



# APIs: A bridge between mobile operators and start-ups in emerging markets



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Department for International Development

This document is an output from a project funded by UK Department for International Development (DFID). The views expressed do not necessarily reflect the UK Government's official policies.

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July 2016

In 2006, fewer than 400 public APIs were available globally.<sup>1</sup> Today, there are around 15,000 APIs, with 40 new ones created every week. Salesforce already generates 50% of its revenues via APIs, eBay generates 60%, and Expedia 90%.<sup>2</sup> Welcome to the new API economy.

An API, or Application Programming Interface, is what allows software programs to “talk” to one another and reach a broader audience. APIs are what allow you to share a news article on LinkedIn or send your location on WhatsApp using your smartphone. APIs are also what allow a farmer in Senegal to check crop prices via SMS<sup>3</sup> or a student in the Philippines to book their bus ride using their mobile airtime credit.<sup>4</sup> Services like these are powered by the APIs of local mobile operators.

In emerging markets, APIs are bridges between mobile operators and start-ups that launch mobile services. These bridges, if open to developers and easy to walk over, can benefit both sides. They may also have a positive socio-economic impact on the four billion<sup>5</sup> unique mobile end users of these services in emerging markets.

**As activity is ramping up in emerging markets around operator APIs, this report intends to:**

- Take a helicopter view of **operator APIs activities in emerging markets**
- Zoom into five case studies: **Globe, Orange, Dialog, Airtel, and MTN**
- Understand **what’s in it for both operators and start-ups**
- Extract some **operational lessons** from existing initiatives
- **Call mobile operators in emerging markets to adopt start-up friendly API strategies**

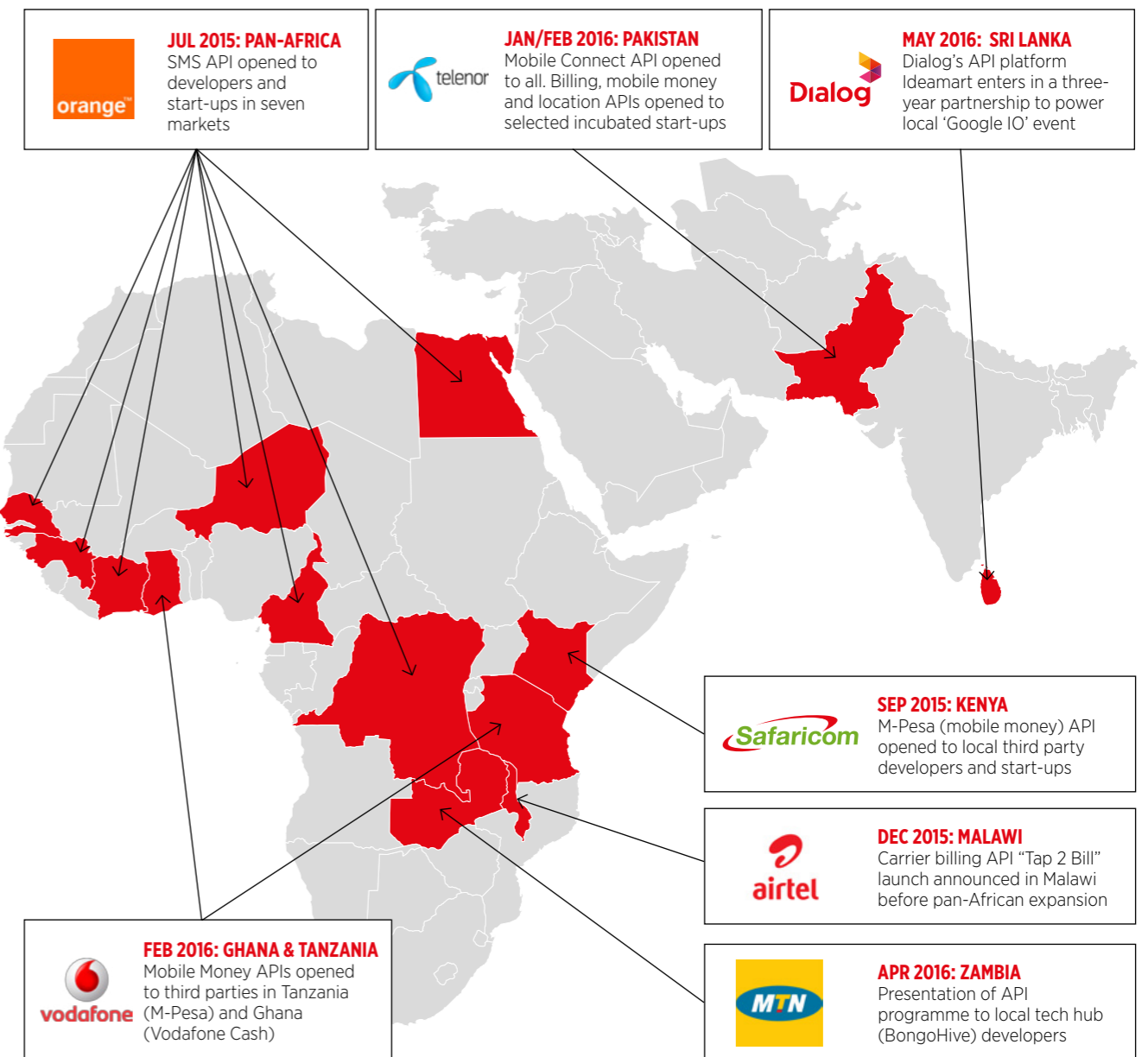
*In this report, when we refer to “open” APIs, we still assume that a minimum level of filtering or validation should be applied by mobile operators.*

# Setting the scene: operator APIs in emerging markets

In the software supporting mobile networks, operator APIs (Application Programming Interfaces) make it possible for third parties to use certain mobile network functions within their applications. As this means giving access to their core assets, mobile operators must weigh security and strategic considerations before opening their APIs. But after several years of learnings from API programmes launched by pioneering operators like Telefonica (BlueVia programme), Deutsche Telekom (Developer Garden), AT&T ([Developer Program](#)) and the GSMA (One API), most large mobile operators in emerging markets have begun to open their APIs too, such as Orange<sup>6</sup> (Middle East and Africa), Axiata (in Sri Lanka with Dialog), and Globe (Philippines). The map in Figure 1 illustrates this growing trend.

