W3C Chicago Meeting – GSMA MOBILE MONEY API

Overview of the GSMA's API initiative

API initiative and background

The mobile money API is designed the help everyone in the mobile money ecosystem speak the same technical language to enable secure, functional and rapid system communication & collaboration

In 2015, GSMA was instructed by our members to map (1) existing best practice in payments APIs and (2) any applicable standards and standard setters to conform to if useful for mobile money

In March 2016, the design of best practice Mobile Money APIs started through wide industry contribution

The first set of APIs were published October 2016, and now broad roll-out and adoption is underway throughout the industry

Roles and responsibilities in design phase

Mobile operators

- Steering API development
- Deciding scope
- Providing technical input
- Reviewing outputs

Platform vendors

- Providing feedback
- Sharing platform information
- Implementing agreed APIs as part of their solution

Third parties

- Providing requirements
- Providing feedback on output and scope
- Sharing information

Current tech situation in mobile money industry

ECOSYSTEM STABILITY

- The mobile money industry operates across multiple verticals
- Substantial work required to connect and meet diverse needs of different verticals
- Overly complex technical workload negatively affects industry growth potential

BESPOKE API WORKSTREAMS

- Mobile money platform vendors are implementing bespoke APIs
- Significant time and money is spent on 1 to 1 vendor connection solutions, which cannot be reused in most cases

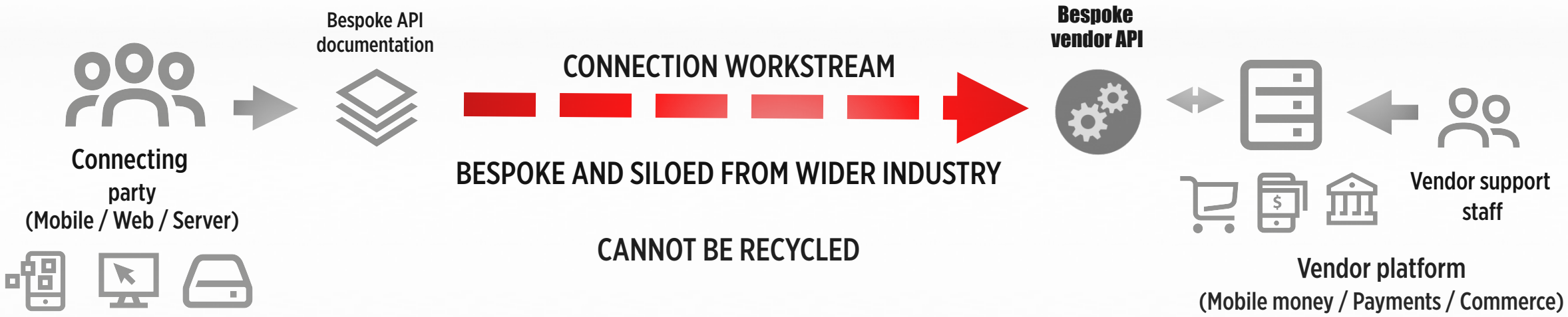
INDUSTRY FRAGMENTATION
NON STANDARD API INTERFACES

- Bespoke APIs are causing fragmentation of vendor service APIs, per platform, per service and per region
- It's also creating an unstable amount of custom APIs

CLOSED CIRCLE ACCESSIBILITY

- The industry lacks visibility around bespoke APIs
- Vendors in different verticals have problems gaining access to these APIs or to specifications
- Before considering technology, more commercial & business meetings between parties needed

Bespoke integrations are costly and time consuming



PROBLEMS & ISSUES:

NOT COST EFFECTIVE

- These engagements are often custom and bespoke, connecting individual vendors together and siloed from the wider industry
- This is highly expensive and inefficient for a single connection between two parties

TIME CONSUMING

- This connection process often requires new API modifications from the service vendor
- Bespoke APIs require the connecting vendor's development team to learn an entirely new API, and must be supported by the service vendor's support team
- Often basics such as API technical standards, documentation or code examples are missing in this process

VENDOR LOCKED

- Once the project is complete, the connection between vendors is usually custom and cannot be reused

Verticals GSMA is working with

MOBILE OPERATORS

- The GSMA works closely with its members to support industry efforts
- Operators decided the scope and capabilities the API should have, as well as key focus for ecosystem expansion

PLATFORM VENDORS

- Platform vendors supply the mobile money technology which the operators use
- They have been very involved in shaping and designing the API to be compatible with their platforms

