



MODUSBOX

ModusBox Community Work

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Mojaloop Integration Products

SDK, MCM Features and Roadmap
Datasonnet update



MCM Features 1 of 2



End Point Management

- Hub Ingress and Egress Entry
- DFSP Ingress and Egress Entry
- Entry Progress Monitoring and Updating



Certificate Management

- TLS (Client + Server) Certificate Hub and DFSP
- JWS Certificate upload and sharing
- Role Based Authentication
- Certificate Validation
- Certificate Signing (local CA)
- CSR Creation or upload
- CSR Progress Monitoring + Updating



MCM Features 2 of 2



Deployment Management

- Docker Container for Portal and Server
- Helm Charts for CI/CD
- Release Management Scripting
- WSO2 + 2FA integration
- Password Reset for first login
- Support self-signed certificates for WSo2 server

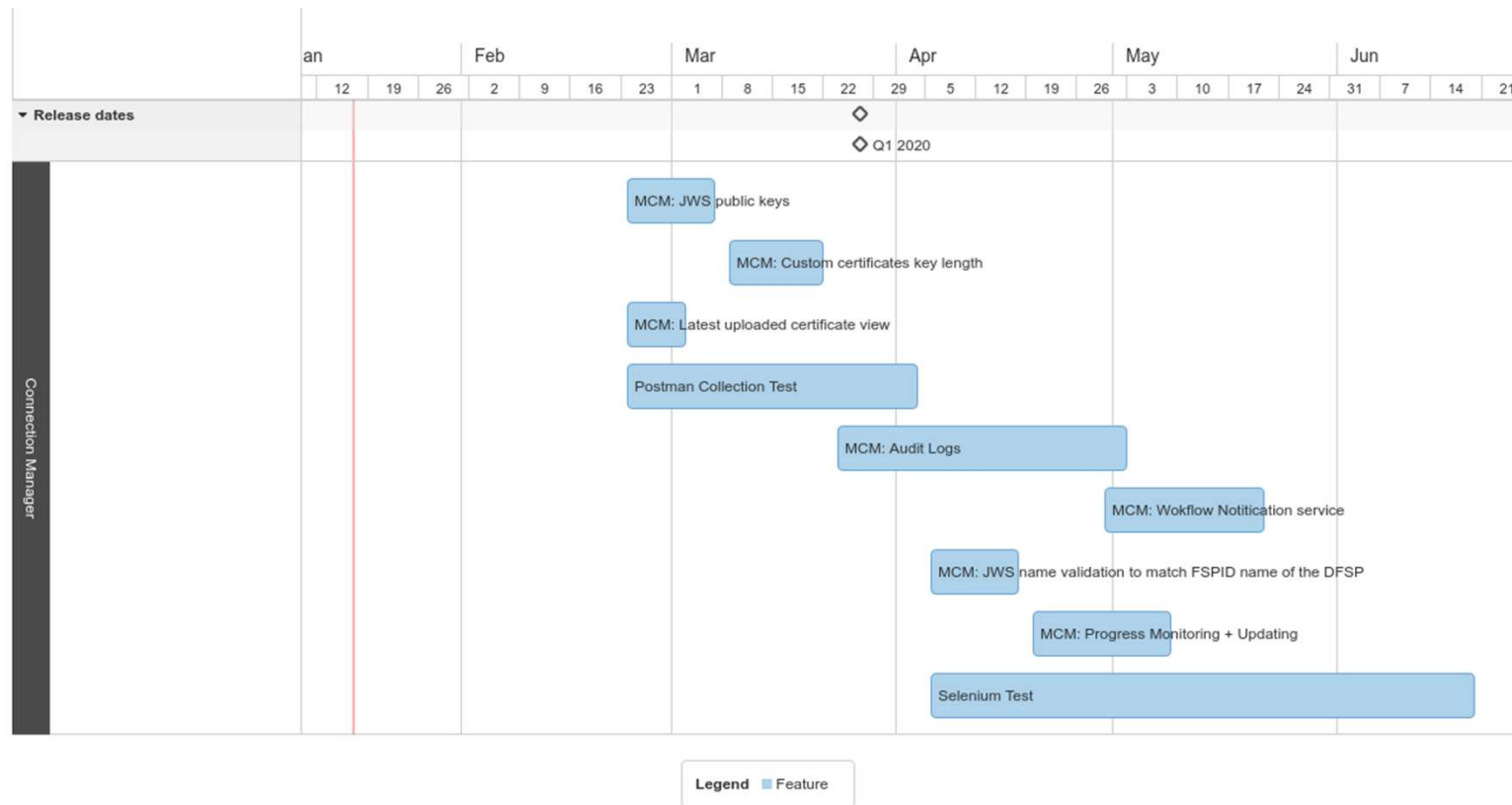


DFSP Configuration

- Add DFSP UI
- Add Monetary Zone to DFSP
- Filter JWS Certificates by Monetary Zone



MCM Roadmap (Q1, Q2 2020)



