

Talking Interoperability

In Focus | Zambia



Digital
Convergence
USP2030

Agenda

12:00–12:15

Welcome

12:15–13:00

Presentation ZISPIS

13:00–13:30

Discussion

13:30–13:55

Audience Q&A

13:55–14:00

Closing remarks



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Housekeeping rules

- Ask your questions in the Q&A box
- Share any comments or resources in the chat
- Session will be recorded



To: Everyone ▾



Your text can be seen by panelists and other attendees



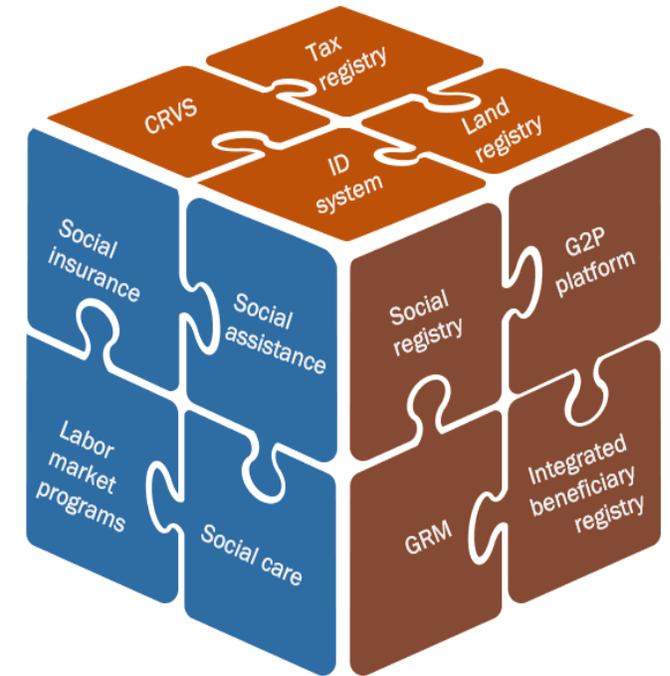
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The Digital Convergence Initiative (DCI)

A joint effort by USP2030 members and non-members, governments, development partners and private sector towards creating a harmonized and interoperable digital ecosystem for social protection

Building consensus-based standards for interoperability to

- **foster an ecosystem for innovation** by ICT solution providers to build products that are interoperable, easy to use, integrate, maintain and scale
- **reduce time and costs** of developing solutions at the country/program level
- enable programs and countries to **mix and match different components** from different suppliers
- **ensure that systems are future-proof by design**, regardless of current levels of policy and information systems maturity



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Talking interoperability

A monthly dialogue series by the DCI to facilitate in-depth technical conversations around integrated and interoperable SP information systems across countries

Deep dive into one country-level system per session to...

- share the technical nuts and bolts of how agencies have designed their social protection information systems for interoperability
- understand how agencies have tackled the major challenges to interoperability.
- brainstorm potential solutions to remaining bottlenecks



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Recordings of past sessions available

The image shows two browser windows side-by-side. The left window is at <https://sp-convergence.org/archive-past-events/> and displays the 'Past events' section of the Digital Convergence Initiative website. The right window is at <https://socialprotection.org/webinar-series#talking-interoperability> and displays the 'Talking interoperability - Dialogue Series' page. The desktop background is white, and the taskbar at the bottom shows various application icons and system information like the date and time (10-06-2022, 14:08).

Past events

- [Dialogue series: Session 3 - Turkey](#)
- [Dialogue series: Session 2 - Belgium](#)
- [Dialogue series: Session 1 - Karnataka State, India - Kutumba](#)
- [Applying the Principles for Digital Development in social protection](#)
- [Open source solution workshop](#)

Talking interoperability - Dialogue Series

The "Talking interoperability" dialogue series is organised by the Digital Convergence Initiative (DCI). These meetings aim to facilitate in-depth technical conversations around designing for interoperability in the social protection sector. By bringing together digital social protection and technology experts from government agencies, software vendors, system integrators and international organisations, they aim to promote peer-based learning and problem solving.

Webinars

1. [Kutumba, India \(Karnataka state\): Breaking data silos for inclusive social protection](#)
2. [Cross Road Bank for Social Security, Belgium: The Belgian experience achieving social sector interoperability](#)
3. [Integrated Social Assistance Information System \(ISAS\), Turkey: Creating the Digital Social Assistance System](#)

Organisers

Digital Convergence USP2030

[Past Events – digital convergence initiative \(sp-convergence.org\)](https://sp-convergence.org)

<https://socialprotection.org/webinar-series#talking-interoperability>



Introductions

Presenters



Dr David Phiri

Director ICT,
Ministry of
Community
Development and
Social Services

Craig Kilfoil

Senior Digital
Payments
Specialist, World
Bank

Lubasi Musambo

Principal Officer in
Charge of SCT
MIS, Ministry of
Community
Development and
Social Services

Discussants



**Christabel E.
Dadzie**

Senior Social
Protection
Specialist, World
Bank

**Alejandro
Grinspun**

Senior Economist
in the Social
Protection Team,
FAO

Moderator



Richard Chirchir

Principal
Management
Information
System Specialist,
Development
Pathways



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Integrated Social Protection Information
Systems, Zambia

Dr David Phiri
Lubasi Musambo
Craig Kilfoil

Outline

- 01 ● The Zambian Context
- 02 ● The Zambia Integrated social Protection Information System (ZISPIS)
- 03 ● Interoperability Capabilities
- 04 ● Interoperable Payments
- 05 ● Challenges & Way forward
- 06 ● Close

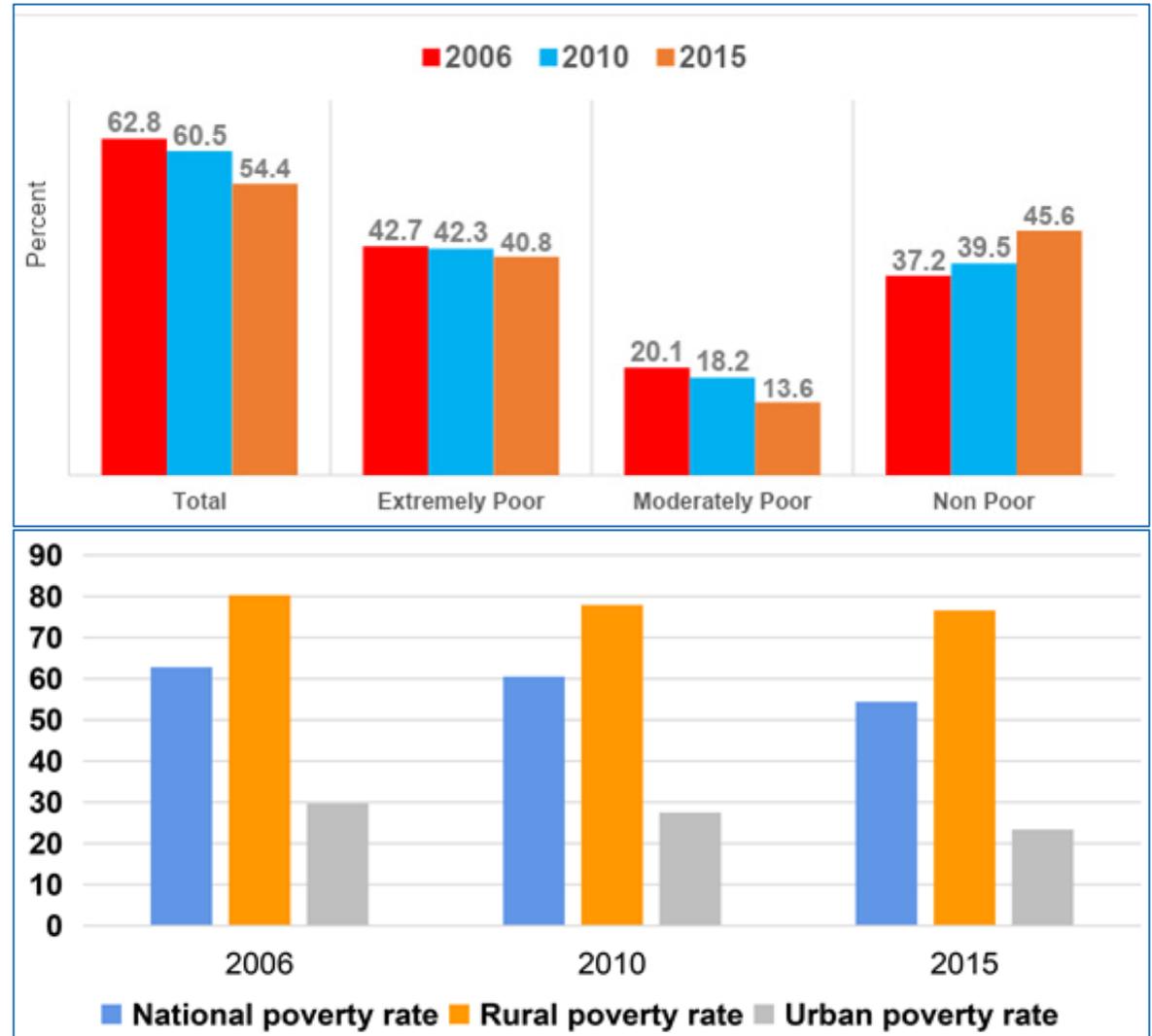


The Zambian Context

The background features a faint, light green silhouette of a graduation cap (mortarboard) on the left side. On the right side, there is a large, stylized orange shape that resembles a curved arrow or a decorative element. The overall background is a light gray gradient.

