



Transforming the financial landscape

Contents

- Mowali : reminders
- Mowali status
- Learnings
- Mowali's FOREX Approach



MOWALI, General presentation

Mowali is a joint venture founded by Orange and MTN to enable interoperable mobile money services by adding interoperability rules on top of transaction mediation services

The scheme has defined a common business and technical framework ...

Business rules

- Business terms
- Business processes
- Compliance requirements
- Merchant acceptance label
- Interchange rules

Technical standards

- API/Transaction messages [mojaloop](#)
- Merchant payment
- Security standards

Transaction mediation

- Transaction routing [mojaloop](#)
- Clearing/Settlement
- Forex management



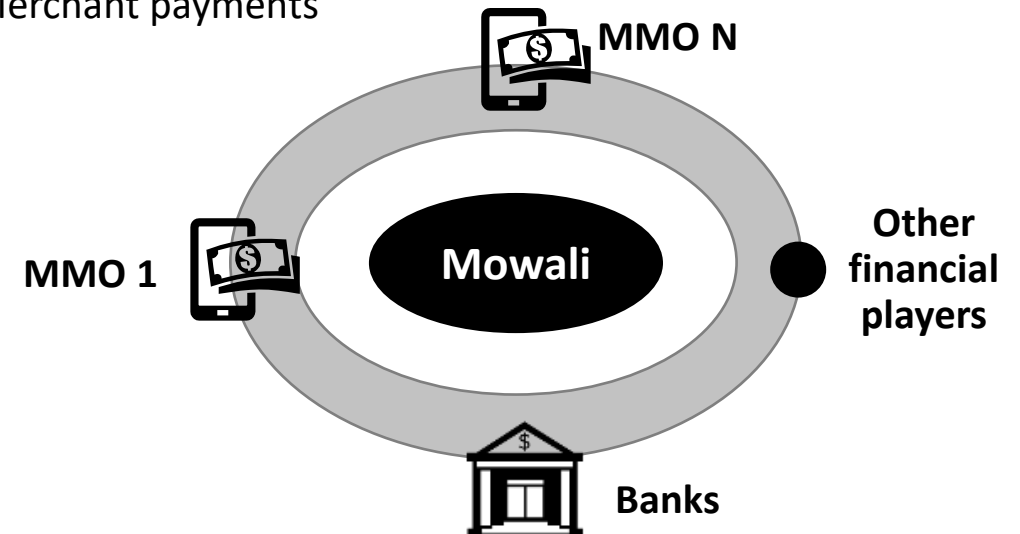
... to provide a full range of mobile money interoperability services for the whole ecosystem

First priorities (2019):

- International and domestic Money Transfer
- E-commerce
- Forex
- Merchant payments

Extensions (2020):

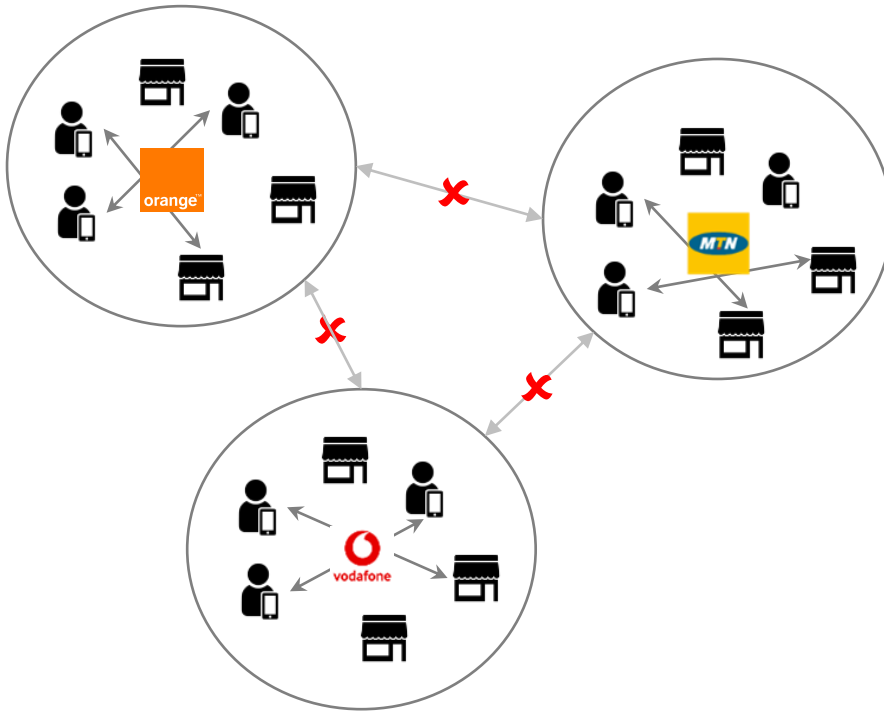
- Bulk payments
- Bank-to-wallet
- Other verticals' specifics