BANKS & PAYMENT PROVIDERS

- Bank-to-mobile transactions are core to the mobile money ecosystem. Partner banks provide clearing and settlement of funds
- Regional and international payment providers, and global banks, have co-designed APIs and policies

UTILITY PROVIDERS

- Utility providers play a core part in the mobile money ecosystem and often rely on mobile money to monetize their business
- Several main providers have co-designed the API

FINTECH & OTHER

- Many companies who require vendor services have been highly supportive of the initiative
- Companies have discussed the tools they require to ensure they can add their innovation & creativity to the ecosystem

COLLABORATION

THE AIM: Cross-vertical mobile money INTEROPERABILITY & API STANDARDISATION

We are helping everyone in the mobile money ecosystem speak the same technical language to enable rapid system communication & collaboration

What's in scope for the Mobile Money API?

INTRODUCTION

The Mobile Money API is publicly available to all vendors. It covers a wide range of use cases and business arrangements that may occur within a mobile money proposition. It allows vendors to be highly flexible in which parts of the API they can use—a vendor may use only a part of the API as part of their compatibility.

SUPPORTED USE CASES & CAPABILITIES:

Visit: https://mmapi.gsma.com

TRANSACTIONS

- ✓ Adjustments
- ✓ Bill payments
- ✓ Deposits
- ✓ Disbursements
- ✓ International transfers
- ✓ Merchant payments
- ✓ Reversals
- ✓ Transfers
- ✓ Withdrawals

ACCOUNTS

- ✓ Account holder name
- ✓ Status
- ✓ Balance
- ✓ Statement entries
- ✓ Create and update debit mandates (pre-auths)
- ✓ Create & update account to account links

BILLS

- ✓ Bill payments
- ✓ Merchant payments
- ✓ View your account-associated bills

QUOTATIONS

- ✓ Request and view a quotation
- ✓ Receive single or multiple quotes

Technology standards for the Mobile Money API

SWAGGER SPECIFICATIONS

- Swagger specifications align with OpenAPI specifications
- Provides editors an easy-to-use documentation interface
- Greatly adopted by technical community
- Three years old, considered cutting edge
- Provides easy code generation tools for API connection and API gateway integration

API DOCUMENTATION

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JSON BASED

- JavaScript Object Notation
- Lightweight descriptor language
- Vast adoption by technical community
- Less memory overhead than other formats (XML)
- Strong mapping support for Object Orientated Systems
- Perfect for data exchange

API COMMUNICATION

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RESTful SERVICES

- Industry-wide adoption since 2011
- Developer & development centric
- Supports a wide range of security, access and routing technologies
- Faster and less complex than other options (SOAP)
- Stateless operation & easily scalable
- New trend towards using REST-based APIs

API ARCHITECTURE

How is the GSMA supporting the Mobile Money API?

GSMA API SPECIFICATION

- Designed with industry collaboration
- Uses modern technologies to provide a modern API to existing platforms
- Covers a wide range of use cases for a wide range of industry adoption
- Fully flexible and adaptable to a wide range of scenarios
- Provides a common way for developers to access different platforms and company services

DEVELOPER PORTAL

- Designed to be accessible to the wider public, free to sign up and gain access
- Allows users to access API specification and obtain a means to access a real live staging area
- Gives developers the opportunity to test the API for their needs and build prototypes
- Provides a forum to engage the community, quick start guides, SDKs and code examples
- Allows developers to get started quickly

COLLABORATION PORTAL

- Designed for commercial work streams and industry teams
- Invitation-only portal with both public and private work areas where industry teams can collaborate on their work effectively
- Provides a public industry area where everyone can contribute to the future of the Mobile Money API
- Provides Mobile Money API oversight by the GSMA, to the industry where requested

Additional Mobile Money API tools and events

SDKs & CODE EXAMPLES

- These help developers of websites, mobile apps or platforms to connect to vendors who have adopted the Mobile Money API standard for their platform
- These also help platform vendors connect to other platforms
- Gives start-ups and indie developers the opportunity to work quickly with the API

STAGING ENVIRONMENT(S)

- Provides real access to a staging environment set up by true industry heavyweights
- Gives developers the opportunity to work with and test all facets of the API
- Provides a way for companies to innovate on a proof of concept mobile app or website