Figure 1

## Selected examples of recent operator API initiatives in emerging markets



In September 2015, Kenya's leading mobile operator, Safaricom, announced it was opening its M-Pesa API to third party developers.<sup>7</sup> Shortly after, Airtel Africa introduced a partnership with [IMImobile](#) to launch an Africa-wide billing API for local merchants called Tap2Bill.<sup>8</sup> After opening its Mobile Connect identification API to Pakistan's largest online retailer in January 2016,<sup>9</sup> Telenor Pakistan launched a new Accelerator programme (Velocity) that allows enrolled start-ups to access its billing, mobile money, and location APIs.<sup>10</sup> In February 2016, Vodacom Tanzania also opened its M-Pesa API to developers.<sup>11</sup> Three months later, in partnership with local tech hub [Bongohive](#), MTN Zambia organised two developer workshops to present its API programme.<sup>12</sup> In Ghana, Vodafone is about to open its mobile money API (Vodafone Cash) and plans to open its SMS API in the coming months.

When mobile operators begin to consider whether to open their APIs, two questions always come up: **which APIs** should we share and **who** should we share them with?

Research and feedback from start-ups and developers in our networks both clearly show that today, the most useful local operator APIs are messaging (SMS, USSD), billing (direct operator billing), mobile money, and location APIs. A Bongohive survey of 40 developers in Zambia in April 2016 confirmed that USSD and SMS were the most relevant APIs for more than 80% of them.

This shows that while the window of opportunity for basic, mainly consumer-driven operator APIs is probably long closed in more developed regions,

in emerging markets where 2G networks, feature phones, and cash payments are still dominant, this window is still open. Although the numbers are rising fast, mobile broadband penetration in Africa or Southern Asia is still well below 30%,<sup>13</sup> smartphone adoption is just reaching 25%,<sup>14</sup> and debit card penetration is only about 20%.<sup>15</sup>

In this context, and with ubiquitous mobile phones, channels like mobile messaging, operator billing, mobile money, or even cellular positioning, remain extremely relevant for emerging market start-ups to reach and charge their end users for mobile services.

In terms of who mobile operators open their APIs to, there is a clear difference between more mature markets and regions like Africa or Southern Asia. In recent years, mobile operators like Telefonica or Deutsche Telekom in Europe have decided to shift from a 'long-tail' approach (opening their consumer-oriented APIs to all start-ups and developers) to a 'short-tail' approach (targeting larger B2B internet players through customised APIs), usually working in parallel with aggregators like Clickatell or Twilio to open their consumer APIs to start-ups and small developers.

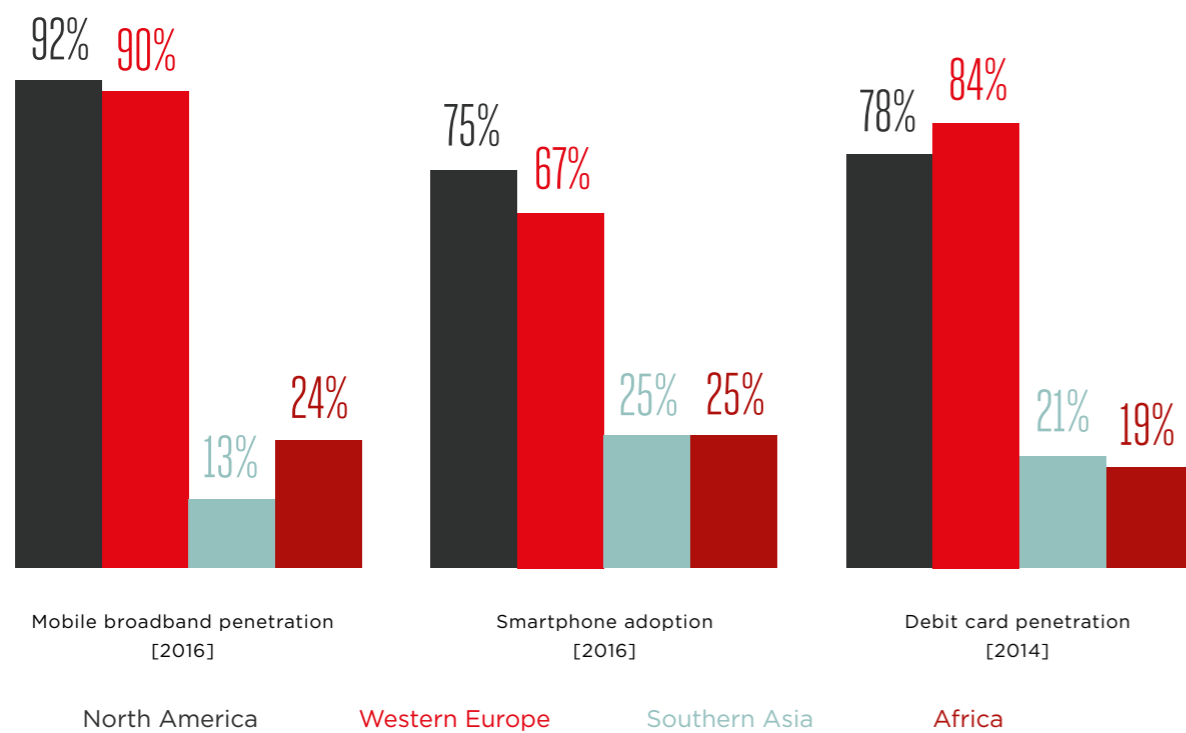
However, this shift has not really happened in emerging markets for three main reasons:

1. There are not always enough large and relevant local service providers; the 'short tail' is often too short.
2. Large API aggregators have not invested a lot in business development to reach start-ups and developers in these markets.
3. The catalogues and pricing schemes of large API aggregators are not necessarily adapted for local start-ups. Typically, global aggregators only offer SMS or voice APIs charged on a "pay-as-you-go" basis.

In emerging markets, mobile operators are some of the biggest companies with the broadest customer bases. As such, they are uniquely positioned as the go-to partners for start-ups wanting to access telecom APIs like messaging, billing, location, or mobile money to provide mobile services to their end users.

Figure 2

### Why USSD, SMS, billing, location, and mobile money APIs are so relevant in emerging markets



i. For more insights and information on mobile money APIs, please consult the [GSMA Mobile Money Programme](#).



Case Study 1

## Globe, Philippines

### Globe Labs

A pioneering API programme



#### Overview

Globe Labs manages the API programme of Globe, the second largest mobile operator in the Philippines with 54 million mobile connections. Globe Labs APIs were launched in 2008, making this API programme one of the first among emerging market operators.

Globe Labs is focusing on five types of APIs: SMS, location, billing, voice, and identity (through GSMA's [Mobile Connect](#)).

APIs are accessible to all developers through a self-service online platform.

#### Outreach and approach to start-ups

In addition to frequent meet-ups and events with local developer communities (Startup Weekend, Hackathons, TadHack), Globe Labs has forged a partnership with Samsung and organises the annual local stage of the [Samsung-Singtel Mobile App Challenge](#) (Globe is 47%-owned by Singtel), which rewards consumer-centric Android apps or solutions that leverage mobile network services.

Globe Labs also works closely with sister company [Kickstart.ph](#), a local venture capital firm launched in 2011 with 19 portfolio start-ups.

#### Charging model

Globe Labs uses a freemium model with free sign-up and 1,000 PHP (21 USD) worth of free API credit valid for one month, after which Globe Labs applies a mixed volume-based and revenue-sharing model:

- 0.01 USD/SMS, 0.05 USD/location query or minute of call
- 68% revenue share for developers.

#### Example of a start-up using the API



**Bustayo** is a mobile web app launched in February 2016 that allows users to book bus tickets, saving them the hassle of lining up at the bus terminal on the day of their trip when there is a high chance of not getting a seat. Users can book their ticket and pay a reservation fee using their mobile prepaid airtime thanks to Globe Labs' charging API. Bustayo then automatically sends an SMS to the user (using Globe Labs' SMS API) with a reservation code, confirmation of the credit/airtime deduction, and the trip details. At the bus terminal on the day of the trip, the user can pick up the ticket and pay the bus operator directly.

#### In Figures








# What's in it for start-ups?

In emerging markets, where mobile operators are the main enablers of the digital economy, operator APIs are a powerful channel for unlocking creativity and giving the start-up ecosystem a boost. Every time an operator opens a new set of APIs, it creates a powerful cycle of innovation as start-ups can combine several APIs to create new services. For example, a start-up can offer SMS-based localised content to its users depending on their city or area, and then charge them by deducting the amount from their mobile airtime. Such a service would leverage three operator APIs simultaneously: SMS, location, and direct operator billing.

Start-ups and developers across emerging markets are already building mobile services using operator APIs. We have compiled some use cases for the six most popular ones: SMS, USSD, location, operator billing, mobile money, and identity (Mobile Connect).

Table 1

### The most popular mobile operator APIs in emerging markets and their use cases

API	COUNTRY	OPERATOR	START-UP	USE CASE
 SMS	Côte d'Ivoire	Orange	<a href="#">Sycelim</a>	Sycelim created a system to manage medical insurance which connects the insurer, patient and caregiver. The solution uses the Orange SMS API to allow both the doctor and the patient to be kept up to date during the insurance approval process.
 USSD & Location	Sri Lanka	Dialog	<a href="#">Offerhut</a>	Offerhut is a USSD-based promotion platform for enterprises to advertise their offers and for consumers to query available offers (all through a single USSD short code) in their geographic area (using Dialog's location API).
 Billing	South Africa	MTN Vodacom	<a href="#">Hello Doctor</a>	Hello Doctor is a mobile-based (text or call) Q&A service with registered doctors. Patients can pay for the monthly service using their MTN or Vodacom airtime (via carrier billing APIs).
 Mobile Money	Kenya	Safaricom	<a href="#">Sendy</a>	Sendy is a USSD (on the driver's side) and iOS/Android (on the customer's side) on-demand, door-to-door package delivery mobile application. Since integrating with Safaricom's M-Pesa API, Sendy users can now top-up their accounts using M-Pesa within the Sendy app.
 Identity (Mobile Connect)	Pakistan	Mobilink Telenor Zong	<a href="#">Rozee.pk</a>	Rozee is one of Pakistan's largest online job platforms. Since March 2016, mobile users of Rozee can login directly using the Mobile Connect login solution without having to type in a login and password. Using Mobile Connect (at no cost) helps Rozee ensure the user has a valid mobile number without using a one-time-password (OTP) to verify the contact details.