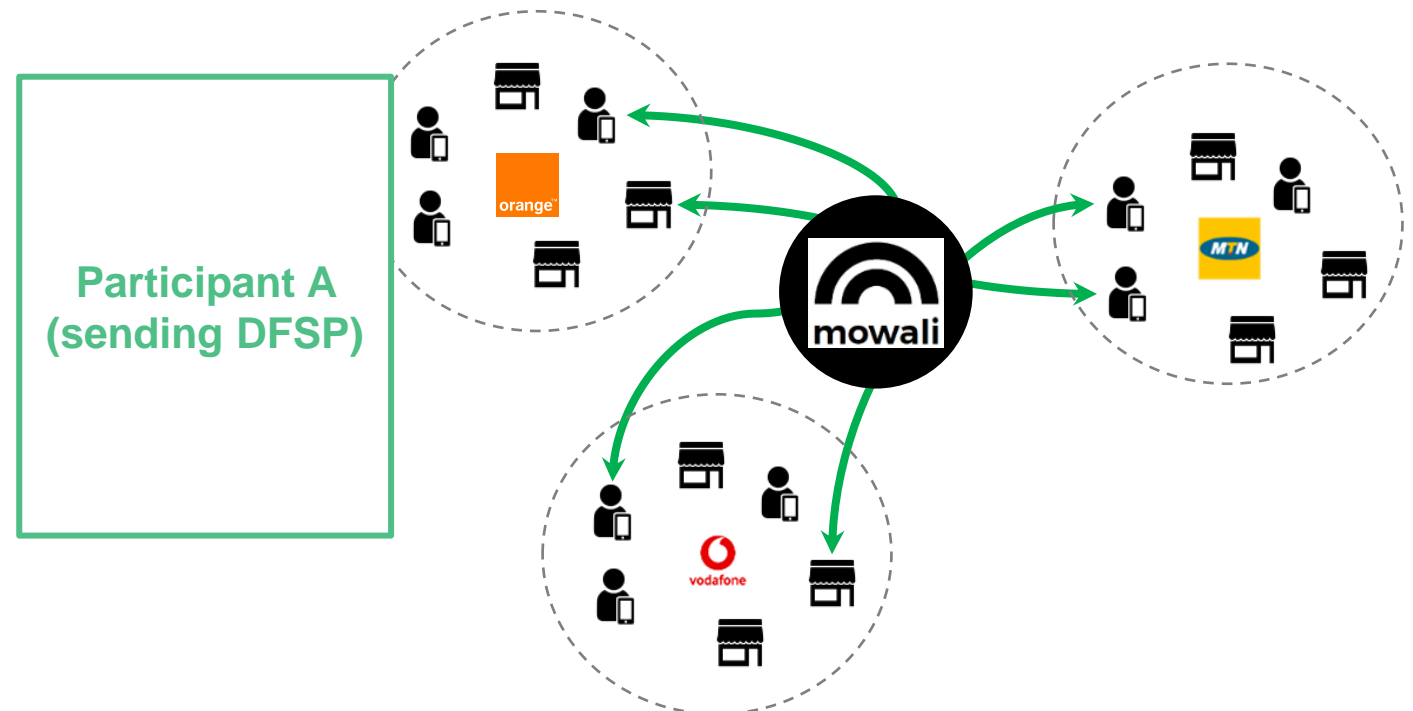
Mowali, what for ?

