Mojaloop PI-8 Convening, Abidjan

Tanzania Instant Payment System (TIPS)

Wednesday, September 11, 2019

Bank of Tanzania

Agenda

1. TIPS project progress
2. Development updates
3. Contribution to the OSS
4. Demo (Pay to TIPS ID)

TIPS project progress

TIPS Implementation

1 BUSINESS CASE

- Stakeholder Consultation
- Evaluate Needs & Options

2 DESIGN

- Decide Key Choices
- Finalise Design
- Define Rules

3 DEVELOPMENT

- Coding
- Testing
- More Stakeholders Consultation

4 DEPLOY

- Soft Launch
- Full Implementation

Project Progress – Stakeholders Engagement

Shared with the Market	To Be Shared
○ Participation Model – Finalized	○ TIPS Branding – WIP
○ Governance Model – Finalized	○ Scheme and Operator fees – WIP
○ Initial Use cases – Finalized	○ Customer Experience – WIP
○ On-us transactions – Proposed	
○ Payee Identifiers & QR codes – Proposed	
○ Interchange model and fees – Proposed	
○ Settlement Model – Proposed	

Project Progress – Product Deliverables

Features in development	Features to be developed
○ Individual Payments (P2P, P2B) ○ TIPS Portal ○ Infrastructure setup	○ Individual Payments (P2G) ○ Bulk payments ○ Settlements (Includes Fees & Charges) ○ Compliance Recording ○ Fraud Detection & Management ○ Dispute Resolution

Development updates

Core Switch

1 | **ACCOUNT LOOKUP**
- MSISDN
- Bank Account Number
- Merchant Identifier
- **TIPS Identifier**

2 | **QUOTING**
- Send Quote Request
- Receive Quote

3 | **TRANSFER**
- Prepare a transfer
- Fulfil a transfer

4 | **SETTLEMENT**
- Not started

TIPS Portal

- Provides a user friendly interface for:
  - Management and maintenance of the switch operations
    - ➢E.g. TIPS Identifiers management, configurations (future)…
  - Viewing reports & dashboards
    - ➢Transactions
    - ➢Compliance

- Used by BOT (switch operator) & DFSPs

- Technology
  - Reactjs (frontend) & Nodejs (backend)

TIPS Portal

- Users creation and management
  - WSO2 identity server integration (creation, roles, passwords)

- User login & authentication
  - Multi level – Password and OTP

- Menus
  - Role based dynamic menus

- Reports & dashboards
  - Screens to access reports and dashboards
  - All transactions, DFSPs successful and failed transactions, volume & value

Integration, Testing & Deployment

- Full implementation of the CI/CD pipeline
  - On cloud, on-prem (go-live)

- Use GitLab Enterprise – in-built features for:
    - Code repo
    - Code testing – GitLab CI
    - Images repo – GitLab image registry
    - Helm repo – GitLab helm repo

- Deployments on kubernetes on AWS
  - QA activities and testing performed on cloud

Contribution to OSS

Oracle shared library

- Also know as Oracle SDK → Donated to OSS

- What it is...
  - NPM module to streamline & simplify development of oracles
  - A template (HTTP server) that Implements the oracle open API

- What operations it supports...