SDK Features 1 of 2



SDK Circle CI

- Circle CI Config improvements



GET /transfers on inbound and outbound interfaces

- Implement GET /transfers on inbound and outbound interfaces



Scheme Adapter Changes

- Extend simplified backend APIs (in and outbound) to support "passthrough" mode



Extension List Capability

- Implement extension list capability on all incoming and outgoing API methods



SDK Features 2 of 2

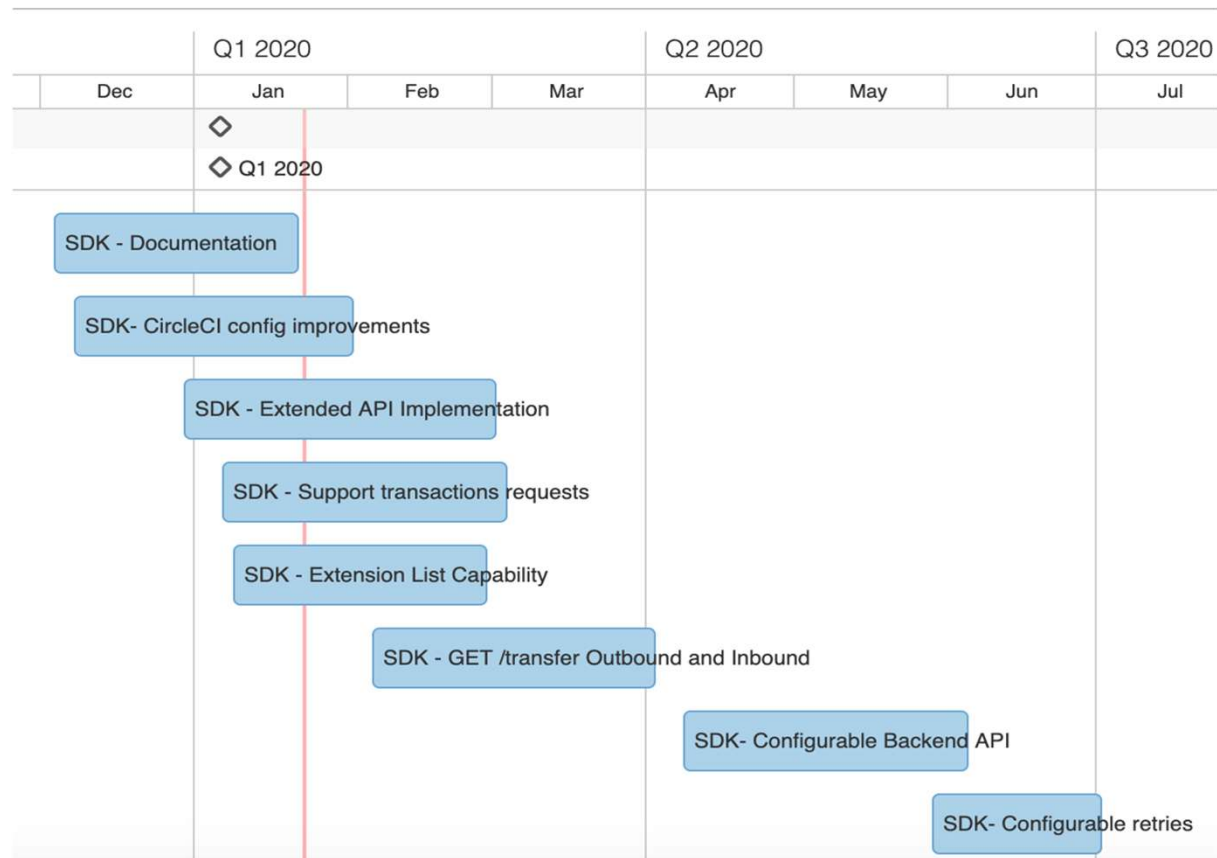


Support for Merchant Payment

- Support Transaction requests API Call for Merchant Payment



SDK Roadmap (Q1, Q2 2020)



DataSonnet - Open Source Data Transformation

- Externalize message transformation from the code
 - Customize without recompiling
 - Approachable for non-developers
 - Extends JSonnet, a templating language by Google
 - Free, vendor-neutral (no lock-in!)
-
- Beta was released as Open Source (Apache 2) in October 2019
 - Already have community contributions received and committed
 - Expect to GA in early Feb 2020.
 - <https://datasonnet.com/>

Mojaloop Partner Program: Why and What?

Enabling Partners, Hubs and DFSPs on Mojaloop



Why join the Modusbox Mojaloop Partner Program?

At  **MODUSBOX** our vision is to ...

Improve lives by **accelerating universal access** to **reimagined financial services**

Join the **mojaloop** Partner Program to

benefit the **unbanked** and **grow digital economies**

by **enabling real time payments**

and **accelerating the Technology Impact**

to **achieve Independence and Sustainability** for local markets



Why partner with Modusbox? To help alleviate poverty.

Financial and Political Crisis



... because of inequality
between races, cultures,
communities and countries

The poor are the most marginalised and
the most vulnerable

Financial Inclusion
alleviates poverty


Partner with **Modusbox** and help **alleviate poverty** by joining the wider **Mojaloop community** and promoting **responsible** and **sustainable real-time** payments facilitating **financial inclusion**.

Mojaloop is a unique opportunity to help change the world for the better.



Why partner with Modusbox? To build sustainable and inclusive financial services

***Financial inclusion** is where individuals and businesses have access to useful and affordable financial products and services that meet their needs that are delivered in a responsible and sustainable way. [4]*

At  **MODUSBOX** we promote financial inclusion.

