Fraud Risk Management

PI 10 Playback
23 July 2020

Mojaloop Fraud Risk Management

PI 8
COMPLETE

The Bill & Melinda Gates Foundation partnered with Deloitte to design a fraud risk management framework to work alongside Mojaloop to manage fraud and financial crime risks in a hyper-connected digital financial ecosystem

- Typology register and threat assessment using DREAD and STRIDE

- Data dictionary

- Business Requirements Document

- Illustrative KRI dashboard

- Proof of Concept

PI 9
COMPLETE

Fraud Risk was selected for further work "To review and classify the typologies to determine which of those strategically fit with Mojaloop's vision and how to get started building it"

- The development of a strategic assessment framework

- The detailed classification of the risk typologies already identified

- A detailed cross-reference between the risk typologies and the data dictionary already developed

PI 10
COMPLETE

At the end of PI9, we identified six potential focus areas for PI10, but ultimately settled on the following two objectives:

- Mojaloop Hub Operator and Digital Financial Service Provider FRM capability assessment

- FRM vendor shortlist and features comparison

Contents

Fraud Risk Management capability assessment

Fraud Risk Management vendor analysis

Deliverable 1

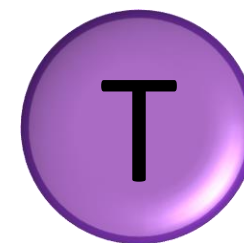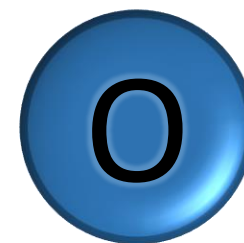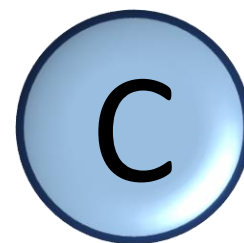## FRM capability assessment

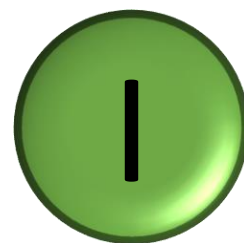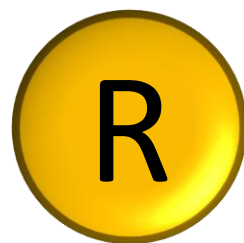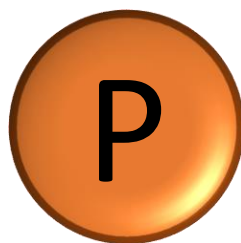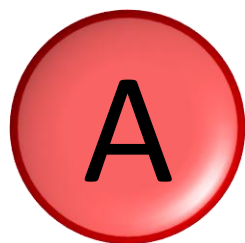▼ **Refinement of the APRICOT model**

Development of a fraud risk management questionnaire

Mapping of the questionnaire responses to the APRICOT model

Next steps and recommendations

Flashback to the original APRICOT model

DIMENSIONS

A	P	R	I	C	O	T
Approach	Product / Service	Regulatory Impact	Involved Parties	Channel	Organisational Scope	Transactions