A switch to overcome barriers between mobile money providers

Today : barriers between networks

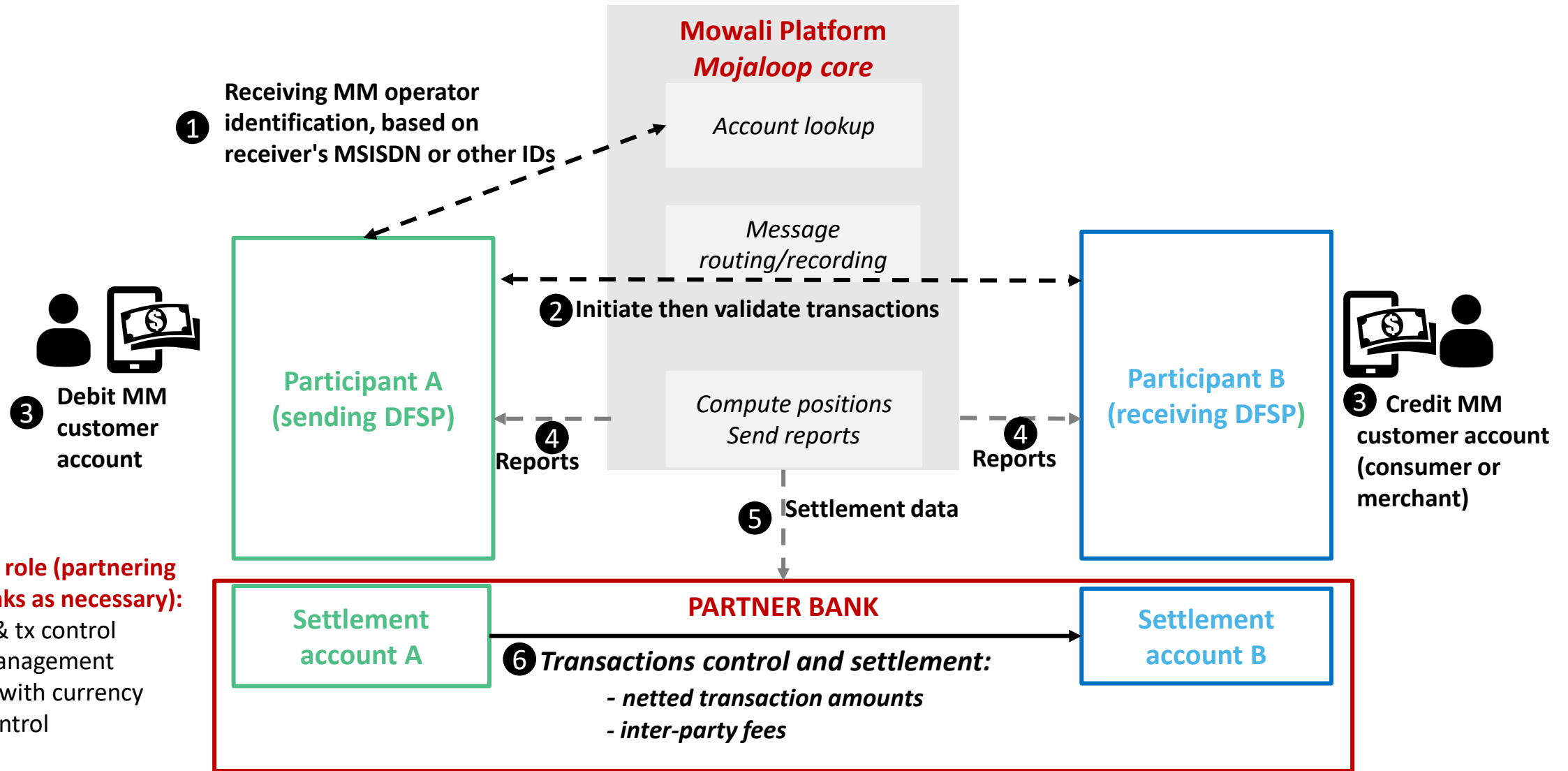


Tomorrow : open ecosystem



➤ A unique opportunity to fast-track the development of P2P, merchant payment and financial inclusion in Africa

