# Mobile Money
# API Industry Report
## The Challenges of
## Seamless Integrations

GSMA

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# In a maturing mobile money industry, growth is being fuelled by newly discovered revenue streams, enabled by partner integrations

Mobile money transactions are becoming increasingly digital, with daily transactions now exceeding USD 2 billion.

Use cases are expanding due to different types of service providers entering the mobile money ecosystem, resulting in creation of new revenue streams.
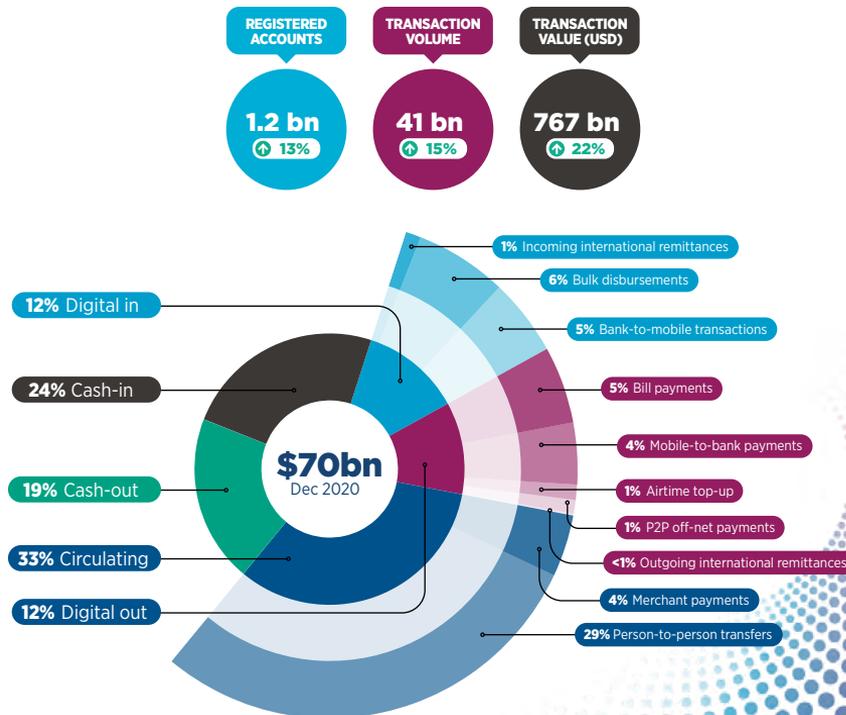
As the ecosystem grows, there is an increased demand for partnerships between mobile money providers (MMPs) and third-party service providers.

MMPs are increasingly establishing such partnerships with third-party service providers through "plug-and-play" access.

APIs are the technology underpinning with open APIs enabling various third parties to integrate with MMPs directly.

Although MMPs are increasingly offering open APIs, direct integration with third parties is not yet the norm.

Still, growth will continue to be fuelled as more third-party service providers start identifying business opportunities presented by APIs.

**REGISTERED ACCOUNTS**
1.2 bn
↑ 13%

**TRANSACTION VOLUME**
41 bn
↑ 15%

**TRANSACTION VALUE (USD)**
767 bn
↑ 22%

$70bn
Dec 2020

12% Digital in
24% Cash-in
19% Cash-out
33% Circulating
12% Digital out

1% Incoming international remittances
6% Bulk disbursements
5% Bank-to-mobile transactions
5% Bill payments
4% Mobile-to-bank payments
1% Airtime top-up
1% P2P off-net payments
<1% Outgoing international remittances
4% Merchant payments
29% Person-to-person transfers

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# The opportunity presented by mobile money API integrations goes beyond ecosystem growth. They are also paving the way for new revenue streams for key industry players.
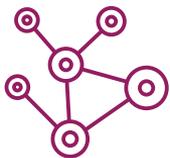
## REACH

**Expanding the business** and brand presence while increasing user engagement

## CUSTOMER ACQUISITION

**Opportunity to grow revenue** by acquiring new customers and reaching the financially excluded

## NEW INDUSTRY VERTICALS

**Fostering partnerships** with new third-party industry players that are plugging into the ecosystem

## NEW PRODUCTS AND SERVICES

**Driving innovation** by creating new products, services and use cases for the growing ecosystem

## MONETISATION

**Earning revenue** through the existing and new use cases being adopted by newly connected industry verticals

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# The GSMA's 2019 study on mobile money APIs found that ecosystem growth is being driven by open APIs and that development remains a top priority for MMP



Mobile Money API Toolkit
Towards seamless integrations

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## MOBILE MONEY IN 2019

### Over 1bn
REGISTERED MOBILE MONEY ACCOUNTS

**$9.1bn** processed daily — by the mobile industry

**57% DIGITAL**
Digital transaction values now exceeding cash-in/out values

**$22bn** in circulation
More money is circulating than exiting the mobile money system

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- The seamless integration of third parties with mobile money platforms is a key catalyst to achieving wider access to critical products by the underserved. Third parties' ability to integrate with mobile money platforms is also a first and necessary step to achieving the payments-as-a-platform (PaaP) model, which is one of the main aspects of the GSMA's vision for the future of mobile money.
- The Inclusive Tech Lab aims to provide thought leadership and technology focused research.
- It is in this context that APIs have been a key focus area for the GSMA's Mobile for Development (M4D) portfolio of programmes, including via the development of the GSMA Mobile Money API.

The Inclusive Tech Lab, a GSMA-led global industry initiative, conducted a study in 2019 on MMPs and their API propositions. The survey found that:

- The mobile money industry is evolving towards a platform-based approach in which other apps and software can easily integrate with mobile money products via plug-and-play access through APIs.

- Sustained growth in the industry has been driven by MMPs hosting a large number of payment APIs, with e-commerce, bill payments and disbursements the top use cases.

- Despite a growing ecosystem, only 32 per cent of MMPs surveyed are making their APIs public, and most have adopted a proprietary API. Both are a sign of market fragmentation and they are contributing to lengthy third-party on-boarding processes.

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# However, the question remains: "Do third-party service providers see API integration as an opportunity?"

## OBJECTIVES & METHODOLOGY

Based on **85 survey responses from third-party service providers across 12 industry verticals in multiple regions including Africa, the Americas, Asia and Europe.**

This API report aims to:

**Understand the barriers faced by third-party service providers** on open API integrations from a technical and commercial perspective.

**Identify the needs of third-party service providers** and the opportunities that MMPs and industry verticals could capitalise on.

**Provide actionable insights on the barriers and limitations** to API integration
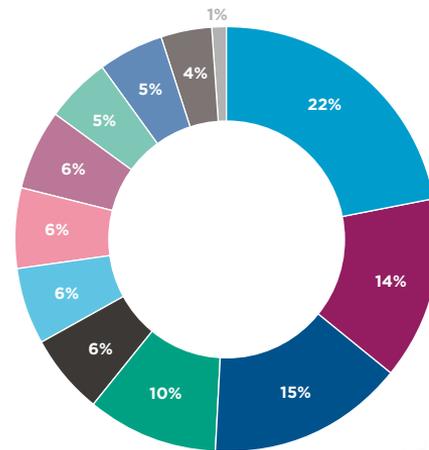
## STRUCTURE

Ecosystem development

Commercial models

Integration challenges

Accelerating third-party integrations

Standardisation

Best practices

## Representation of industry verticals surveyed

- Energy and utilities
- Agriculture
- NGOs
- Payment gateways and financial services aggregators
- Government agencies
- Insurance
- MFIs and banks
- Retail or wholesale trade
- International remittance
- Transportation
- Healthcare
- Education

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# Key findings

**Mobile money API payments are on track to accelerate ecosystem growth**

**94%** of respondents are using payment APIs, which indicates that the technology is a key component of a growing mobile money ecosystem. Mobile money is becoming a **key payment instrument** in emerging markets, with **70%** of respondents using APIs.

**Ecosystem growth is synonymous with growth in industry verticals**

The growth of the mobile money ecosystem is evident in the **diversity of third-party service providers** plugging into the ecosystem. The acceleration towards a digital society is also boosting the number of third-party service providers offering **new services with mobile money use cases.**

**There is clear demand for deeper and more innovative mobile money use cases**

At **64%**, **merchant payments** and **disbursements** were identified as two of the top mobile money use cases. The study also showed potential **for new business opportunities, with 54%** of respondents indicating a significant desire to adopt **international remittances** and **56%** to adopt **recurring payments**.

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# Key findings

**Mobile money use cases are diversifying to cater to the needs of third parties**

As more industry verticals plug into the ecosystem, **mobile money use cases are diversifying**, with some respondents expressing interest in **use cases that are not core to their business.**

A rise in demand for **new use cases**, such as credit scoring and savings, will contribute to future growth.

**Pricing is typically the first barrier to integration for third parties**

**Pricing remains a key barrier** in mobile money API integrations, with **36% of respondents indicating that pricing is the most important consideration** when integrating. Although commercial models for a mobile money API pricing strategy are still not fully defined, incentives such as **free on-boarding practices encourage third-party integration.**

**Offering tiered pricing models could lower the pricing barrier for third parties**

**60%** of respondents use a **transaction-based fee model**, which is common with payment APIs. Other models include pay-as-you-go (PAYG) and open APIs.

**Tiered pricing models** accommodate various customer segments and demonstrate the business value of APIs for third parties.

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# Key findings
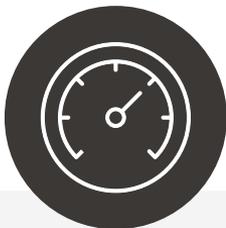
## Third parties experience lengthy on-boarding times during integration

**71%** cited **speed of integration** as a barrier, with **56%** of respondents experiencing integration times of more than **30 days**. Poor communication; contract processes and lack of standard protocols; unclear error codes; and a lack of available developer portals and integration tools are some of the main barriers to integration.
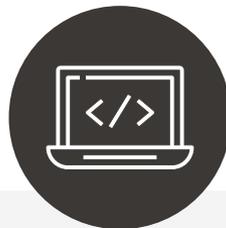
## Developer portal components can improve the integration experience significantly

**Well-equipped developer portals** are viewed by third parties as essential to smooth integration.

**77%** value **testing environments** and **56% reference documentation** in a portal. **55%** perceive **development tools, such as software development kits (SDKs)**, as an important way to make integration less complex.