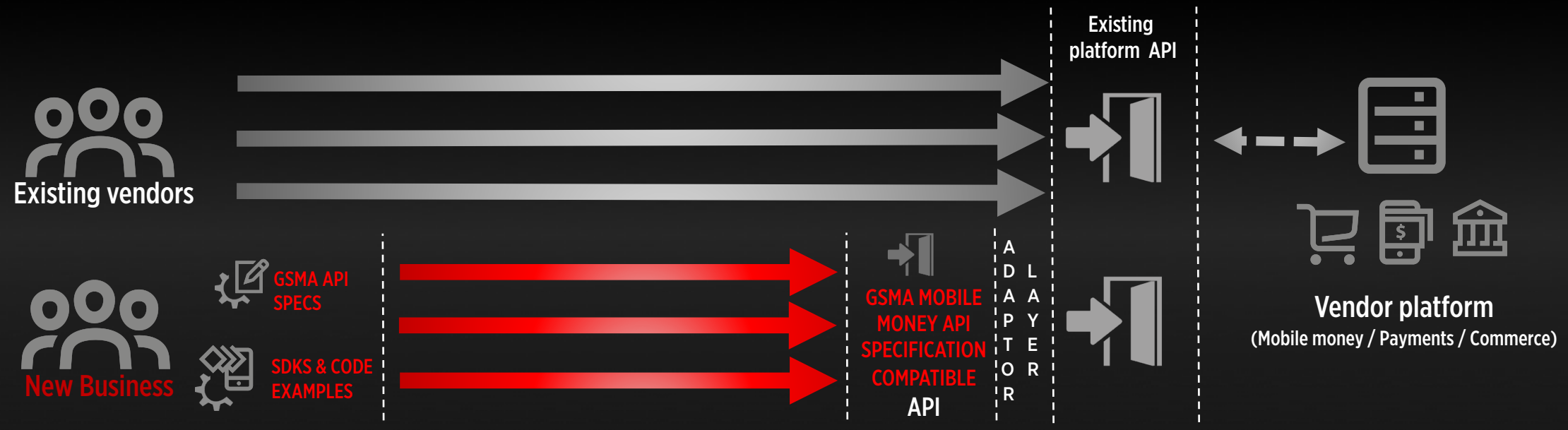
HACKATHONS & EVENTS

- The GSMA is hosting hackathons based around the API with industry support
- The GSMA is attending several global conferences to discuss the Mobile Money APIs with industry and wider technical community

BEST PRACTICE & SECURITY GUIDELINES

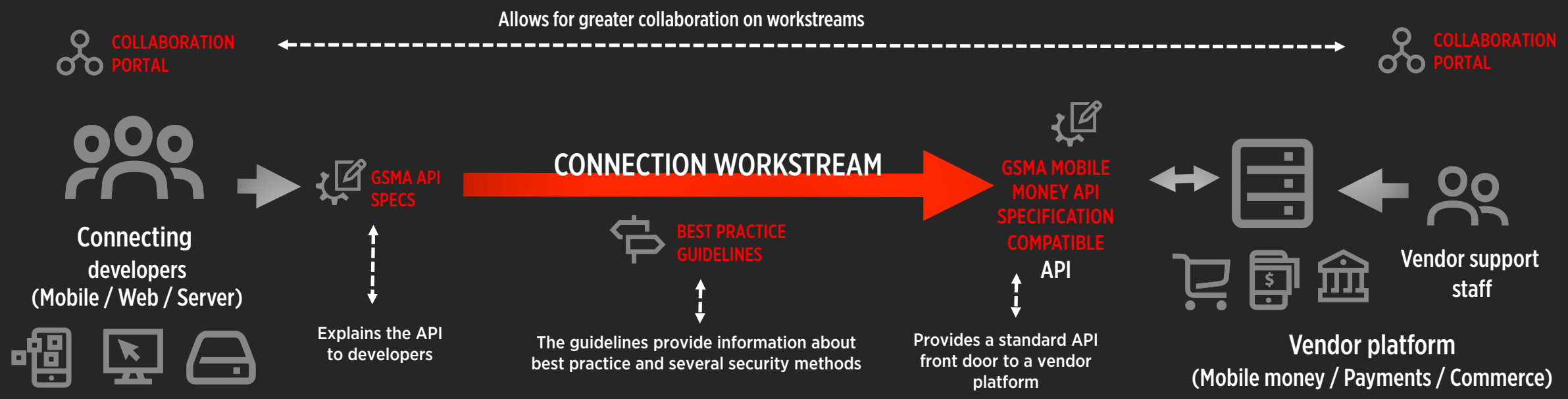
- The GSMA has provided a set of guidelines for vendors to adopt the API and will continue to update these in line with the latest industry trends
- The GSMA has done extensive work into the security impacts of the ecosystem and provided these free of charge to the public, as well as facilitating workshops with multiple vendors to provide faster adoption