Mowali's platform : How it works ?



Mowali update 1/2

- Company growing in Abidjan – hiring as a top priority (technical and operational team : 12 HC at Mowali HQ)
- **Platform in production (FUT)** with first Orange/MTN DFSPs :
 - FUT are done for 2 corridors scenario : Local Currency and Local Currency/Cross Border.
 - *Frozen due central bank veto*
 - FUT started for one new corridor scenario : Cross Border/Cross Currency (FOREX)

**Service is available for international and local transfers
First customers to launch in the coming days !**

- Partner bank for settlement is Citibank
- Roadmap- following steps:
 - **cross-currency transactions** – expand Q2 2020 and beyond, ambitious DFSP onboarding roadmap
Inbound transfers (e.g. from Europe), intra Africa (e.g. East-Africa)
 - **Enhanced operational and onboarding tools** to support more operators
 - **Enhanced flexibility on forex rate and settlement management**
 - Operational and infrastructure readiness, GDPR tooling
 - **Merchant Payment**
 - **Mowali is ready and open to collaborate with others schemes in Africa**

Mowali update 2/2

Key Achievements

✓ **Functional :**

- FOREX features are available and tested (included for Golden DFSP Simulator),
 - Integrate FXP to manage two-leg transactions and FX rate multiplication
 - Integrate Treasury Management Function ("TMF") managing ledger updates after closing a settlement window, Forex Orders and payments between parties,
- MCM tool to improve certificate exchange during DFSP Onboarding journey process

✓ **Operations :**

- End to End Support chain process,
- Promfana monitoring tool,
- DFSP Onboarding process refining
- Release & Change Management

✓ **Security :** Complete Vulnerabilities assessment and related mitigation plan

✓ **GDPR :** Data Classification policy, GDPR tooling assessment ongoing

Lessons learnt

Business operations are the key component of the service

onboard them early, get them to be the Mojaloop product's customer

Reporting IS IMPORTANT : don't wait, specify it clearly, test it, *make it flexible*

Settlement : settlement flow varies with regulation and banks need time. Sorry.

Forex : beware end-to-end management of two-legged transactions

take a hard look at FXPs and CNPs, they can create dangerous edge cases.

Preventive maintenance and monitoring : be paranoid

Anticipate Security Audit

What we expect from OSS

A process to support the introduction of Enhanced Capabilities

New functionality leads to risk of breaking changes.

→ Mowali needs:

- Backward compatibility-conscious design for new features / enhancements
- Early visibility to allow for planning of proposed changes
- Provision and support of an upgrade path
- **Improve QA exhaustivity (including edge cases)**

A stream to simplify operator onboarding

- Some progress with SDK and MCM, but...
- Mojaloop remains complex for DFSPs :
- Deploying on WSO2 remains a pain point

Complete Settlement suite

- TMF improvements (automation for FX rate, Settlement and payment file; multi-currencies capabilities, business ops capabilities), Customer Care interface, **PATCH notification**

A stream to address some remaining forex-related challenges

- forex rate transition management without interrupting the service
- **Edge cases of two-leg transactions**
- liquidity management challenges: specific settlement constraints applying to different currency pairs
 - Staggered forex rate changes
 - Constraints on settlement flow structure

Reiterated interest in the security stream

With a focus on compliance (financial + GDPR) & Secure and high quality code base in line with best practise standards