## Standardisation will be key to addressing various integration barriers

**46%** of respondents identified **standardisation as the single most important technology to resolve for the future**, while **92%** indicated an interest in adopting standardisation to address integration challenges. To support the exponential growth predicted for the mobile money industry, a **harmonised API** such as the **GSMA's Mobile Money API** can offer a significant advantage.

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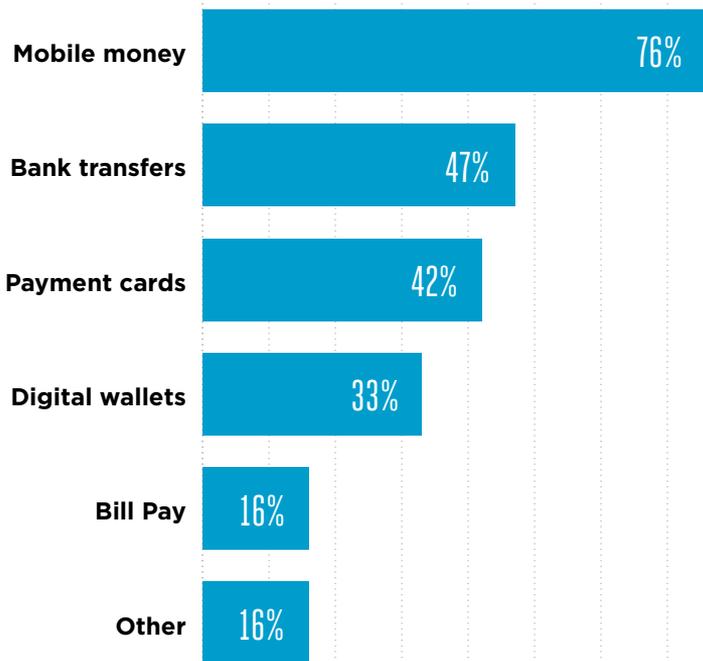
# Ecosystem development
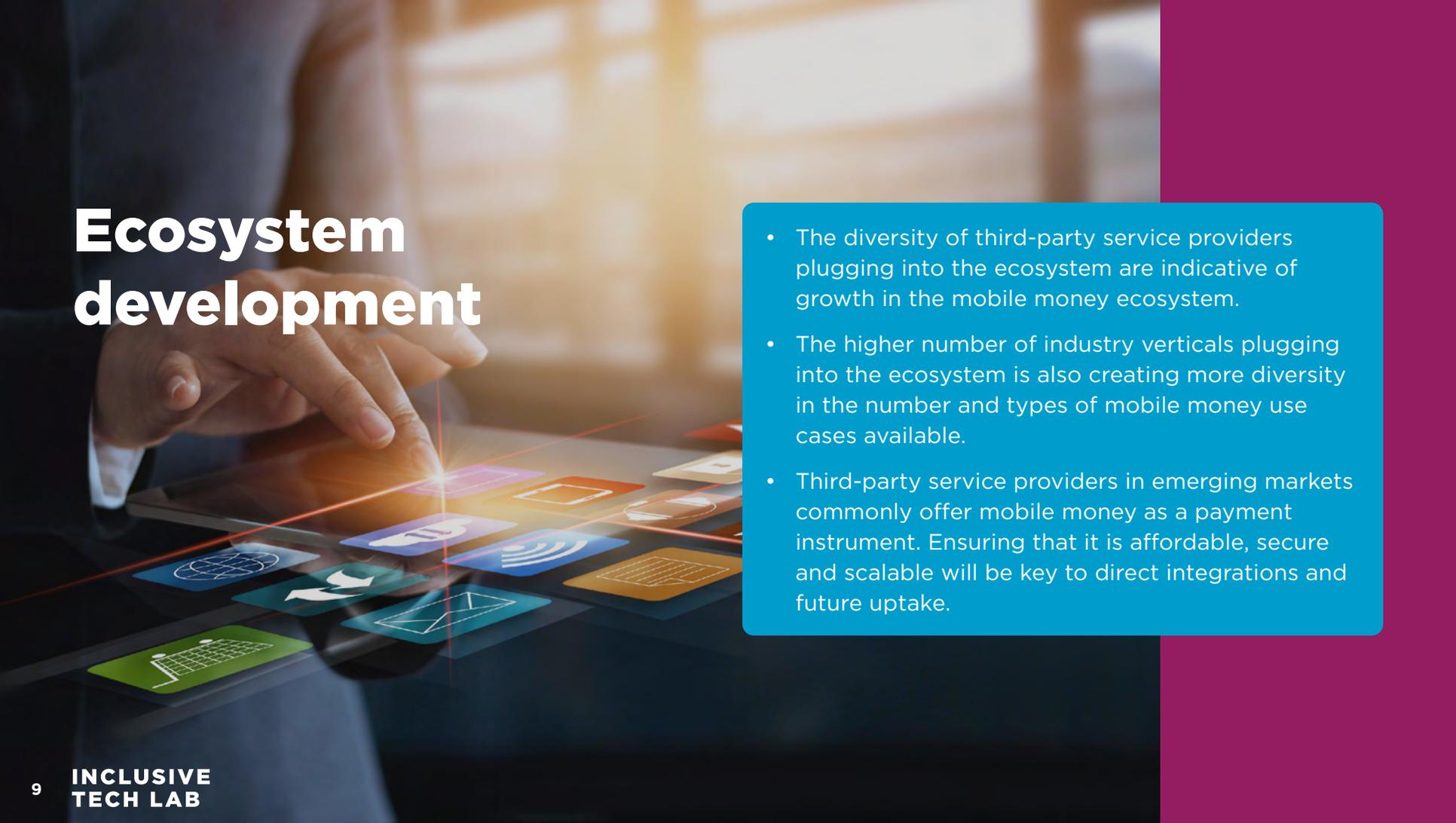
- The diversity of third-party service providers plugging into the ecosystem are indicative of growth in the mobile money ecosystem.

- The higher number of industry verticals plugging into the ecosystem is also creating more diversity in the number and types of mobile money use cases available.

- Third-party service providers in emerging markets commonly offer mobile money as a payment instrument. Ensuring that it is affordable, secure and scalable will be key to direct integrations and future uptake.

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# Ecosystem growth is solidifying mobile money as the key digital payment instrument in emerging markets

Digital payment tools offered to customers by respondents

| Payment tool | Percentage |
| --- | --- |
| Mobile money | 76% |
| Bank transfers | 47% |
| Payment cards | 42% |
| Digital wallets | 33% |
| Bill Pay | 16% |
| Other | 16% |

On average, third-party service providers offer four payment tools to end users.

Mobile money is the most commonly offered digital payment tool in emerging markets, according to respondents.

18 per cent of respondents indicated plans to integrate with an MMP within a year, a signal of the opportunity.

Increasing the use of mobile money as a payment tool is essential because other digital payment instruments are not always options for users in emerging markets.
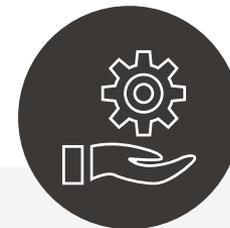
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# With 94% of respondents using APIs, they have become more relevant to mobile money use

API interactions among survey respondents



53%

41%

6%
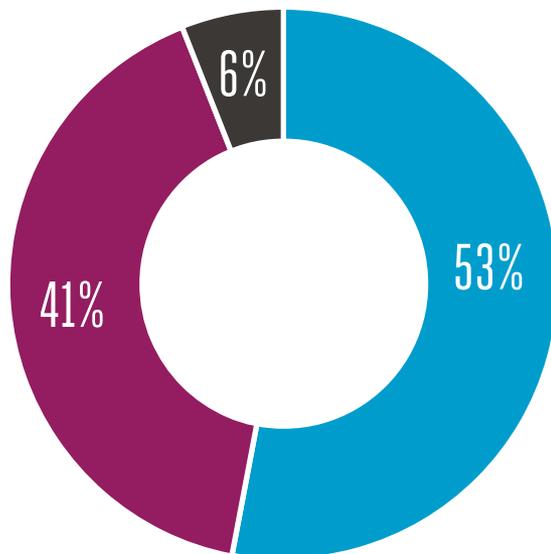
■ **Develop and use APIs**  ■ **API Consumer only**  ■ **API Provider only**
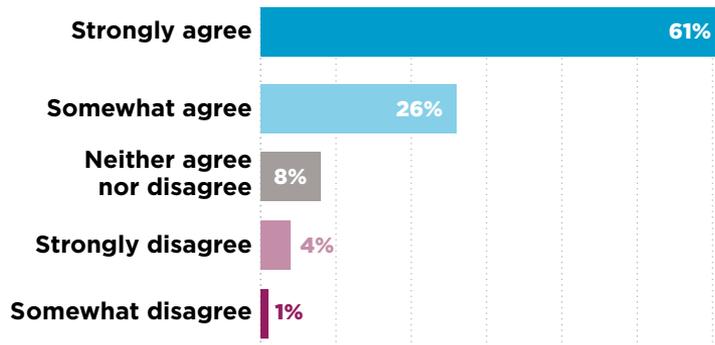
- **APIs are core to the business** of various service providers in the mobile money ecosystem.

- Third parties are also **providing APIs to improve their business.**

- By opening up their APIs and integrating with key players, MMPs have an opportunity to **capitalise on demand and increase revenue.**
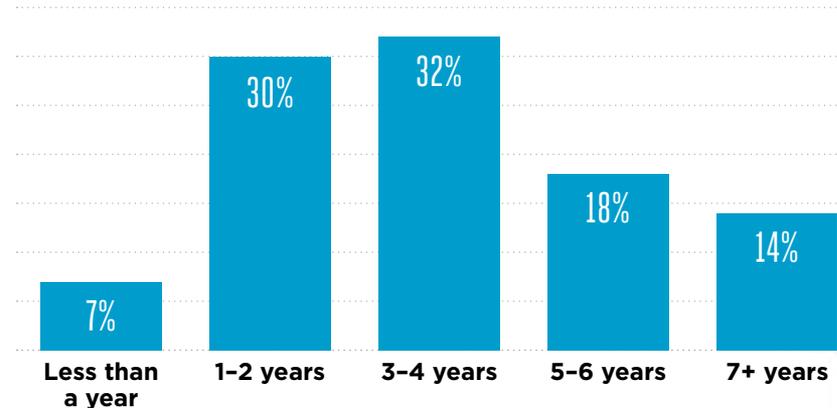
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# MMPs and third parties are prioritising and positioning API integrations to further their mobile money initiatives

## Priority level for integrating with MMPs

- Strongly agree: 61%
- Somewhat agree: 26%
- Neither agree nor disagree: 8%
- Strongly disagree: 4%
- Somewhat disagree: 1%

## Period of time respondents have been using mobile money APIs

- Less than a year: 7%
- 1–2 years: 30%
- 3–4 years: 32%
- 5–6 years: 18%
- 7+ years: 14%

- **87 per cent of third-party service providers in 12 industry verticals** are keen on increasing API integrations with MMPs.
- This highlights the importance of APIs as a tool for facilitating digital payments in emerging markets.