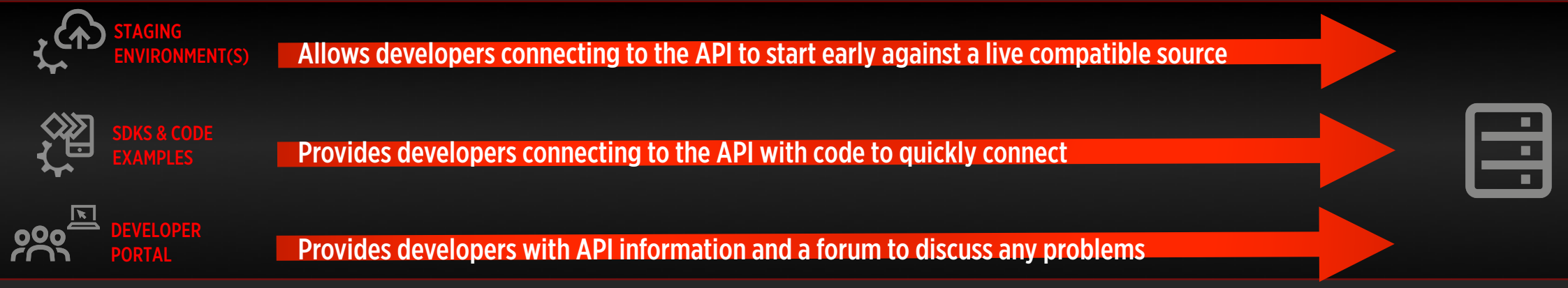
Adoption and compatibility: how it works



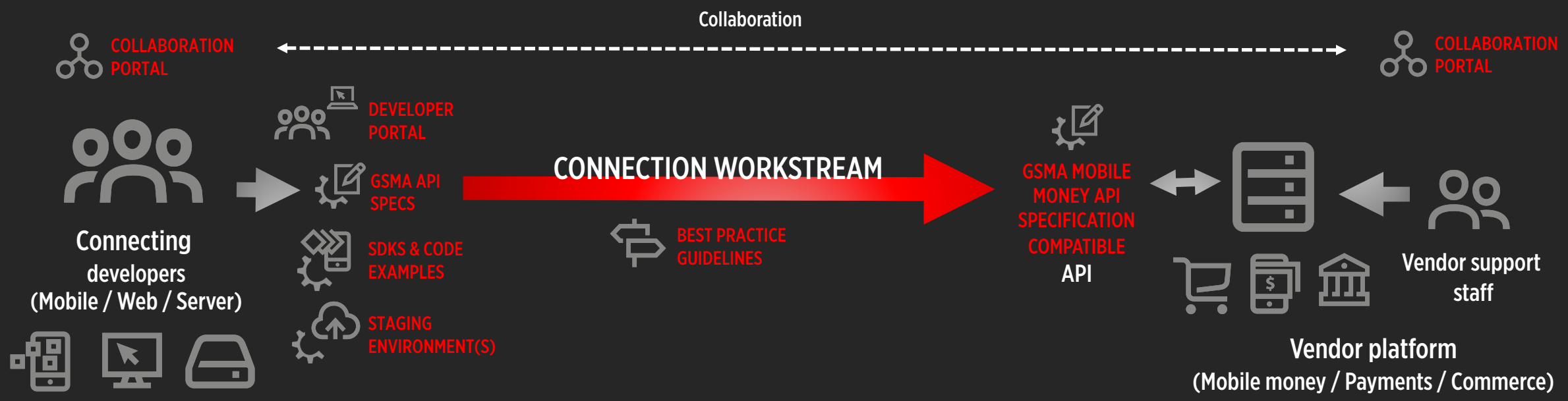
- When adopting the Mobile Money API, the adopting vendor is not expected to change or remove their existing API, as they will have existing business and technical dependencies against this
- The vendor platform seeking COMPATIBILITY with the Mobile Money API creates an adaptor layer (a data translation layer between two data formats) and presents the Mobile Money API as a new way (additional to their existing API) to access their platform
- This new way of accessing their platform is supported by additional tools provided by the GSMA

How does the Mobile Money API and its tools work together?