We are experienced and skilled at:

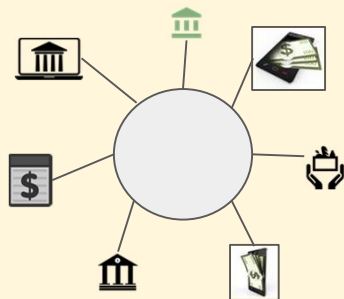
- a. **real-time** payments
- b. Implementing **Mojaloop** Hubs
- c. **integrating** with Mojaloop
- d. Mojaloop's **best practices**



Why use Mojaloop? To build sustainable and inclusive financial services

Mojaloop is a real-time payment switch for interoperability ...

Switch interoperability



Cheaper to run
Greater liquidity efficiency
Inclusive

... between all classes of digital financial service providers (DFSP's).

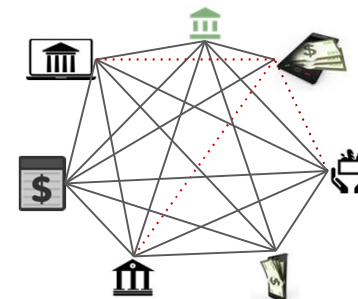
VS

Not financially inclusive



Underserved markets

Bilateral interoperability



Increased complexity → Increased running costs
Some DFSP's favoured over others
DFSP's stuck in silo's
Limit transfer use-cases
Low - valued transactions are not prioritised
Non-banks are treated differently



Why use Mojaloop? To build sustainable and inclusive financial services

Blueprint of what a good interoperable switch should look like to facilitate financial inclusion

