protection)	30%
There are plans to develop open APIs in future	30%
Not enough bandwidth to develop and maintain open APIs	20%
Only develop APIs for selected partners	20%
Avoid security-related events	10%
Other priorities	10%
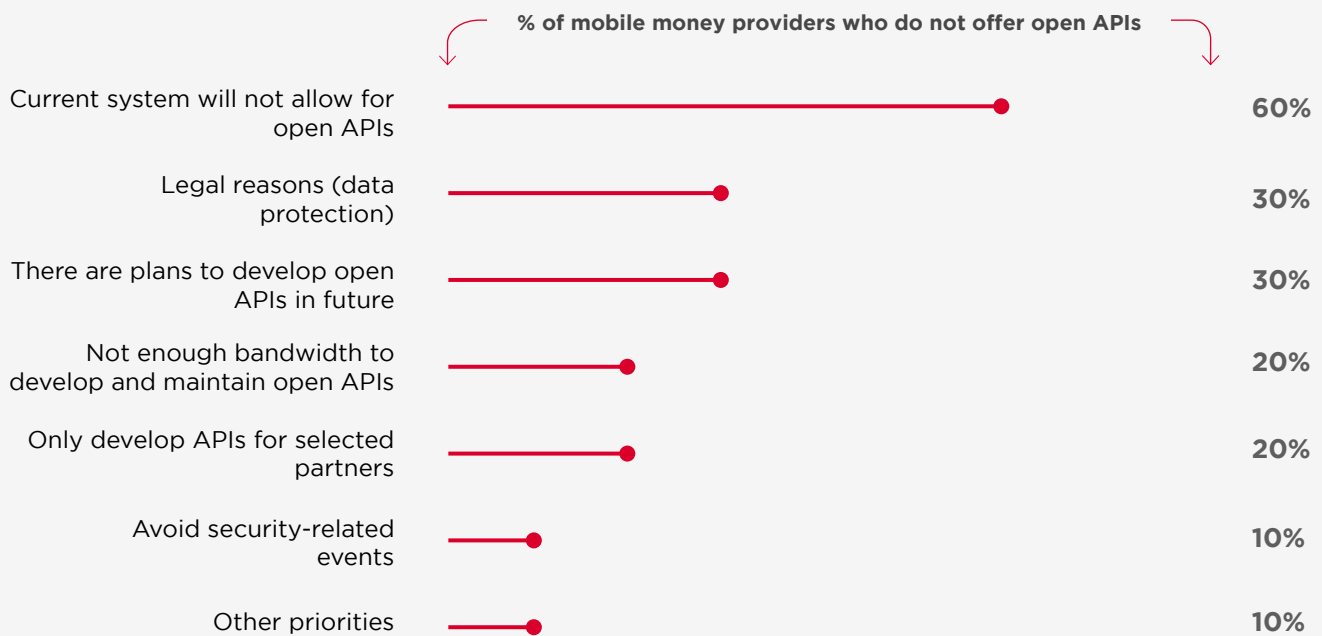
Source: 2023 GSMA primary research with MMPs in 53 countries

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29 Question: Why is your organisation not offering mobile money open APIs?

Respondents using standardised open APIs cited several benefits. These include high quality, cost savings, commercial advantages, easy alignment with partners and contributing to industry standardisation efforts.

Use of standardised or proprietary open APIs

Respondents using standardised open APIs[30] cited several benefits. These include high quality, cost savings, commercial advantages, easy alignment with partners and contributing to industry standardisation efforts. However, a few raised quality concerns.

Respondents with open APIs generally developed them internally. However, 27% of respondents overall and 33% of responding MNO-led MMPs either use or are inspired by the GSMA Mobile Money API Specification[31] (Figure 7). This standardised specification is particularly relevant among MMPs with smaller user bases. Their open APIs tend to have fewer connected parties, compared to larger players.

MNO-led MMPs with many connected third parties typically use proprietary APIs developed in-house. These larger players have often bypassed any external industry standard specifications simply because they had already established their own API specifications. Lack of awareness, use of vendor or different industry-standard APIs are also cited as reasons for not using mobile money industry standard open APIs.

Figure 7: Type of open API developed and in use, by organisation[32]

% of mobile money providers who offer open APIs

	Uses or is inspired by GSMA Mobile Money API Specification	Proprietary API developed internally
Total	27%	73%
MNO-led MMP	33%	67%
Non-MNO-led MMP	20%	80%

● Uses or is inspired by the GSMA Mobile Money API Specification

● Proprietary API developed internally
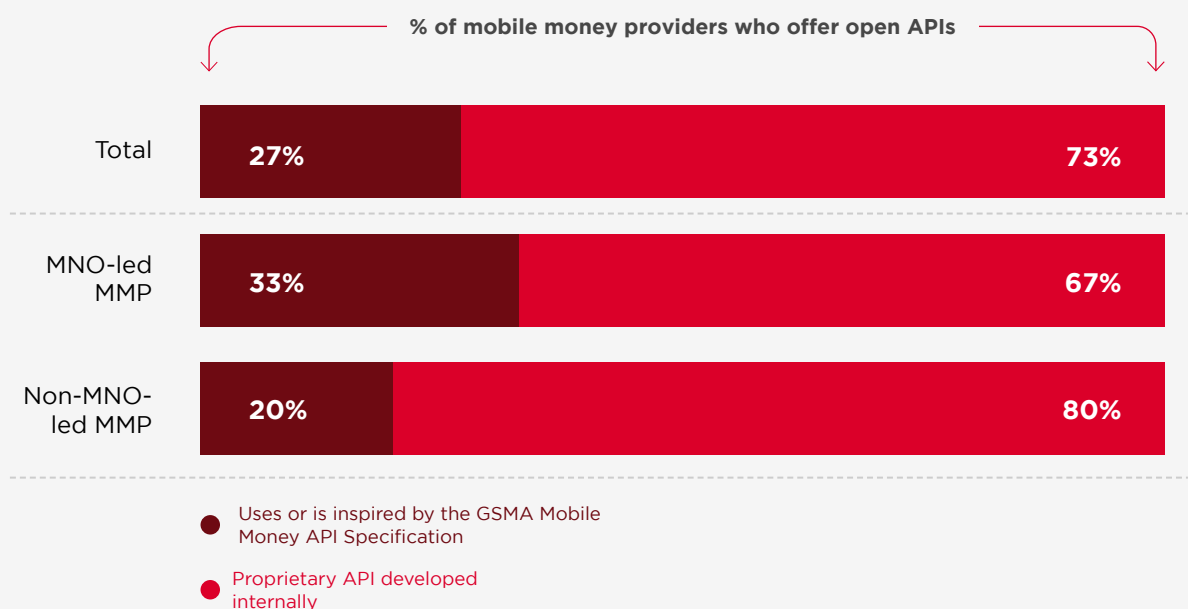
Source: 2023 GSMA primary research with MMPs in 53 countries

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30 A common or industry standard open API specification such as The GSMA Mobile Money API Specification

31 Your organisation or your technology provider has consulted the GSMA specifications for learning, leveraged examples or best practices from the GSMA specifications, attended GSMA events related to the GSMA specifications, interacted with the GSMA regarding building an API, etc

32 Question: Type of API/Specifications used

Benefits and challenges of mobile money open APIs

The benefits and challenges of open APIs are well identified and understood by responding MMPs, with the vast majority acknowledging that there is a trend toward increasing the use of open APIs in the industry (Box 2). However, there are still significant differences in readiness for open APIs between different markets – especially considering digital infrastructure and regulation. Moreover, MNO-led MMPs often have different approaches to open API implementation and use among their different OpCos.