- The use of mobile money APIs has increased, with 69 per cent of respondents adopting them over the past four years.
- Previous findings by the GSMA indicate that 49 per cent of MMPs that prioritise ecosystem growth are using APIs.

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# According to the survey results, respondents expect mobile money to:

Serve as an omnichannel (compatible with multiple channels)

Reach a wide customer base

Reach a wide customer base

Enable secure, smooth and faster payments

Accommodate current use cases
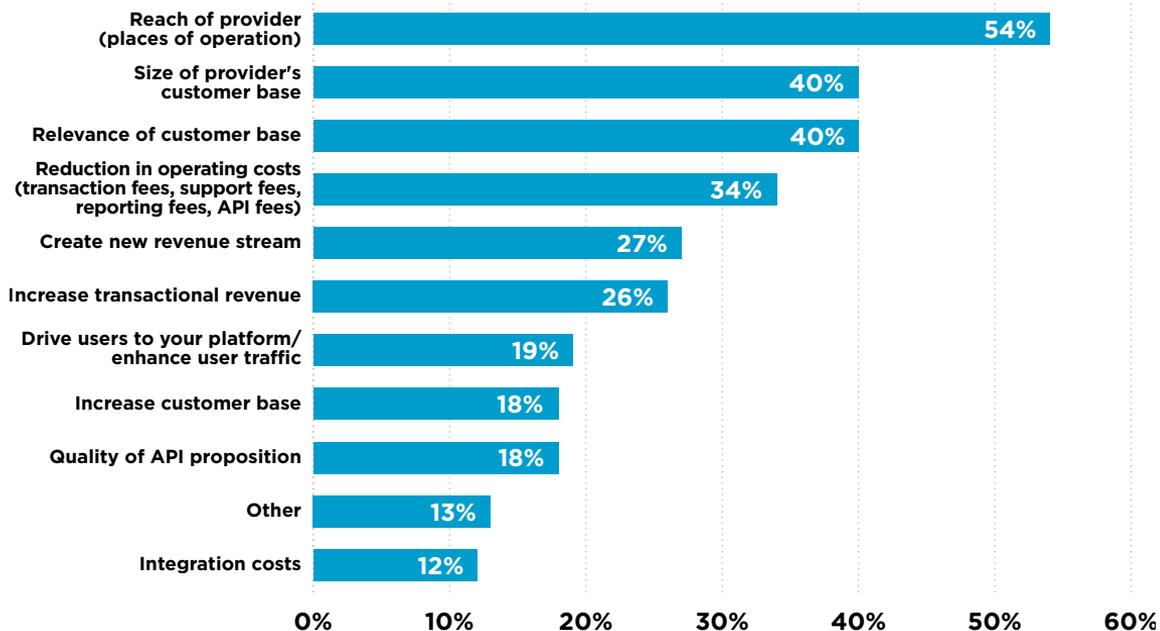
Provide opportunities for future use cases
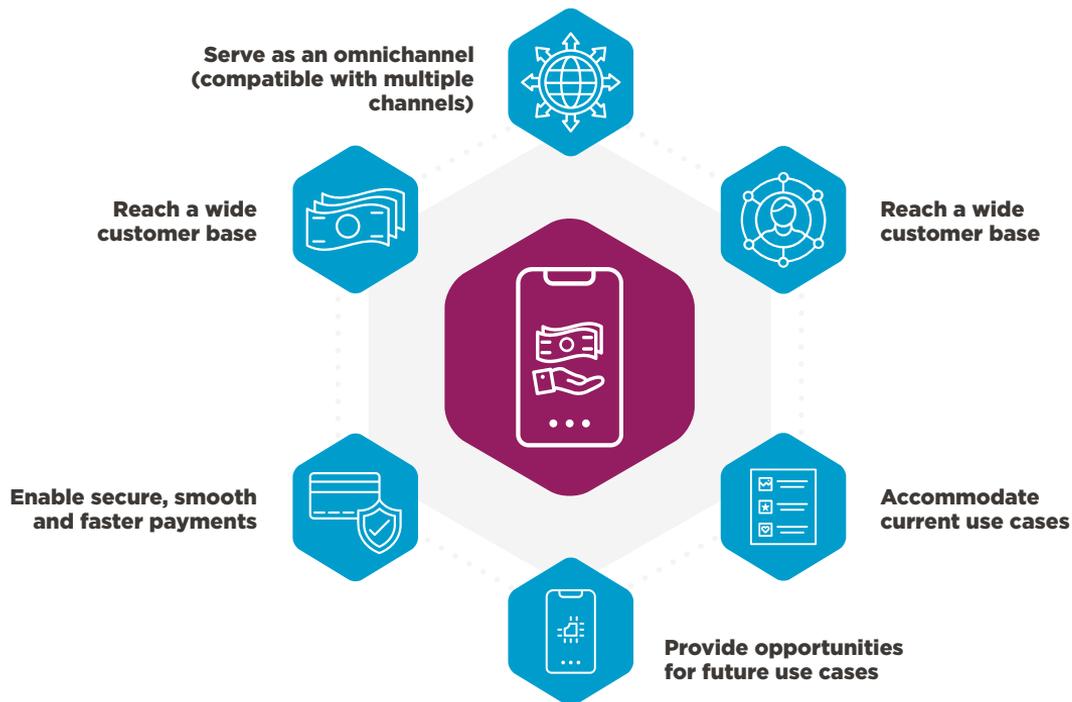
- **To become a leading payment instrument in emerging markets,** mobile money needs to fulfil various functions.

- **Respondents in emerging markets are seeking** a digital payment solution that removes friction for consumers while also providing the features they identify as important.

- **These features will encourage** third-party service providers to adopt and integrate with MMPs.

- **Although most MMPs offer some of these features,** service providers want them all.

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# MMPs have invested in distribution to reach a wide user base, which is a major consideration for third parties when selecting partners

## Main factors influencing payment instrument integrations for third-party service providers

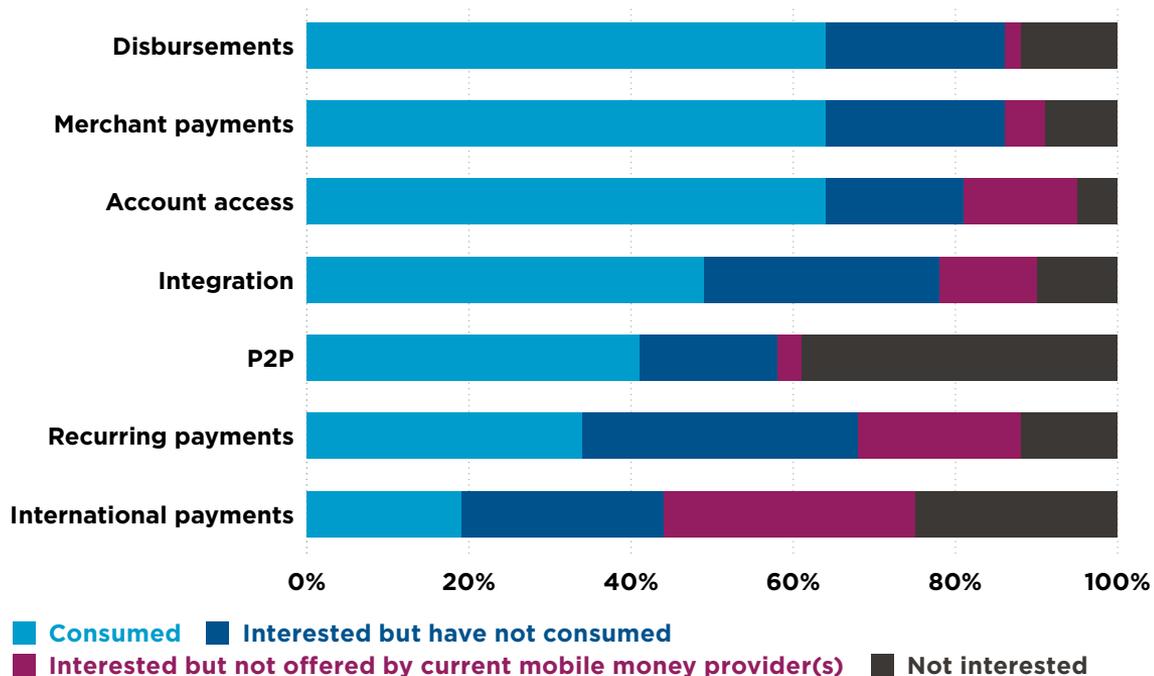| Factor | Percentage |
|--------|-----------|
| Reach of provider (places of operation) | 54% |
| Size of provider's customer base | 40% |
| Relevance of customer base | 40% |
| Reduction in operating costs (transaction fees, support fees, reporting fees, API fees) | 34% |
| Create new revenue stream | 27% |
| Increase transactional revenue | 26% |
| Drive users to your platform/ enhance user traffic | 19% |
| Increase customer base | 18% |
| Quality of API proposition | 18% |
| Other | 13% |
| Integration costs | 12% |

- **The strength of MMPs, particularly mobile network operators (MNOs),** is distribution and the ability to reach low-income people in remote areas.

- **Most service providers do not have the logistical reach** to match the distribution capacity of MMPs.

- **The reach of the provider, both in terms of where they operate and the size of their customer base,** are therefore considered powerful tools in accessing more consumers with fewer integrations.