Functional Principals

Self issued account identity

Pre-funded DFSP

System wide fraud and risk assessment

Centralised scaling architecture

Open System



mojaloop is a level one project aligned switch

Easy to open an account

Access to cash- in cash- out

P2P Transfers

Merchant Payments

Low, Transparent fees

Direct Deposit of Wages

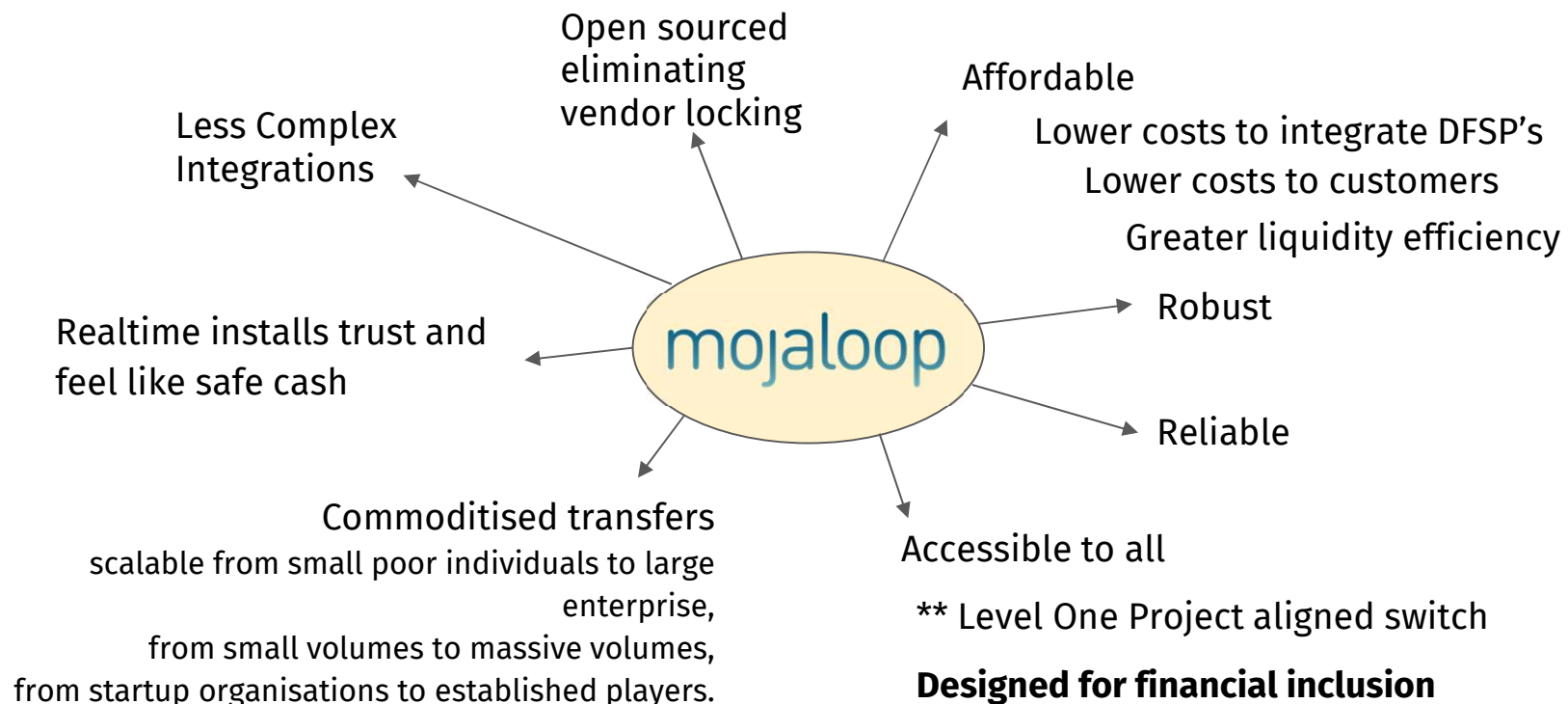
Bulk Payments

Cross Border Payments

Use cases



Why use Mojaloop? To build sustainable and inclusive financial services

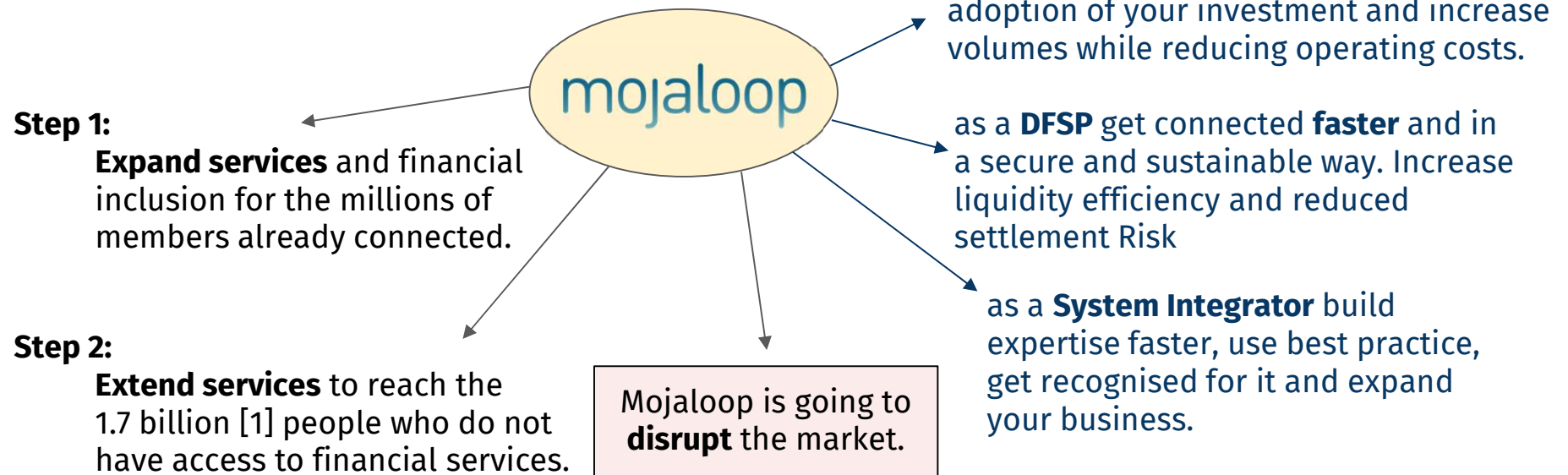


Why partner with Modusbox? To join the Wider Mojaloop Community

For years the industry has been debating how to serve the unbanked and underbanked market.

Finally we have an answer that is practical and exists today.

Partner with **Modusbox** :



Why partner with Modusbox? To use best practices

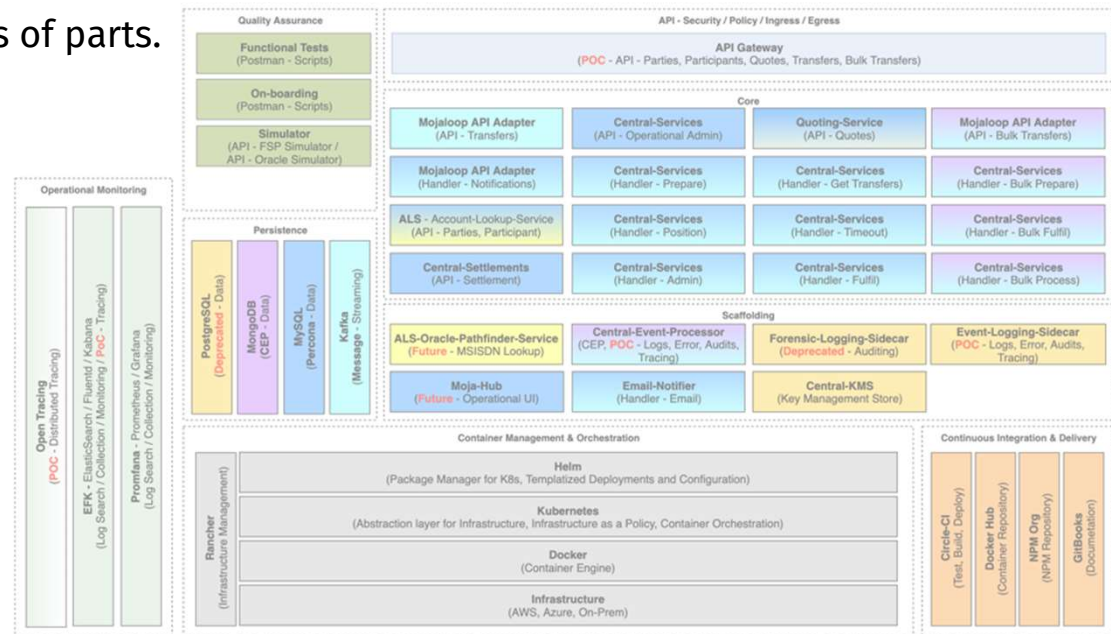
Mojaloop is a **complex** system with lots of parts.

This is unavoidable
because of the use-case
requirements.

Mojaloop **leverages modern technologies** that are not
often used in banking.