Poverty and social protection context in Zambia

- **Population:** 18.9 Million
3.6 Million HHs
- **Poverty level:**
 - ❖ **54.4 %** Nationwide lives below the international poverty line
 - ❖ Poverty is as high as **76.6 %** in Rural areas.
 - ❖ **40.8 %** percent of the population living in extreme poverty (LCMS 2015)
 - ❖ Multidimensional Poverty:



Poverty and social protection context in Zambia

- The Zambian government has prioritized poverty reduction since the 2002 adoption of the interim **Poverty Reduction Strategy Paper (PSRP)**, and subsequent National Development Plans.
- **Multi-Intervention Approach:** Social Protection, health, nutrition, education support, etc., strengthening household resilience and planting seeds to ensure future generation, to avoid ending up poor again

Highest coverage/key SP programmes

SP program	Target group/function	Lead agency	Coverage (HHs/individuals)
Social Cash Transfer	Extremely poor/Vulnerable	Ministry of Community Development and Social Service (MCDSS)	973,323 Households (30% of population)
Food Security Pack	Poor but Viable	MCDSS	263,000
SWL	Women from extremely poor HHs		
Public Welfare Assistance Scheme	Poor and Vulnerable		
Keeping Girls in Schools	School Girls		
FISP	Poor but Viable	Ministry of Agriculture	1,024,000
Children in Child Care			

Critical Motivations and Considerations for Digitalisation & Interoperability

Enable harmonized & automated management of critical processes of Social Protection Interventions including, enhanced oversight of Programmes, E-Disbursement, Improved Tracking and Reconciliation

Support Scaleup & Coordination

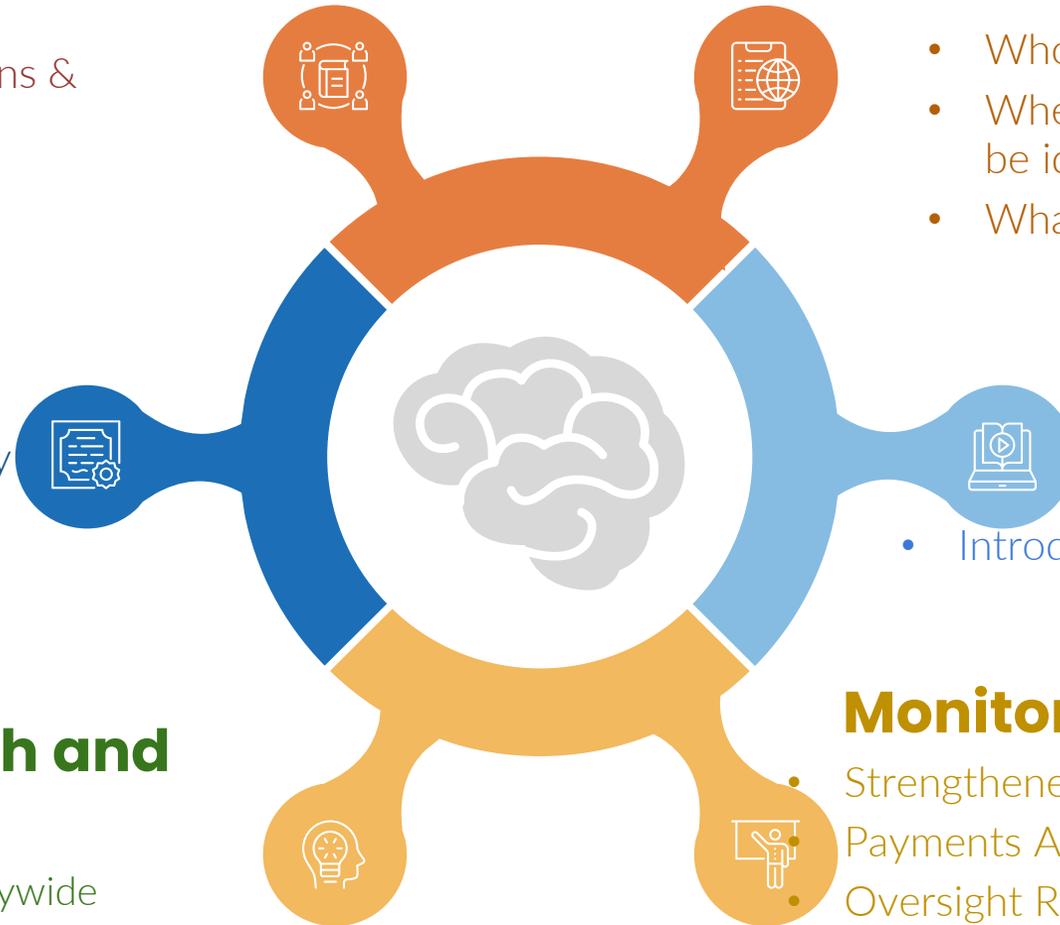
- Support Scaleup (new interventions & expanded caseloads)
- Coordination and Coherence
- Enhanced M&E of Interventions

Transparency and Accountability

- Enhanced Transparency & Visibility of intervention activities
- Improve accountability for Resources/Reduce error and fraud
- Stakeholder information sharing

Harmonised Approach and processes

- Standardise SP Processes Countrywide
- Harmonise entitlements?



Unified Eligible beneficiary lists

- Who are the Participating Beneficiaries?
- Where are they located and how can they be identified?
- What & How much are they Entitled

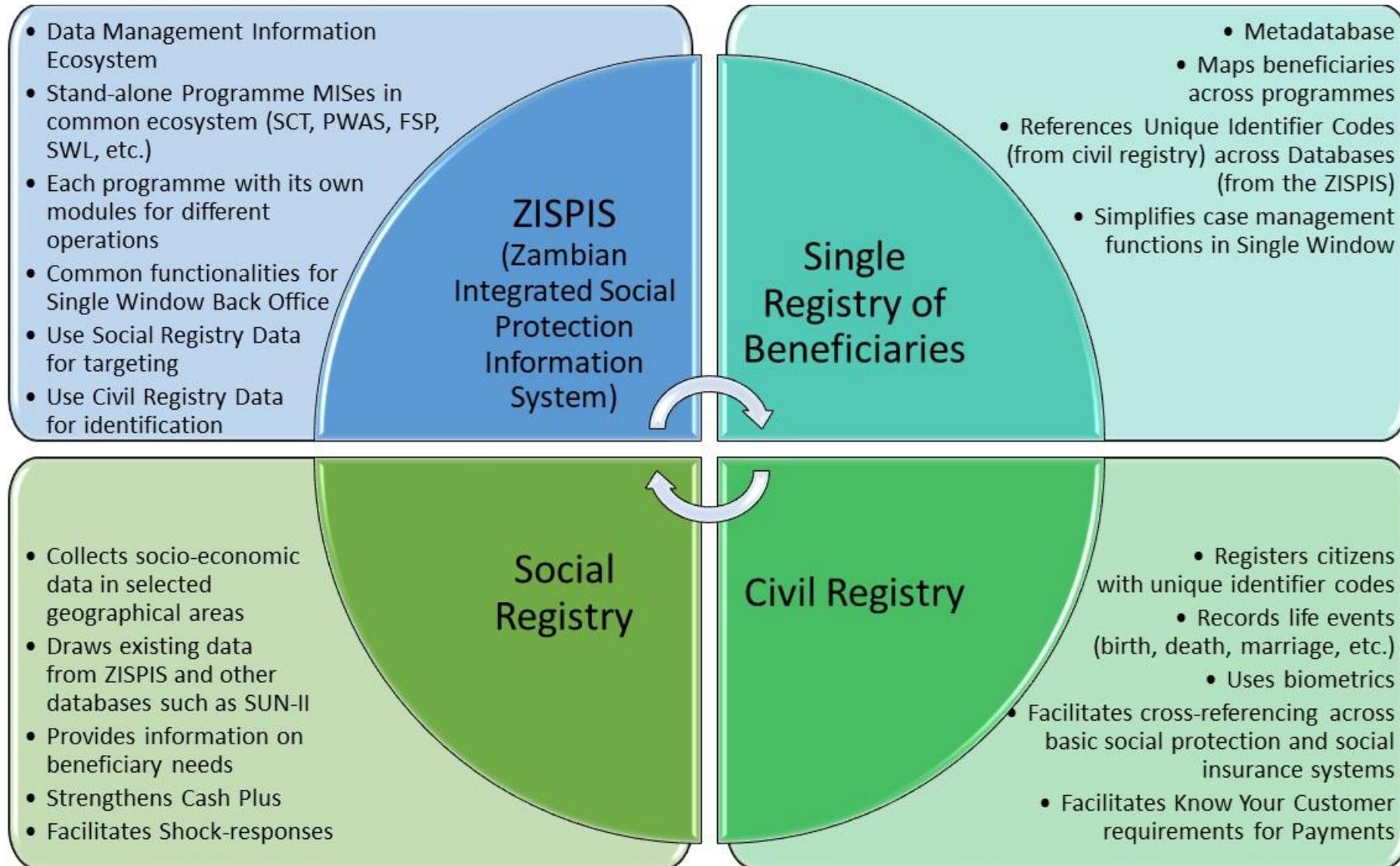
Management of Payment Processes

- Introduce electronic Payments and enhanced Authentication

Monitoring & Reconciliation

- Strengthened Controls & Accountability of Players
- Payments Accounting & Reconciliation
- Oversight Reporting and Tracking Tools.