ATTRIBUTES

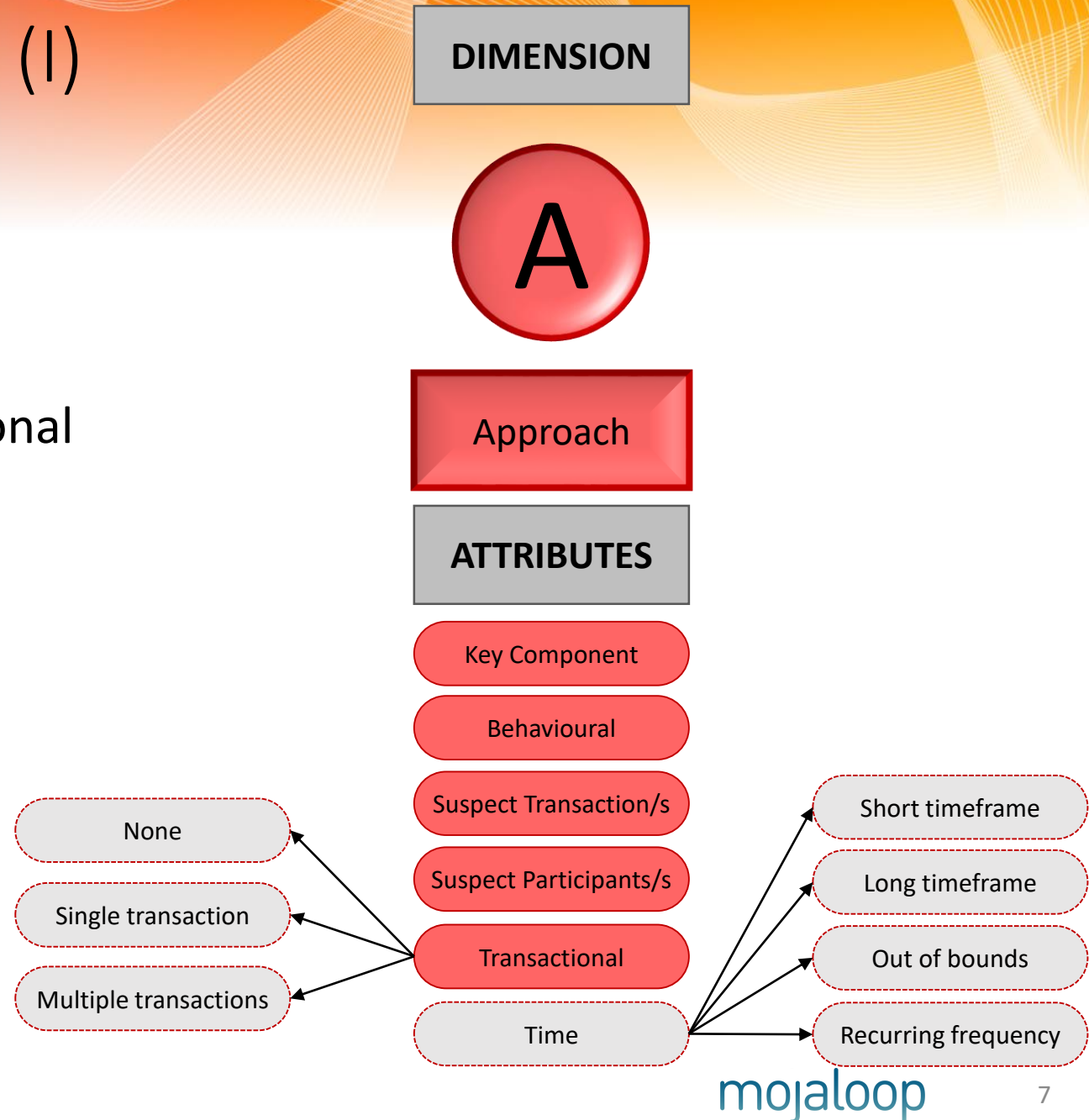| Approach	Product / Service	Regulatory Impact	Involved Parties	Channel	Organisational Scope	Transactions
Key Component	Products	Thresholds	Individual users	Interaction with client	Internal / external	Type/s
Behavioural	Services	Regulatory arbitrage	Institution users	Channels	DFSP / Loop	Characteristic/s
Suspect Transaction/s			Agents			Participant/s
Suspect Participants/s			FSPs			
Transactional			Operators			

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Refine the APRICOT model (I)

Enhancement of current model

- Improved discrimination between typologies
- Improved classification in preparation for rules development in support of detection
- General changes
  - Remove "not applicable" values from all attributes
  - Remove "no" values from all attributes
  - Replace "any" or other aggregated values with explicit lists of values