It's real-time

Need to do it right



Mojaloop **can** be hard to implement



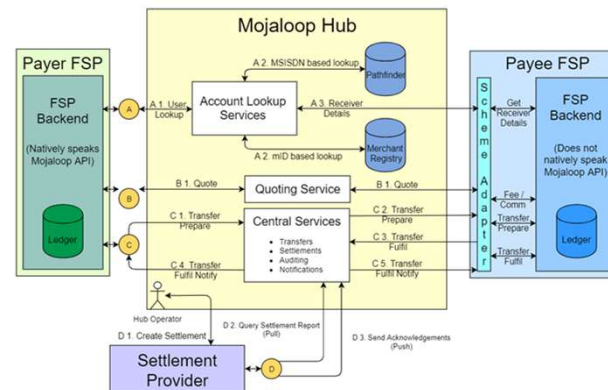
Why partner with Modusbox? To use best practices



Mojaloop's **distributed security model** has many advantages as each participant take their own responsibility for non-repudiability of a transfer, this also **distributes the security risk**.

Multiple layers of Security
Difficult to configure.
Multiple vulnerable point.

Requires security specialist expertise throughout the system.



Why partner with Modusbox? To use best practices



These risks are mitigated by following **best practice**.

Following **best practices** will make Mojaloop:

- more **secure** without requiring a security specialist at all parts,
- **reduced complexity** through abstraction,
- more **affordable** because standardisation makes it simpler and **faster** to implement,
- easier to **scale** and
- easier to **maintain** because the modular abstraction facilitates upgrades.

At Modusbox we have been involved in designing/defining and promoting these best-practices.



Why partner with Modusbox? To understand the impact on your business



Real Time Payments has numerous **impacts on a participant's business and operations**

Participants need to be prepared so they not only survive an RTP environment but thrive by:

- Preparing for adjustments to their *products and operations*
- Have the knowledge to make *informed recommendations* to the system

What are the impacts of different settlement models?

What are the impacts of each key decision or rule on business operations?

How does the business translate use cases into DFSP products?

How does the business ops and tech ops prepare for 24/7/365?

How does the business manage disputes?

Etc...

ModusBox is interested to find partners interested to deliver and improve these components



Why partner with Modusbox? To build Real-Time Payment Expertise

We have the
expertise and
have done it
before

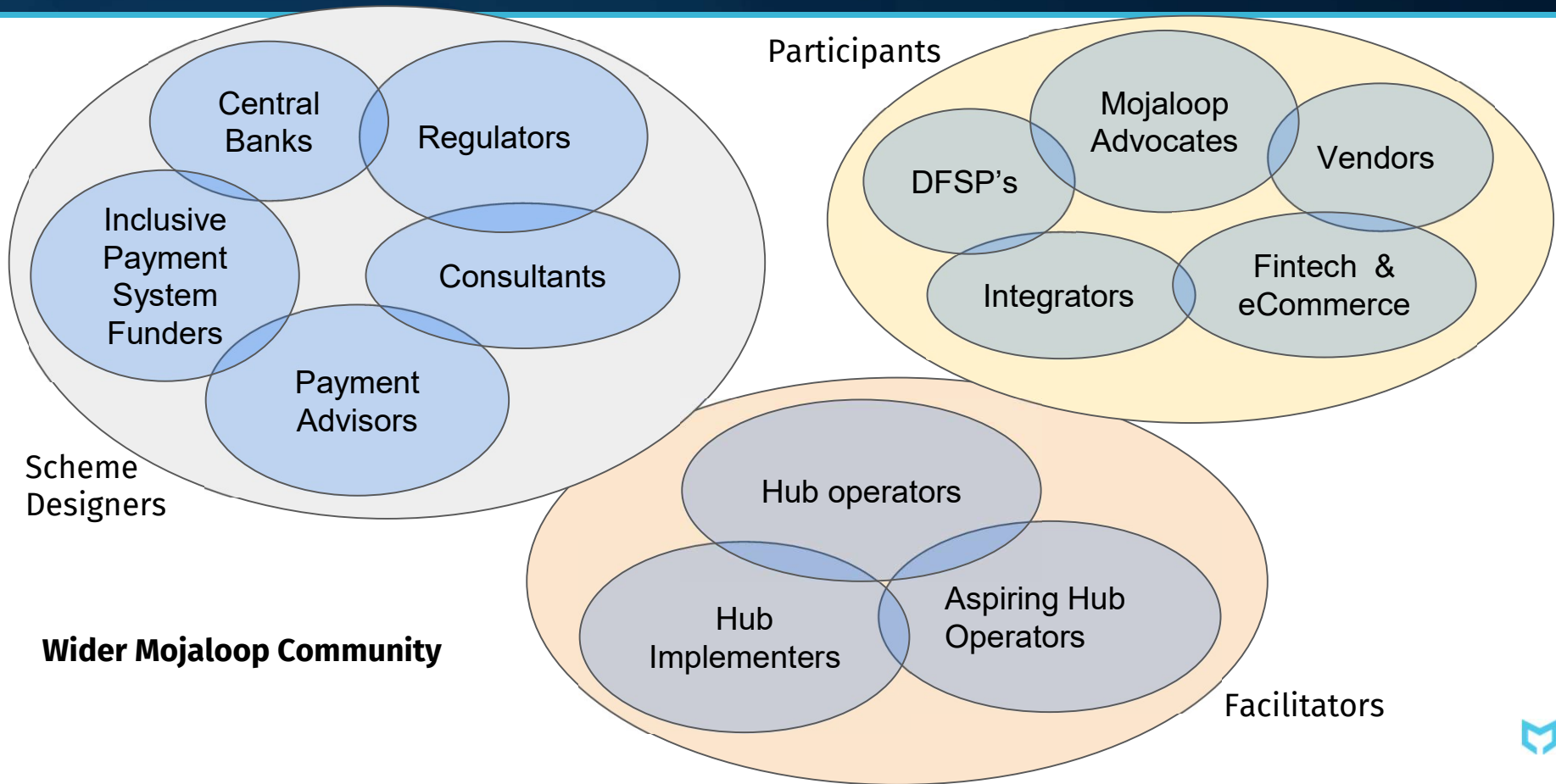
Modusbox
succeeds
when the
community
grows