Sources: Sycelim ([Startups in 5 African countries can now access Orange's SMS API](#)), Offerhut ([2014 winner of a marketing budget by Dialog Ideamart](#)), interview with Sendy (Kenya), GSMA (Mobile Connect), and start-up websites.

These uses cases illustrate the variety of solutions operator APIs can bring to local start-ups. Beyond the solutions they provide to start-ups, working with these APIs is also a first level of collaboration with mobile operators and can in some cases turn into a deeper partnership: co-branding, sales and distribution collaboration, cross-selling, etc. This reflects the "bridging" role of APIs between start-ups and operators.

Case Study 2

### Orange (Egypt and Cameroon)

#### #303# My Store A Pan-African USSD API



#### Overview

#303# My Store is a USSD shop and the latest API opened by Orange MEA (Middle East and Africa). After opening its SMS API in 2015 (available via self-service in seven Orange operations in Africa) and its billing API across most of its footprint, Orange MEA is now offering a standardised USSD API to developers and start-ups in its Africa and Middle East operations.

#303# My Store is an Africa-wide USSD portal where Orange partners can easily offer their services to every Orange customer in Africa, regardless of the handset they use. Orange handles the marketing of the #303# short code to its users, giving start-ups using the API a much wider reach.

After launching in two markets (Egypt and Cameroon) in the first half of 2016, Orange is planning to make this platform accessible to start-ups in another 5 countries in the region under the same short code by the end of 2016. Interested start-ups and developers can enquire directly through an online form on the [Orange Developer](#) portal.

#### Outreach and approach to start-ups

The Orange MEA API programme is part of a wider Orange programme on innovation and start-ups. It has a dedicated Africa and Middle East entrepreneur portal ([Orange Entrepreneur Club](#)) featuring its crowd innovation platform ([Imagine](#)), its network of incubators ([CTIC](#), [Cipmen](#), [BIG](#) etc.), an accelerator programme ([Orange Fab](#)), and a venture capital arm ([Orange Digital Ventures](#)) to support start-ups at different stages. In 2014, Orange launched the [Orange Developer Challenge](#), an annual start-up competition to make the best use of Orange's open APIs.

#### Charging model

Orange uses a volume-based model, usually charged through carrier billing.

#### Example of a start-up using the API



**MLouma** is a Senegalese start-up that has developed a web portal to connect buyers and sellers of agricultural products. In 2015, it integrated Orange APIs to build a USSD version of its web portal, which allows users without smartphones and internet connectivity to access the service. It also adopted the Orange operator billing API to offer users an alternative payment solution for the service.

When it launched in 2013 and was only available on the web platform, MLouma saw only one or two new users a day and could not offer any paid service. However, the USSD and billing APIs integration as well as Orange marketing campaign brought mLouma user base from 1K to 75K within 6 months.

#### In Figures



# What's in it for mobile operators?

Mobile operators in emerging markets are uniquely positioned to build bridges with start-ups through APIs. Beyond the macro conditions mentioned earlier (low smartphone, mobile broadband, debit card and banking penetration), mobile operators in these markets still benefit from a powerful brand image, strong sales and distribution networks, and a large customer base. This gives them a potential first-mover advantage when it comes to working with local start-ups and developer communities, ahead of other players like Facebook, Google, or Twilio.

Operators in emerging markets could see three main benefits from opening their APIs to local start-ups:

Figure 3  
Mobile operators benefits from opening their APIs to start-ups



**SHORT-TERM: Delivering more value to end users.**

More than ever, mobile operators are looking for ways to create stickiness and add value for their subscribers. Opening their APIs to local developers gives operators the opportunity to offer their customers some of the most innovative and relevant mobile services available locally. By partnering with local tech innovators and attractive start-ups, operators also have a chance to give their brand image a boost. Success could be measured by looking at metrics such as the number of new mobile services launched through the API programme and the number of end users of these services.

**MID-TERM: Partnering for innovation.** Beyond the technical benefits, opening APIs gives operators the opportunity to engage with the broader local start-up and developer community and partner with the most innovative and talented start-ups in their markets before anyone else. At a time when several emerging markets operators are considering creating investment arms (e.g. Safaricom's Spark Venture Fund, Orange Digital

Ventures, MTN's large investments in Africa Internet Holding and Travelstart), being the first to approach and partner with leading start-ups is a major benefit. To quantify this benefit, operators could look at metrics like the number of developers registered on their API platform and the number of developers actively using each API.

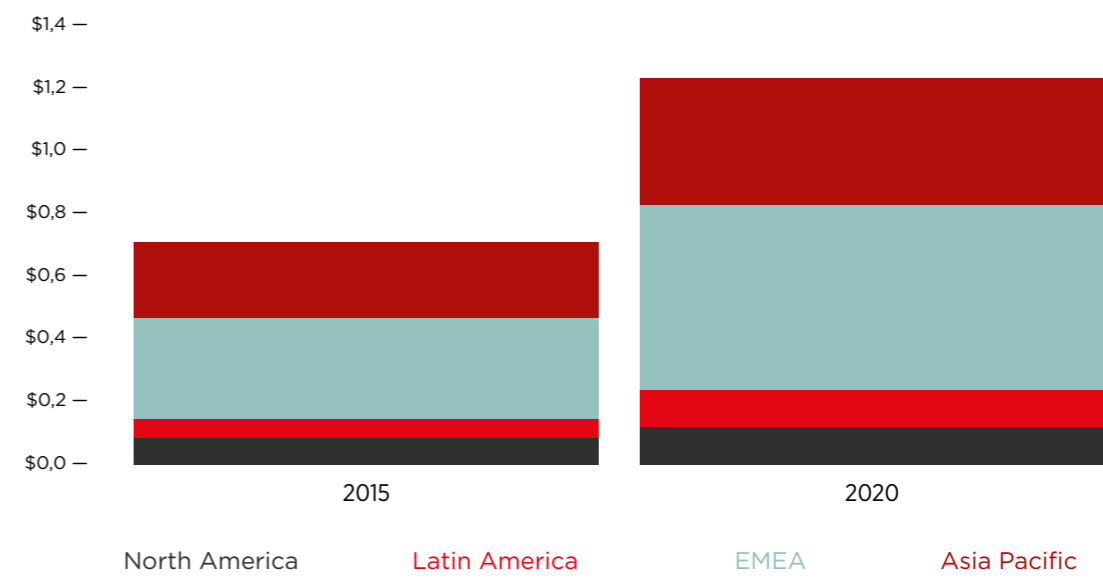
**LONG-TERM: Accessing new revenue streams.**