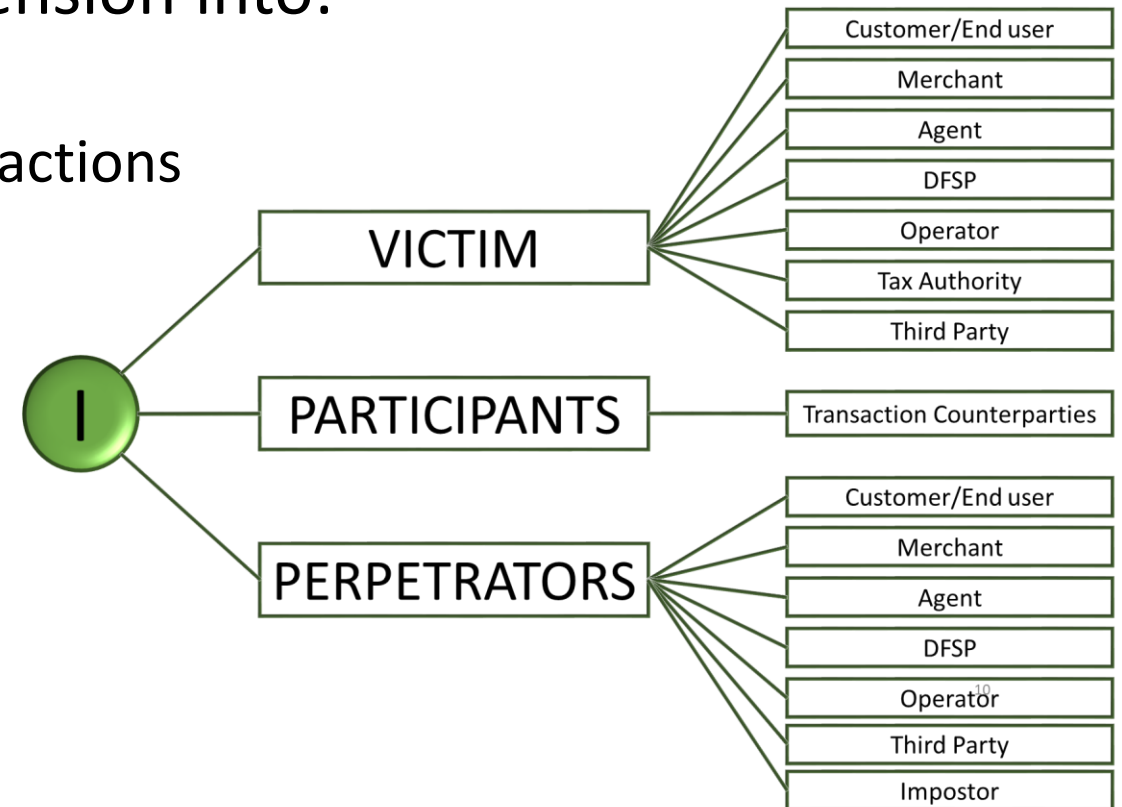# Refine the APRICOT model (I)

Enhancement of current model

- Changes in APPROACH
  - Add a cardinality to the Transactional attribute
  - Add a "Time" attribute

DIMENSION

A

Approach

ATTRIBUTES

Key Component

Behavioural

Suspect Transaction/s

Suspect Participants/s

Transactional

Time

None

Single transaction

Multiple transactions

Short timeframe

Long timeframe

Out of bounds

Recurring frequency

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Refine the APRICOT model (II)

Enhancement of current model

- Remodel the IMPACTED PARTIES dimension into:
  - Victims/target of a typology
  - Participants/Counterparties to the transactions through which the typology is executed (association only)
  - Perpetrators of the typology

Refine the APRICOT model (III)

Enhancement of current model

- Included Country Risk information to better identify regulatory arbitrage
    - KnowYourCountry.com models country risk transparently across 8 dimensions
    - Trade/transactions from a low-risk country to a high-risk country triggers all typologies that rely on regulatory arbitrage

	Indicator / Sub Indicator	Weighting
1	Money laundering/terrorist financing risks	56
	1.1. FATF Uncooperative / AML Deficient	25
	1.2. FATF Compliance with 40+9 Rec	10
	1.3. US State ML Assessment	15
	1.5. US Secretary of State terrorism	6
2	International sanctions	15
3	Corruption risks	10
4	World Governance Indicators	3
5	Narcotics Major List	3
6	Human Trafficking	3
7.	EU Tax Blacklist	5
8	Offshore Finance Centre	5