Box 2

Benefits and challenges of open APIs for mobile money providers

Benefits	Challenges
Market expansion: Open APIs allow MMPs to reach a broader audience by integrating their services into third-party applications and platforms, increasing their customer base and transaction volume.	**Infrastructure challenges:** LMICs often face infrastructure limitations such as poor internet connectivity or outdated technology. Open API implementation might be hindered by these constraints.
Diversification of services: Open APIs can foster innovation and therefore diversify service offerings. MMPs can also streamline their operations and reduce the cost of developing new products and services.	**Data security concerns:** Given the sensitivity of user data, especially in financial transactions, there are concerns about personal information being exposed to security risks, leading to breaches or misuse.
Improved customer experience: Open APIs facilitate the creation of integrated services, resulting in a seamless experience for users and potentially more personalised products and services.	**Regulatory hurdles:** LMICs might have less well-defined or evolving regulatory frameworks for technology and data. MMPs must ensure compliance while opening up their APIs.
More revenue streams: MMPs can generate additional revenue by enabling new services on their platform.	**Loss of control:** By allowing third-party developers to build solutions on their platforms, MMPs may lose some control over their brand and customer experience.
Competitive advantage: MMPs can differentiate themselves from competitors through the availability of open APIs.	**Complexity:** Implementing an API management platform can be complex, requiring time and resources to set up and maintain consistent performance.
Economic growth: New services can foster financial inclusion and economic empowerment. Open APIs can support an ecosystem where developers and startups thrive, creating job opportunities.	**Dependency on external developers:** Developers are dependent on MMPs exposing their capabilities however, some MMPs may rely on certain beneficial third-party developers who may fail to deliver on their commitments.

Source: GSMA, GSMA 2023 GSMA primary research with MMPs in 53 countries

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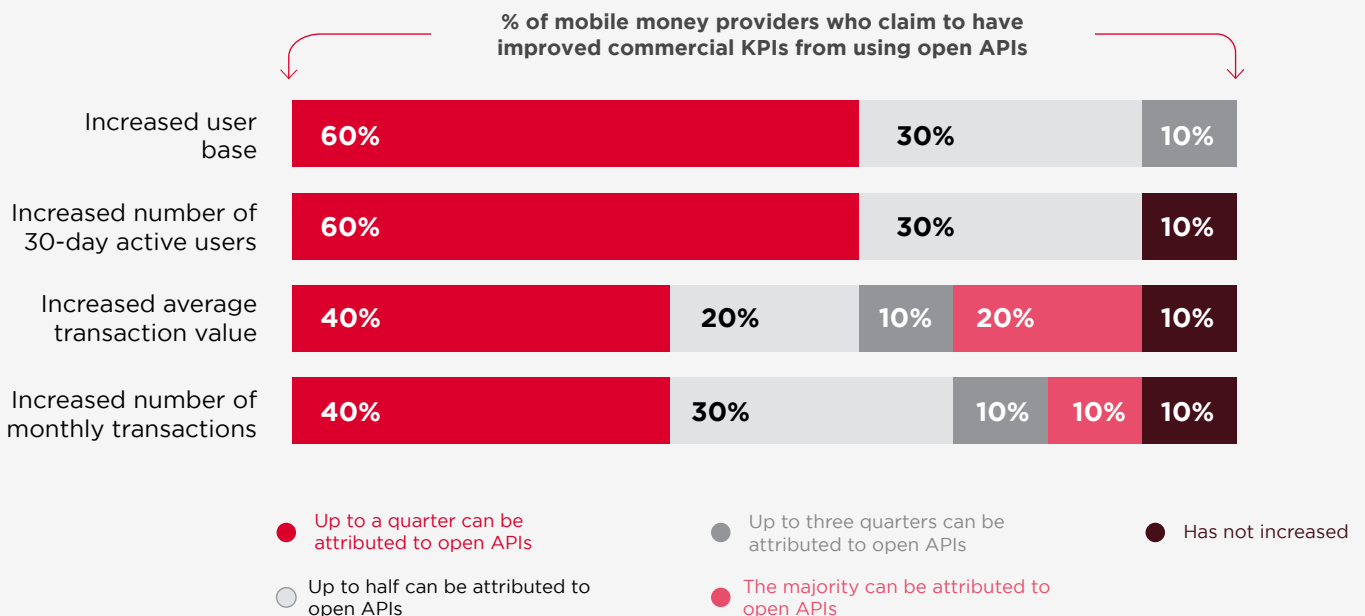# Commercial benefits of mobile money open APIs

Direct benefits include user growth and increasing volume and value of transactions.

Open APIs are perceived by a majority of respondents that offer them to contribute to direct or indirect commercial benefits. Direct benefits include user growth and increasing the volume and value of transactions. Indirect benefits include revenue growth and diversification, reduced costs, improved brand image and contribution to mobile money ecosystem growth.

All respondents cited a larger the user base as the most common direct commercial benefit (Figure 8). Around 60% stated that up to a quarter of the increase in users can be attributed to open APIs. Around 30% felt that half the increase could be attributed to open APIs, while 10% attributed up to three-quarters of the increase.

Increased 30-day active users, average transaction values and the number of monthly transactions are the next most common commercial benefits, according to most respondents. Of these, open APIs appear to have contributed most to increasing average transaction values: 20% of respondents claimed the bulk of this increase can be attributed to open APIs.

Figure 8: Extent of improved direct commercial benefits attributed to open APIs[33]

% of mobile money providers who claim to have improved commercial KPIs from using open APIs

	Up to a quarter can be attributed to open APIs	Up to half can be attributed to open APIs	Up to three quarters can be attributed to open APIs	The majority can be attributed to open APIs	Has not increased
Increased user base	60%	30%			10%
Increased number of 30-day active users	60%	30%			10%
Increased average transaction value	40%	20%	10%	20%	10%
Increased number of monthly transactions	40%	30%	10%	10%	10%

