



## **Bank of Tanzania Academy pre-graduation research presentation**

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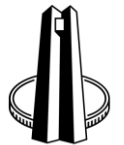
***Assessment of the opportunities  
and risks of technology adoption in  
the national payment systems.***



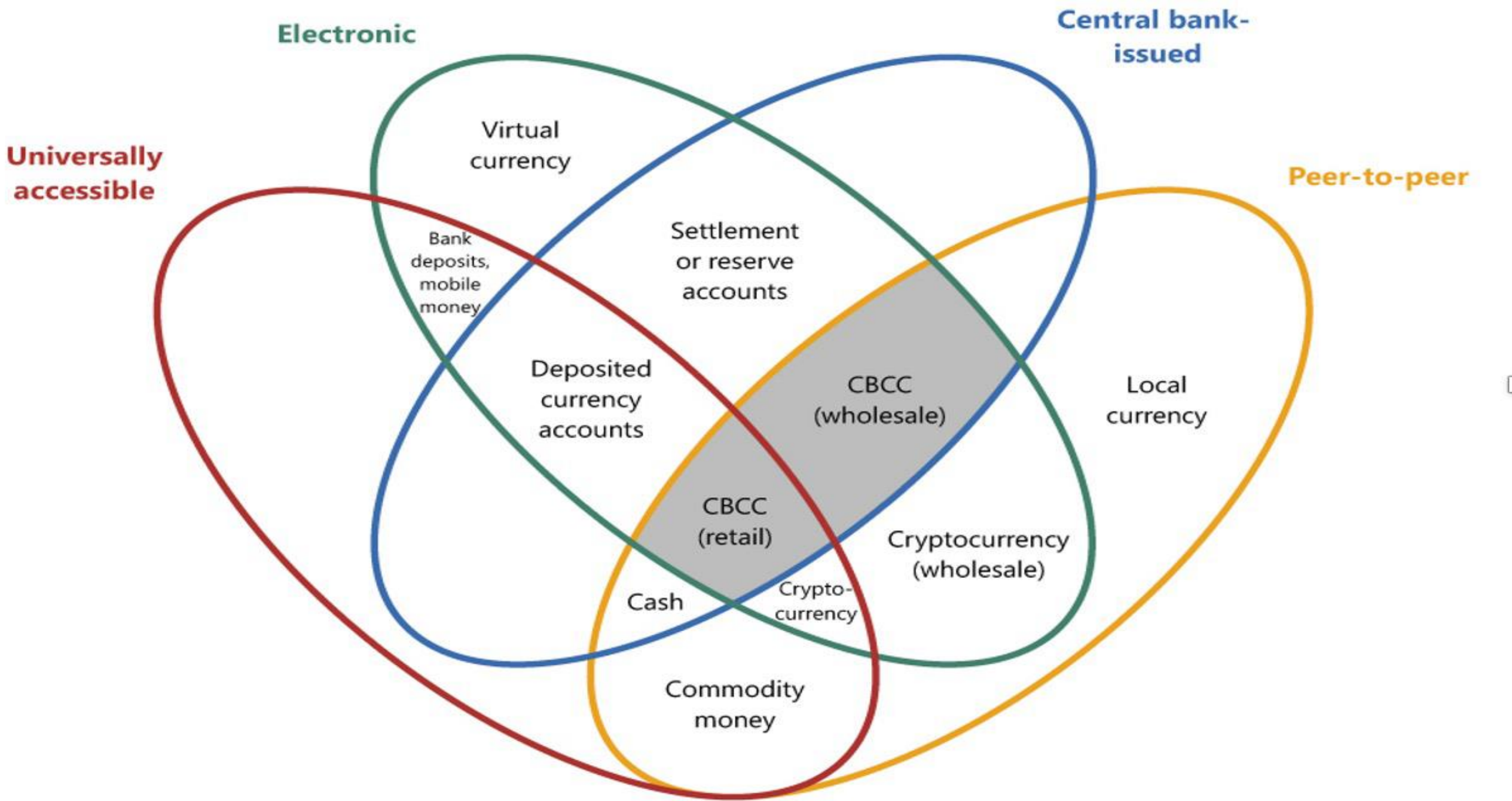
SOUTH AFRICAN RESERVE BANK

# Purpose

The purpose of this presentation is to share with the delegates the opportunities, challenges and risks associated with technology adoption in the national payment systems







# Leveraging Technology

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1. Centralised architecture can be extremely efficient in terms of speed, cost and reduced waste, but can be inflexible and monolithic.
2. Effective governance can be achieved through centralised planning and control, but this risks disenfranchising the authorities responsible for individual benefit delivery.
3. Re-use or sharing of existing infrastructure has large potential benefits, but may force benefit programs to limit or adapt what can be supplied, to the detriment of the recipient.
4. Reliance on private and/or competitive service delivery at various points in the value chain can improve prospects of timely delivery and spread economic benefits widely, but risks system capture by private interests.