Digital Transformation Vision for Social Protection



Information systems landscape in Zambia

Common digital infrastructure

Information system	Status (see legend below)	Responsible institution	Percentage of population covered (if available)
Common identification system	Under development	Internal Security / on GSB	
Social registry	Under development	MCDSS	>2,000,000
Common payments platform	Live	MCDSS	
Grievance redressal platform	Live	MCDSS	
Integrated beneficiary registry	Under development	MCDSS	> 1,400,000
Civil registration system	Under development	Health/Local Authorities/on GSB	
Disability registry	Live	MCDSS/ZAPD	



**The Zambia Integrated Social Protection
Information system (ZISPIS)**

Overview of The ZISPIS



- ❖ Launched in 2020, Significant Version Change in 2021
- ❖ **973,323** households covered
- ❖ \cong **5,061,280** individuals covered (**30 %** of population)

SP business processes supported

Initial registration	Eligibility check	Enrolment
Grievance redressal	Payment	Data management (updates)
Case management	Monitoring and evaluation	Shock Response Plug-in

TECHNOLOGY STACK

- **UI**
 - HTML5
 - CSS3
 - JQuery (OSS)
- **Backend**
 - Java 8
 - Spring Boot
 - Jasper Reports (OSS)
- **Data**
 - MongoDB
 - Elasticsearch (OSS)



How the ZISPIS system has evolved



Growth of the SCT caseload by 58%

ZISPIS System architecture

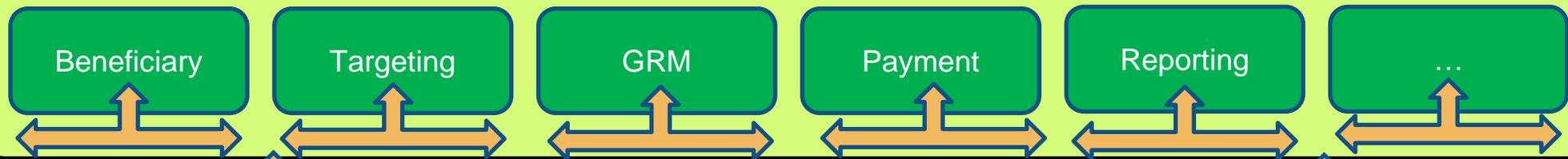


Frontend accessible by Web browser (Spring Boot Thymeleaf)

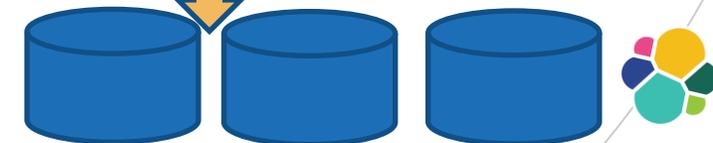


Security Layer: Authentication and Authorization

Backend



Datastore



Elasticsearch Data lake

Key milestones and Impacts achieved due to interoperability



Unified National Register of beneficiaries
Compared to District Excel Lists

Real time information exchange and interaction between Key Players



Payment Data Available in Real Time to 1 week compared to 2 Months



Real time integration with Payment service providers
Real-Time Disbursement of Payments



Step by Step comprehensive reporting, tracking and reconciliation

Cheaper disbursement through Payment Service Providers [Avg 3% Compared to about 15 %]



Convenient means of receiving SP support



Easy tracking of beneficiaries and Implementation of Graduation Pathways

Interoperability capabilities

The background features a light gray grid. Overlaid on this are several large, semi-transparent abstract shapes in shades of brown, tan, and green. Faintly visible in the background is the text 'i3S eT' in a light gray font.

Mapping data exchange across key systems

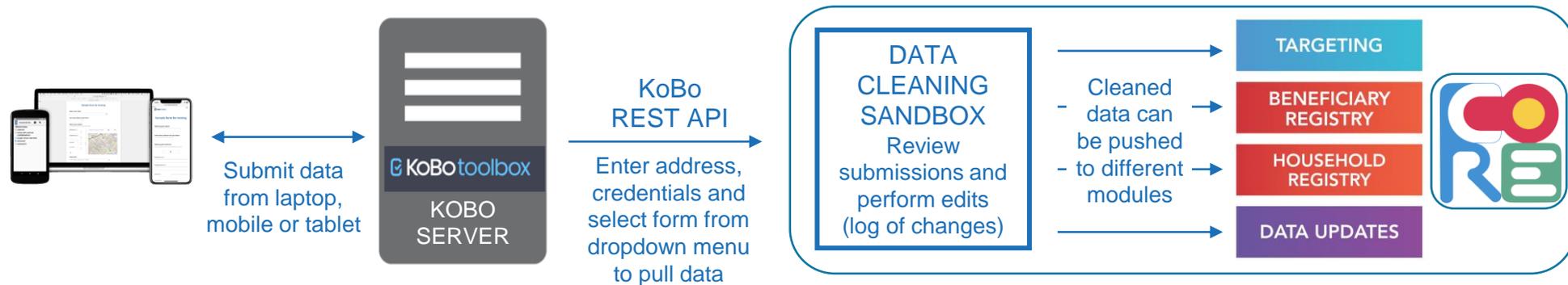
Common information system	Program 1	Program 2	Program 3	Program 4	Program 5
Common identification system	SCT	1000 Days	SWL	FSP	PWAS
Social registry	SCT	1000 Days	SWL	FSP	PWAS
Common payments platform	SCT	1000 Days	SWL	FSP	PWAS
Grievance redressal platform	SCT	1000 Days	SWL	FSP	PWAS
Integrated beneficiary registry	SCT	1000 Days	SWL	FSP	PWAS
Civil registration system	SCT	1000 Days	SWL	FSP	PWAS

Program draws on data from common information system

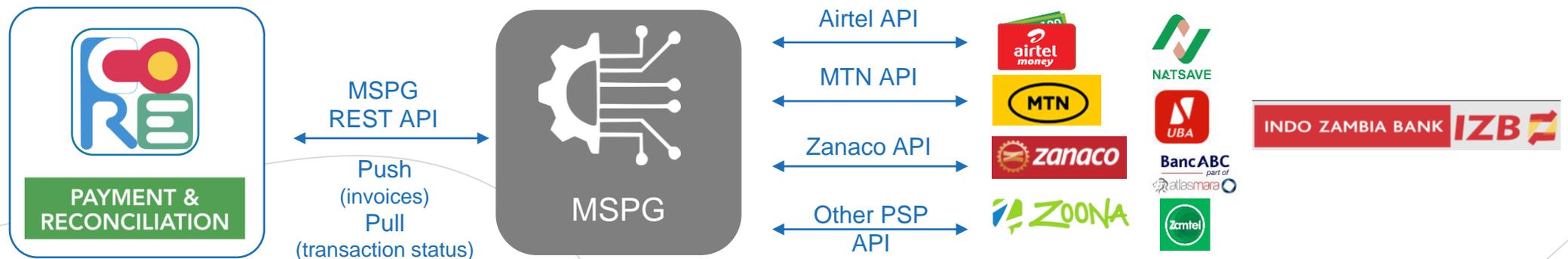
Program is not connected to the common information system

Integrations supported by ZISPIS

- ZISPIS supports integration with KoBo Toolbox to allow pulling of data collected through KoBo app



- ZISPIS supports integration with Zambia's MSPG facilitating digital payments through 9 PSPs



Coordination and Administration of Operationalisation Framework

Standardized Common Data

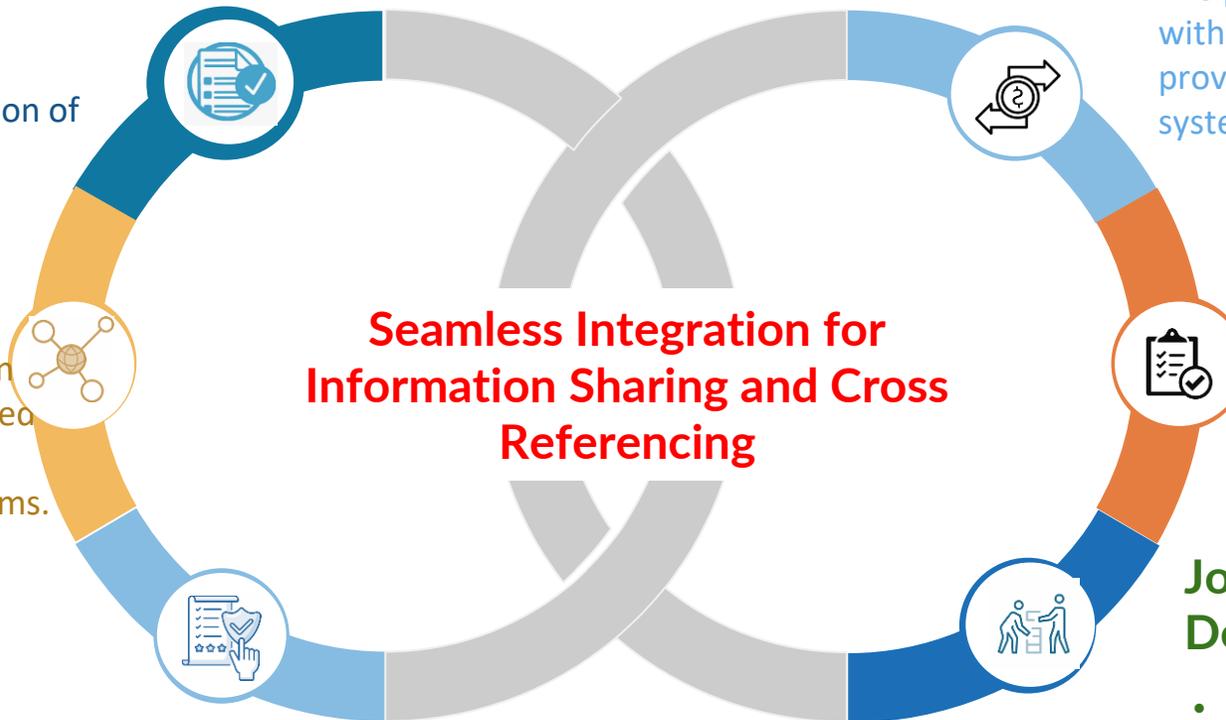
- Harmonised Data Capture Tool and Templates
- Sector Data Dictionary
- Coordinated Digital Transformation of the Sector