- Up to a quarter can be attributed to open APIs
- Up to half can be attributed to open APIs
- Up to three quarters can be attributed to open APIs
- The majority can be attributed to open APIs
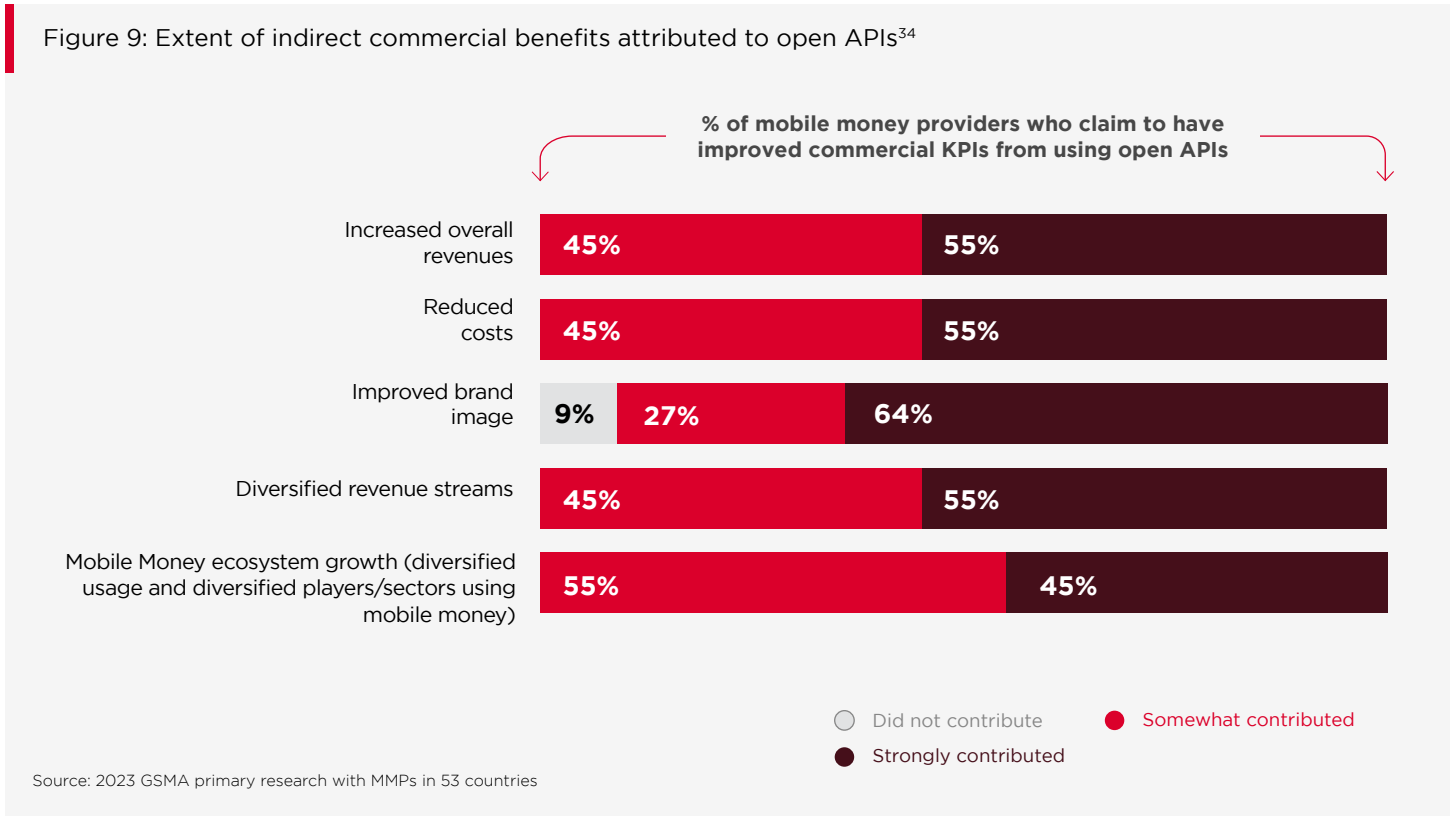- Has not increased

Source: 2023 GSMA primary research with MMPs in 53 countries

33 Question: For at least one of the use-cases, you mentioned that you have experienced improved commercial KPIs since you started offering open APIs (number of transactions, transaction value, etc.). On a scale from 1 to 5, to what extent would you attribute these improvements to the use of the open APIs?

Among possible indirect commercial benefits, open APIs most strongly contribute to improved brand image, cited by 64% of respondents (Figure 9). Around 55% of respondents also believed that open APIs contributed to increased revenue, diversified revenue streams and reduced costs. Around 45% indicated the same for mobile money ecosystem growth.

Figure 9: Extent of indirect commercial benefits attributed to open APIs[34]

% of mobile money providers who claim to have improved commercial KPIs from using open APIs

	Did not contribute	Somewhat contributed	Strongly contributed
Increased overall revenues		45%	55%
Reduced costs		45%	55%
Improved brand image	9%	27%	64%
Diversified revenue streams		45%	55%
Mobile Money ecosystem growth (diversified usage and diversified players/sectors using mobile money)		55%	45%

○ Did not contribute   ● Somewhat contributed   ● Strongly contributed

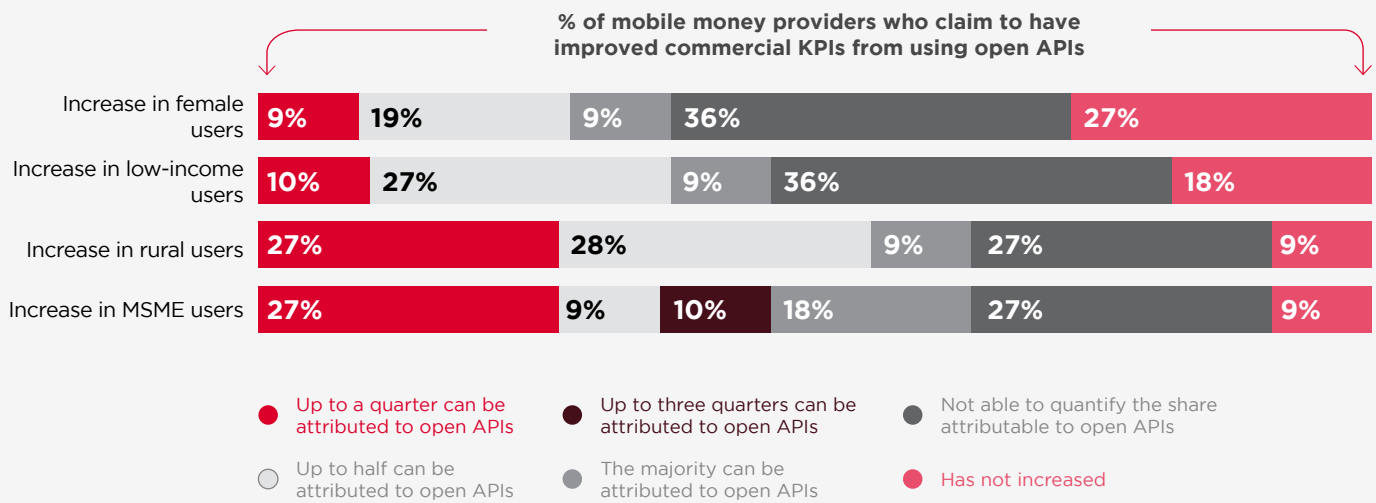Source: 2023 GSMA primary research with MMPs in 53 countries

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34 Question: In general, would you say that offering open APIs has contributed to other commercial benefits? To what extent?

Respondents experiencing improved commercial key performance indicators (KPIs), notably user growth, noticed an increase among four underserved demographics since first offering open APIs: women, those on low incomes, rural residents and MSMEs.[35] Most of these respondents experienced user growth of up to 25% across these demographics. Between 18-28% claim higher increases, while between 27-45% do not know if there has been any change.

The extent of user growth attributed to open APIs for these underserved demographics appears highest for MSMEs, followed by those in rural areas (Figure 10). However, across all demographics, between 9-27% of respondents say there is no growth and between 27-36% are unable to quantify any growth attributed to open APIs.

For MSMEs, 27% of respondents stated up to a quarter of this growth can be attributed to open APIs. About 9% attribute up to half the growth to open APIs, while 10% attribute up to three-quarters of the growth. Around 18% attribute the majority of the growth to open APIs.