- **Wider access to customers may influence** service use and gvenerate higher revenue for both MMPs and third parties.

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# Third-party respondents expressed interest in using more existing use cases and creating new ones to cover gaps in the market

## Mobile money use cases utilised and of interest to survey respondents



Legend:
- **Consumed** (light blue)
- **Interested but have not consumed** (dark blue)
- **Interested but not offered by current mobile money provider(s)** (magenta)
- **Not interested** (dark grey)

- **Service providers across various industry verticals** employ multiple mobile money use cases even when they are not core to their business.

- This could be evidence that **third parties are seeking to unlock new revenue** by offering products and services that use such APIs.

- **There are still opportunities to increase use cases** such as recurring payments, which **54 per cent** of respondents expressed interest in adopting in the future.

- **20 per cent of respondents are interested** in recurring payment APIs and **31 per cent** in international remittance APIs, neither of which are currently offered by their MMPs.

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# The increasingly diverse third parties plugging into the ecosystem are creating new and more diverse mobile money use cases

As more service providers enter the mobile money ecosystem, the **number of mobile money use cases is increasing and diversifying** to meet the various needs of service providers and end users.
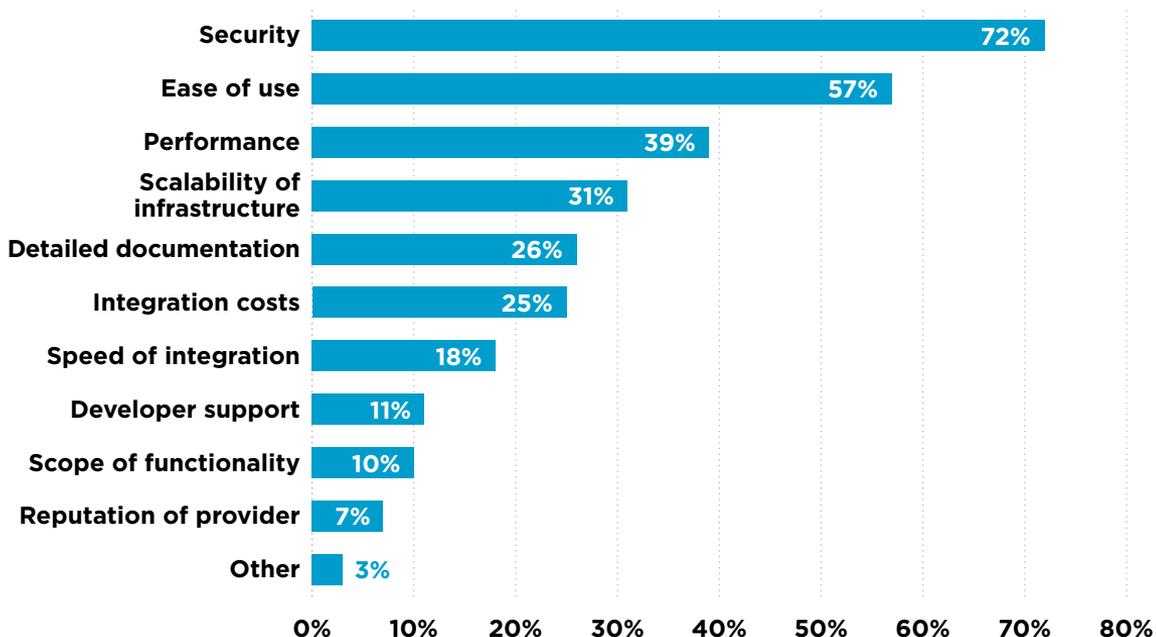
The expansion of mobile money use cases can increase the value of the sector and its economic contribution. For instance, most recipients of mobile money remittances are no longer cashing out and are circulating mobile money within the ecosystem instead, which is beneficial.

To maximise the revenue potential of open APIs, MMPs would benefit from offering all available use cases. In some instances, **third parties expressed interest in adopting use cases that were not currently offered.**

**MMPs will benefit from creating new use cases** as digitisation continues. Some third parties expressed interest in APIs that are not currently offered, such as for credit scoring and remittance collection.

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# Security, ease of use and performance were identified by respondents as key characteristics of a digital payment instrument

The most important technical integration characteristics of mobile money APIs for third parties

| Characteristic | Percentage |
| --- | --- |
| Security | 72% |
| Ease of use | 57% |
| Performance | 39% |
| Scalability of infrastructure | 31% |
| Detailed documentation | 26% |
| Integration costs | 25% |
| Speed of integration | 18% |
| Developer support | 11% |
| Scope of functionality | 10% |
| Reputation of provider | 7% |
| Other | 3% |

- As with most digital payment instruments, the **security of mobile money** was important to respondents.

- With end users in mind, other key requirements of mobile money included **ease of use and performance.**

- It was also important to respondents that **payment infrastructure could be scaled** to accommodate a service provider's future needs.

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**CASE STUDY 1**

# The integration journey of a growing remittance provider with one MMP partner

**PROFILE**
A mid-sized international remittance provider based in Southern Africa and operating in Africa, South Asia and parts of Europe

**PAYMENT INSTRUMENTS**
Bank transfers and mobile money

**API STATUS**
Provider and consumer

**MMP INTEGRATIONS**
One MMP; in the process of integrating with three others history of mobile money integrations
3–4 years

**MOBILE MONEY USE CASES**
P2P and international remittances, account access, bank-to-wallet transfers

**COMMERCIAL MODEL(S)**
Transaction fee model

**The integration process** with the first partner took nearly **2.5 years to complete**, which has slowed progress in integrating with other partners.

The business contracts took 18 months while technical integration took half a year.

The key barriers to integration have been **poor communication, extended response times** and **finding the relevant technical expertise.**

The remittance provider indicated it would benefit from:

- **Standard frameworks for processes,** especially on the business front;

- **An on-boarding dashboard** that provides notifications of progress updates, bounce notifications (error codes) and FAQs from previous integrations; and

- **A standard API** to resolve and facilitate future integrations.
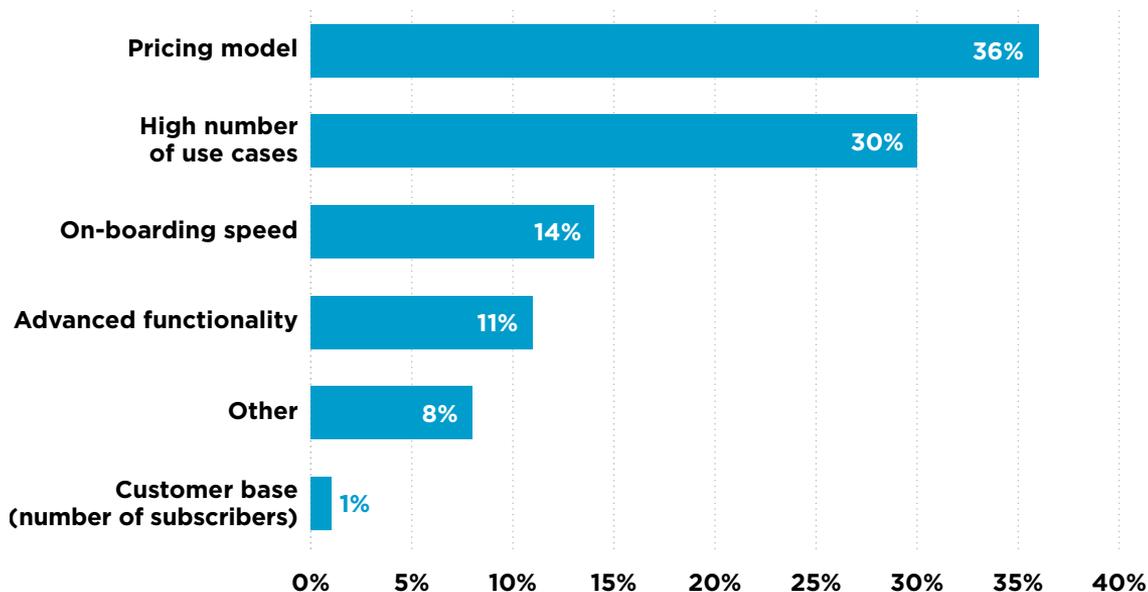
# Commercial models

- Ensuring that commercial models meet the needs of various third-party service providers and are affordable is important to increase uptake among third parties.

- Transaction fees are the most common model in the payments space and are popular among both MMPs and non-mobile money API providers.

- On-boarding fees are a barrier to entry in the mobile money industry and third parties are not typically charged on-boarding fees as an incentive to integrate with MMPs.

- Segmentation could be the key to defining suitable commercial models for various third parties in the ecosystem.

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# Pricing is key for any API-based business, including mobile money integrations. Survey respondents identified it as the first barrier to entry

The most important considerations for survey respondents when selecting an MMP partner



Bar chart: The most important considerations for survey respondents when selecting an MMP partner

- Pricing model: 36%
- High number of use cases: 30%
- On-boarding speed: 14%
- Advanced functionality: 11%
- Other: 8%
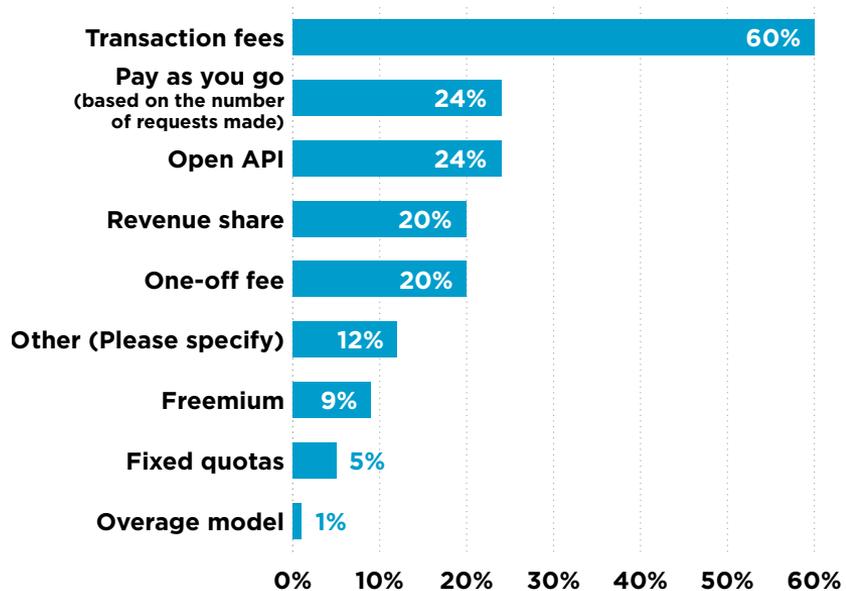- Customer base (number of subscribers): 1%

(x-axis: 0% to 40%)

- **Pricing models are important** for both API providers and consumers.