How does the Mobile Money API and its tools help the ecosystem?



OPEN & ACCESSIBLE

- Providing an API standard for multiple verticals & parties
- Open access to GSMA dev portal, SDKs and staging environment for the wider ecosystem
- Using latest technologies to enable new technology movements

INTEROPERABLITY

- Via an industry standard API specification
- One connection to a compatible vendor means workstream compatibility against multiple vendors
- Using the API standard to connect, vendors have a wider market for potential connecting vendors

SPEED TO MARKET & ENABLEMENT

- Compatibility means speed to market is faster
- Workstream for connecting party can be recycled for multiple compatible vendors
- Using the GSMA API SDKs, portals and best practices mean technical teams have early documented visibility

The Mobile Money API and other standards

Mobile Money API version 1.1

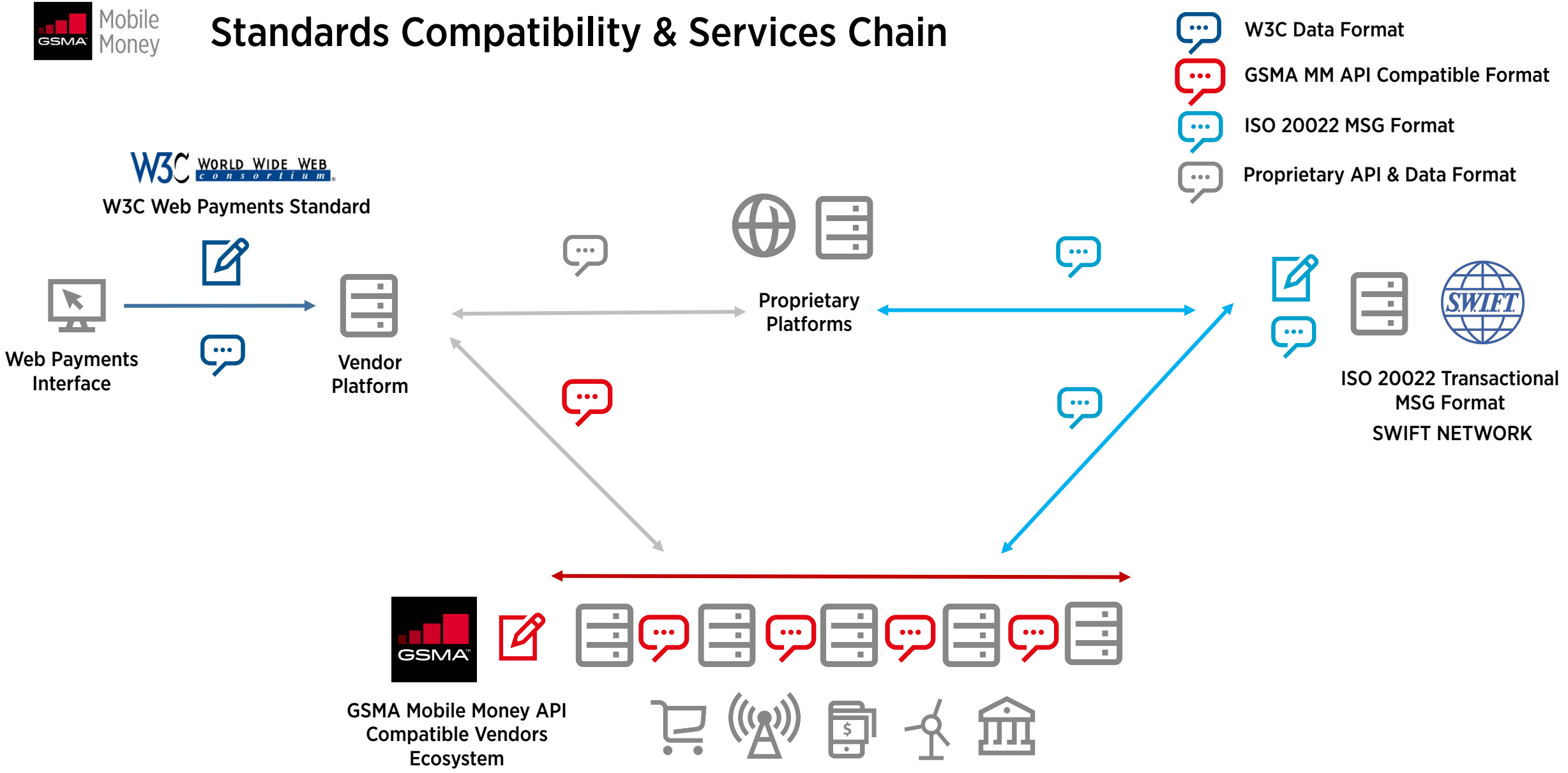
- The GSMA is currently working with SWIFT and ISO to ensure ISO 20022 compatibility
- We expect this minor release update to be available to the industry in Q1/Q2 of 2017