# South African Approach to Payment System Development

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- 1. Develop Vision and Strategies for Payment System Development**
  - Vision 1995 to 2005 – NPS Legal Framework and RTGS
  - Vision 2010 – Risk Reduction Measures
  - Vision 2015 – Embedding of Principles for Financial Market Infrastructures
  - Vision 2025 – as per next Slide



## Industry goals



Promoting  
competition and  
innovation



Financial inclusion



Regional  
integration



Transparency and  
public accountability



Cost-effectiveness



Interoperability



A clear and transparent  
regulatory and  
governance framework



Financial stability  
and security

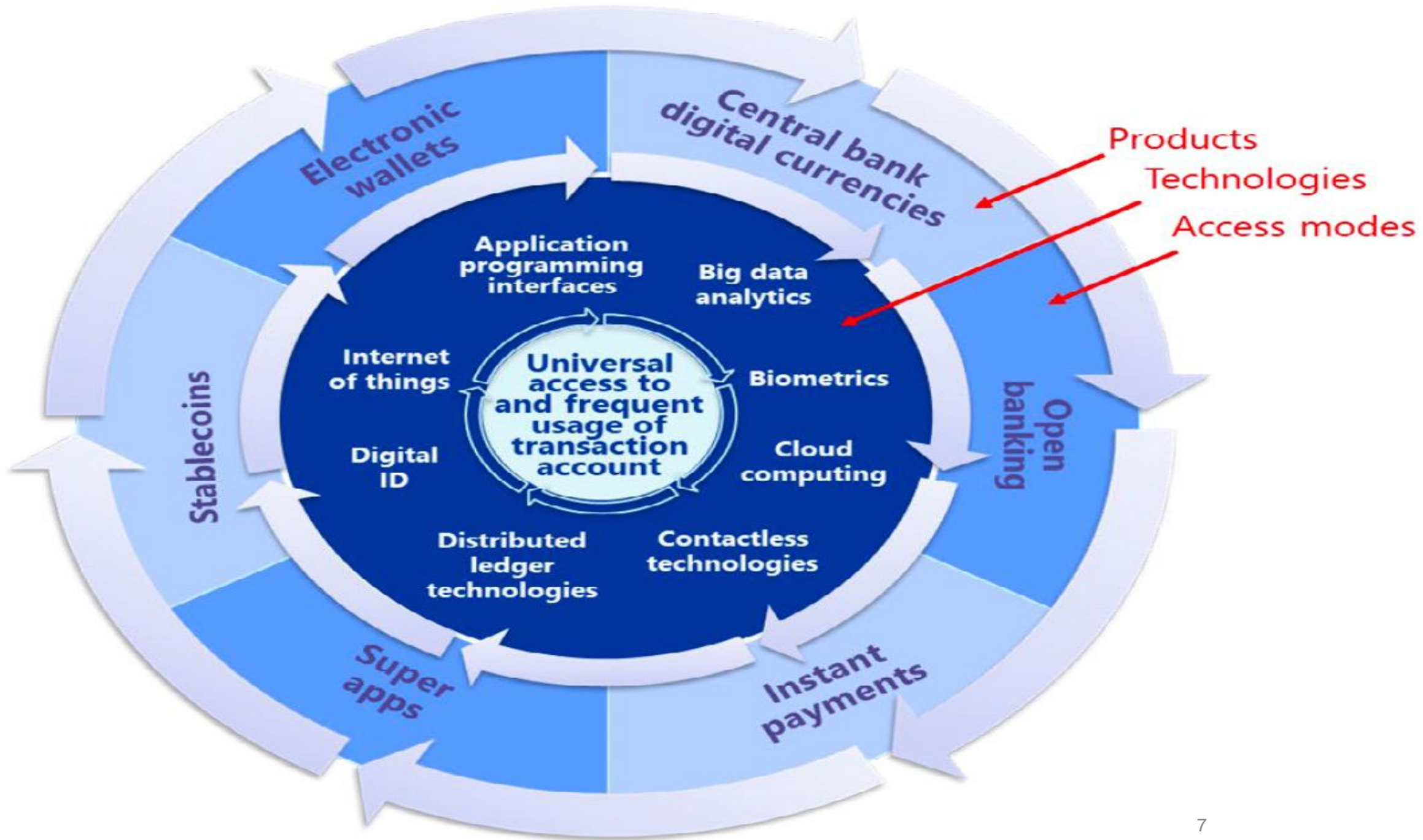


Flexibility and  
adaptability

## **Relevant Key Goals from Vision 2025:**

- Promoting  
Competition and  
Innovation
- Financial Inclusion
- Cost-effectiveness
- Interoperability
- Flexibility and  
Adaptability