Sector Standards and Ecosystem Integration

- SP Digital Ecosystem is Anchored on the ZISPIS which is directly integrated to external systems and offer standard API for other Sector systems.
- (National Id, Civil Registry, SRB)

E-Government Regulations

- National Data Standards and Dictionary
- National Government Service Bus (GSB) with standard APIs



Payment Gateway Integrations

- Multi-channel
- The payment gateway is directly integrated with all participating Payment service providers and Provides standard API for systems in the sector

Technology Oversight

- Compliance with standards enforced through Explicit Systems Verification and Approval
- Explicit Clearance of deployment of ICT systems by Smart Zambia & Treasury

Joint Application Development

- Technical working Groups with Multi-programme representation
- Technical Reviews and validation sessions

MSPG (Multi-service Provider Payment Gateway)

Making Government Payments Interoperable “is a journey not a destination”

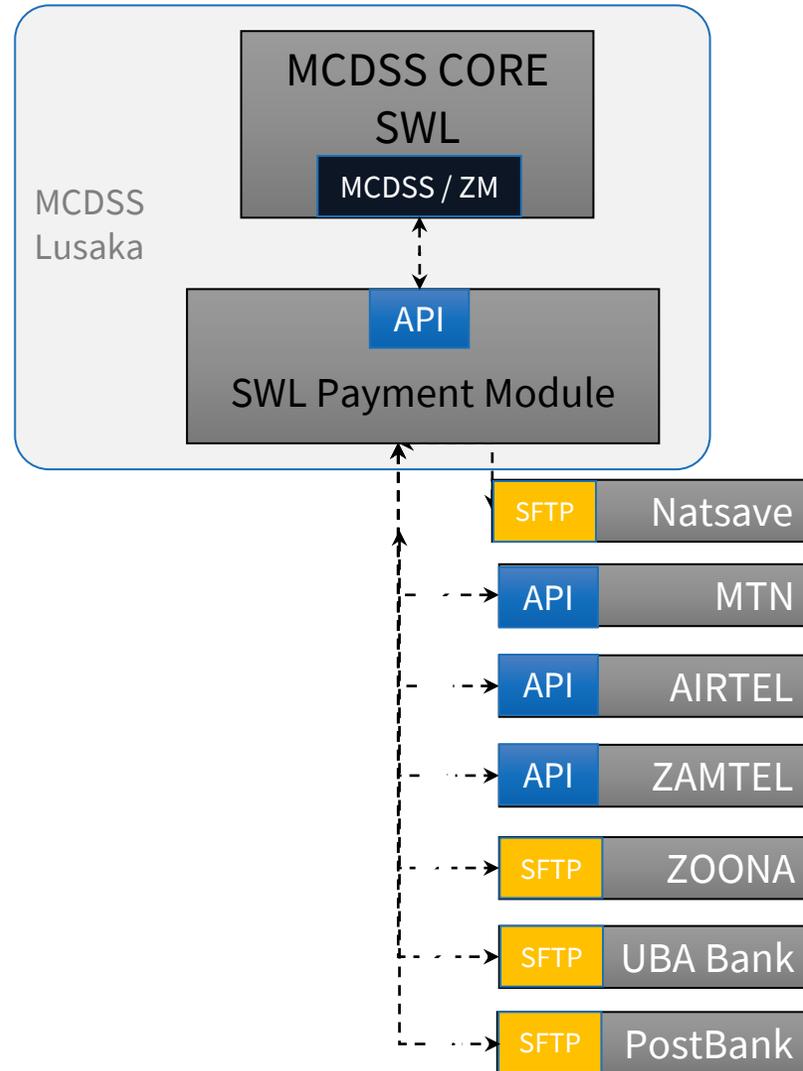
Key Design Features:

- Full Interoperability with all types of Payment Provider
- Bank Accounts
- Mobile Money
- VISA and MasterCard
- Electronic Vouchers
- Smart Cards





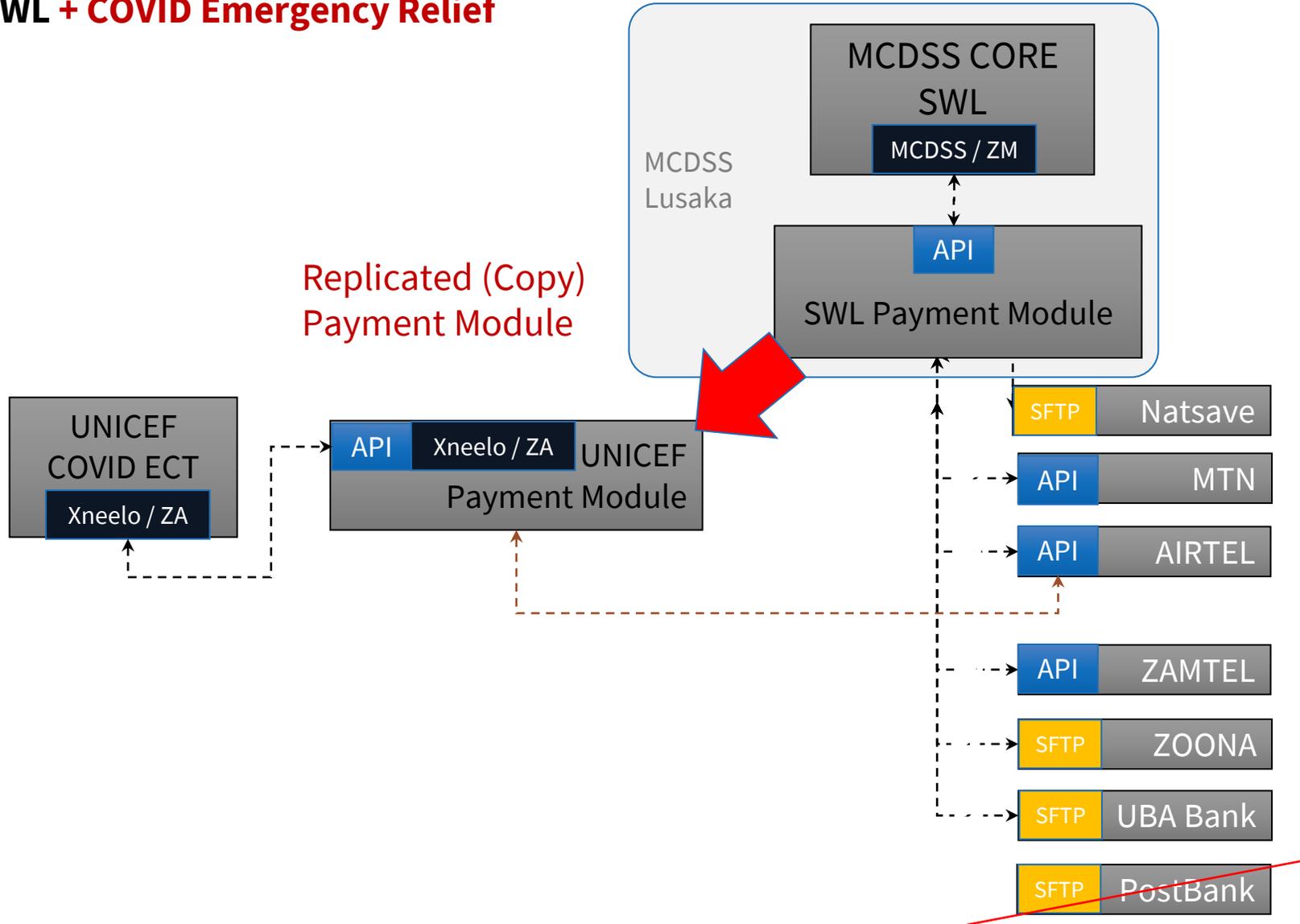
ZAMBIA MCDSS SWL Payment Options (2017/18)





Zambia MCDSS Payments Roadmap (2019 / 2020)