Figure 10: Extent of user growth attributed to open APIs, by demographic[36]

Source: 2023 GSMA primary research with MMPs in 53 countries

Overall, respondents tend to offer multiple use cases, illustrating the diverse and comprehensive use of open APIs in the sector.

Open API use cases

Merchant payments, bill payments, and bulk disbursements emerged as the primary open API use cases, offered by over 78% of responding MMPs (Figure 11). While most respondents offer merchant payments, one respondent stands out as an exception and only offers this use case. Bulk disbursements are universally offered among MNO-led MMPs.

Half of all respondents offer international remittances. The remaining use cases (agent services, account linking, P2P transfers, recurring payments and others) are offered by fewer than 44% of respondents. Overall, respondents tend to offer multiple use cases, illustrating the diverse and comprehensive use of open APIs in the sector.

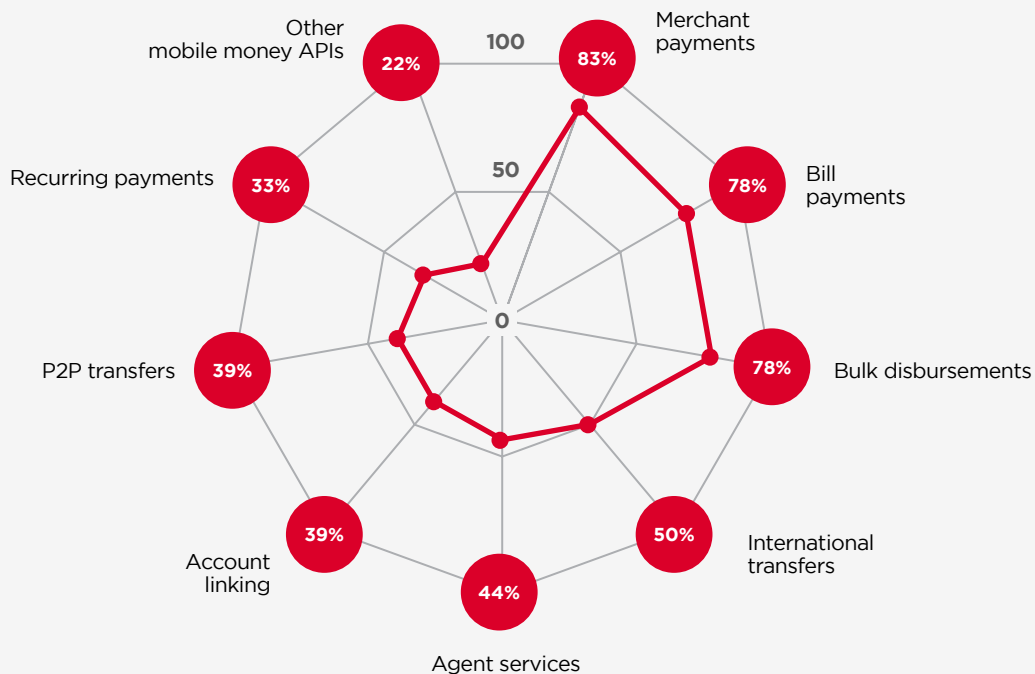Figure 11: Open APIs offered by mobile money providers, by use case[37]
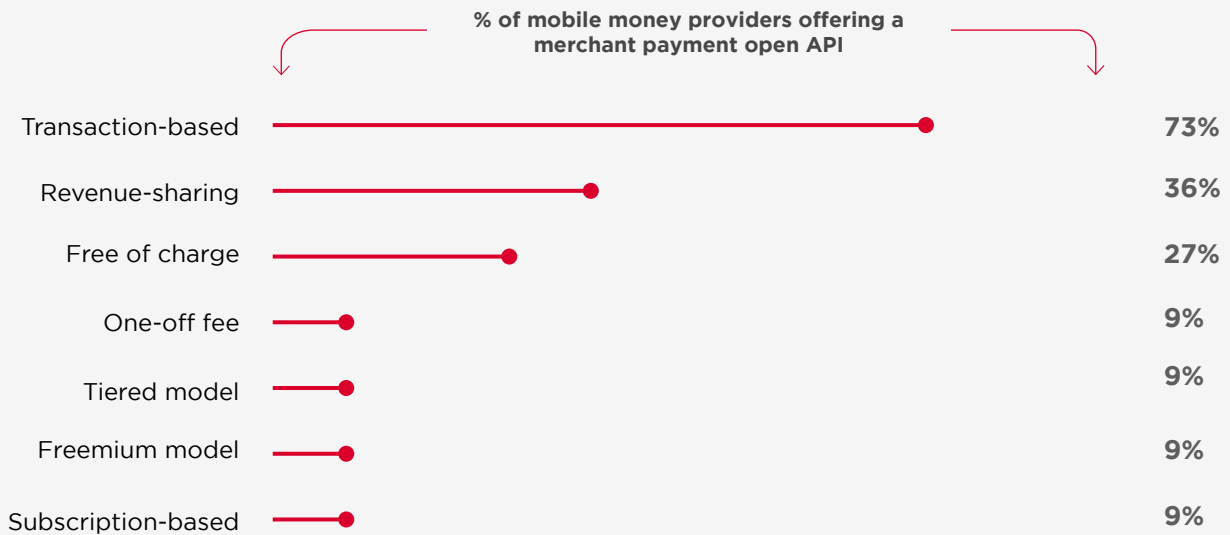
% of mobile money providers

Source: 2023 GSMA primary research with MMPs in 53 countries

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37 Question: For which use cases do you offer open APIs?

Merchant payments

The most prevalent monetisation model for merchant payment open APIs, consistent with other use cases, is transaction-based (Figure 12). Around 73% of respondents use this model, particularly MNO-led MMPs. Non-MNO-led MMPs tend to benefit from a wider variety of monetisation options, in some cases adopting hybrid approaches combining transaction-based pricing and revenue-sharing. Around 36% of respondents use revenue-sharing and 27% offer their merchant payment open API free of charge. Other monetisation models, including one-off fees, freemium, tiered and subscription-based pricing, are also offered but by fewer respondents.

Figure 12: Type of open API monetisation model used for merchant payments[38]

% of mobile money providers offering a merchant payment open API

Model	%
Transaction-based	73%
Revenue-sharing	36%
Free of charge	27%
One-off fee	9%
Tiered model	9%
Freemium model	9%
Subscription-based	9%

Source: 2023 GSMA primary research with MMPs in 53 countries

There are many different engagement patterns between MMPs and third parties. Some MMPs connect exclusively with only one partner while others connect with multiple third parties. MMPs' merchant payment open APIs are predominantly connected to merchants and service providers - according to 91% of respondents (Figure 13). Around 55% connect to payment service providers (PSPs) and payment aggregators, while 22% connect to other MMPs and 9% to government agencies.