According to a February 2016 IHS report, the telecom API market should reach \$1.2 billion globally by 2020, up from \$702 million in 2015. This is a healthy 11% CAGR, with growth coming mainly from the EMEA and Asian regions.<sup>16</sup> While most of this revenue opportunity is driven by telecom APIs opened to the so-called 'short tail' (more established businesses, not start-ups), operators opening their APIs to all third parties (larger businesses and start-ups) also have the opportunity to unlock future revenues through fast-growing start-ups. Uber, Go-Jek, or Viber – some of the largest customers of API aggregators (Twilio, Clickatell, and Nexmo, respectively) – did not exist just seven years ago.

Figure 4

## Global telecom API revenue projection, by region

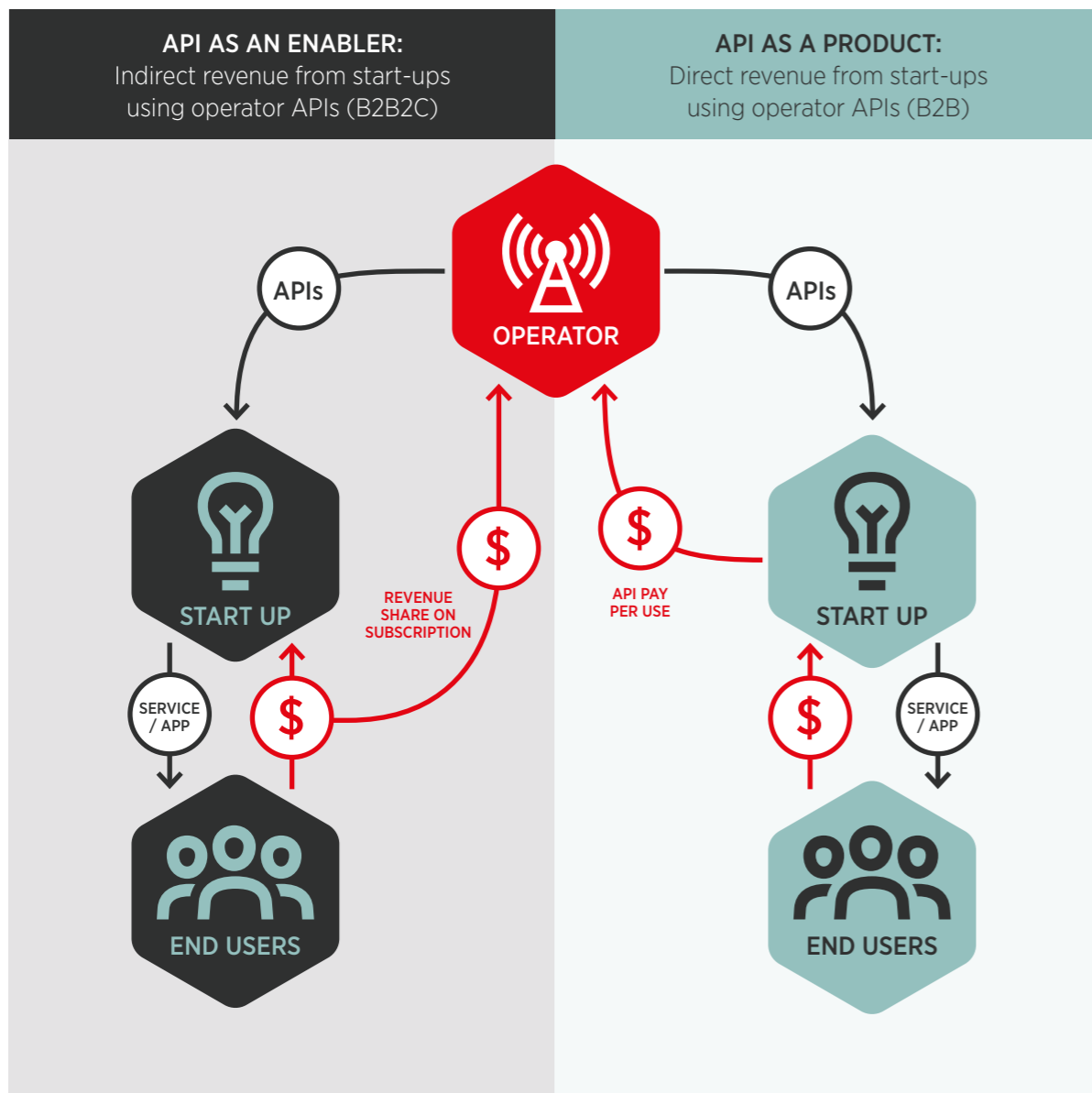
(USD billion)



Although there are two main revenue models for operators opening up their APIs (see Figure 5 below), pioneering operators around the world have learned that the revenue opportunity from start-ups is mainly indirect, through revenue-sharing agreements, but also through a rise in traffic of core mobile services (SMS, USSD, mobile money, etc.). In this model, APIs are seen as an enabler, not an end product.