SWL + COVID Emergency Relief



PostBank Insolvent

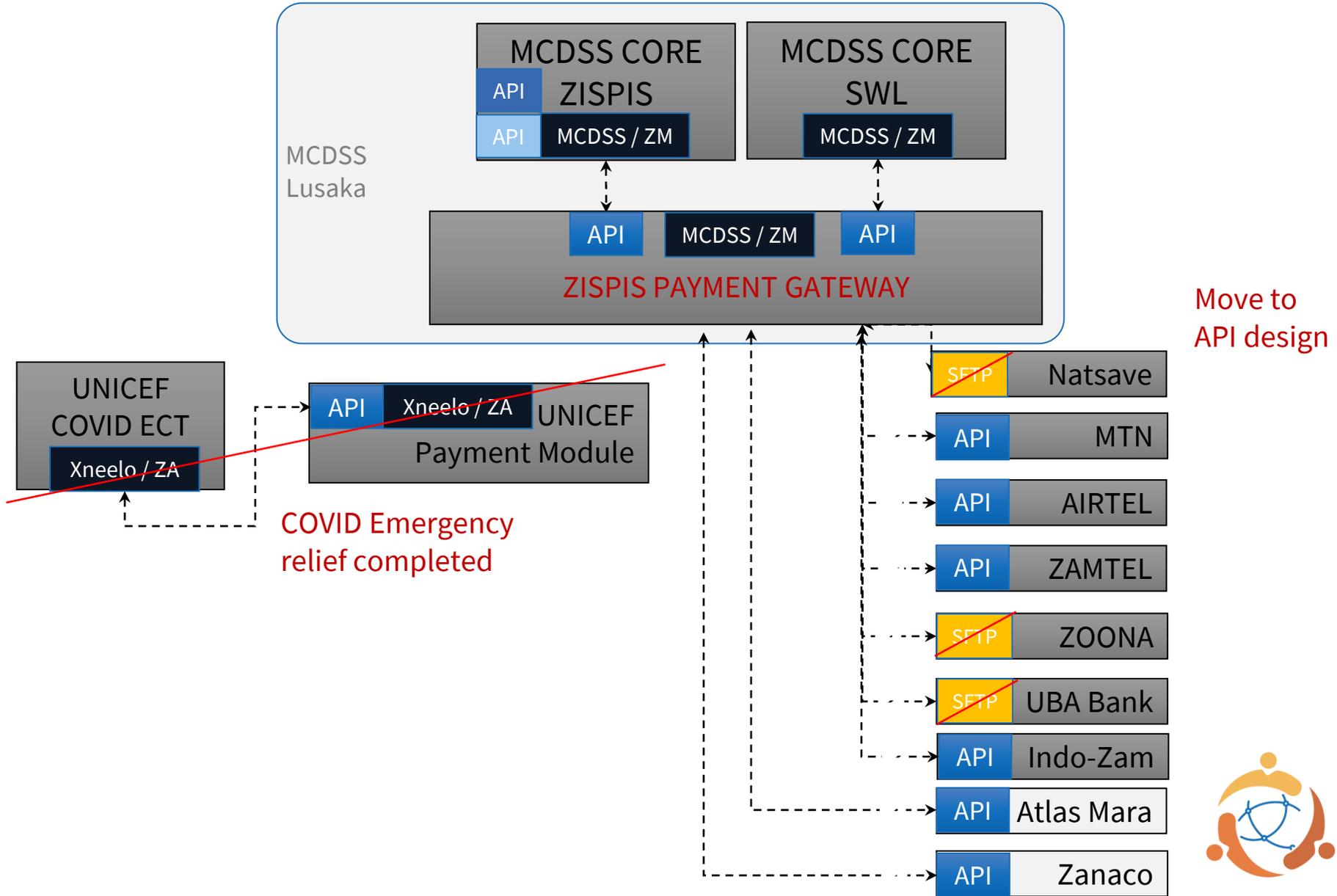


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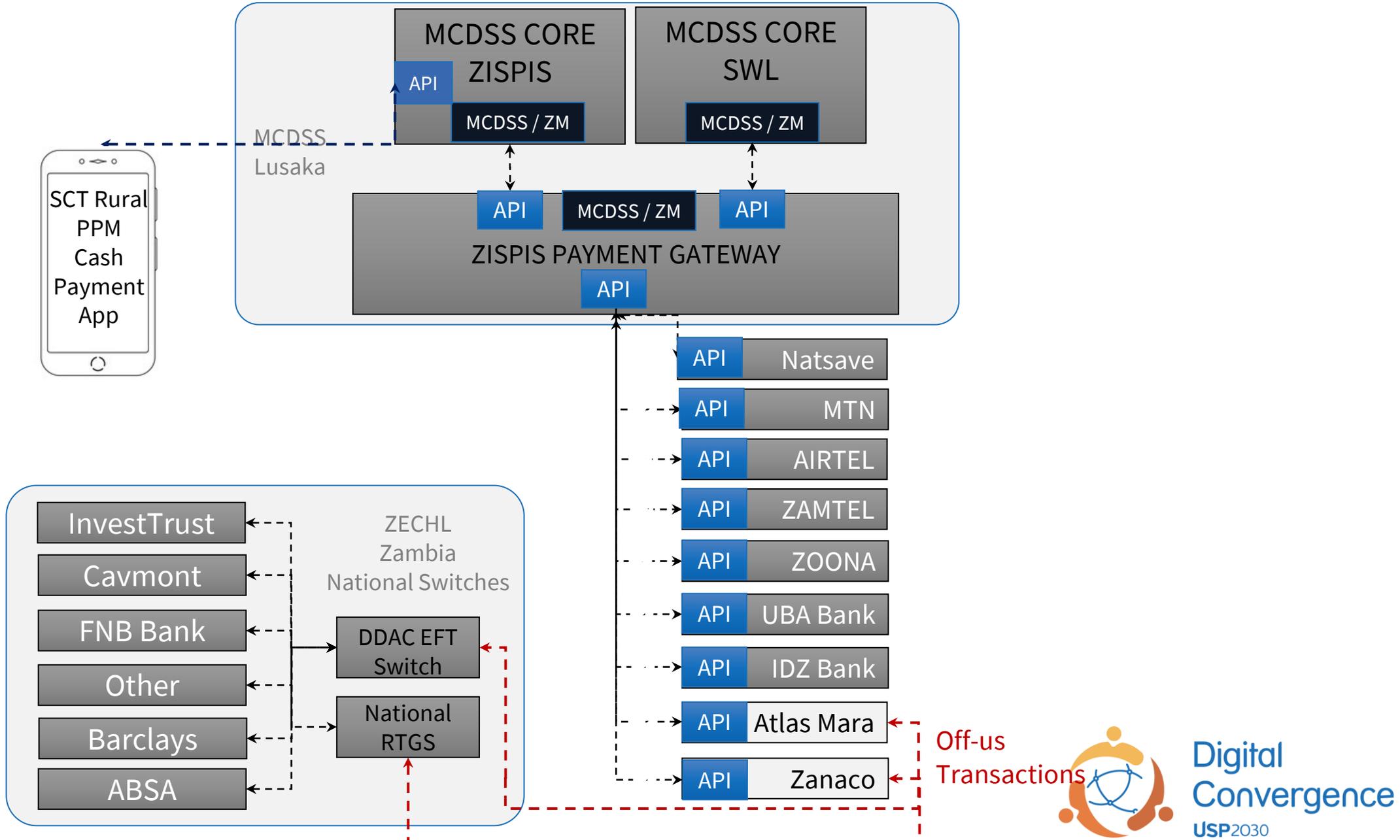
Zambia MCDSS Payments Roadmap (Q3 2021)