Recognising other standards & initiatives for V2.0

The GSMA is looking at other payment standards, proposals and regional initiatives to ensure we are both contributing to and confirming compatibility against the Mobile Money API. We are currently working with and researching the following for compatibility:

- The GSMA is currently in discussions with the W3C group to ensure synergy between the Mobile Money API and the new web payments standard currently in Draft 1.0
- We are also closely engaged closely with SWIFT & ISO, taking advice from both our industry-wide Mobile Money API working group and SWIFT on which standards are a priority for compatibility. The API is already compatible with a wide range of ISO standards and we are ensuring we are forward-thinking of any future standards or changes that should be a part of future API versions
- The GSMA is monitoring developments in India concerning the new Universal Payments Interface.
- To date (Q4 2016) we have performed initial capability and data model mapping to ensure any platform vendor who adopts the Mobile Money API will be compatible with UPI's services should they need to facilitate engagement with the service

Standards Compatibility & Services Chain



Working together for industry growth and financial inclusion

GSMA MOBILE MONEY API

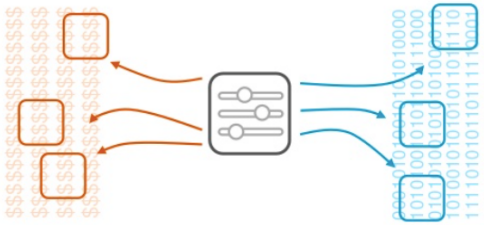
- Leading an industry effort for harmonised mobile money APIs, to eventually to reach a common industry standard
- Creating a plug & play ecosystem, with tools to accelerate connected platforms

TECHNOLOGY PLATFORMS

- Developing technical platform solutions and concepts for financial inclusion
- Technology platform and hardware deployments, facilitating interoperability and use of new technology (e.g. blockchain)

OPEN API INITIATIVE

- Working with industry stakeholders to promote open APIs for payments and beyond (e.g. datasets)
- Advocating for publicly-accessible APIs to aid the industry



Mobile Money API-compatible vendors

GSMA COMPATIBILITY LIST

To highlight efforts undertaken by vendors in ensuring compatibility with the Mobile Money API, we will be providing a public list of compatible vendors on our website. This list will:

- Act as a directory for those seeking compatible vendors
- Detail the exact compatibility service list for a given company

Mobile Money API Compatible 2017

2017

Q1

Q1 Submissions
Q1 API Tests

Q2

Q2 Submissions
Q2 New API Tests
Q1 Compatibility List Published

Q3

Q3 Submissions
Q3 New API Tests – Q1 List Retested
Q2 Compatibility List Published

Q4

Q4 Submissions
Q4 API Tests – Q2 List Retested
Q3 Compatibility List Published

Compatibility requirements

The following requirements must be met for the GSMA to undergo API testing for confirmed compatibility:

- Compatible API must be serviced by an available staging environment with suitable test data provided
- The entire API specification should be modified to highlight available services and example payloads provided
- Agreement that the GSMA will be informed of changes to the compatible services within the six-month publication cycle

Impact of widespread API compatibility

ECOSYSTEM RAPID EXPANSION

- Provides a common language and interface that everyone understands
- Reduces time & cost overhead in connecting to another party and having a party connect to you via common language

STANDARDISED API & INTEROPERABILITY

- Has one common industry standard, so industry can focus on collectively improving one standard
- Industry collaboration ensures bilateral compatibility and compatibility with other standards and initiatives

RAPID WORKSTREAM ENABLEMENT & RE-USE

- Provides the technical tools needed to accelerate connections
- Using a common API means once you connect to one vendor, you can connect to anyone else supporting the API