Refine the APRICOT model (IV)

Enhancement of current model

- Tweak the definition of the ORGANISATIONAL SCOPE dimension
  - Range of the typology across the transaction value chain
  - Visibility of the typology to participants in the transaction value chain

Refine the APRICOT model (V)

Enhancement of current model

- Add a "High risk participants" attribute

Adverse media	Microfinance service providers
Agents	Non-Government Organisations (NGOs)
Ancestry websites	Non-Profit Organisations (NPOs)
Charities	Politically Exposed Persons (PEPs)
Company registries	Prominent Influential Persons (PIPs)
Employment websites	Prominent Public Officials (PPOs)
Gambling website	Recruiters
Labour agencies	Risk model-calculated result
Low-regulatory jurisdictions	Subscription service providers
	Tax haven

The APRICOT graph

WHY A GRAPH?

- Easily answers the questions:
  - How many typologies that rely on x also rely on y and how many of those rely on z?
  - What is the DNA/fingerprint of a typology?
  - What is the degree of overlap between various typologies, and/or institutions

- Extensibility
  - Adding new classification attributes is trivial
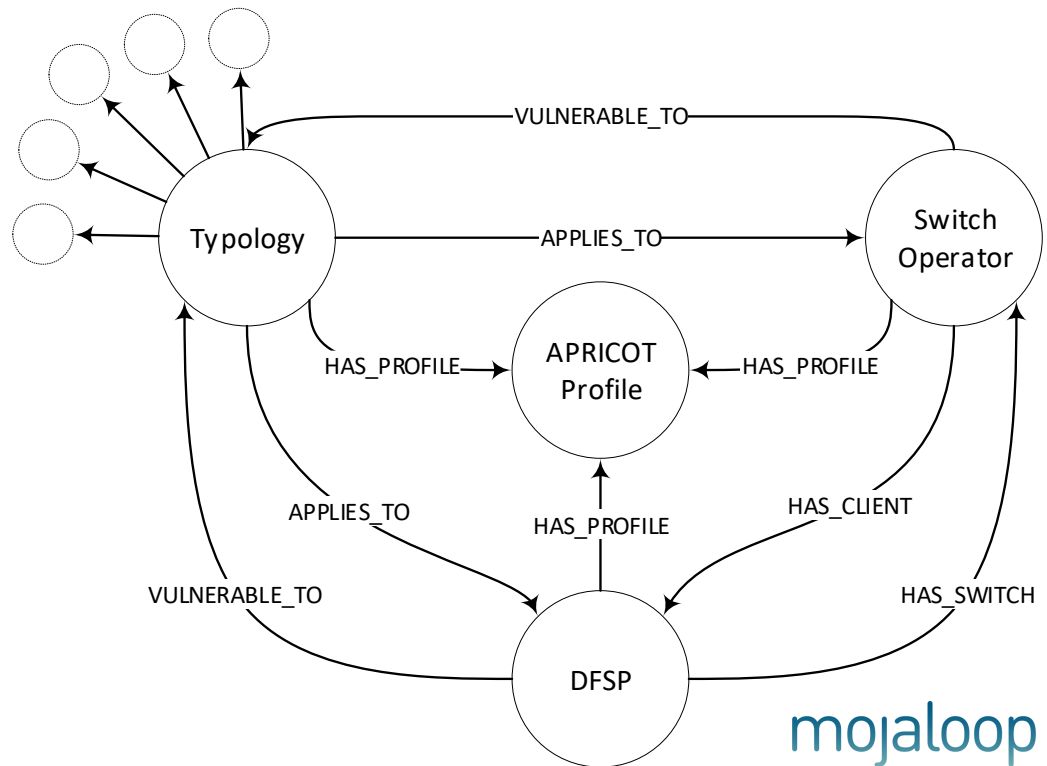
The APRICOT graph