ZISPIS SCT + SWL CORE MIS



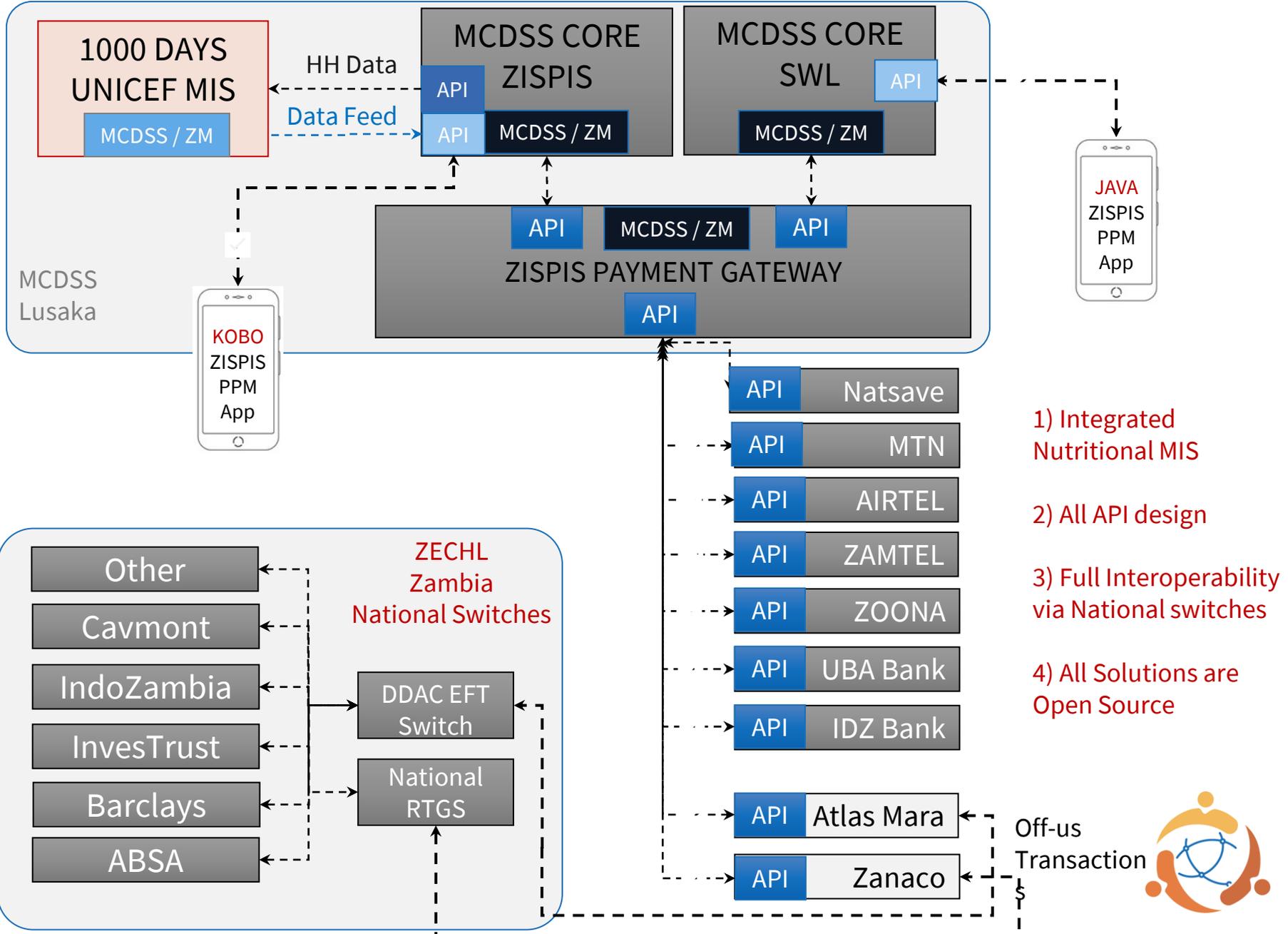


Zambia MCDSS Payment Systems Roadmap (Q2 2022) SCT Pilot + SWL Phase 4





UNICEF 1000 Days Integration + SCT National Roll Out + SWL Phase 5 (Q4 2022)





Authenticated Cash Payments + Electronic Reconciliation

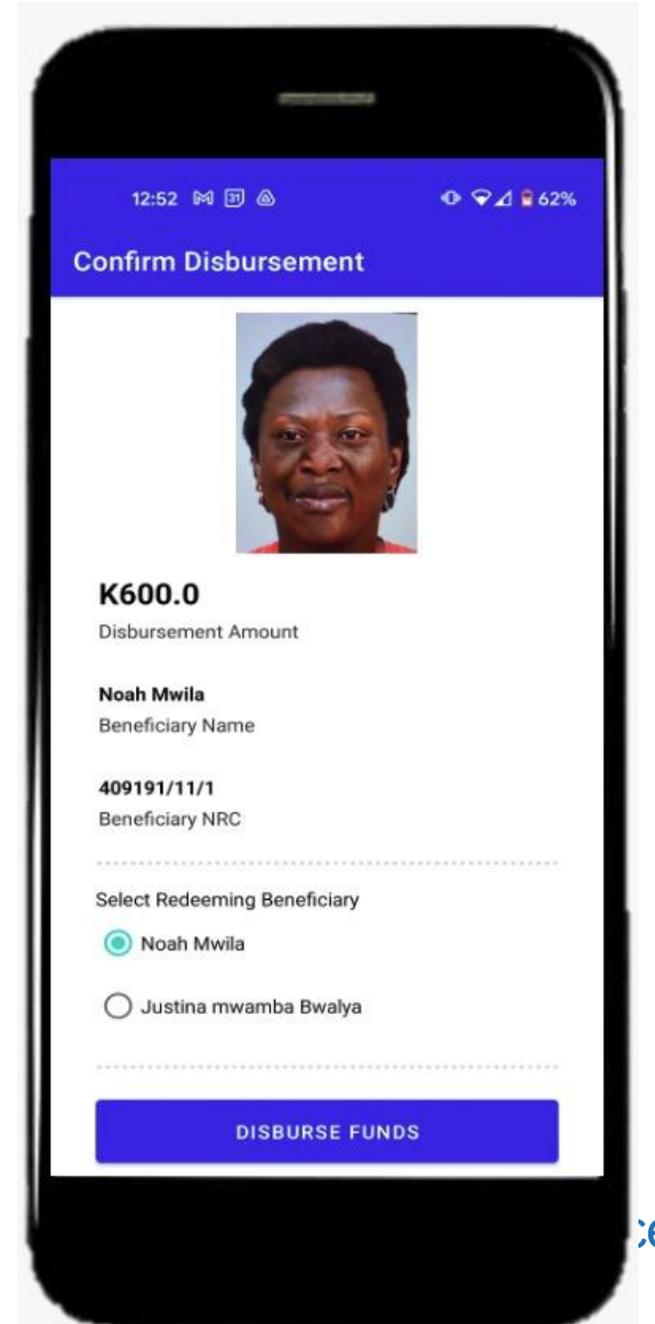
ZIPSI Pay Point Manager (PPM)

Open-source Android Kobo Toolkit App

- Rural Authenticated Cash Payments Application
- Multi-factor Authentication
- Off-line with On-line synchronization

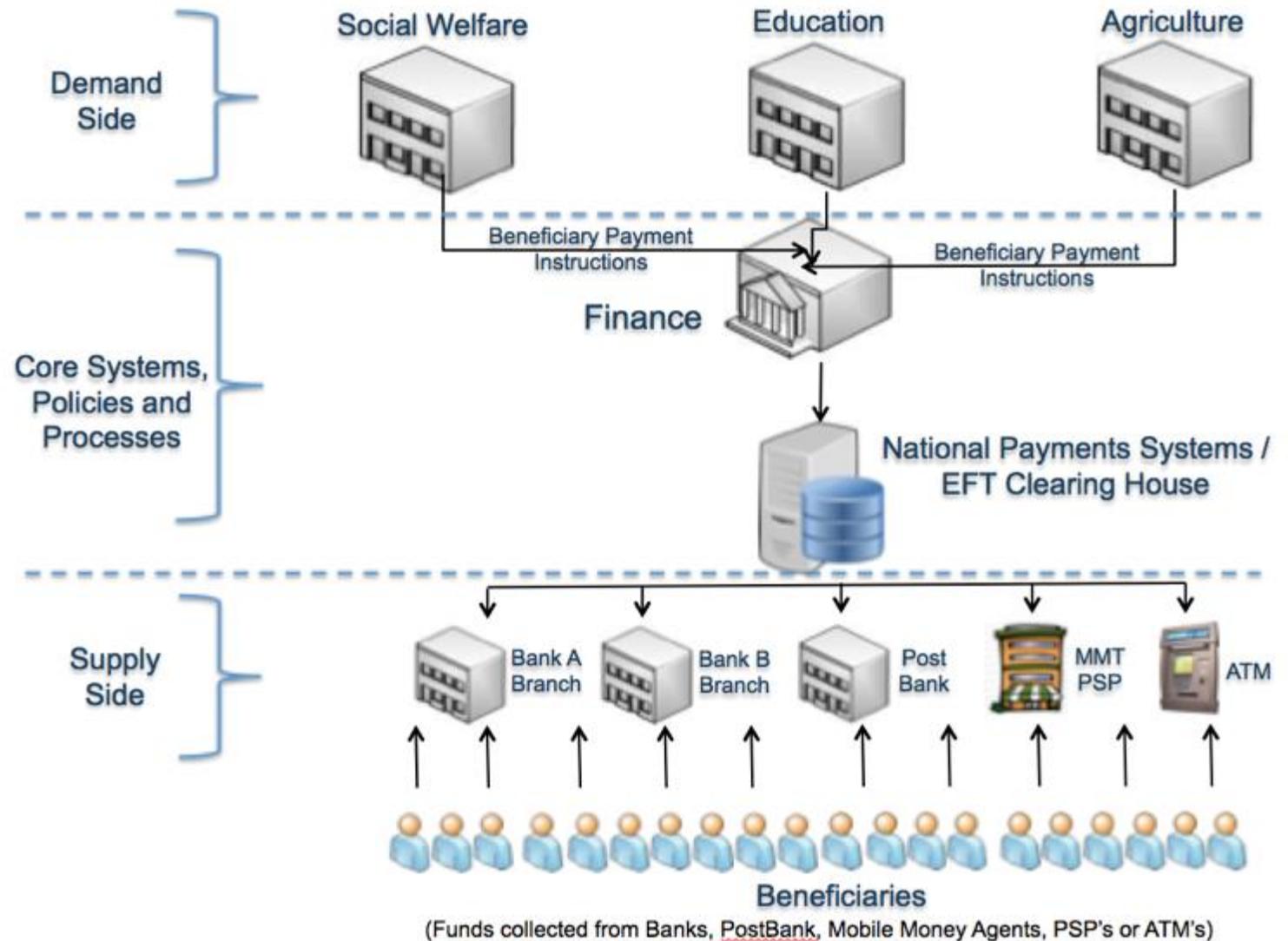
Multi-Factor Authentication

- Zambia NRC ID validation “Something I have”
- GPS Location Capture “Where I am”
- Biometric: Photo of Recipient “Something I am”



MSPG (Multi-service Provider Payment Gateway)

Making Government Payments Interoperable
“is a journey not a destination”



MSPG Design Principles 1

Procuring PSP's most often fails to scale nationally

- Procuring Service providers seldom works because no provider is everywhere.
- Procurement takes a long, is expensive because PSP's tend to see the service as a stand-alone silo and not as an extension of their core business where the costs are already sunk and they are just profiteering
- Procurement often leads to Vendor lock-in

Lake Tanganyika, Zambia

The remote district of Mpulungu/Mbala on the banks of Lake Tanganyika, for example, does not have a Zanaco Bank branch but one finds that Zampost and Cavmont Bank have a branch.