- **It is the first barrier to integration** for some third parties, especially smaller ones in emerging markets.

- **Use cases also play an important role** when selecting MMP partners. It is therefore important that MMPs **offer many diverse use cases.**

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# Although there are various models, the transaction fee model is the one respondents use most, with free on-boarding an incentive for adoption

Commercial models adopted by third parties for API integration

| | |
|---|---|
| Transaction fees | **60%** |
| Pay as you go (based on the number of requests made) | **24%** |
| Open API | **24%** |
| Revenue share | **20%** |
| One-off fee | **20%** |
| Other (Please specify) | **12%** |
| Freemium | **9%** |
| Fixed quotas | **5%** |
| Overage model | **1%** |

0%  10%  20%  30%  40%  50%  60%

- **Associated costs, such as on-boarding fees** and fees accrued from selected commercial models, affect uptake of payment APIs by third parties.

- **Free on-boarding is typically offered** to third parties that adopt the transaction fee model.

- **This is important in low-income markets** where the cost of integrations can be a barrier to entry.

- **The transaction fee model is also common** among other payment API providers, such as PayPal and Stripe.

- The model has enabled many **MMPs to become profitable**, but it has limitations.

- **To remain profitable** and cater to a growing and competitive ecosystem, MMPs have extended their offerings beyond the transaction-fee model.

- **Offering a range of commercial models** allows various revenue streams to be explored.

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ECOSYSTEM
DEVELOPMENT | COMMERCIAL
MODELS | INTEGRATION
CHALLENGES | ACCELERATING THIRD-PARTY
INTEGRATIONS | STANDARDISATION | GSMA HARMONISED MOBILE
MONEY API SPECIFICATION | BEST PRACTICES FOR
SEAMLESS INTEGRATION

# As the mobile money landscape evolves, commercial models should be defined to accommodate the business values of different third parties
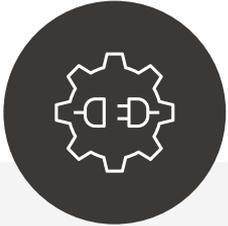
Third-party service providers are **typically integrated with more than one MMP**, increasing integration costs.

The commercial models for financial APIs in emerging markets are still being defined and pricing norms are not yet in place. Developing commercial model strategies can be challenging for some API providers; **the key is balancing business objectives and meeting the needs of their customers.**

**MMPs can align with the practices of other players in the same region and adjacent industries.** For example, they can take inspiration from established payment providers, such as Stripe and PayPal.
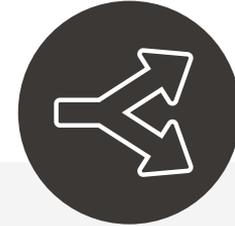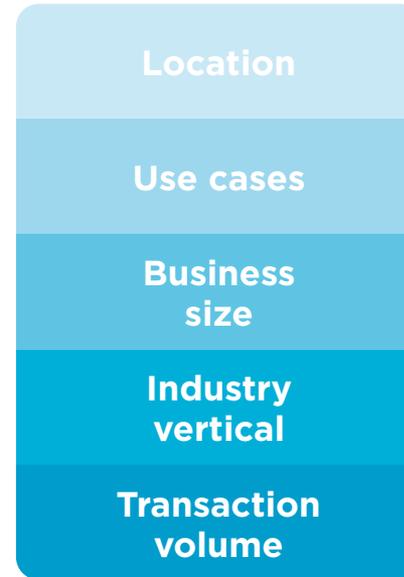
There is no one-size fits all, as every third party that uses open APIs has different needs. It is important for MMPs to **underline the business value of open APIs for third parties**, as this will determine their willingness to adopt APIs and subsequent commercial model strategies.
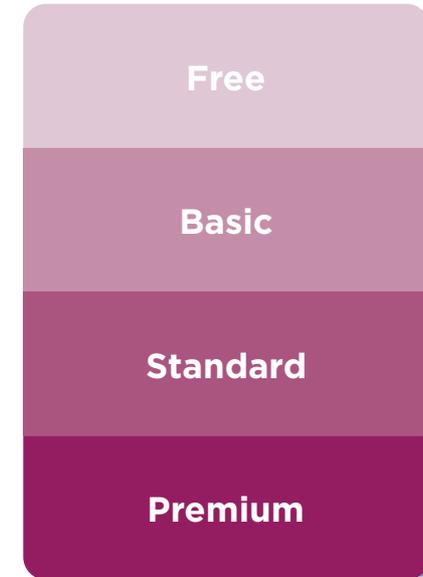
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# Segmenting customers could be the key to effective commercial models for MMPs

- Commercial models are based on various factors, which usually include **customer segmentation by business size, type and use case.**

- **In such cases, tier pricing is offered** and boosts growth. Tier pricing typically involves offering payment packages, such as freemium, basic and premium.

- **Understanding the different value drivers** for each segment allows API providers to set commercial levels for each third-party segment separately, for instance, API packages that bundle value-added services.

- **The packages illustrate important differences** between target segments, including different needs and willingness to pay. For instance, basic packages tend to offer free on-boarding and no recurring monthly payments, which can be ideal for smaller players.

**SEGMENTATION MODELS**

- Location
- Use cases
- Business size
- Industry vertical
- Transaction volume

**PRICING TIERS**

- Free
- Basic
- Standard
- Premium

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# Integration challenges

- Third-party respondents cite costs and lengthy on-boarding times as key barriers to integrating with MMPs.

- Technical and business contractual elements are extending the on-boarding process, with some reportedly taking years to complete.

- Poor communication and lack of engagement are cited as key factors in long on-boarding processes, particularly the business and legal aspects.

- Meanwhile, limited access to technical expertise, standardised protocols and formal guidance also create delays.

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# According to survey respondents, speed of integration is the greatest barrier to integrating with MMPs

Barriers faced by respondents when integrating with mobile money APIs
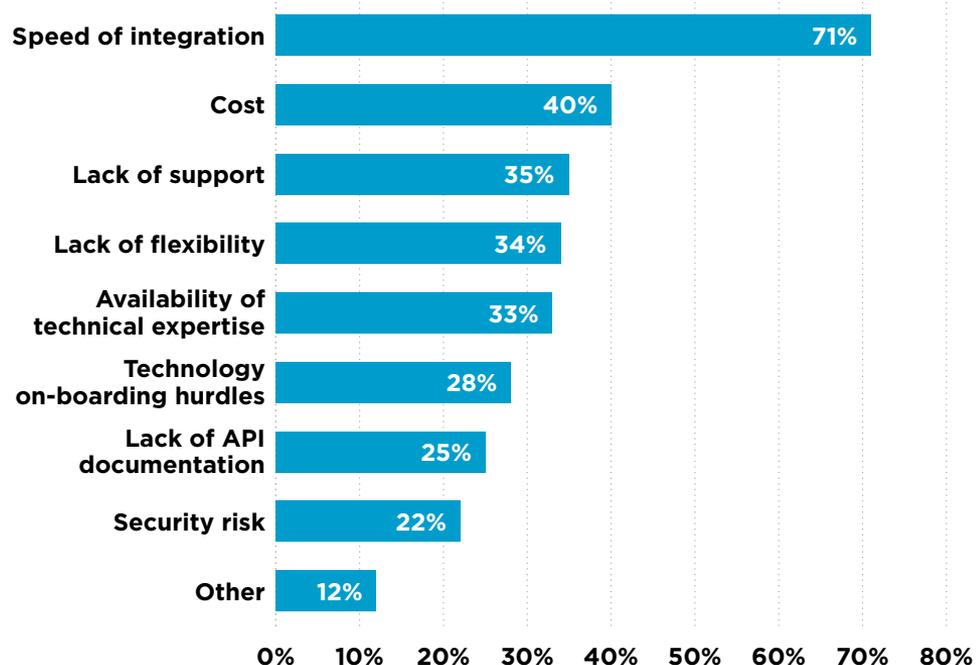


The length of on-boarding processes is perceived as a **challenge by third parties in all industry verticals.**

In addition to the **cost hurdle, lack of support from MMPs** can inhibit integration.

The **lack of flexible architecture**, which is important for scaling up, was also identified as a barrier.

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# MMPs have an opportunity to reduce on-boarding time by formalising some business and technical procedures

Length of the overall onboarding process (business and technical)

"**Support. support, support with knowledge, knowledge, knowledge.**"

56%

14%

10%

11%

8%

**1–5 days**  **6–10 days**  **11–20 days**  **21–30 days**  **31+ days**

**Technical and business contractual elements** are both extending the on boarding process, with some reportedly taking years to complete.

Respondents cite **lack of support, informal processes and poor communication** as some of the factors affecting integration.

Third-party developer teams are reportedly struggling with getting **appropriate technical assistance** from MMPs, which poses a major challenge to timely integration.