Typology Fingerprints
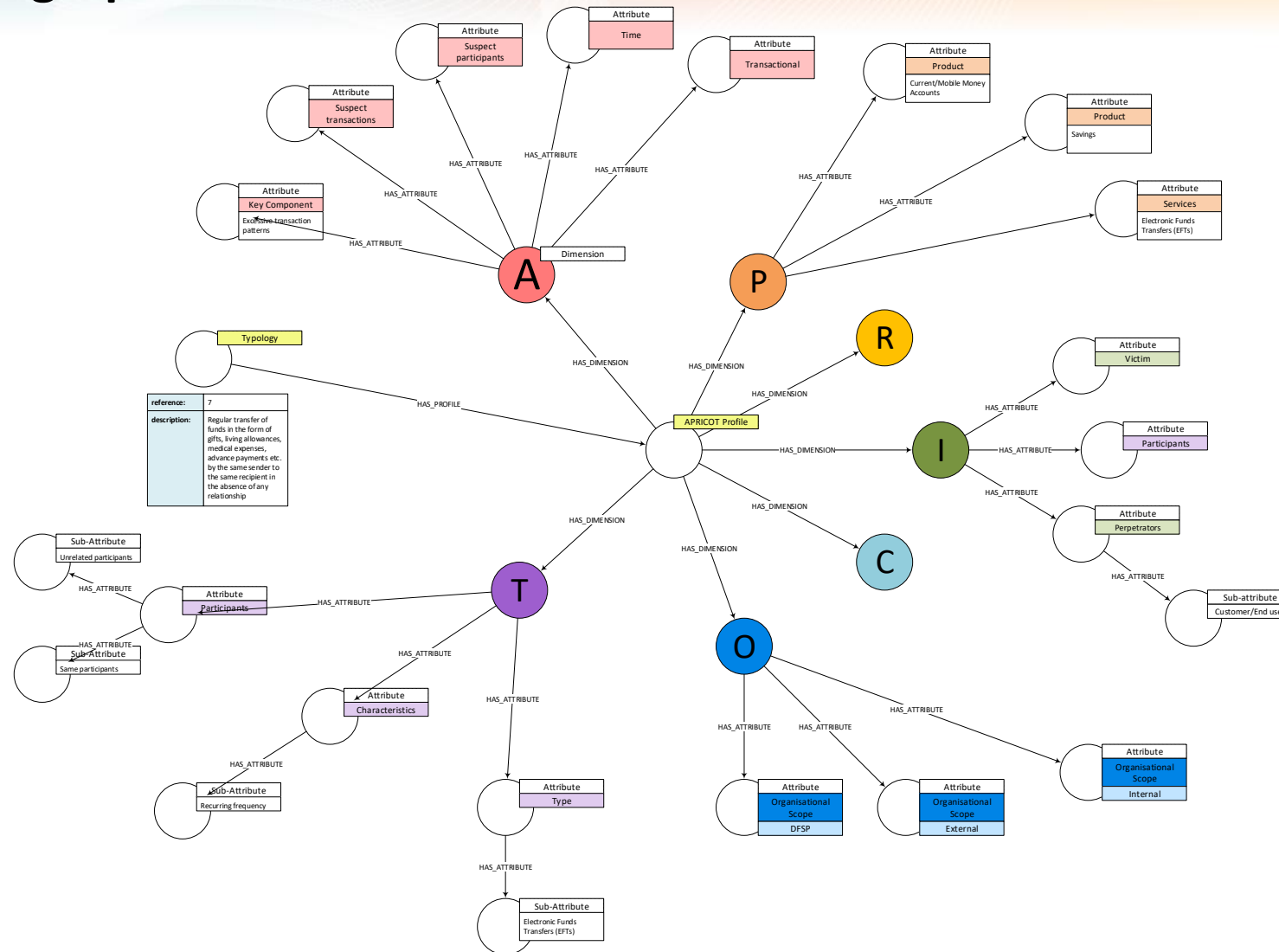
Deliverable 1

FRM capability assessment

Refinement of the APRICOT model

▼ Development of a fraud risk management questionnaire

Mapping of the questionnaire responses to the APRICOT model

Next steps and recommendations

The Fraud Risk Management Questionnaire

Why do you need a questionnaire?