Figure 5

### Operator API revenue stream models



Initially, the revenue benefit could be measured by looking at how much revenue developers generate from the use of each open API, and then operator revenue over the longer term.

Case Study 3

## Dialog, Sri Lanka

**Ideamart**  
Telecom APIs made popular



### Overview

Ideamart was created as a separate business unit by Sri Lanka's leading operator Dialog (Axiata) back in 2012 to open their SMS and Billing APIs. Three years later, Ideamart has added USSD, Location, Subscription and IVR APIs to its self-service portal *Idea Pro*. The online platform also offers non developers without coding knowledge the possibility to build simple SMS API-based applications through *Idea Apps*. Today, Idea Apps represents 60% of Ideamart's revenue.

### Outreach and approach to start-ups

To promote its APIs to Sri Lankan start-ups and developers, Ideamart is leveraging its 50+ "Agents of Ideamart" — developers who have become ambassadors and are rewarded by Ideamart in the form of free API credit for instance. Beyond the hackathons that Ideamart has organised every two to three months since 2012 (eight are planned for 2016), the team has held more than 150 outreach events for universities, schools, and business communities to showcase their programme and activities. In May 2016, Dialog announced that Ideamart was going to power Google's IO Extended event for the next three years.<sup>17</sup> Ideamart's goal with this strong outreach programme has always been to show developers and students the market and revenue potential of using Ideamart APIs for their mobile services and how to achieve it.

### Charging model

Sign-up and registration are free to create applications, after which start-ups and developers are offered a revenue-sharing scheme whereby entrepreneurs retain 70% of revenue from services using the SMS, USSD, location, or subscription APIs, while they keep at least 80% from applications using Ideamart's billing and mobile money (*EzCash*) APIs.

### Example of a start-up using the API



**Online Cabs** is a mobile-based taxi booking service in Colombo, Sri Lanka. To achieve the widest possible reach, the local start-up has partnered with Ideamart to integrate its USSD, SMS, and location APIs. Using either the USSD or SMS booking option, users can now book a taxi even if they do not have a smartphone and the Online Cabs Android app. Their location is then automatically shared with the driver through the location API. The booking fee charged by Online Cabs can be deducted directly from the user's mobile airtime thanks to Ideamart's charging API.

### In Figures

**\$270**  
AVERAGE MONTHLY REVENUE FOR SERVICES ON IDEAMART

**4,300+**  
DEVELOPERS

**8,500+**  
MOBILE SERVICES /APPLICATIONS

**\$580K**  
MONTHLY REVENUE FOR IDEAMART

**11M**  
POTENTIAL END USERS

**80M+**  
API CALLS PER MONTH





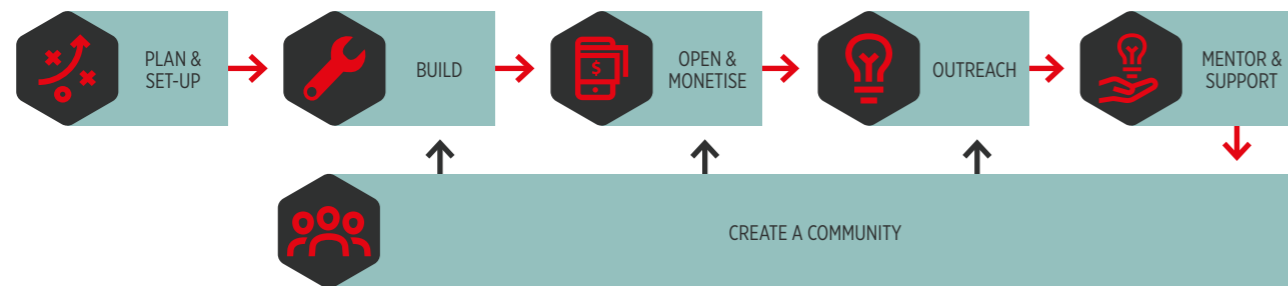
# Key lessons for operator API programmes in emerging markets

A series of interviews with operator API programme heads, start-up founders, and external consultants revealed several lessons about implementing API programmes in emerging markets.

Experience shows that when it comes to opening APIs, an operator cannot simply take a “build it and they will come” approach. We have identified six iterative stages that operators usually follow when opening their APIs to local start-ups and developers.

Figure 7

## A six-staged approach to opening operator APIs to start-ups and developers



### PLAN AND SET-UP: Design a clear strategy and empower a team with a broader start-up mandate

- Once the decision to open APIs to third parties has buy-in from management, the next step is to devise a clear and simple strategy that answers three questions: Which APIs, opened to Whom, and How?
- Operators willing to open their APIs should consider the challenge of not having comprehensive market coverage: the less the market coverage, the higher the risk of not being relevant to a developer.
- It is also important to clearly define the business model and the KPIs for measuring success (these should be linked to the three types of benefits operators could yield from API programmes: value to end users, access to innovation, and new revenue stream).
- The most successful API programmes are usually run by a separate team or even entity, for example, AT&T’s Developer Program or Dialog’s Ideamart. Team members would ideally have a developer or entrepreneurial background to ensure a good understanding of the process and collaboration with start-ups.
- As with Orange’s Entrepreneur Club in Africa, integrating API programmes within a broader collaboration effort with start-ups would promote greater outreach.