Demo – Pay to TIPS ID

TIPS Identifier
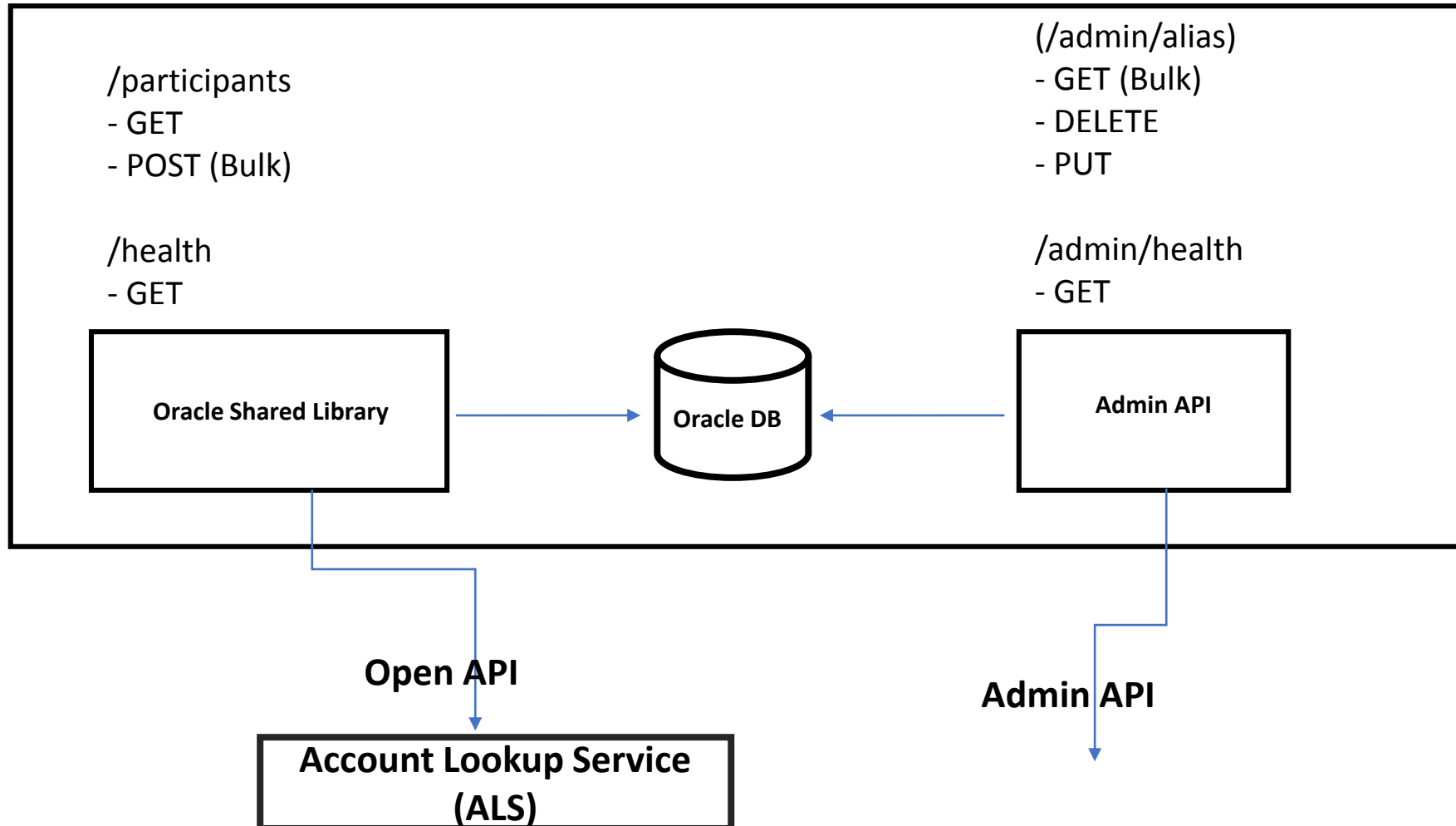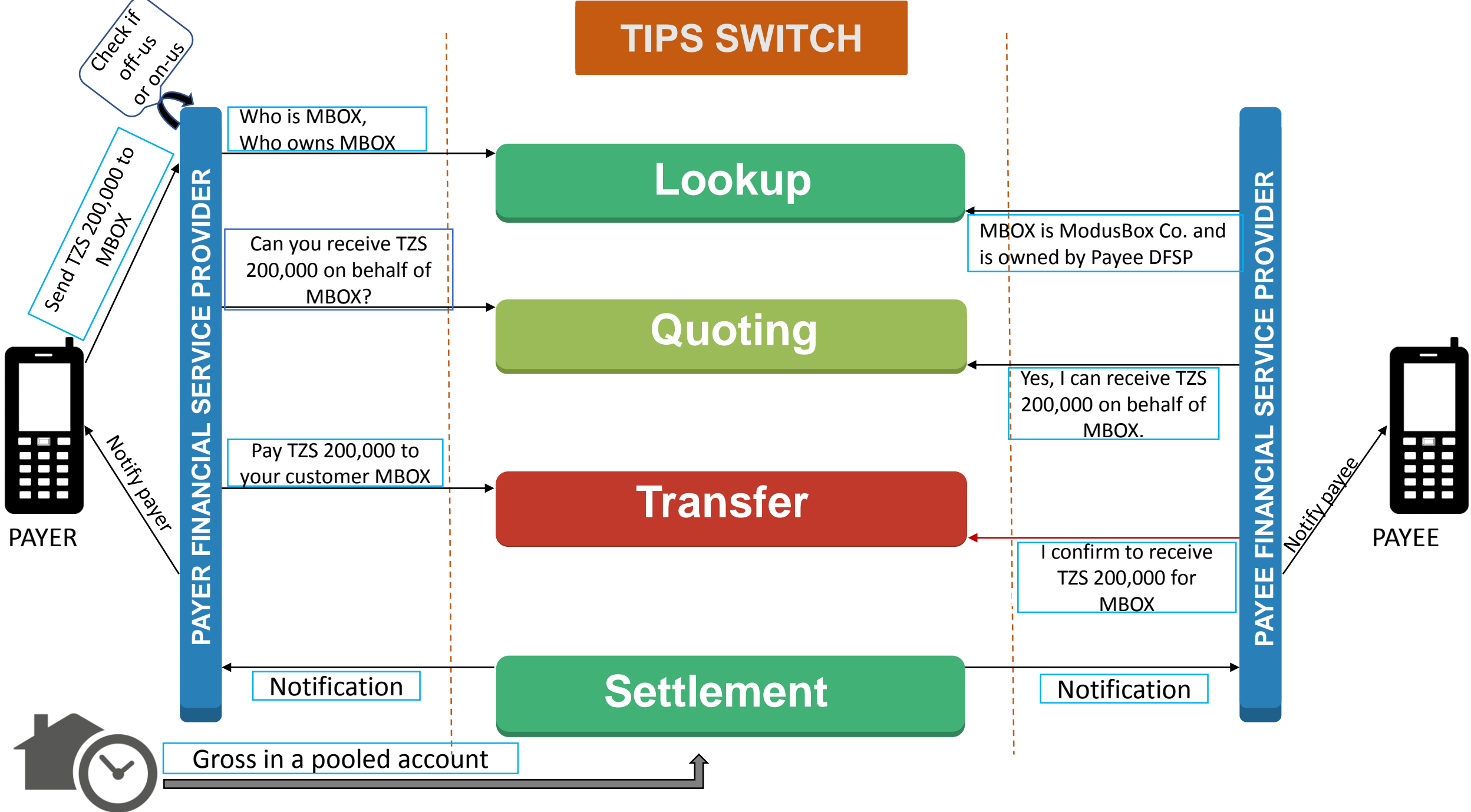
- A string (2-8 characters) that uniquely identifies a party in TIPS
  - E.g. MBOX → ModusBox Company Limited (Acc: 00401234567890)
  - Uses ALIAS as partyIdType

- Stored and managed in TIPS (TIPS ID Oracle), full party details resides with respective DFSPs

- Attached to the actual transacting account (MSISDN or Bank Account)

TIPS Identifier Oracle

/participants
- GET
- POST (Bulk)

/health
- GET

(/admin/alias)
- GET (Bulk)
- DELETE
- PUT

/admin/health
- GET

Oracle Shared Library → Oracle DB ← Admin API

Open API

Admin API

Account Lookup Service (ALS)

LIVE DEMO

> ~ Asante Sana ~
> Tanzania Instant Payment System (TIPS)
> *A Digital Financial Connection for All Tanzanians*