More involvement about Operations & Support

Performance and resilience testing, Test automation tool, Event tracing framework, Customer Care interface

Mowali's Contributions to Open Source Community 1/2

Component	Rationale	Benefit
<i>Mojaloop generic test</i>	<i>The better the quality of testing within the Core OSS development program the better the quality of code being received for adoption by Mowali.</i>	<i>Reduces ongoing adoption costs and builds confidence for all users of Mojaloop-Operator or DFSP - when we can point to demonstrable quality checks around the core technical solution. The core team is now responsible for execution of these tests daily and that the core releases pass the tests.</i>
<i>Multilateral net settlement implementation v1</i>	<i>Mowali had both a delivery time imperative as well as the desire to ensure that the quotes were implemented via the switch ensuring that business and scheme rules could be applied at the centre, before the process had progressed to actual transfer requests.</i>	<i>this ongoing development is being taken up by the community.</i>
<i>Quote Service</i>	<i>Mowali had both a delivery time imperative as well as the desire to ensure that the first release supports Mowali's commercial settlement model.</i>	<i>The default OSS MLNS solution is compliant to Mowali's business needs and now as those grow, such as with the support for independent settlement of currency or particular ledger accounts, this ongoing development is being taken up by the community</i>

Mowali's Contributions to Open Source Community 2/2

<i>Component</i>	<i>Rationale</i>	<i>Benefits</i>
<i>Golden DFSP Simulator now Mojaloop Simulator</i>	<i>Mowali to ensure that the OSS services and DFSPs match and improve on the Mowali baseline. This was a future target for the community and by providing the Mowali version we have extended the capabilities and raised the quality bar.</i>	<i>As additional OSS service are being developed, for example bulk quote and transfers, these are being merged into the simulator so and edge cases are better testable.</i>
<i>Finance Portal</i>	<i>The lack of an administration portal to manage settlement and external liquidity movements was a hurdle for Finance Managers so was urgently needed. Introduction of this to the community will support other adoptors and create a stable base for mowali</i>	<i>this ongoing development is being taken up by the community. Not very convincing so far.</i>
<i>ALS Oracle for Pathfinder</i>	<i>GSMA's pathfinder provides the Mobile Operator associated with a MSISDN, which can be used to map to the Mobile Money Operator in most cases. Creating an Oracle was a pre-requisite for Mowali</i>	<i>this ongoing development is being taken up by the community.</i>