- **Mowali:** Working with Mowali on domestic same currency and forex transfers in a pan African solution supporting over 338 million mobile money accounts and mobile money operations in 22 of sub-Saharan Africa's 46 markets.
- **TIPS:** Supporting the central bank to build the internal capabilities to deliver a platform that will encompass 50+DFPS's of all classes.
- **WOCCU:** Working with the World Council of Credit Unions and Paysys helping to build a network of 85,400 diverse institutions in 118 countries reaching 274 million households.
- **KIFIYA:** Built a lab to test interoperable e-commerce and enable partners for digital transformation in the financial sector
- **UNCDF:** Training low capacity DFSPs in practical training to become active participants in a real time payment system with Mojaloop as a reference case.
 - At Modusbox we believe in sharing our knowledge and expertise.
 - Partner with Modusbox to participate in training workshops designed to build Real-time Payment, Mojaloop and Modusbox expertise within your organisation.
 - Use our labs / sandboxes to try-out, demo and test the technology.
 - Leverage this expertise to expand your business.
 - Keep up-to-date with latest OSS features.

**We Share
our
knowledge**

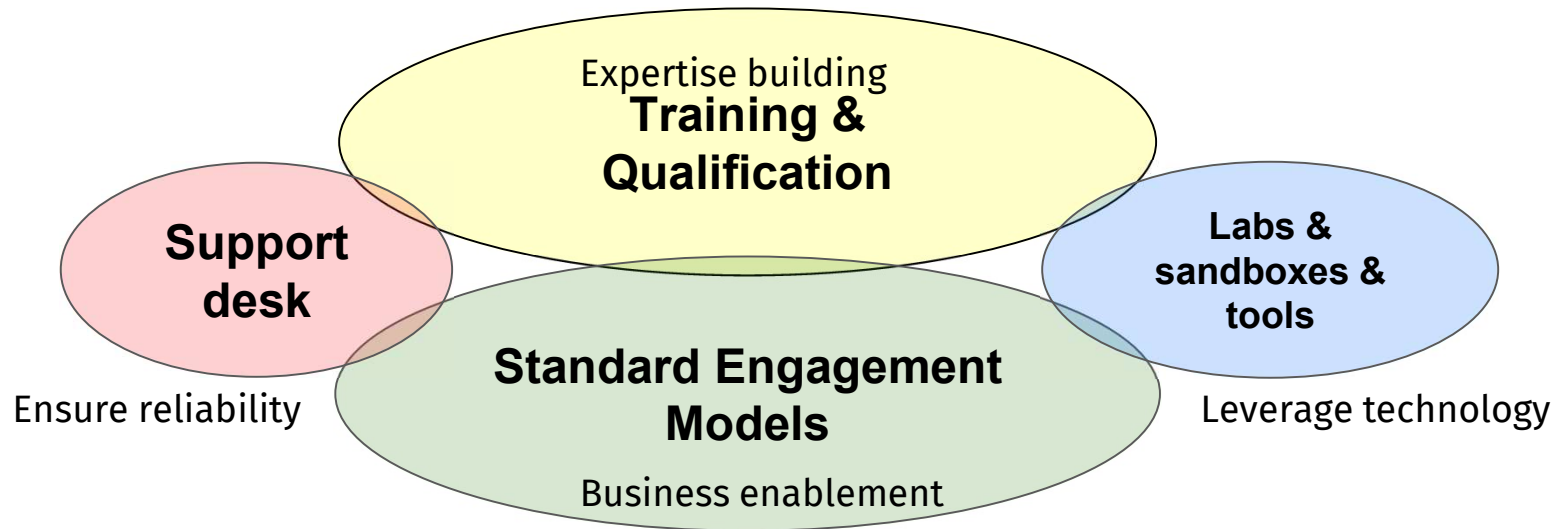


Who is the Partner Program for?

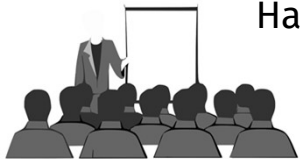


What is the Modusbox Mojaloop Partner Program?

An **enablement** partnership with Modusbox designed to be a **technical accelerator** for Mojaloop.