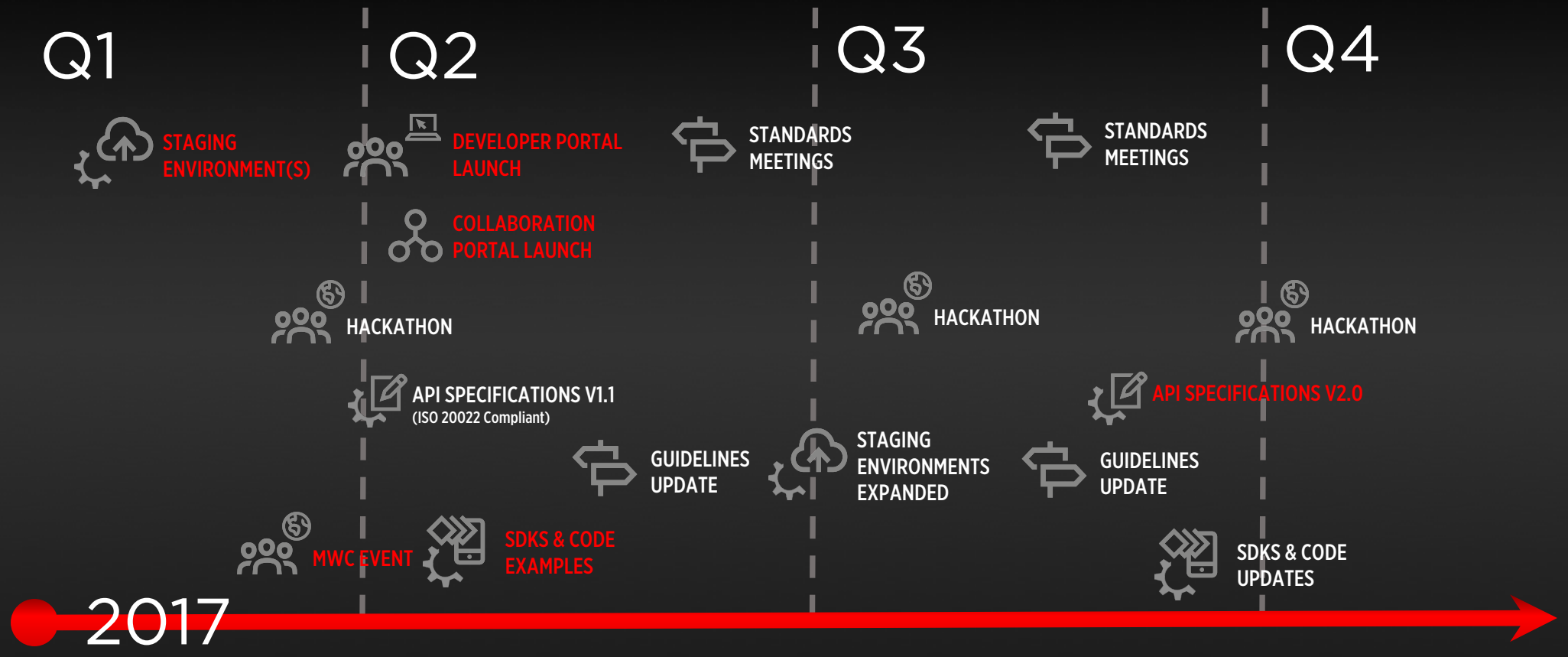
IMPROVED API TECHNOLOGY STANDARDS

- Uses latest techniques from the technology industry and everyone who adopts the API is technically current
- Uses best practices and security guidelines to assist in securing and modernising existing API technology within the mobile money ecosystem

COMMUNITY ACESSIBIITY

- Publicly available to everyone, allowing the technical community to review and work with it before entering into any business discussions
- Supports the technology industry in terms of accessibility and supports the current Open API initiatives

Mobile Money API 2017 activity calendar



W3C & GSMA Mobile Money API – Next Steps

- Mobile Money API Design Authority Board for V2.0
- GSMA would like to encourage:
  - A W3C Web Payments Participant Seat
  - A SWIFT 20022 Participant Seat
- A W3C Web Payments Abstract Specification
- A joint W3C Use-case Hackathon Challenge for our Mobile360 Tanzania Event mid July