- A standardised and repeatable approach to evaluating fraud vulnerabilities

- Evaluate the risks facing a prospective Mojaloop Hub Operator

- Evaluate the risks facing the DFSPs within a Mojaloop eco-system

- Fraud Risk Management is more than just transaction monitoring

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The Fraud Risk Management Questionnaire

Where does the questionnaire fit into a process?

- Procurement and/or development of an FRM solution

- Self-evaluation of risk by a Mojaloop hub operator

- Evaluation of DFSPs by a Mojaloop hub operator

- Identify vulnerabilities to motivate and implement specific risk controls

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The Fraud Risk Management Questionnaire

- Data availability
    - Specific typologies rely on certain data – if the data is not available, the typology cannot be detected effectively
    - Catalogue information for both private individuals, as well as legal entities
    - Include data for individuals acting in their own capacity, as well as individuals acting on behalf of a legal entity
    - Catalogue customer "account" information, including process-related information
    - Incoming and outgoing transactional data: payer, transaction, payee

The Fraud Risk Management Questionnaire

Operational concerns

- Products and services

Some typologies are highly specialised and specific, and relate only to a single type of product. For example commodities, securities and trade financing products account for 19 typologies.

- Scope:
  - DFSPs

Product	Description
Bank drafts	A cheque drawn by a financial institution on its own funds.
Cashier's Cheques	A cashier's cheque is a cheque issued by a financial institution to a third party on behalf of a customer.
Cheques	An order to a financial institution to pay a stated sum from the drawer's account, written on a specially printed form.
Brokerage accounts	Also "securities account". A brokerage account is an arrangement where an investor deposits money with a licensed brokerage firm, who places trades on behalf of the customer.
Credit cards	A small plastic card issued by a bank, building society, etc., allowing the holder to purchase goods or services on credit.
Credit guarantees	Also "bank guarantee". A credit guarantee assures a third party

The Fraud Risk Management Questionnaire

Operational concerns

- Regional presence and cross-border transaction flows
  - For the determination of vulnerabilities to regulatory arbitrage

Transaction flows from a low risk region into a high risk region creates vulnerabilities to 10 specific typologies

- Scope:
  - End users/customers
  - Agents
  - DFSPs
  - Mojaloop Hub Operators

C6 Know Your Country

- Lower Risk
- Medium Risk
- Higher Risk
- No Data
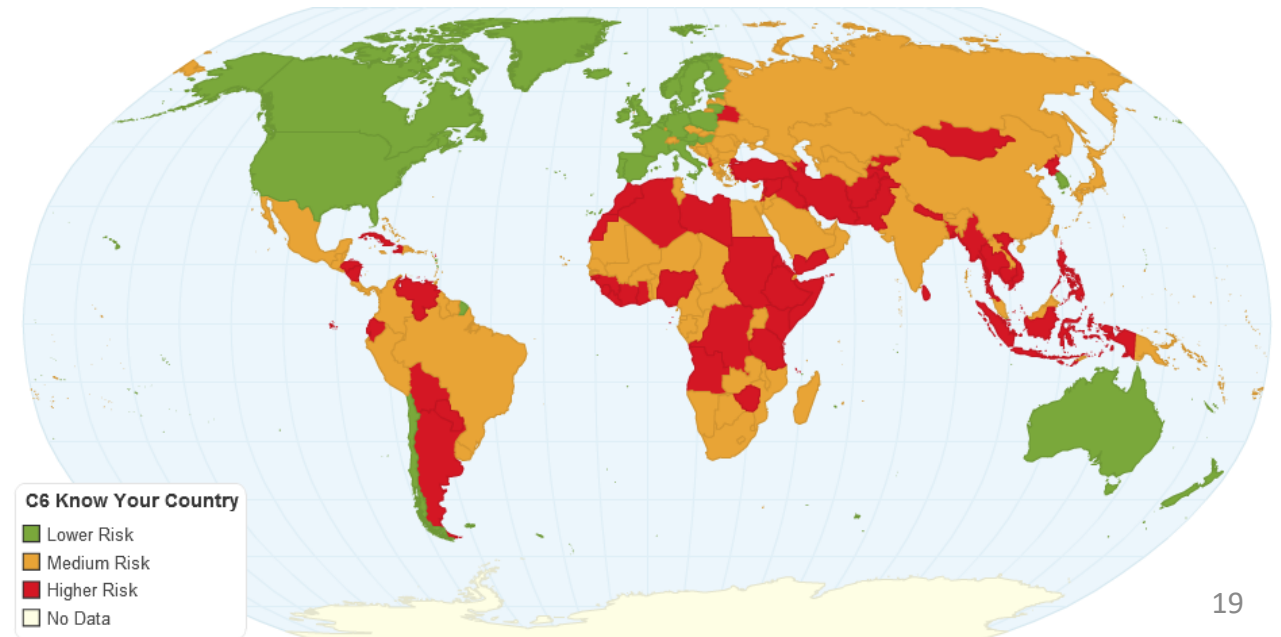
The Fraud Risk Management Questionnaire