Build expertise. Get a Modusbox Mojaloop Partner Training



Have a **training workshop** on premise

Get a **self-paced online** training qualification

Modusbox Mojaloop Quantification

MOJA 101

MOJA 102

MOJA 103

MOJA 104

DFSP 101

DFSP 203

DFSP 206

DFSP 208



Mojaloop
Design /
Advocacy



Mojaloop
Architect



Mojaloop
DFSP

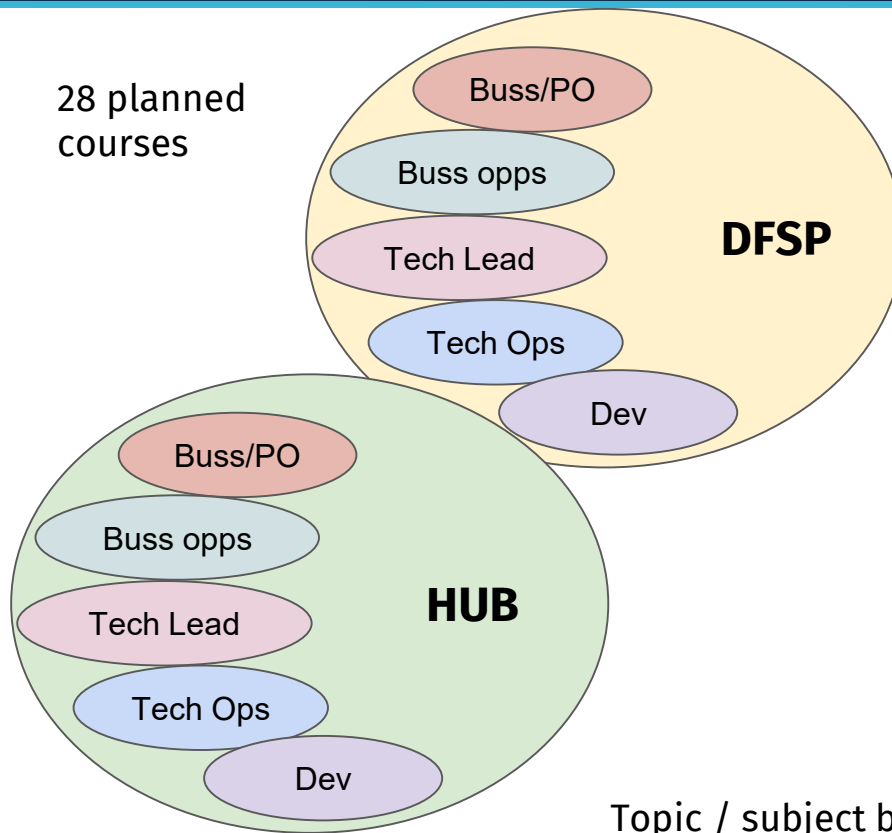


Mojaloop
Hub
Operations



Build expertise. Get a Modusbox Mojaloop Partner Training

28 planned
courses



Topic / subject based learning

MOJA 101 - Mojaloop Overview

MOJA 102 - API

MOJA 103 - Technical Overview

MOJA 104 - Security

MOJA 105 Advisory / Design

DFSP 101 - DFSP Overview

DFPS 203 - Technical Overview

DFSP 206 - On-boarding

DFSP 207 - Testing and Deployment

DFPS 208 - Operations

HUB 101 - Hub Overview

HUB 208 - Operations and support


HUB 109 - Database

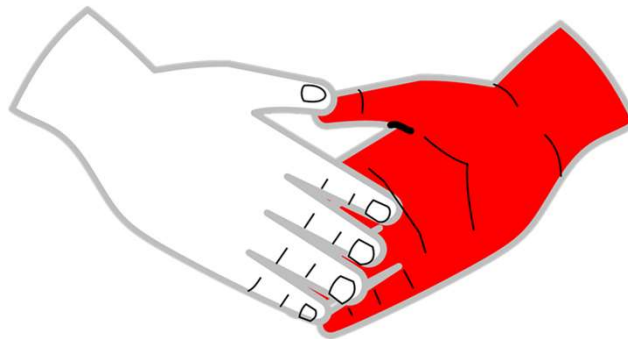
HUB 210 - IaC

HUB 110 - Hub WS02



Enabling business. Partner with Modusbox on a business engagement

Work with  **MODUSBOX** as partners on a business engagements to build business problem solving expertise and ensure the best chance of success.



Using best-practice to build:

- faster,
- more secure,
- higher quality,
- easier to maintain solutions.

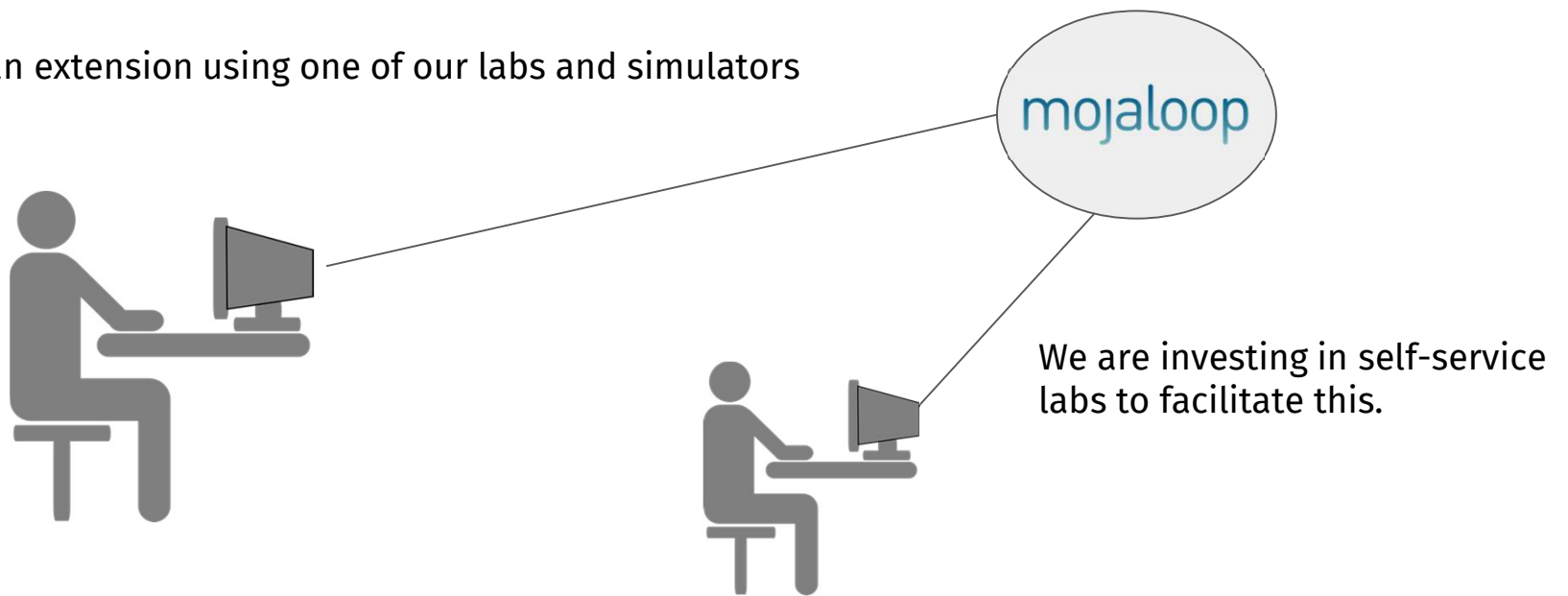
Achieve long term independence through expertise building