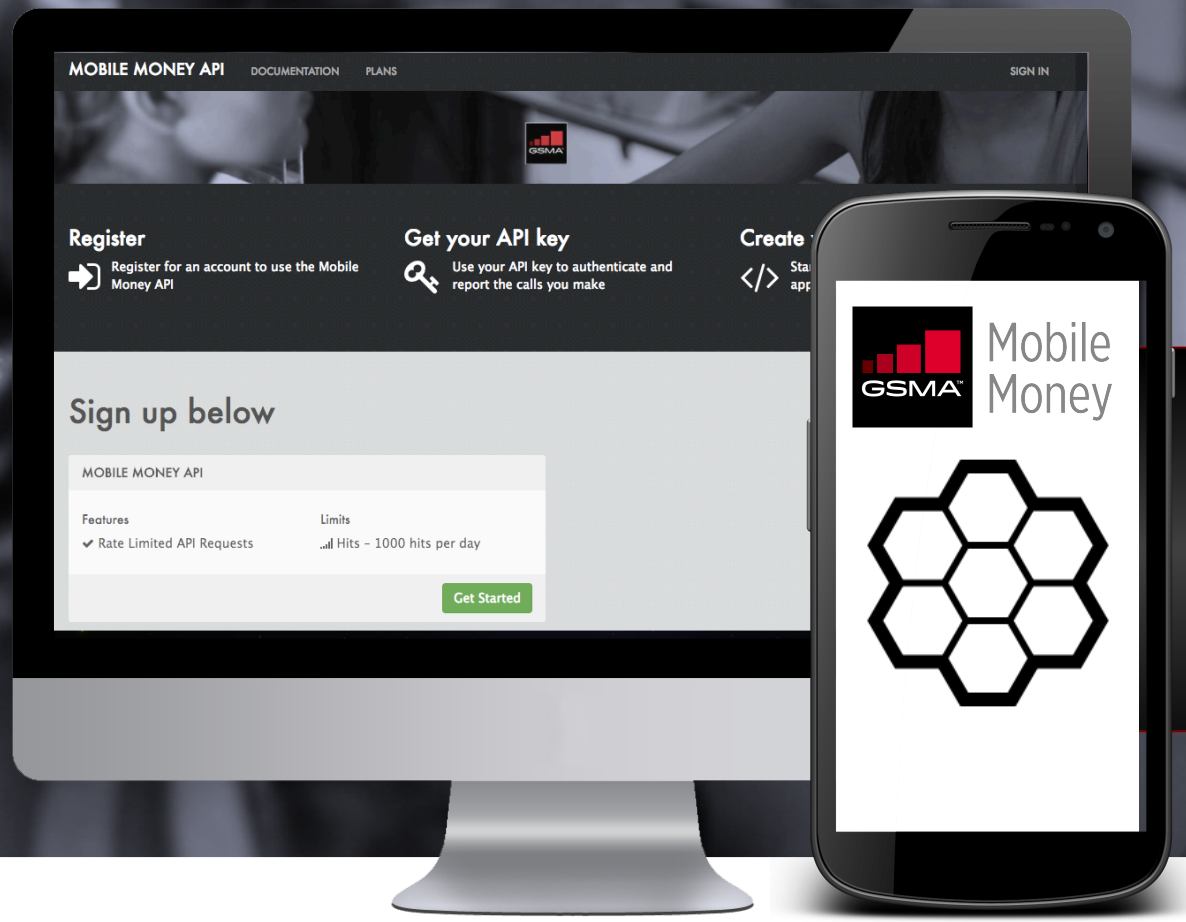
The GSMA's aim

WITH INCREASED INDUSTRY ADOPTION OF APIs IN 2017, THE GSMA EXPECTS TO SEE GREATER COLLABORATION, CONNECTIVITY AND RAPID EXPANSION OF THE MOBILE MONEY ECOSYSTEM

WE AIM TO

DEVELOP A PLUG AND PLAY ENVIRONMENT

WITHIN THE MOBILE MONEY INDUSTRY AND ECOSYSTEM



MOBILE MONEY API

DEVELOPER PORTAL

PREVIEW LAUNCH

SIGN UP AT

DEVELOPER.MOBILEMONEYAPI.IO

TO GET ACCESS TO:

- SDKs & CODE EXAMPLES
- HACKATHONS & EVENTS
- STAGING ENVIRONMENT(S)
- BEST PRACTICE & SECURITY GUIDELINES

2000 DEVELOPERS WILL BE GIVEN EARLY ACCESS

THANK YOU

For more information:

www.gsma.com/mobilemoney
mobilemoney@gsma.com
@GSMAmmu