Reminder: Mowali's FOREX Approach

DFSP

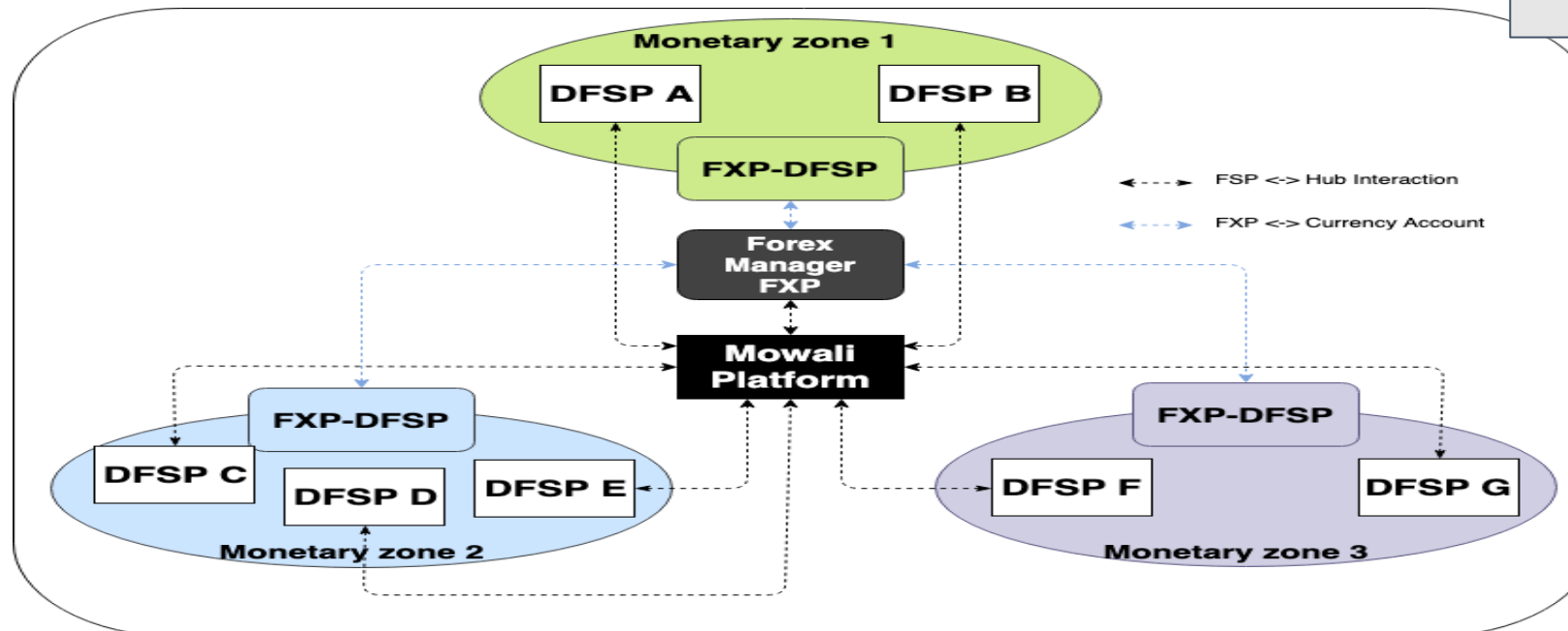
1. Minimal API call changes for DFSPs
2. **Make use of API extension for KYC management and FX Rate sharing**
3. **Same on boarding process for all types of DFSPs**

FXP+TMF

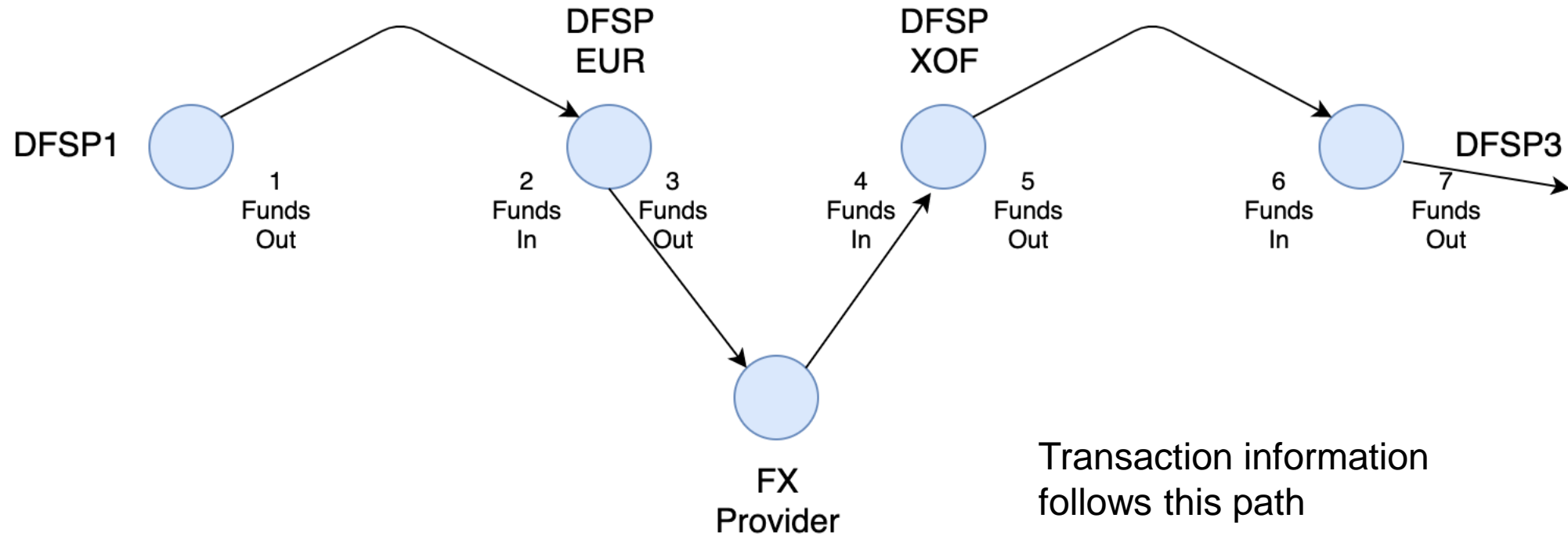
1. **On boarded like any other DFSP – a VDFSP per Monetary Zone**
2. **P2P Quotes, Transfers and Rounding management**
3. Exchange Rate Management
4. Ledgers for Settlement and Transfers
5. Settlement (FXP - Hub ; FXP - Citi)