Figure 13: Type of third party connected to merchant payment open APIs[39]

% of mobile money providers offering a merchant payment open API

91%	55%	27%	9%

- ■ Merchants and service providers
- ■ Mobile money providers
- ■ Payment service providers & payment aggregators
- ■ Government
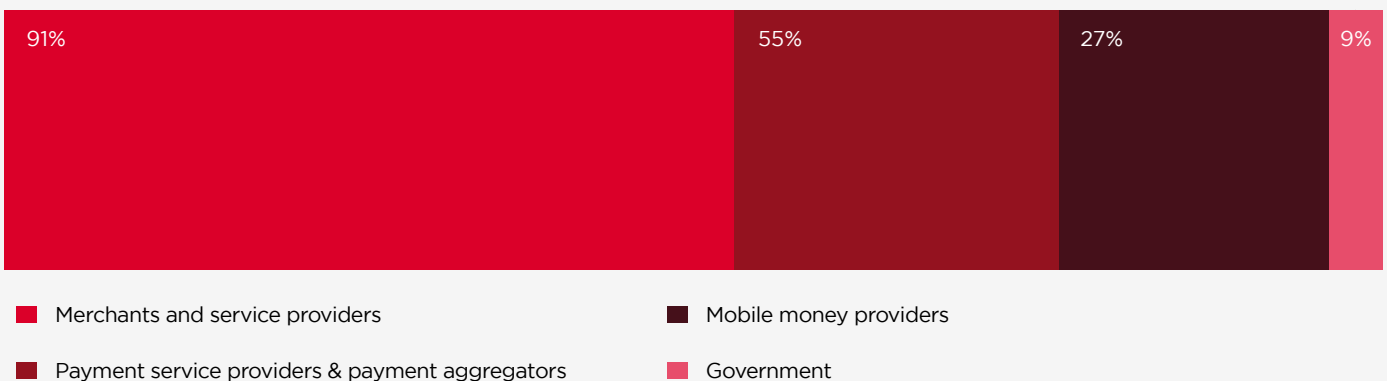
Source: 2023 GSMA primary research with MMPs in 53 countries

38 Question: What monetisation model do you use for this API use case? Note: For the tiered open API monetisation model, transaction fees are based on the type of service the connecting third party is consuming from the open API
39 Question: Types of connected parties

Most respondents offering merchant payment open APIs reported some increase in overall users, 30-day active users, monthly transaction volume and average monthly transact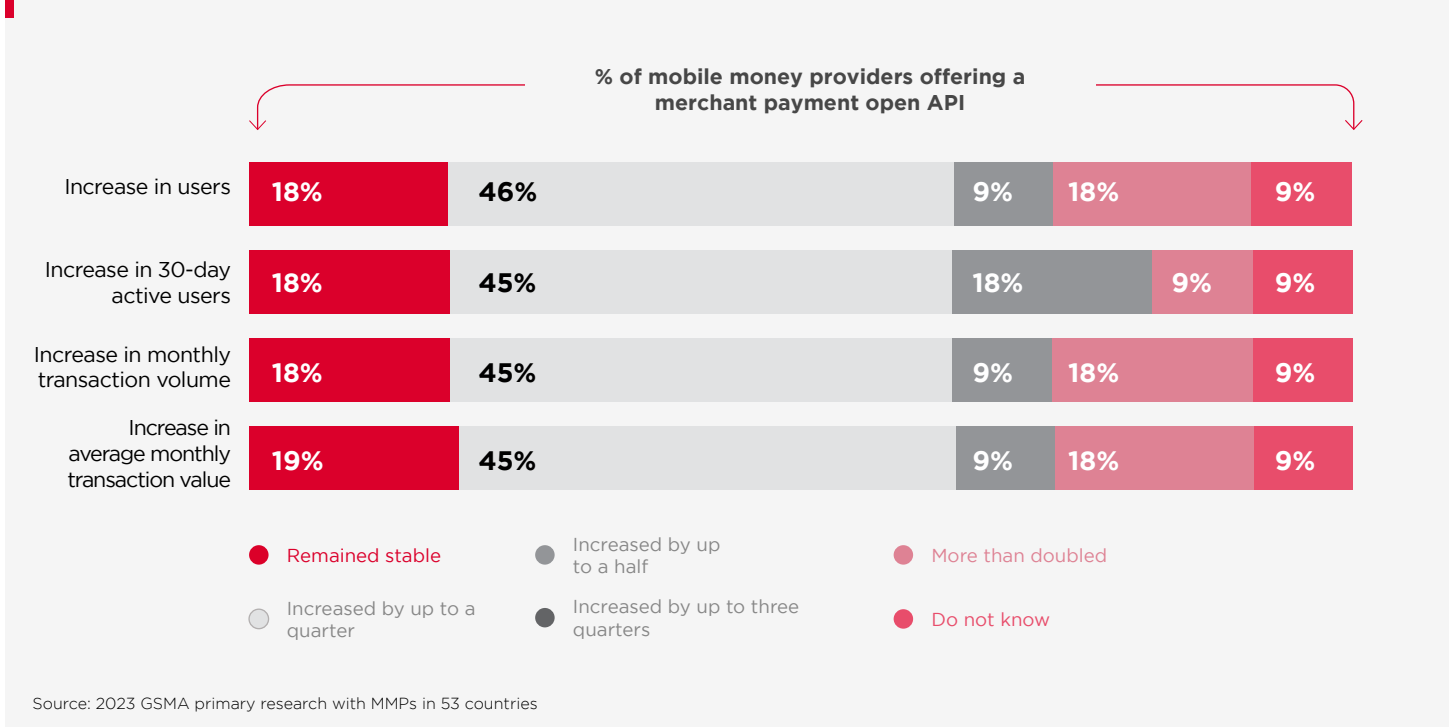ion value since first offering the APIs (Figure 14). The majority (45-46%) reported that these KPIs increased by up to a quarter, 27% said these KPIs increased by more than a quarter, and between 9-18% claimed increases in the four KPIs had more than doubled. Despite this growth, between 18-19% felt that these KPIs remained stable.

Figure 14: Extent of improvement in KPIs since offering a merchant payment open API[40]

% of mobile money providers offering a merchant payment open API

	Remained stable	Increased by up to a quarter	Increased by up to a half	Increased by up to three quarters	More than doubled	Do not know
Increase in users	18%	46%	9%		18%	9%
Increase in 30-day active users	18%	45%	18%		9%	9%
Increase in monthly transaction volume	18%	45%	9%		18%	9%
Increase in average monthly transaction value	19%	45%	9%		18%	9%

● Remained stable
◯ Increased by up to a quarter
● Increased by up to a half
● Increased by up to three quarters
● More than doubled
● Do not know

Source: 2023 GSMA primary research with MMPs in 53 countries

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40 Questions: Since you started using this open API…What has been the percentage increase in your number of users?"; What has been the percentage increase in your number of 30-day active users?; What has been the percentage increase in your number of monthly transactions?; What has been the percentage increase in the average transaction value?

Bill payments

MMPs offering bill payment open APIs predominantly adopt a transaction-based monetisation model (Figure 15). Around 89% of respondents use this model, while 33% adopted revenue-sharing, 22% used free-of-charge, freemium or one-off fee models, and 11% embraced a tiered or subscription-based model. MNO-led MMPs tend to adopt transaction-based pricing over other models. Non-MNO-led MMPs tend to use hybrid approaches combining transaction-based pricing and revenue-sharing.