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# Respondents indicated that business integration tends to be impeded by contractual requirements, poor communication and a lack of formal procedures

## Length of the business integration process



| 1–5 days | 6–10 days | 11–20 days | 21–30 days | 31+ days |
| --- | --- | --- | --- | --- |
| 18% | 16% | 16% | 9% | 41% |
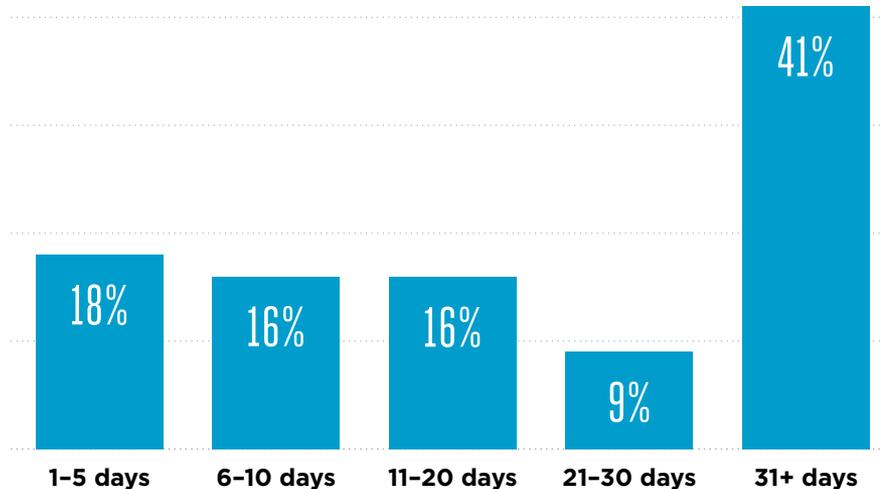
**Contractual and regulatory requirements** tend to be the main factors affecting the business integration process.

**Both processes can reportedly take more than a year** to complete.

**Various communication channels are available,** but responses to requests during on-boarding tends to be poor.

**Response times can reportedly take months,** leaving third parties with inadequate support.

**Lack of internal alignment** among MMP teams can make poor communication even worse.
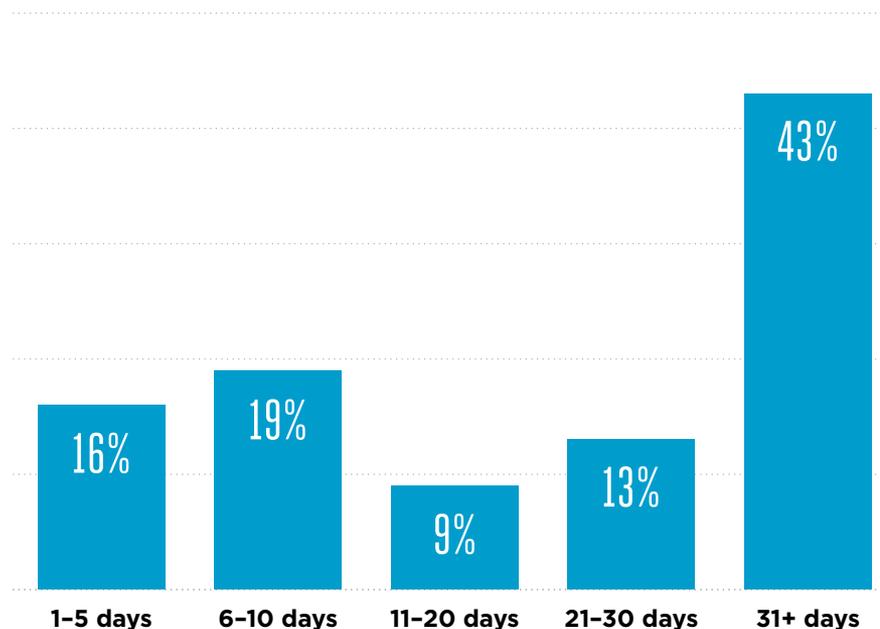
**The lack of standard documentation and formal procedures** are lengthening the on-boarding process.

**Integrations with multiple** MMPs are common for third parties, and each provider tends to have their own framework.

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# MMPs have an opportunity to reduce on-boarding time by formalising some business and technical procedures

**Length of the overall onboarding process (business and technical)**

| Period | Percentage |
| --- | --- |
| 1–5 days | 16% |
| 6–10 days | 19% |
| 11–20 days | 9% |
| 21–30 days | 13% |
| 31+ days | 43% |

**Factors affecting the technical integration process tend to be:**

**Lack of technical expertise,** which can be attributed to a lack of internal coordination.

**Lack of clear error codes** when failures occur also affect integration times. Generic codes are typically provided, but they can be difficult to analyse.

**Lack of well-equipped developer portals** and available integration tools.

**Lack of communication** from MMPs once the technical integration process begins.

**Lack of guidance documentation,** which could be used for reference to ease the integration process.
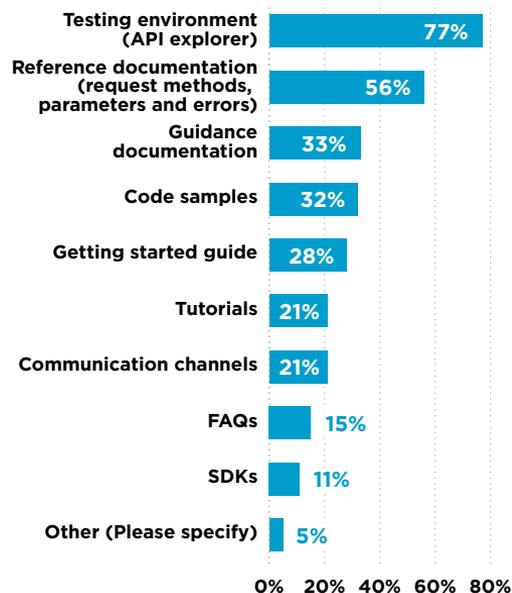
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# Accelerating third-party integrations

- MMPs can reduce friction in the API integration process for third parties in various ways.

- Providers should ensure there are multiple communication channels and that staff with appropriate expertise are available.

- Well-designed developer portals, including the availability of integration tools such as SDKs, will simplify the integration process for third-party service providers.

- A standard API will address some of the integration barriers.

- With on-boarding requirements varying by MMP, country and region, it can be a difficult and lengthy task for third-party service providers to integrate with multiple MMPs.

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# According to survey respondents, a well-equipped developer portal is the first requirement as it can facilitate a smoother integration process

## The most important components of a developer portal for respondents

- Testing environment (API explorer): **77%**
- Reference documentation (request methods, parameters and errors): **56%**
- Guidance documentation: **33%**
- Code samples: **32%**
- Getting started guide: **28%**
- Tutorials: **21%**
- Communication channels: **21%**
- FAQs: **15%**
- SDKs: **11%**
- Other (Please specify): **5%**

### COMPONENTS

- Equipping developer portals with tools such as testing environments and adequate documentation improves the experience and autonomy of third parties.

- GSMA's Developer Portal can be used by API providers for guidance on adapting and customising their developer portals.

- Detailing clear timelines and implementing notification milestones through the on-boarding user dashboard would remove the burden of communication.

### TESTING ENVIRONMENT

- A testing environment was cited as the most important component of a portal and enables developers to simulate API requests and debug applications.

- Sandbox environments, such as simulators and testing and compliance platforms, can be offered on developer portals.

- The GSMA's Simulator and Compliance platforms are available for API providers to access and reference.
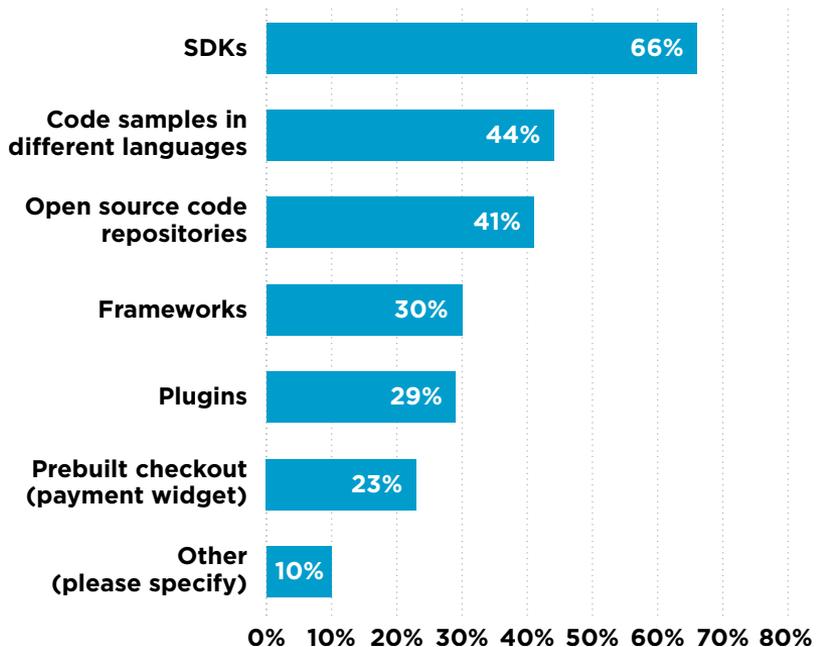
### DOCUMENTATION

- Developer guidelines and API reference documentation will shorten on-boarding processes.

- Documentation can provide a clear framework for on-boarding processes and protocols.

- API reference documentation can detail end points, error codes and headers while security documentation can describe authentication and authorisation.

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# It is important to ensure that components such as advanced development tools, including SDKs, are available in the developer portal

## Integration tools currently used by survey respondents

| Tool | Percentage |
|---|---|
| SDKs | 66% |
| Code samples in different languages | 44% |
| Open source code repositories | 41% |
| Frameworks | 30% |
| Plugins | 29% |
| Prebuilt checkout (payment widget) | 23% |
| Other (please specify) | 10% |

- **Integration tools such as SDKs** can significantly improve the integration process. This was validated by both MMPs and third parties in the GSMA's 2019 study.

- **55 per cent of third-party respondents** indicated experiencing a quicker and smother integration process when using additional tools.

- **Consistent with the findings of the 2019 survey,** libraries that are available in multiple languages can significantly improve the integration process.

- **A standard API will allow** intermediaries to contribute to the growth of the ecosystem by providing SDKs and other service layers to ecosystem players, including **open-source resources.**
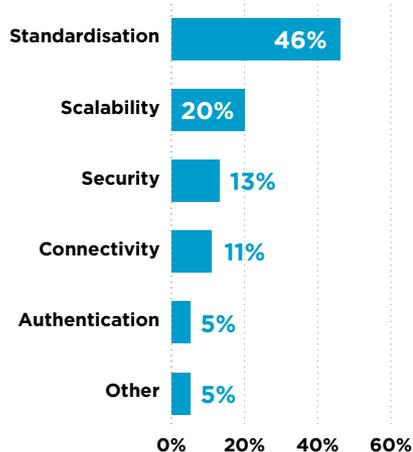
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# Standardisation

- Although mobile money APIs are becoming more widespread, the lack of standardisation is resulting in more bespoke APIs and a fragmented market.