Mowali Hub

1. **Switch logic for correct routing**
2. **JWS for both hops.**
3. Forex Portal
4. Manage Currency pairs
5. Manage FX Rate
6. KYC Tier Management
7. KYC Fields Validity
8. Multiple Currency management (Payment Matrix)
9. **Golden Simulator support for on boarding Forex DFSPs**

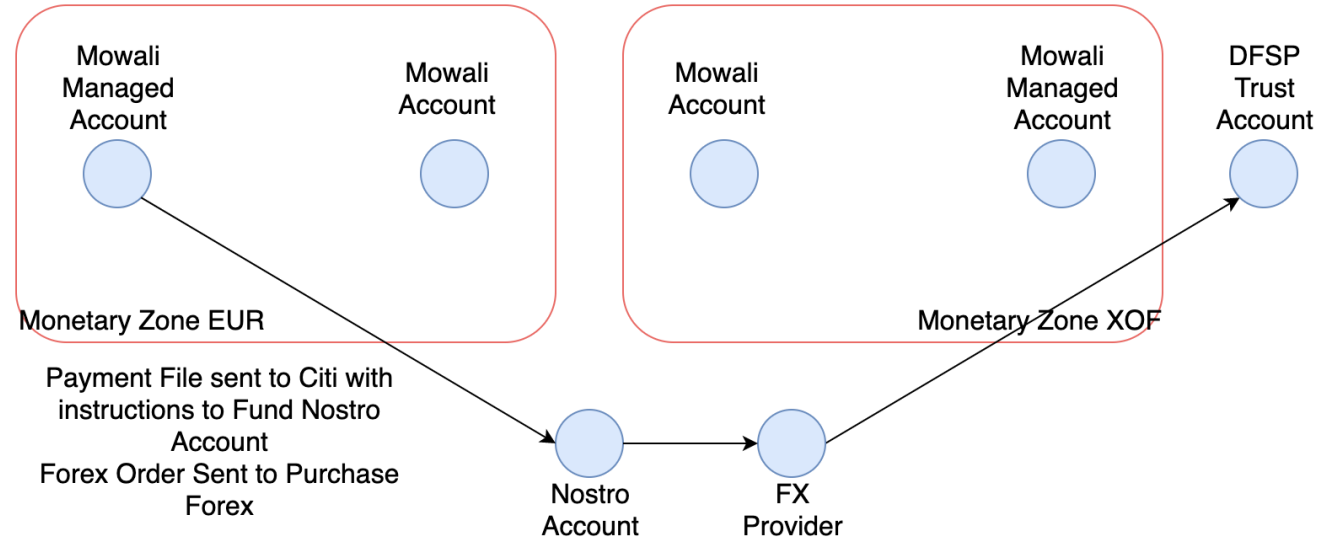


Logical Settlement



Physical Settlement

Physical Settlement - only 1 sender



Physical Settlement - Multiple senders