Figure 15: Type of open API monetisation model used for bill payments[41]

% of mobile money providers offering a bill payment open API

| Transaction-based	Revenue-sharing	Free of charge	One-off fee	Freemium	Tiered model	Subscription-based
89%	33%	22%	22%	22%	11%	11%

Source: 2023 GSMA primary research with MMPs in 53 countries

MMPs providing bill payments connect to a wide variety of third parties, including fintechs offering credit, savings and insurance, as well as companies in the energy, utilities, agritech, education and health industries. MNO-led MMP respondents tend to have more connected parties than their non-MNO-led counterparts. Around 90% of respondents are primarily connected to energy providers, utility providers and agritechs (Figure 16). Around 60% connect to educational institutions, health-related organisations and fintechs, 20% to other MMPs, and 30% to third parties in other industries such as telecoms, transport, entertainment and taxation.

Figure 16: Type of third party connected to bill payment open APIs[42]

% of mobile money providers offering a bill payment open API

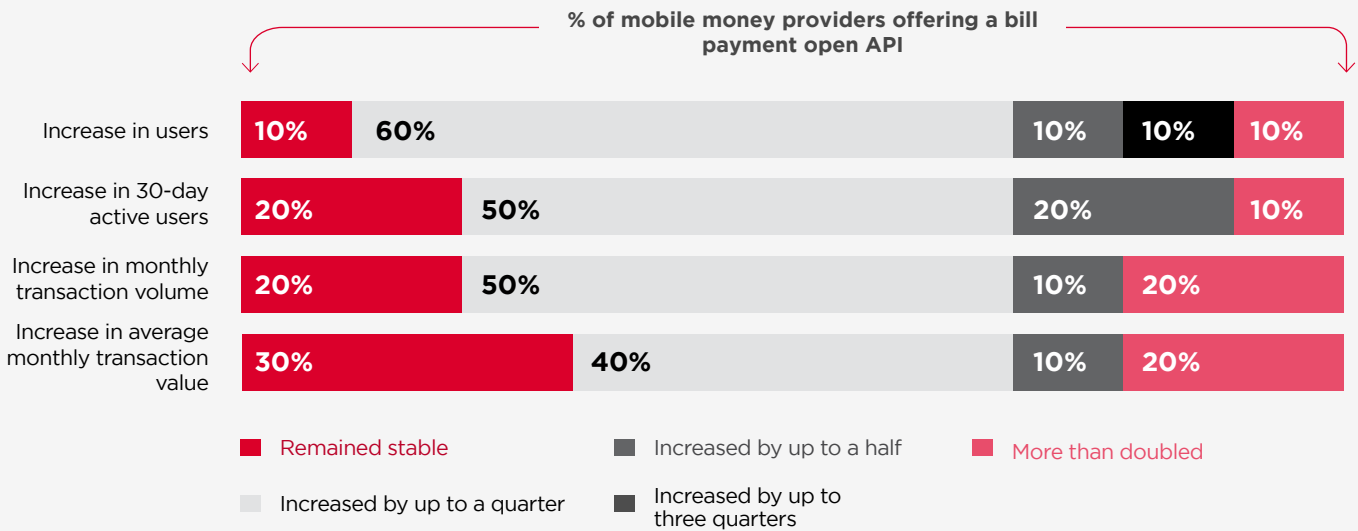| Energy, utilities & agritech	Education & health	Fintech providers	Mobile money providers	Other
90%	60%	60%	20%	30%
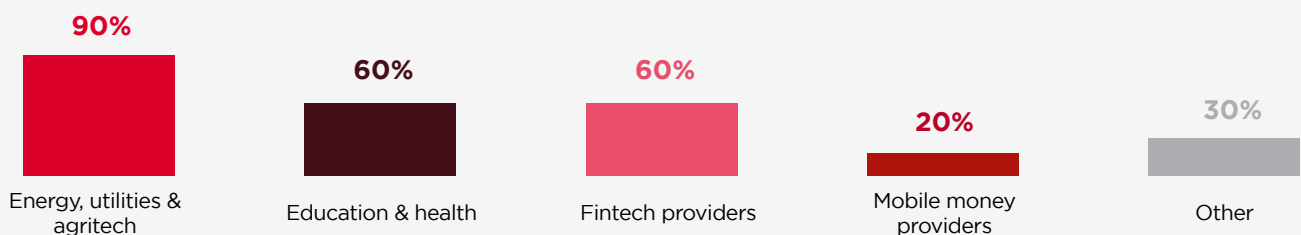
Source: 2023 GSMA primary research with MMPs in 53 countries

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41 Question: What monetisation model do you use for this API use case? Note: For the tiered open API monetisation model, transaction fees are based on the type of service the connecting third party is consuming from the open API.
42 Question: Types of connected parties

Among respondents offering bill payment open APIs, most claim improvements in their commercial KPIs since first offering the APIs (Figure 17). The majority (40-60%) reported that these KPIs increased by up to a quarter, while 30% said that these KPIs increased by up to a half or more. Notably, around 20% of respondents reported a more than doubling of monthly transaction volumes and average monthly transaction values since adopting open APIs. Several respondents who reported a doubling in these KPIs said this was consistent across implementations of other open APIs, such as merchant payments and disbursements. Conversely, 20-30% said that these two KPIs remained stable.

Figure 17: Extent of improvement in KPIs since offering a bill payment open API[43]

% of mobile money providers offering a bill payment open API

	Remained stable	Increased by up to a quarter	Increased by up to a half	Increased by up to three quarters	More than doubled
Increase in users	10%	60%	10%	10%	10%
Increase in 30-day active users	20%	50%	20%		10%
Increase in monthly transaction volume	20%	50%	10%		20%
Increase in average monthly transaction value	30%	40%	10%		20%

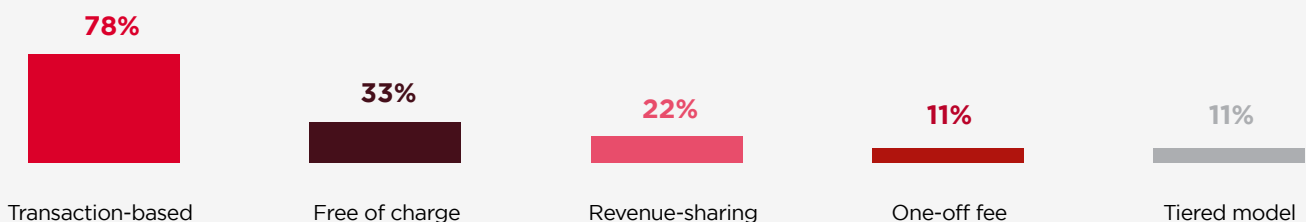Source: 2023 GSMA primary research with MMPs in 53 countries

Bulk disbursements

Bulk disbursements are commonly employed by the public sector and MMP open APIs used for bulk disbursements are most often monetised using a transaction-based model. Around 78% of MMPs offering a bulk disbursement open API use transaction-based monetisation, particularly MNO-led MMPs (Figure 18). Around 33% of respondents offer their bulk disbursement open

API free of charge to third parties, 22% use revenue sharing and 11% charge one-off fees or adopt a tiered model. Several respondents, usually with a limited number of connected third parties, offer bulk disbursement using hybrid monetisation models. These include free-of-charge, plus a tiered model or a combination of one-off fees, revenue-sharing and free-of-charge services.