- In a fragmented mobile money market, third parties, particularly larger organisations, must integrate with multiple MMPs (on a case-by-case basis), which tends to be a lengthy and costly process.

- API standardisation was identified as a top priority, with 92 per cent of service providers expressing interest in adopting this technology in the future.

- A standardised API can address integration challenges, such as time and costs, while also enhancing scalability, encouraging third-party service providers to adopt standard APIs .
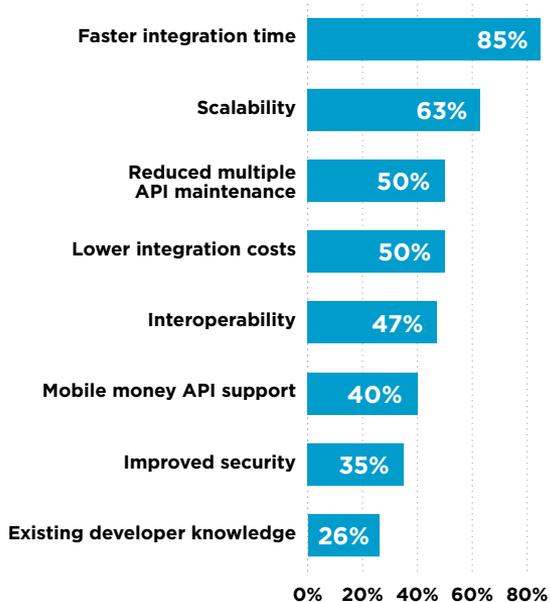
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**GSMA**

# Standardisation was identified by respondents from every vertical as the number one challenge to resolve as it can address barriers to integration

## API technologies identified as challenges to be resolved

- Standardisation: **46%**
- Scalability: **20%**
- Security: **13%**
- Connectivity: **11%**
- Authentication: **5%**
- Other: **5%**

(0% 20% 40% 60%)

## Factors that influence third-party service providers to adopt standardised APIs

- Faster integration time: **85%**
- Scalability: **63%**
- Reduced multiple API maintenance: **50%**
- Lower integration costs: **50%**
- Interoperability: **47%**
- Mobile money API support: **40%**
- Improved security: **35%**
- Existing developer knowledge: **26%**

(0% 20% 40% 60% 80%)

- **Speed and cost of integration are key barriers** for most third parties, and would influence their decision to adopt a standard API.

- **Standard APIs can offer access to multiple MMPs** through a single API for third parties and in various countries or regions.

- **Standardisation will address some integration challenges,** such as time and costs, while also enhancing scalability, which will encourage greater uptake among third-party service providers.

- **Scalable infrastructure was identified as important** to third parties and was also highlighted in the 2019 survey as a necessary feature of a payment tool.

- **Interest in scalability is an indication of the potential growth** of the ecosystem, as more third parties will seek to expand operations via API integrations.

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ECOSYSTEM
DEVELOPMENT

COMMERCIAL
MODELS

INTEGRATION
CHALLENGES

ACCELERATING THIRD-PARTY
INTEGRATIONS

**STANDARDISATION**

GSMA HARMONISED MOBILE
MONEY API SPECIFICATION

BEST PRACTICES FOR
SEAMLESS INTEGRATION

# 92% of respondents expressed interest in adopting a standard API to make integration and maintenance less complex

Respondents that believe standardised APIs will ease integration



8%

92%
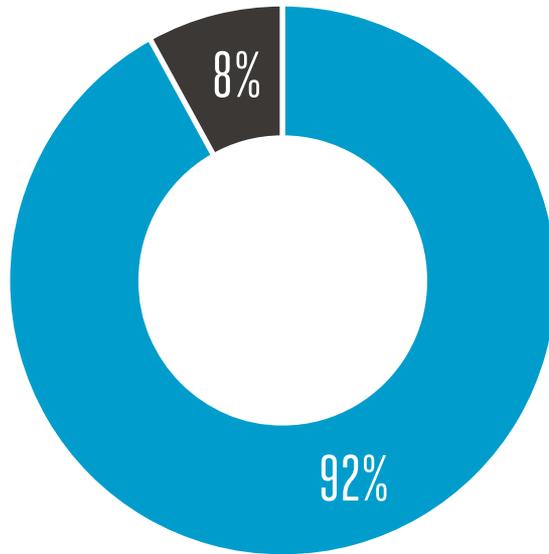
■ **Yes**   ■ **No**

**Standardising APIs** will unlock multiple benefits for the mobile money ecosystem:

**Ecosystem growth as more third-party solutions become compatible.** Having a single API will allow third parties to offer solutions quicker as they do not have to develop the infrastructure.

**A more sustainable ecosystem as it reduces the maintenance needs** of third parties while APIs evolve.

**Significantly eases documentation,** creating a better developer experience.

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## CASE STUDY 2

# The integration journey of an energy provider with 10+ MMP partners

### PROFILE
A large energy provider based in East Africa and operating in parts of Africa and Asia

### PAYMENT INSTRUMENTS
Payment cards, bank transfers, mobile money, bill pay

### API STATUS
Developer and consumer

### MMP INTEGRATIONS
10+ direct integrations

### MOBILE MONEY USE CASES
Merchant payments, account access, bank-to-wallet transfers, P2P, recurring payments

### COMMERCIAL MODEL(S)
Transaction fees and revenue share

**The integration processes** varied between partners, but they all took **months to complete.**

**Poor communication and freeze cycles that can last months** (during which no integrations can occur) have been cited as key integration barriers. **Lack of coordination and limited access to relevant staff** also creates delays. The **documentation that is provided is unclear** and leaves room for interpretation, and there is not sufficient guidance.

The energy provider believes that API integrations can be accelerated by:

- **Streamlining** business and technical integration processes;

- Having clear **integration timelines;**

- Providing **clear and relevant documents** for each process, as well as **guidance documentation**; and

- **A standard API, which would resolve and facilitate future integrations.** However, it would be expensive for this provider to move away from their existing direct integrations, which they have invested in heavily.
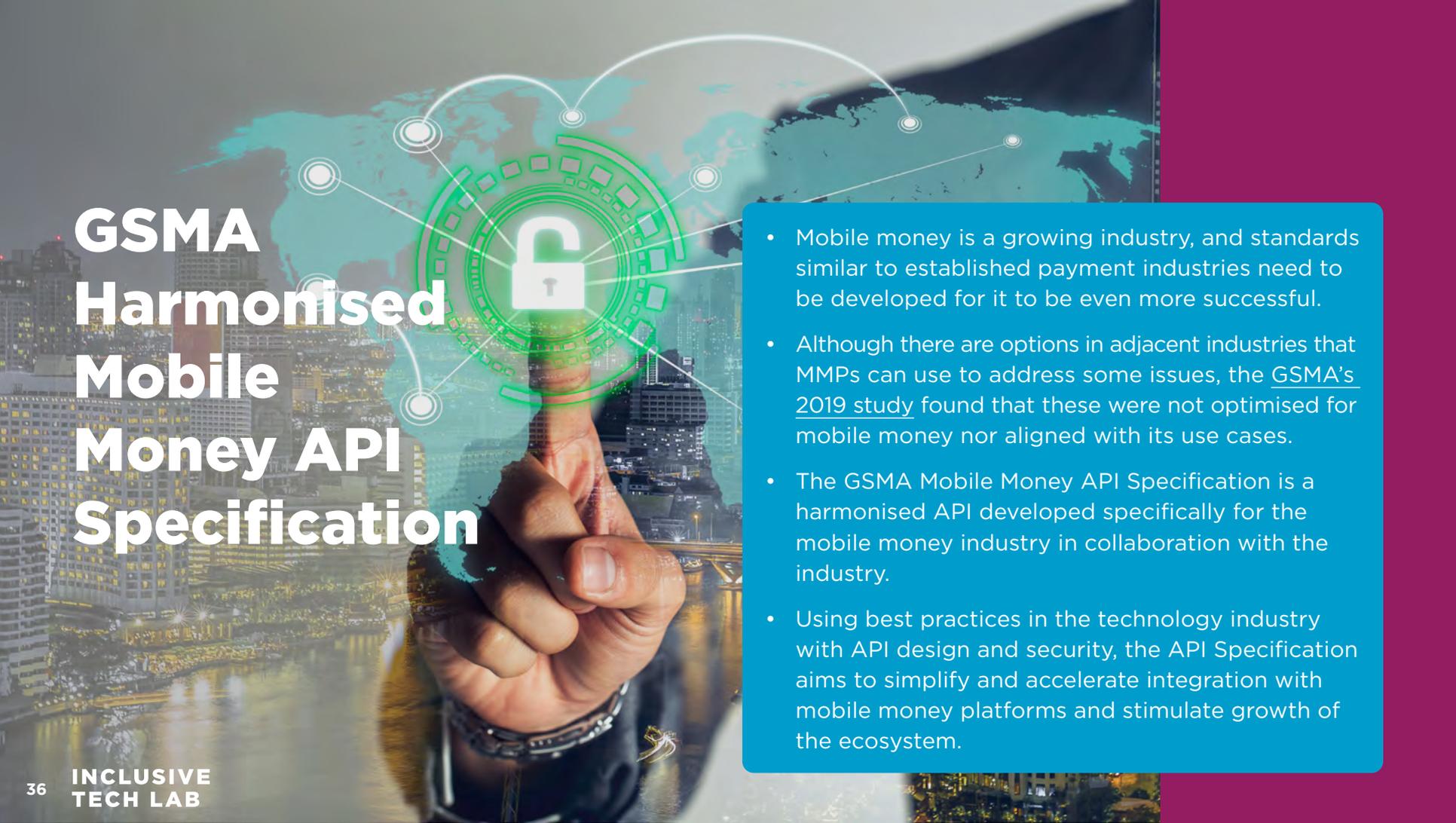
# GSMA Harmonised Mobile Money API Specification

- Mobile money is a growing industry, and standards similar to established payment industries need to be developed for it to be even more successful.

- Although there are options in adjacent industries that MMPs can use to address some issues, the GSMA's 2019 study found that these were not optimised for mobile money nor aligned with its use cases.