### BUILD THE API PLATFORM: Start small, use standards, and favour self-service

- In emerging markets, operators opening their APIs can usually begin by focusing on three to four core types of APIs. At Axiata Digital Services, the unit driving Axiata’s group API programme, most API traffic comes from its SMS API, while the largest chunk of revenue comes from its operator billing API.
- In a discussion with Alan Quayle, founder of telecom apps development initiative TADHack, a clear recommendation to mobile operators willing to open their APIs was to start small and simple.
- A good way to keep things simple is to use GSMA OneAPI standard-compliant APIs (available through the Open Mobile Alliance API inventory).
- Open APIs should be made available to start-ups through self-service and online, ideally with a “one-click agreement” contracting step. Time is a scarce and valuable resource for start-ups.

### OPEN AND MONETISE: Remember that APIs are enablers, not the end product

- Mobile operators in emerging markets usually opt for a freemium and revenue-sharing approach when pricing their APIs for start-ups. Any start-up or developer registering on Globe Labs’ API platform, for instance, will automatically get 1,000 PHP (\$20 USD) worth of API credit to use and will then be offered a 68% share of revenue.
- Start-ups being accelerated by Orange Fab in Côte d’Ivoire get free access to the Orange SMS API for a given time. Several operators also offer developers the use of a ‘sandbox’.<sup>ii</sup> This kind of developer-friendly approach enables start-ups to have an inexpensive first go at testing the capabilities of the operator APIs.
- Operators can also opt for a pro-developer revenue-sharing model. Start-ups using Dialog’s APIs, for instance, retain more than 70% of revenue depending on the type of API.

### MENTOR AND SUPPORT start-ups using the APIs: Provide technical support and mentoring beyond APIs

- On the technical side, our consultations with African and South Asian developers revealed that quality and fully accessible (online) API documentation is critical. A round-the-clock technical support hotline is also beneficial.
- Part of Orange MEA’s value proposition when it opened its USSD shop API, #303# My Store, was that it would handle the marketing. Start-ups using the API to offer their mobile service through USSD will have their service visible to any user accessing the unique short code, which is largely marketed by Orange locally.
- Similarly, Ideamart in Sri Lanka identifies start-ups eager to generate revenue and communicates about their service for free on its USSD broadcasting service “077 Live” until they reach their first few hundred customers.

### OUTREACH: Engage with the local developer community to demonstrate the revenue potential

- Engagement with the local developer community is vital for operators to show developers how to generate revenue using their APIs, to provide “how to” support, and present some real API use cases. This approach is often used by large internet players.
- To open APIs to the broader developer community (large online platforms, start-ups, students, etc.), pioneering operators have been investing in strong outreach efforts. Examples include in-house initiatives like the Orange Developer Challenge across Africa or Smart’s (Philippines) DevNet’s partnerships with AngelHack events.
- Operators are increasingly participating in third party developer events like the TadHack series (Telecom Application Developer Hackathon), which expanded in 2015 to Sri Lanka, Bangladesh and Turkey, with 2016 events planned for Zambia, South Africa, and Nigeria.<sup>18</sup>





### CREATE A COMMUNITY OF DEVELOPERS: Engage API users

- An operator opening its APIs through a new dedicated programme will want to turn its first customers (in this case, developers and start-up founders) into advocates and ambassadors, like start-ups do with early adopter users. One example is Ideamart’s team of 50+ “Agents of Ideamart”, a group of seasoned Dialog API users supported by Ideamart who guides the rest of the community on technical or commercial questions.
- Large API aggregators like Twilio have understood the importance of engagement from the beginning, and now benefit from a 700,000-strong developer community.<sup>19</sup>
- The developer community using operator APIs will allow the operators to gather feedback and build/open new sets of APIs that target their specific needs.

<sup>ii</sup> A sandbox is a self-contained virtual testing environment that mimics the live server production environment. It provides a shielded space where start-ups can initiate and watch their application process the requests they make to telecom APIs without touching any live accounts.





Case Study 4

## Airtel, Malawi

<b>Tap2Bill</b> A harmonised billing API	
<b>Overview</b> Airtel's Tap2Bill API project was initially introduced at the end of 2015 to enable merchants and content providers across Africa to charge end users directly through their Airtel mobile prepaid/post-paid accounts or by using their Airtel Money accounts. The operator billing API was piloted and launched commercially in Malawi in March 2016, with a plan to expand to the rest of Airtel's African markets during the year. The service is managed in partnership with third-party software service provider, <a href="#">IMImobile</a> .  In Malawi, the API is available online via self-service with a digital contract sign-up. Airtel only needs to approve the developer's request. The process takes a maximum of five working days, including the API integration time for the developer. All the documentation is available <a href="#">online</a> .	<b>In Figures</b>    
<b>Outreach and approach to start-ups</b> Airtel's outreach efforts are just getting started as the pilot phase in Malawi only ended in March 2016, but the local team has already signed up a dozen developers.	
<b>Charging model</b> The current charging model is a revenue share of 45% for third parties using the Airtel Tap2Bill API.	

Case Study 5

## MTN, Zambia

<b>BongoHive</b> API programme outreach via a local tech hub	
<b>Overview</b> MTN Zambia was one of the first MTN operations to open its APIs (USSD, SMS, billing, mobile money) to third parties through the group SDP <sup>iii</sup> platform in 2014. After integrating with a dozen third parties, in early 2016 MTN Zambia accelerated its outreach to start-ups by signing a two-year partnership with <a href="#">BongoHive</a> a leading local tech hub.	<b>In Figures</b>    
<b>Outreach and approach to start-ups</b> As per the agreement, MTN offers BongoHive's start-ups the following benefits: access to APIs, free data centre co-location space, free internet access, as well as market knowledge and technical training for developers with on-demand applications that integrate well with MTN APIs. By May 2016, MTN and BongoHive had already organised three workshops to present their APIs and supported more than 60 developers. Meanwhile, the first BongoHive start-up ( <a href="#">TeleDoctor</a> ) was integrating with MTN's SMS and USSD APIs to power their live on-demand doctor Q&A service, Hello Doctor.	