Figure 18: Type of open API monetisation model used for bulk disbursements[44]

% of mobile money providers offering a bulk disbursement open API

Transaction-based	Free of charge	Revenue-sharing	One-off fee	Tiered model
78%	33%	22%	11%	11%

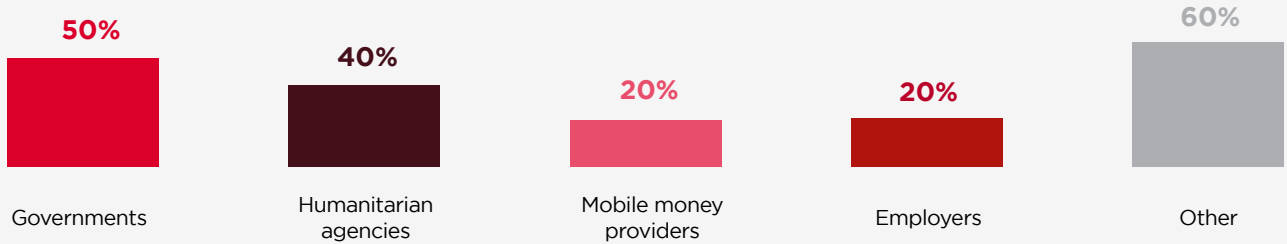Source: 2023 GSMA primary research with MMPs in 53 countries

43 Questions: Since you started using this open API…What has been the percentage increase in your number of users?"; What has been the percentage increase in your number of 30-day active users?; What has been the percentage increase in your number of monthly transactions?; What has been the percentage increase in the average transaction value?
44 Question: What monetisation model do you use for this API use case? Note: For the tiered open API monetisation model, transaction fees are based on the type of service the connecting third party is consuming from the open API

In contrast to merchant and bill payment open APIs, bulk disbursement open APIs lack a singular overarching category of connected third parties. The most highly cited category of third-party connections to the bulk disbursement open API is "Other" (Figure 19) – cited by 60% of respondents, particularly MNO-led MMPs. This category encompasses a diverse range of third parties including corporates, betting companies, financial institutions, technology start-ups, utility and agritech companies. Furthermore, 50% of respondents connect with governments, 40% with humanitarian agencies and 20% with employers or other mobile money providers. Non-MNO-led MMPs in general tend to connect with fewer third parties relative to MNO-led MMPs.

Figure 19: Type of third party connected to bulk disbursement open APIs[45]

% of mobile money providers offering a bulk disbursement open API

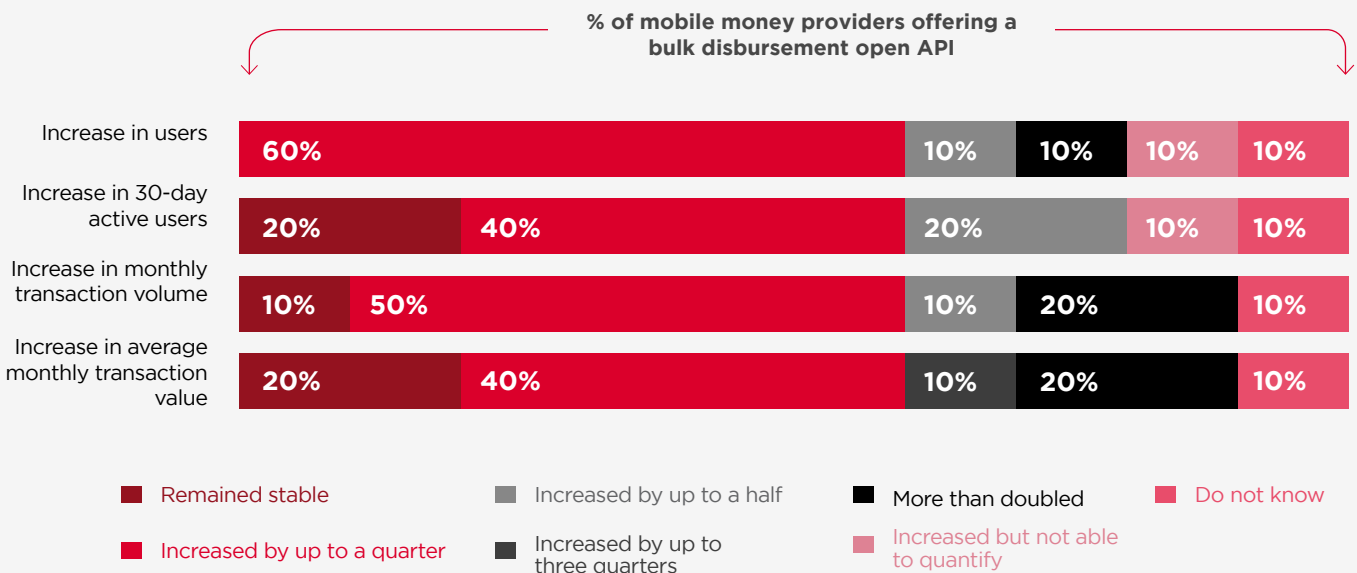| Governments | Humanitarian agencies | Mobile money providers | Employers | Other |
| 50% | 40% | 20% | 20% | 60% |

Source: 2023 GSMA primary research with MMPs in 53 countries

The majority of respondents offering bulk disbursement open APIs reported increases in overall users, 30-day active users, monthly transaction volume and average monthly transaction value since first offering the APIs (Figure 20). However, the impact for MNO-led MMPs is less than that for merchant and bill payment open APIs.

The majority (40-60%) reported that these KPIs increased by up to a quarter, with 20-30% pointing out that these KPIs increased more but some were not able to quantify the increase in overall and 30-day active users. Conversely, between 10-20% found that 30-day active users, monthly transaction volumes and average monthly transaction values remained stable.

Figure 20: Extent of improvement in KPIs since offering a bulk disbursement open API[46]

% of mobile money providers offering a bulk disbursement open API

Increase in users	60%		10%	10%	10%	10%
Increase in 30-day active users	20%	40%	20%		10%	10%
Increase in monthly transaction volume	10%	50%	10%	20%		10%
Increase in average monthly transaction value	20%	40%	10%	20%		10%

■ Remained stable ■ Increased by up to a half ■ More than doubled ■ Do not know

■ Increased by up to a quarter ■ Increased by up to three quarters ■ Increased but not able to quantify

Source: 2023 GSMA primary research with MMPs in 53 countries

45 Question: Types of connected parties
46 Questions: Since you started using this open API…What has been the percentage increase in your number of users?"; What has been the percentage increase in your number of 30-day active users?; What has been the percentage increase in your number of monthly transactions?; What has been the percentage increase in the average transaction value?

05

Conclusion

The GSMA Mobile Money API Specification has the potential to contribute further to industry growth, offering a standardised and well-documented framework.

The mobile money industry is growing, driven by open APIs. Key use cases, including merchant payments, bill payments, bulk disbursement and international remittances, have seen robust year-on-year transaction growth, contributing to a thriving ecosystem.

Aggregators, backed by substantial investments, have reshaped the market landscape, playing a pivotal role in simplifying integration with MMPs, fintechs and third parties. The influence of technical infrastructure vendors is evident, impacting MMPs' strategic considerations regarding open APIs.

The GSMA Mobile Money API Specification has the potential to contribute further to industry growth, offering a standardised and well-documented framework. Various MMPs responding to this research find inspiration in or directly use the GSMA specification, emphasising its role as a credible industry standard.