Operational concerns

- ## Use of agents and agent commissions

Agent networks, particularly where agents are incentivised through commission schemes, create vulnerabilities to 16 specific typologies

- ## Scope:
  - ### DFSPs

Agent processes	Capability	Commission
Sign up new customers	●	●
Update customer information	○	○
Open new accounts	●	●
Update account information	○	○
Close existing accounts	○	○
Accept cash deposits into customer accounts (cash in) in return for electronic value (balance)	●	●
Disburse cash from customer accounts (cash out) against electronic value (balance)	●	●
Facilitate electronic funds transfers on behalf of customers	●	○
Perform payments on behalf of customers	○	○
Loans (cash or electronic value)	○	○

The Fraud Risk Management Questionnaire

Operational concerns

- Types of end-users/customers

Specific types of customers carry unique fraud risks and the presence of these customers in an eco-system require the implementation of specific rules and transaction monitoring strategies to detect fraud

- Scope:
  - DFSPs

Types of Customers
Business/Corporate customers
Informal collectives, such as clubs and associations
Importers/Exporters
Insurers
Investment Brokerages
Micro-lenders
Non-government/non-profit organisations or charities
Non-resident foreign nationals
Non-resident legal entities
Other financial institutions
Public services/government organisations
Private individuals
Professional services (Lawyers, accountants, doctors)
Remittance service providers
Retailers and Merchants (physical and online)

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Deliverable 1

FRM capability assessment

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▼ **Next steps and recommendations**

Next Steps and Recommendations

Fraud Risk Management capability assessment

- Automation of the interpretation of the questionnaire results

- Testing and calibration of the model against real-world results

- Identify the risks and the controls for a precise Fraud Risk Management response

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Deliverable 2

FRM vendor assessment

▼ FRM solution selection criteria

Development of a Request for Information Template

Prospective FRM solutions

Next steps and recommendations

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FRM solution selection criteria

- Presence
  - World Bank Group's Universal Financial Access by 2020 Focus Countries
  - Local branches, partnerships or staff vs remote service and deployment

FRM solution selection criteria

- Requirements
  - Data pipeline creation and management
    - RESTful APIs
    - Data streaming capabilities
    - Performance metrics for volumes (TPS) and turnaround time (ms)
  - Rules engine
    - Standard rules library
    - Extensible and configurable
    - Fraud focused, but AML capable
    - Focused on transaction monitoring
  - Case Management
    - Roles-based
    - Configurable workflows
    - Distributed browser-based multi-tenanted access

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Deliverable 2

FRM vendor assessment

FRM solution selection criteria

▼ Development of a Request for Information Template

Prospective FRM solutions

Next steps and recommendations

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Development of an RFI template