Leveraging technology. Use our toolboxes and labs

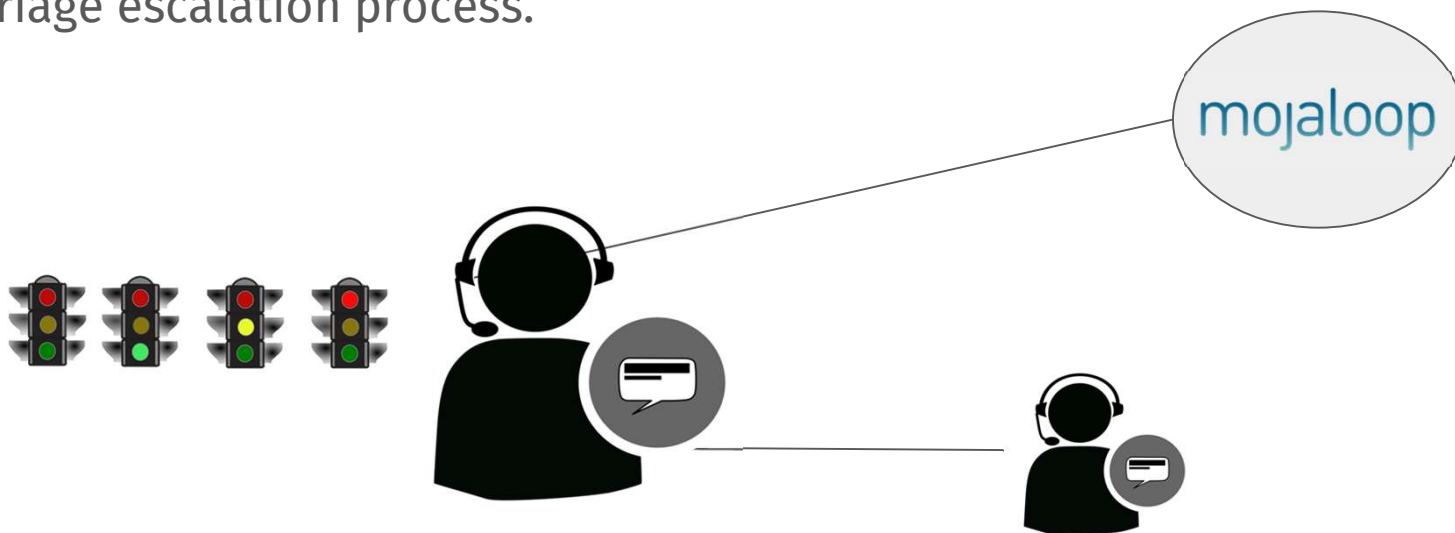
Demo a new concept in one of our Labs

Test out an extension using one of our labs and simulators



Ensuring reliability. Enterprise support is available

We support our labs and products through our support desk and designed triage escalation process.



The three themes of the Modusbox Mojaloop Partner Program

Partner with  **MODUSBOX** to :

enable real time payments

Transfer **Mojaloop expertise** so that Mojaloop is implemented **securely** and in a **sustainable** way using **best practice**.

accelerate the Technology Impact

Get to market **faster** and more **affordably** and do more. The program is designed to get you there faster. Be part of the Mojaloop movement and wider community that is changing the face of banking by creating new markets

achieve Independence / Sustainability

Our engagement models are designed to reinforce Mojaloop expertise in a **business problem solving** context. This is to improve chances of Mojaloop success and to **transfer expertise**. The long-term intention is to achieve sustainability by **building independence**.



References

1. 1.7 Billion unbanked people - Bill and Melinda Gates foundation : Financial services for the poor - Strategic Overview
2. Orange and MTN Press release: Orange and MTN launch pan-African mobile money interoperability to scale up mobile financial services across Africa. November 2018.
3. WOCCU website.
4. World Bank website definition.
<https://www.worldbank.org/en/topic/financialinclusion>



Thank you!

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