However, the open API landscape reveals divergent strategies and varying levels of readiness among providers and across markets. Fintechs advocate for greater openness and use of open APIs, while some MMPs view their APIs as differentiators. Concentration in the mobile money industry is evident, with six MMPs boasting a majority of global 30-day active users across their 58 operating companies - 36 of which offer open APIs.

Merchant payments, bill payments and bulk disbursements are the three most prevalent open API use cases among respondent MMPs, with transaction-based monetisation overwhelmingly favoured. Most MMPs have witnessed some improvement in various commercial key performance and financial inclusion indicators since offering open APIs. Around 20% reported a doubling of average transaction values.

This study recommends that the industry enhances awareness and training on open APIs and builds more simplified specifications to foster consistent growth. Improved regulatory support and collaboration with third parties are crucial to improving the diversity of mobile money open API business opportunities and advancing the inclusive tech landscape.

06

Appendices

Methodology

Based on existing primary research and engagement with the mobile money industry, key informant interviews and surveys in Arabic, English, French and Spanish were carried out between September and December 2023. These were performed with subject matter experts in mobile money and open APIs from MNO-led and non-MNO-led MMPs, technology solution providers, multilateral organisations and think tanks.

The customer base of MMPs participating in this research ranges from 5,000 up to 50 million and their collective footprint covers 53 countries (Figure 21). A total of 40 organisations participated, typically involving C-Level executives, group heads, founders and strategists in addition to technical specialists. This research is supported by 2023 nationally representative demand-side research in 9 LMICs from the GSMA Consumer Survey and desk research which reviewed relevant literature and data sets.

Limitations

This study presents the findings of mixed methods research. It details the perspectives of a cohort of experts primarily from MMPs as well as technology solution providers, multilateral organisations and think tanks. There are some limitations to this research:

- It is not representative of all MMPs globally and as such findings should be interpreted as representative of the participants.
- It is a mixed methods sample of MMPs in 53 countries and does not consider the viewpoints of all providers in those countries nor from other countries outside this sample.
- Due to conducting this research in different languages, some respondents might have occasionally misinterpreted questions.

API

An application programming interface is a way for two or more computer programs or components to communicate with each other. It is a type of software interface that offers a service to other pieces of software.

Open API

An open API is a publicly available application programming interface that provides developers with access to a, possibly proprietary, software application or web service. Open APIs are APIs that are published on the internet and are free to access by consumers and publicly available for all developers to access. They allow developers, outside of an organisation's workforce, to access backend data that can then be used to enhance their own applications.

Closed (Proprietary) API

A closed or proprietary API is an interface that opens parts of an organisation's backend data and application functionality for use by developers working within, or contractors working for, that organisation. These APIs are only exposed to internal developers therefore the API publishers have control over what and how applications are developed.

Mobile money

A service is considered a mobile money service by the GSMA if it meets the following criteria:

- A mobile money service includes transferring money and making and receiving payments using a mobile phone.

- The service must be available to the unbanked, for example, people who do not have access to a formal account at a financial institution.
- The service must offer a network of physical transactional points which can include agents, outside of bank branches and ATMs, that make the service widely accessible to everyone. The agent network must be larger 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 are not included.
- Payment services linked to a traditional banking product or credit card, such as Apple Pay, Google Pay and Samsung Pay, are not included.

Figure 21: Footprint of mobile money providers responding to this study

Source: GSMA
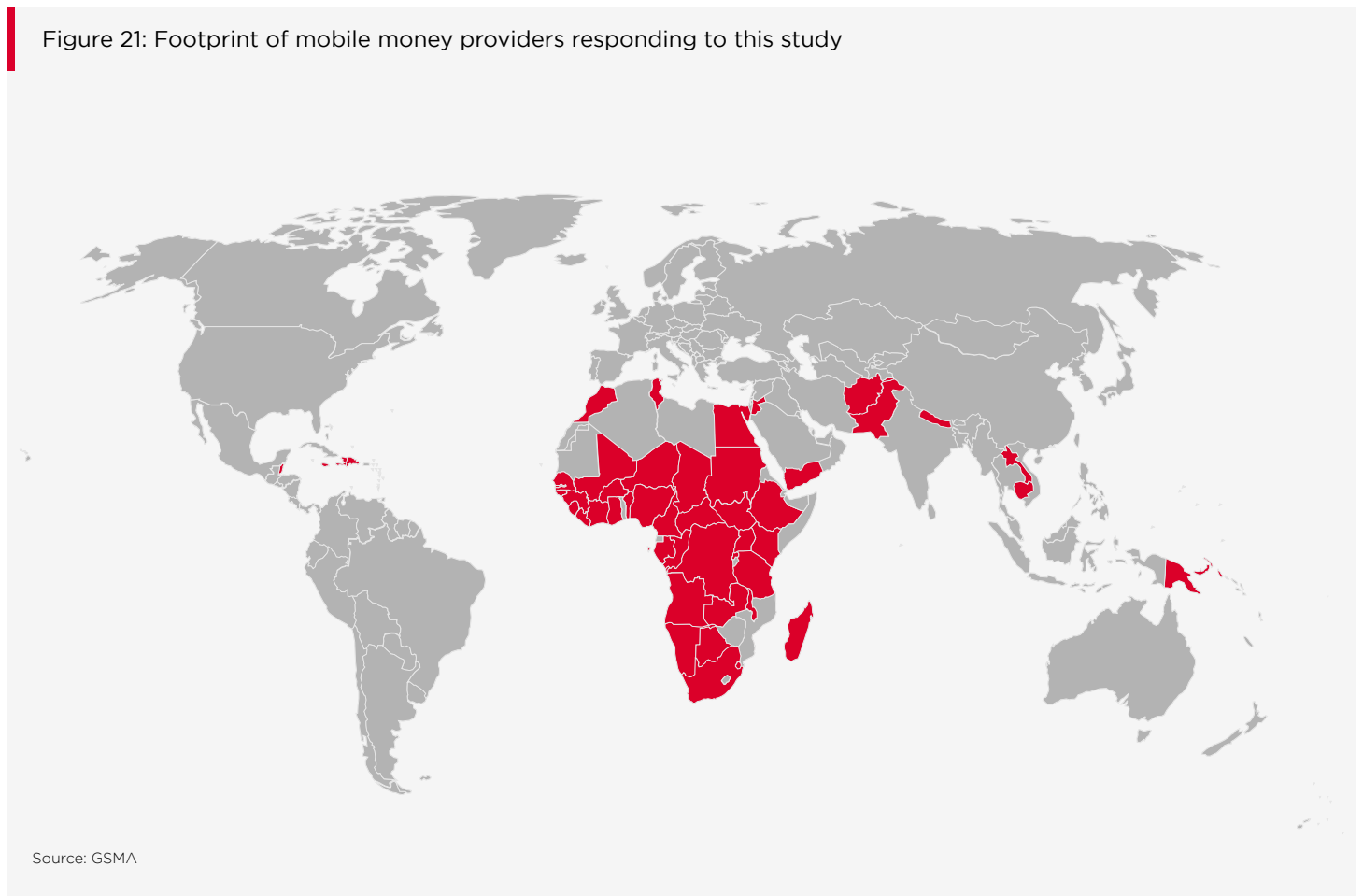
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