<sup>iii</sup> Service Delivery Platform: set of components that provides a service(s) delivery architecture (such as service creation, session control and protocols) for a type of service delivered to consumer, whether it be a customer or other system



# Calling for start-up friendly operator APIs in emerging markets

In emerging markets, operator APIs can still play an enabling role to unlock the growth of start-ups. This is a window of opportunity for both operators and start-ups, but it may not last. In this context, we are calling mobile operators to **open** their APIs, **harmonise** them, and **collaborate** with one another in order to seize this opportunity. In the meantime, teams behind operator API programmes need to accelerate their **outreach** efforts to educate and support the local start-up community about operator APIs and engage with them more broadly.

Figure 8

## Four recommendations for start-up friendly operator APIs in emerging markets



**OPEN.** Learning from the successes and failures of pioneering operators around the world, mobile operators in emerging markets are increasingly looking for ways to unlock the API economy and expose their assets. This is great news for local developers and start-ups keen to use the operators' universal channels to reach their respective markets and gain scale. We fully support this trend and call more operators (regional as well as local players) to look at different ways of using APIs to give the start-up ecosystem a boost. Depending on their in-house capabilities and market coverage, operators have three main options for their API go-to-market and sales approach:

- In-house API programmes
- Partnerships with a third party API management software provider like [Apigee](#) or [WS20](#)
- Wholesale models with an API aggregator (local/regional, like [Africa's Talking](#) or global, like [Twilio](#)). This last option is probably more relevant for operators with smaller market shares and limited in-house resources to drive an API programme.

**HARMONISE.** While the trend of operators opening their APIs is certainly very positive, a key pain point remains for start-ups and developers: the heterogeneity of APIs. The idea of harmonising APIs has gained a lot of traction, and there have been several attempts to do this in mature markets (e.g. GSMA's One API harmonisation among operators in the Canadian market in 2012),<sup>20</sup> albeit with mixed results. Experience has shown that while harmonising technical specifications is usually not a barrier, harmonising the commercial and contracting parts is a lot more complicated. For mobile operators in emerging markets, we recommend they study the following two options for harmonising APIs that could support innovation in local ecosystems:

- **At the operator group level:** Several operators in emerging markets have been harmonising their APIs at the group level, which has proven useful for start-ups willing to expand rapidly to neighbouring countries with similar market dynamics. Orange (SMS, USSD, and billing APIs harmonised across Africa), Axiata (launch of their own group-wide API platform, "Mobile Internet Fulfilment Exchange"<sup>21</sup>), and MTN.
- **At the industry level:** The adoption of a common platform or standards for specific APIs at the industry level is also a step towards harmonisation. This work is currently being done by GSMA's Mobile Money team, which aims to implement a mobile money API adaptor. Mobile money platform vendors would adopt the adaptor as a default configuration to enable seamless and faster integration between operators and third parties.<sup>iv</sup>

iv. For more insights and information on mobile money APIs, please consult the GSMA Mobile Money Programme. <http://www.gsma.com/mobilefordevelopment/programmes/mobile-money>



**COLLABORATE.** APIs should not be seen as end products but as enablers of innovation. The competitive differentiation between mobile operators should not be the APIs themselves, but rather their efforts to engage with start-ups and support them in key business areas beyond APIs, such as go-to-market mentoring, communication and marketing support, or co-branding, to name but a few. Operators should join forces, where necessary, to mitigate the natural advantage of network-agnostic third parties.<sup>22</sup>

- **At the global level:** The Mobile Connect<sup>iv</sup> initiative, powered by [GSMA API Exchange](#), is a recent example of operator collaboration on APIs, and has already been made available to two billion mobile users globally.
- **At the country level:** A second alternative is API harmonisation led by several operator hubs, an option whereby leading regional operators could set up API hubs for other operators to use. Earlier this year, [Analysys Mason](#)<sup>23</sup> suggested this approach when it mentioned that one "option is for a single operator to take the lead in building an API hub for multiple operator APIs". Several operators in emerging markets have been investigating this as a relevant option.



**OUTREACH.** The value is not in the APIs themselves, but in the innovative mobile services that start-ups in markets like Rwanda, Sri Lanka, Indonesia, or Egypt want to scale using operator APIs. The value will come from start-ups willing to take risks, and operator APIs will only play an enabling role if developers use them. Although this was mentioned throughout the report, we cannot emphasise enough the need for operators to have a developer outreach strategy as the backbone of their API programme.


















The GSMA Ecosystem Accelerator programme works to encourage mobile operators in emerging markets to further open their APIs to start-ups and developers, harmonise them at the group level, and collaborate. Our programme also supports operators in outreach efforts to local developer communities, allowing start-ups to unlock the benefits of operator APIs.

For more information, please get in touch at [accelerator@gsma.com](mailto:accelerator@gsma.com)

v. Mobile Connect is a secure universal login solution. By matching users to their mobile phones, Mobile Connect allows them to login to websites and applications quickly without the need to remember passwords and usernames. It is safe, secure, and no personal information is shared without permission.

**ACKNOWLEDGEMENTS**

We would like to especially thank mobile operators, external consultants, start-ups, and GSMA experts who were interviewed and consulted for this report:

			
Airtel Africa	Axiata Digital Services	Dialog Axiata	Globe Telecom
			
MTN Zambia	Orange MEA	Safaricom	Telenor Pakistan
			
Vodafone Ghana	Africa's Talking	Alan Quayle	Bongohive
			
Bustayo	Facebook	MLouma	Sendy
			
All our GSMA colleagues for their expertise and support			

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