Ref	Requirement	Full	Partial	WIP	Planned	None
6.1.1	The ability to accept a high volume of transactions (3000 transactions per second or greater) in real-time from another system in a continuous, streaming fashion					
6.1.2	The ability to conclude the evaluation of a transaction in under 400 milliseconds					
6.1.3	The ability to accept transactions simultaneously and in real-time from multiple source systems					
6.1.4	The ability to accept transactions through RESTful API					
6.1.5	The ability to restrict access to the management and configuration of the data interface to authorised users only					
6.1.6	The ability to monitor the performance of the transaction interface in real-time through an administrative dashboard					

Deliverable 2

FRM vendor assessment

FRM solution selection criteria

Development of a Request for Information Template

▼ Prospective FRM solutions

Next steps and recommendations

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Prospective FRM solutions

Prospective FRM solutions

Fraud Risk Management solution comparison

FRM Solution	Presence	Data pipeline	Rules Engine	Case Management
CaseWare Alessa	● (full)	◔ (partial)	◔ (partial)	● (full)
ComplyAdvantage	◔ (partial)	◔ (partial)	◔ (partial)	● (full)
Feedzai	◔ (partial)	● (full)	● (full)	● (full)
ACI Proactive Risk Manager	● (full)	◔ (partial)	◔ (partial)	● (full)
EastNets PaymentGuard	◑ (half)	◔ (partial)	◑ (half)	● (full)
3i Infotech AMLOCK	● (full)	◑ (half)	◔ (partial)	● (full)
SAS Fraud Management	● (full)	● (full)	◔ (partial)	● (full)
Brighterion AI	● (full)	◔ (partial)	◑ (half)	● (full)

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Prospective FRM solutions

Contact Matrix

FRM Solution	Contact	Web address	Contact email address
CaseWare Alessa	Joel Freckleton	www.caseware.com/alessa/	joel.freckleton@caseware.com
ComplyAdvantage	Emir Osmanovic	complyadvantage.com/	emir.osmanovic@complyadvantage.com
Feedzai	Michael Sedcole	feedzai.com/	michael.sedcole@feedzai.com
ACI Proactive Risk Manager	Dan van der Westhuizen	www.aciworldwide.com/products/proactive-risk-manager	dan.vanderwesthuizen@aciworldwide.com
EastNets PaymentGuard	Ala'a Suleiman	www.eastnets.com/solutions/risk-aml-compliance/fraud-detection-prevention/en.safewatch-payment-guard	ASuleiman@eastnets.com
3i Infotech AMLOCK	Arvind Viswanathan	www.3i-infotech.com/kastle-secure-banking/anti-money-laundering/	ARVIND.V@3i-infotech.com
SAS Fraud Management	Mark Timms	www.sas.com/en_za/software/fraud-management.html	Mark.Timms@sas.com
Brighterion AI	Vikas Dahiya	brighterion.com/	Vikas.Dahiya@mastercard.com

Product evaluation observations

- Case Management isn't a great product differentiator

- Focus on Fraud vs Money-Laundering

- DFSPs vs Hub Operators
  - Broad, comprehensive solutions
  - Possibly over-kill for an operator

- Entity resolution may be a challenge

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Deliverable 2

FRM vendor assessment

FRM solution selection criteria

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Prospective FRM solutions

▼ Next steps and recommendations

Mojaloop Fraud Risk Management

PI 8

PI 9

PI 10

BRD

RFI

DATA

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Next Steps and Recommendations

Determine a Mojaloop FRM Strategy

BUILD	**VS**	BUY

BUILD

- Appoint a product owner
- Unpack the FRM BRS
- Complete solution architecture
- Plan/scope the development
- Recruit/appoint a developer
- Secure funding
- Develop and deploy

BUY

- Customise the RFI template
- Determine the scope of the solution
  - Fraud vs AML/CFT
  - Eco-system vs Hub
- Vendor engagement, review, selection
- RFP
- Implementation

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