MSPG Design Principles 2

Zoona agent, Mangogo Village, Zambia

“Don't re-invent the wheel”

- Payment Service Providers are professional, regulated providers that know what they are doing - use them



MSPG Design Principles 3

“Deal with Exceptions, Exceptionally”

- It is a 3 to 4 hour boat trip from Samfya to pay people on Lunga Island.
- It is exceptionally difficult.
- But paying 95% of Zambian’s is not exceptionally difficult

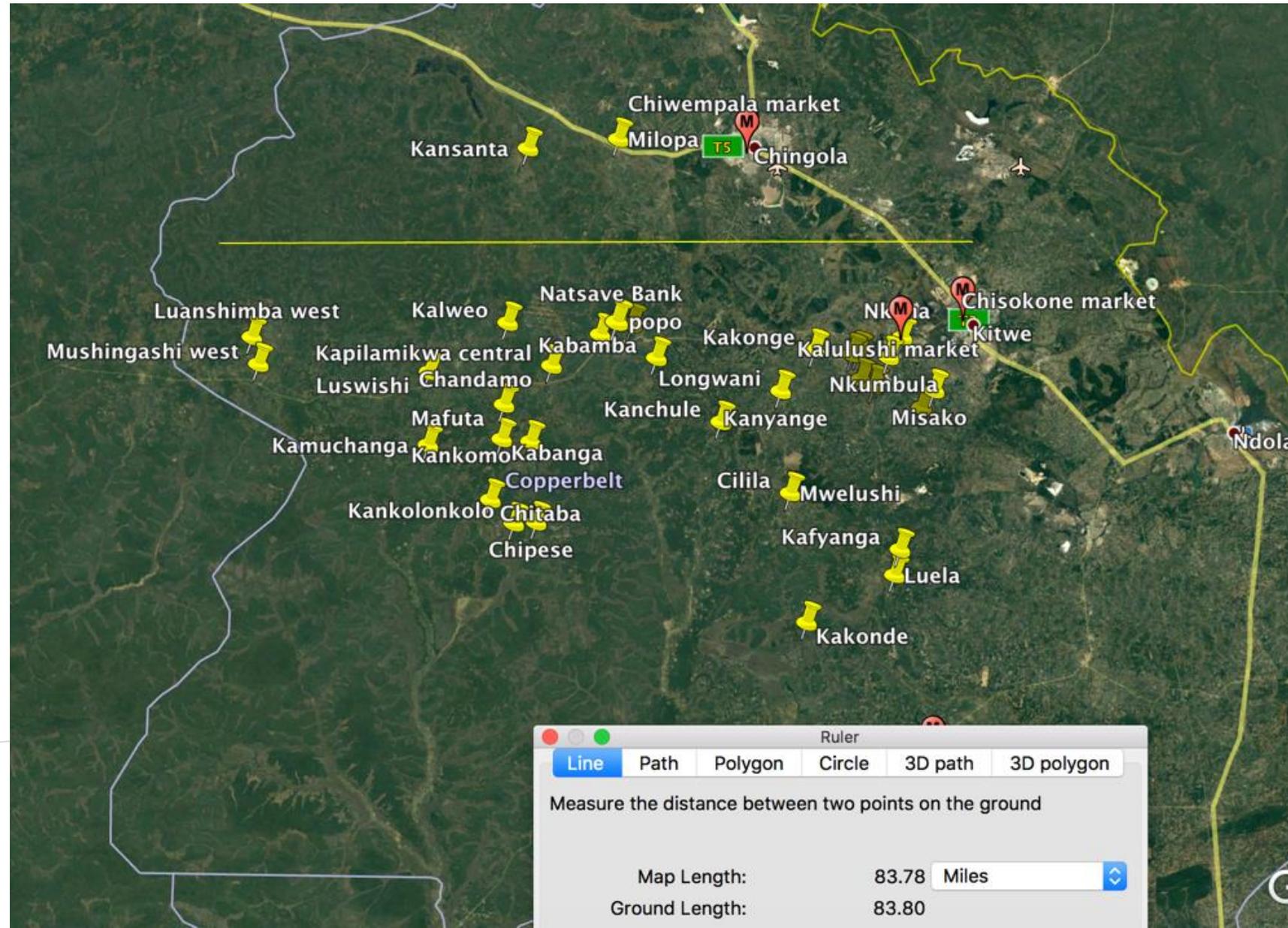
Samfya, Zambia



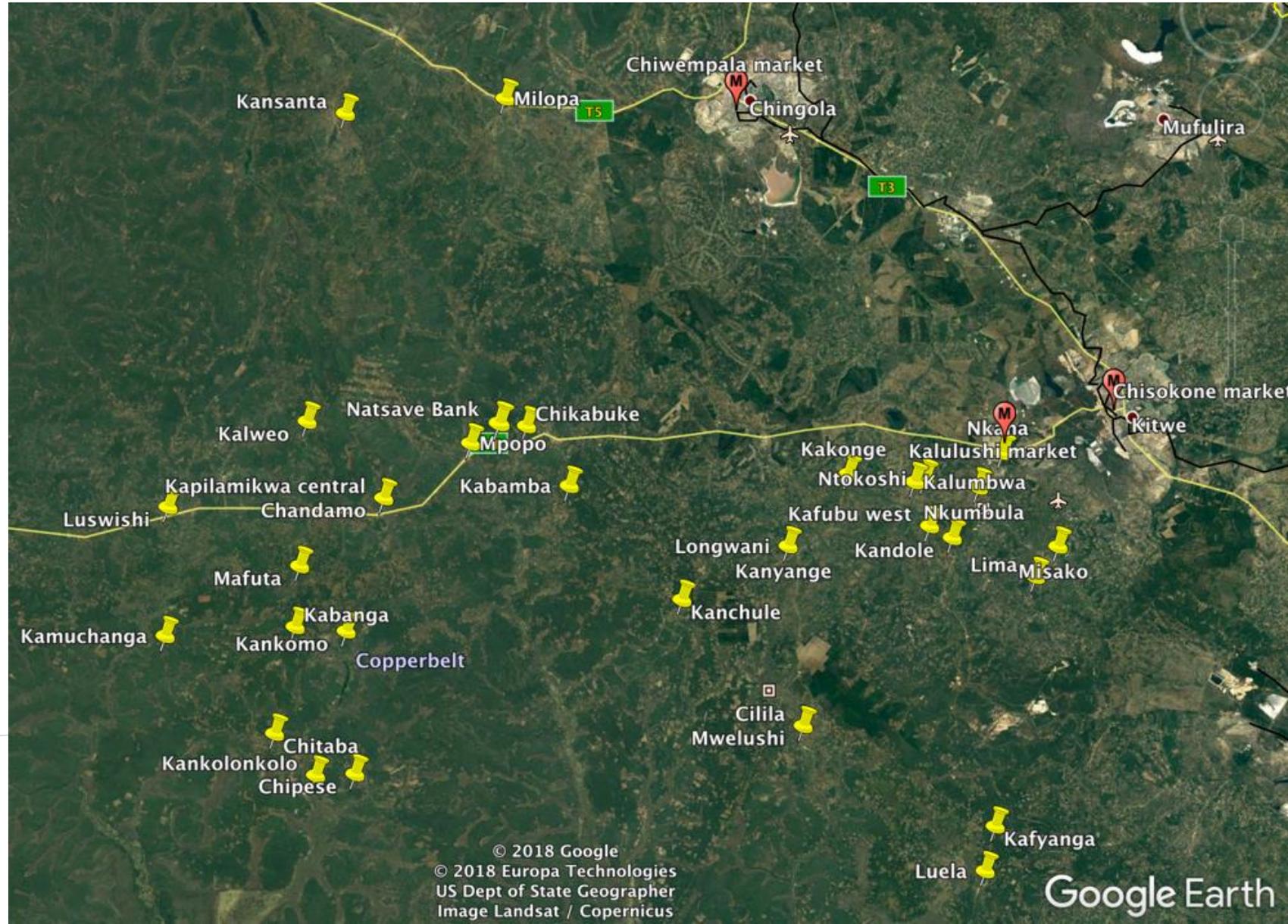
MSPG Design Principles 4

Zambia has 114 Districts

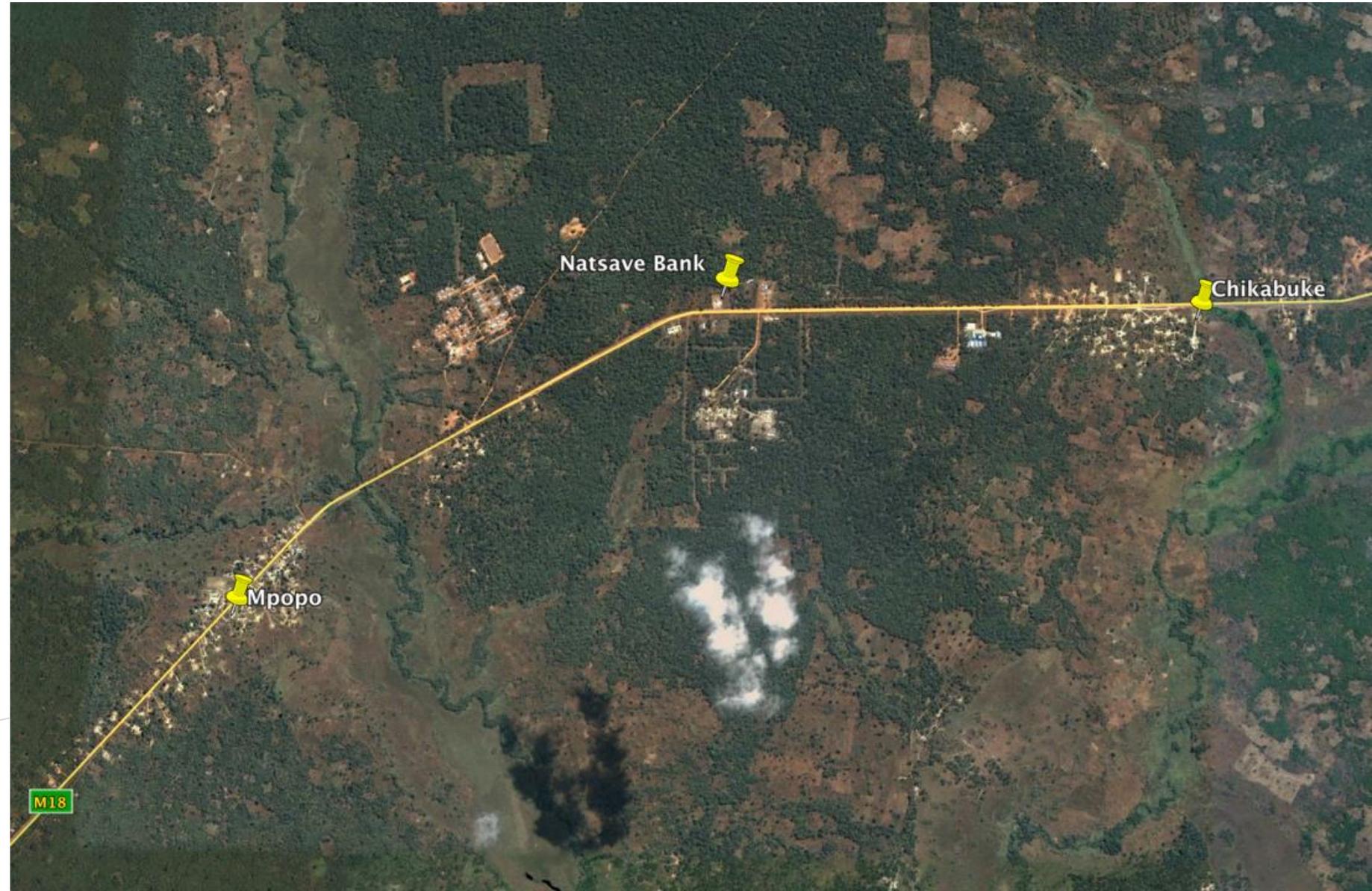
Lufwanyama District
alone is 150km wide



Lufwanyama District



Lufwanyama District



MSPG Design Principles 4

Lufwanyama District



MSPG Design Principles 4

Who knew that in the middle of Lufwanyama District there was a Natsave Bank Branch ???



They did



MSPG Design Principles 4

“Ask me and I will tell you how to send me money”

When asked, over 86% of SWL beneficiaries in Lufwanyama had been sent money before via ZoonA.

Collectively, every (100%) poor person interviewed in 35 Villages had been sent money that year.

Lufwanyama 2017, Zambia

Lufwanyama – PSP Most Commonly Used in Community (35 CWAC's)		
	Freq.	Percent
Zampost	17	48.57%
Natsave	5	14.29%
Zanaco	0	0.00%
Investrust	0	0.00%
MTN	12	34.29%
Airtel	0	0.00%
ZoonA	30	85.71%
PersonHolding cash	5	14.29%
Other	2	5.71%

MSPG Design Principles 5

“I am poor, not stupid”

- Poor people are financially astute because they need to be to survive
- They know exactly how much things cost and they know about fees
- When empowered they make wise financial decisions
- Give me a little extra to pay the withdrawal fee and I will make a wise decision that suites me

Subsistence farmer, Zambia

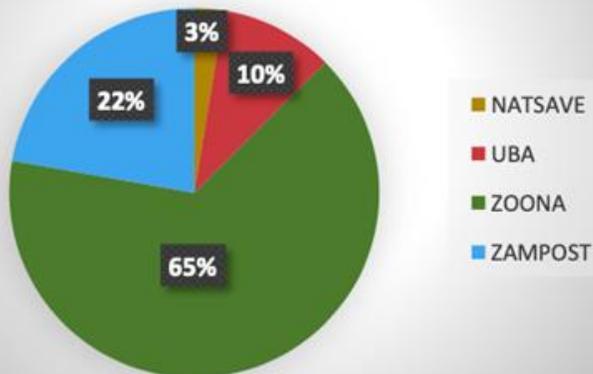


MSPG Lessons Learnt - What Choice looks like over 4 years

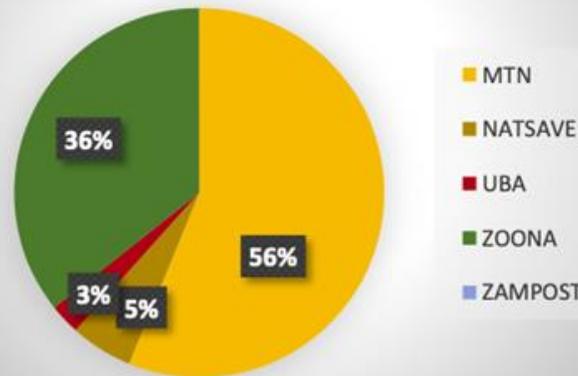
Samfya, Zambia

- Zoonna had 65% share and then MTN entered
- Zampost had 27% and went insolvent
- Airtel Money and Zamtel Money leveled the playing field
- Banks are always 1st prize where they have infrastructure

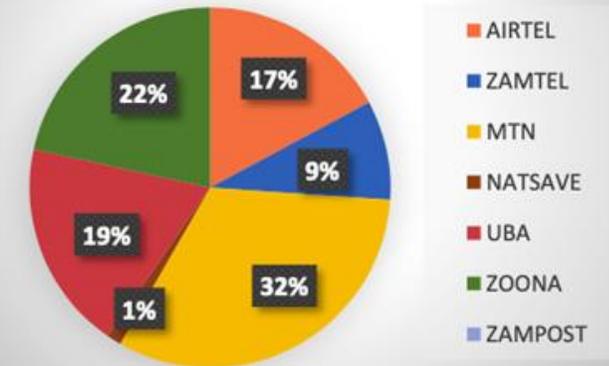
SWL 2016/17 Phase 1
PSP Choice n=12257



SWL 2017/18 Phase 2
PSP Choice n=18046



SWL 2019/20 Phase 3
PSP Choice n=40223



Source: GEWEL Multi-Service Provider Payment Gateway

- Things are guaranteed to go wrong, but if you are highly engaged, challenges can be overcome
- Communication is the #1 Challenge
- Outsourcing doesn't make the problem go away, it only makes it someone else's problem
- PSP's are your partners, not suppliers