- The GSMA Mobile Money API Specification is a harmonised API developed specifically for the mobile money industry in collaboration with the industry.

- Using best practices in the technology industry with API design and security, the API Specification aims to simplify and accelerate integration with mobile money platforms and stimulate growth of the ecosystem.

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# The GSMA Mobile Money API Specification helps to address some of the integration challenges survey respondents experience

- **Although the reach of mobile money is growing,** it is still maturing as a financial services industry. The success of other industry sectors came with the expansion of products and services.

- This highlights the need for industry-specific solutions like a **harmonised mobile money API** – an initiative led by the GSMA.

- **The GSMA Mobile Money API Specification** is a harmonised API developed specifically for the mobile money industry in collaboration with the industry. It aims to simplify and accelerate integration with mobile money platforms and stimulate growth of the ecosystem.

### Collaborate with industry

Collaborate with the industry on global harmonisation of mobile money APIs, by and for the industry.
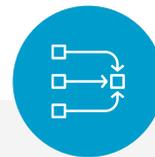
### Reduce complexity

Reduce complexity and API fragmentation to reduce costs and time to market for third-party integrations.
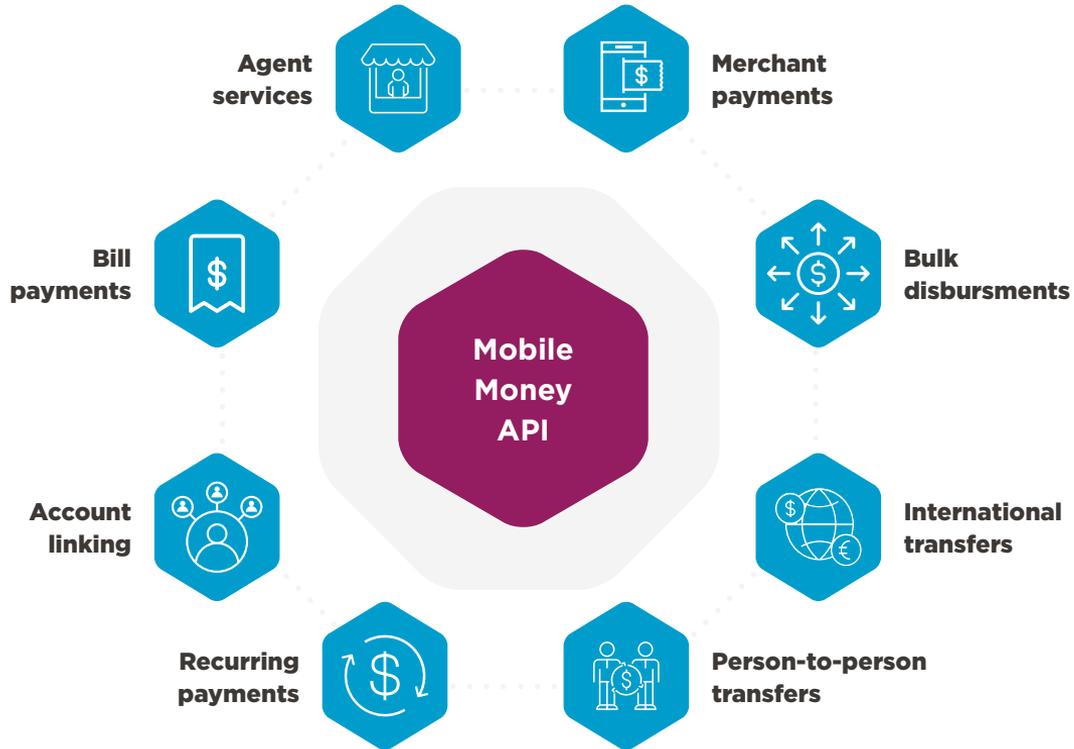
### Advance industry capability

Use best practice in API design and security guidelines to advance use case functionalities and API product development.

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# GSMA Mobile Money API Core set of Use Cases

Agent services

Merchant payments

Bill payments

Mobile Money API

Bulk disbursments

Account linking

International transfers

Recurring payments

Person-to-person transfers

**GSMA Mobile Money API Specification**

The GSMA specification provdes a generic definition of how Mobile Money APIs should function defined using OAS

**Mobile Money Provider APIs**

Concrete mobile money APIs for API use cases are provided by Mobile Money Providers for third party Service Providers to integrate with
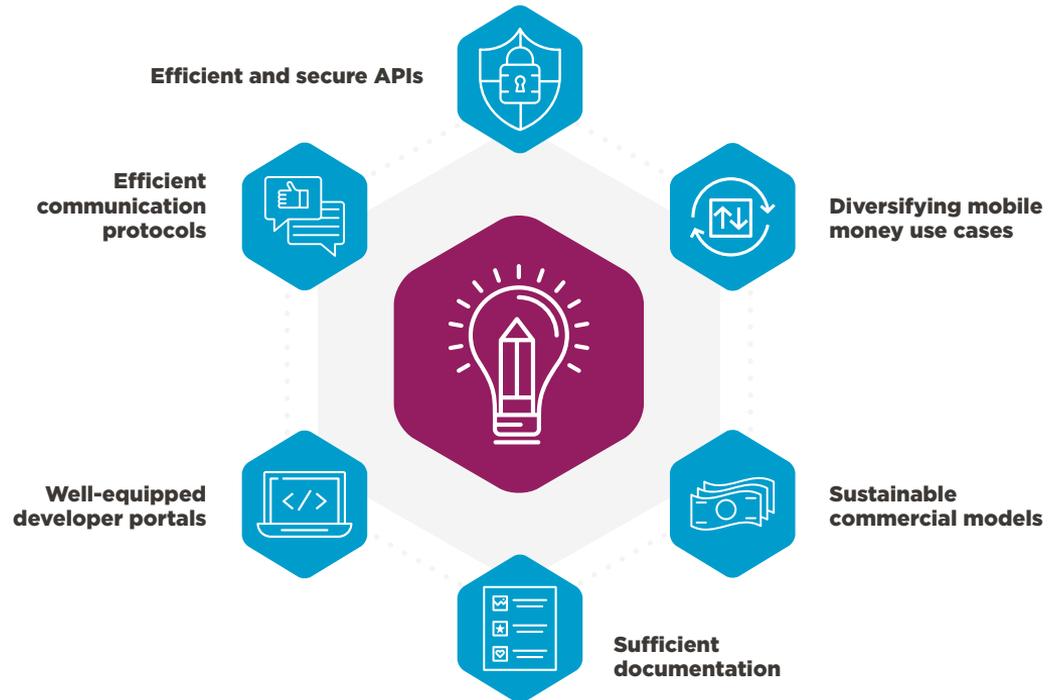
**Mobile Money Ecosystem Solutions**

End user solutions which allow end users to access mobile money services such as payments or financial services

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# Best practices for seamless integration

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# Survey respondents identified key factors that could improve third-party API integrations



Efficient and secure APIs

Efficient communication protocols

Diversifying mobile money use cases

Well-equipped developer portals

Sustainable commercial models

Sufficient documentation

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# Best practices for seamless integration

**1/2**

## DESIGN EFFICIENT, SECURE AND DEVELOPER-FRIENDLY APIS

- Using existing frameworks and standards can significantly improve the integration experience and drive usage by making APIs easily understandable and usable for a wide range of developers.

- Example: using REST APIs and frameworks such as OAS (open API specification).

- Ensure APIs are secure. Prevent malicious usage by using security protocols that support client authentication and API authorisation mechanisms beyond basic HTTP authentication, such as OAuth2 and OpenID.

## DIVERSIFY MOBILE MONEY API USE CASES

- To encourage more third-party service providers to plug into the ecosystem, MMPs should offer all mobile money API use cases currently available.

- In addition, new use cases should be created to accommodate the demand fuelled by the increase in industry verticals plugging into the ecosystem.

## DEFINE COMMERCIAL MODELS THAT ARE FRIENDLY TO ALL THIRD PARTIES

- Ensure commercial model strategies can accommodate third parties of different sizes and from various verticals, while highlighting the relevance and value of mobile money APIs to their business.

- Tiered pricing boosts uptake, and offering free tiers or testing periods can encourage greater adoption as third parties can identify models that are suitable and offer more value to their business.

- Sustainable and scalable commercial models will encourage more third parties to plug into the ecosystem.

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# Best practices for seamless integration

## PROVIDE CLEAR DOCUMENTATION DETAILING API INTEGRATION PROCESSES

- Providing documentation that details the integration process will improve third parties' experience and autonomy when integrating with MMPs, and can ultimately lead to wider adoption.

- This includes providing examples, avoiding jargon, defining all available API requests and responses, headers and error categories and codes. Creating different integration approaches for different types of third parties can help the ecosystem grow even more.

## PROVIDE WELL-EQUIPPED DEVELOPER PORTALS AND INTEGRATION TOOLS

- Enable third parties to integrate their systems with MMPs independently through self-service features.

- Ensure all documentation is available and easily accessible within the developer portal.

- Enable access to well-developed portals that feature a testing environment, such as Swagger UI, test functions for API requests and postman collections. These can all help to ensure a bug-free solution and a smoother experience for end users.

- SDKs and libraries in multiple languages can significantly improve the integration process.

## ESTABLISH EFFICIENT COMMUNICATION PROTOCOLS AND RELEVANT EXPERTISE

- Ensure communication channels are available, and that third parties receive responses in a timely manner from relevant support staff with the required expertise.

- Provide integration milestone notifications to ensure third parties are up to date on the process and timelines.

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## GSMA Mobile Money

The GSMA is a global organisation unifying the mobile ecosystem to discover, develop and deliver innovation foundational to positive business environments and societal change. Our vision is to unlock the full power of connectivity so that people, industry, and society thrive. Representing mobile operators and organisations across the mobile ecosystem and adjacent industries, the GSMA delivers for its members across three broad pillars: Connectivity for Good, Industry Services and Solutions, and Outreach. This activity includes advancing policy, tackling today's biggest societal challenges, underpinning the technology and interoperability that make mobile work, and providing the world's largest platform to convene the mobile ecosystem at the MWC and M360 series of events.

We invite you to find out more **www.gsma.com**

Follow the GSMA on Twitter: **@GSMA**

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

For more information, please contact us:

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