- Don't surprise the PSP's they need time to prepare
- Be aware of political influences

Lunga, Zambia



Live demo



Challenges and way forward

Key challenges to interoperability and how they were overcome

A number of challenges facing our pursuit of seamless data sharing including:

Challenge	Solution
Variability in Required Data	Harmonised and unified Data collection form with corresponding data Dictionary
Variability in Intervention approach (HH vs Individual support)	Supporting Data capture for HH and HH heads and any beneficiary that can benefit as a member of an eligible household
Variability in Processes for Interventions	Allow specialised System for Programme Implementation and achieve integration through Data Sharing and API Interactions
Some eligible Beneficiaries DO NOT have Unique National Ids (Id issued at 16 Years, therefore some targeted Beneficiaries Do not Have Ids)	Generation of Proxy National Id until Beneficiary Registers actual Id
Lack of Connectivity Coverage and Access to Payment service Providers	Hybrid Payment Disbursement Modalities (Rural vs urban)

What challenges remain in terms of interoperability?

- Implementation
- Limitation of technology capacity at PSP end at times
- Legal framework may not support certain forms of interoperability e.g.
access to financial records and Person detail
- Technological divide in rural setups

Key advantages of adoption and implementing our Proposed System and the Proposed Approach



Implementation of the Single Window Systems

- The implementation will accelerate building of a National social Registry
- Provide a Common pool for Targeting Beneficiaries of specific Interventions



Update/Build the Single Registry of Beneficiaries

- Update Common Registry of Beneficiaries
- Start to end real-time monitoring capabilities to detect and address divergences



Integration to National Id and Civil Reg systems

- Automated checks of Beneficiary Identities
- Robust Authentication Mechanisms (including Biometrics)
- Cross referencing Civil Registry DBs for



Integrated software and hardware minimizing critical failure points

- Refine Integrations and Information exchange among MISs
- MISs to specialize in Processes for Programme management



Real Time Monitoring and Tracking

- Real time SP program Implementation monitoring and Oversight
- Centralized and harmonized business processes

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Thank you

Thank you

Make sure to answer our survey which will appear on your browser, and join us for the next sessions!

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