## Emerging payment methods

% of customers who **currently use** emerging payment methods

% of customers who **will use** emerging payment methods in the next 1–2 years

% of customers who face **significant hurdles** in their current payment experience (with **traditional** payment methods)



**Buy Now Pay Later (BNPL)**

~20%

~60%

~40%

Of customers **often use credit options** for online purchases, strive to **avoid high credit card charges**, and demand **new payment options** for better purchasing power



**Invisible payments**

<10%

>45%

>30%

Of customers face **high friction** in payment checkout, both online and in-store



**Biometric payments**

~10%

~50%

>50%

Of customers worry about **transaction privacy** and need better **payment authentication** solutions



**Cryptocurrency payments**

<10%

>45%

~35%

Of customers witness **increasing cross-border payment needs**, concerned of **higher transaction fees** and lack of **standardization** in global payments



PILLARS

**Interoperability & Shared Infrastructure**

Regulations & Policies	Systems & Infrastructure	Design choices
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**Enablers for Accessible and Choice-based G2P Payments**

Regulations & Policies	Systems & Infrastructure	Design choices
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**Inclusion and Empowerment Accelerators**

Regulations & Policies	Systems & Infrastructure	Design choices
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DESIGN PRINCIPLES

Multiple programs plug into shared infrastructure.

Shared infrastructure is interoperable and seamlessly supports various programs and financial service providers.

Availability of choice of payment service provider

Access points are numerous and widely accessible

Received in a fully functional account that is adequate for recipients with simple onboarding

Enabling uses beyond cash-out

Designed for recipients with their needs, barriers and preferences in mind



PSP Option A



PSP Option B



PSP Option C



ATM Access Point



Agent Access Point



Bank Access Point



Traditional bank account



Mobile Money Account



Cash-out



Electronic payments



Remittances & transfers

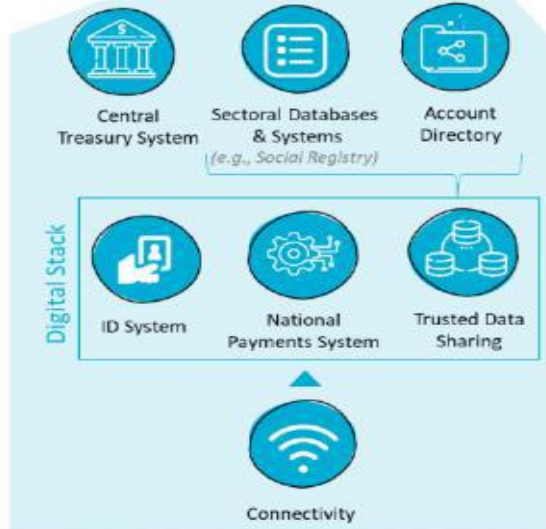


Savings



Recipients

BUILDING BLOCKS



Cross-cutting building blocks

# Common challenges have surfaced that require careful planning

## Access to digital payments is still constrained

- Financial access points don't reach all beneficiaries



**Liberia** – 62 % of surveyed beneficiaries said it would be difficult to get their payments without the cash-out event.

- Meeting KYC requirements makes account opening a challenge



**Mozambique** – Rigid KYC rules and a lack of official ID among beneficiaries led to a limited transaction account design

- Low connectivity makes digital payments unfeasible

## Account usage remains low

- Underdeveloped digital payment ecosystems limit use cases



**CAR** – Beneficiaries cash-out immediately because there is no digital payment acceptance in rural areas.

- Claw-back clauses threaten path to FI



**Indonesia** – Benefits are clawed back after a month if not fully withdrawn, reducing trust and usage

- Digital financial capability and awareness is limited



**Philippines** - Only 31% could correctly recall which FSP disbursed their allowance

## Choice is rarely offered

- Creating a sustainable multi-PSP business case is challenging
- Administrative complexity for low capacity PIUs

## Path to WEE must be forged

- Persistent gender gaps in ID and mobile phones



**Cameroon** – Payments initially directed to women, but lack of IDs and mobile phones led to replacements

- Gender bias among policy-makers
- Reliance on head of household concept



**Tunisia** – Payments directed to men since they were the default head of household. New government decree allows women to apply for cash transfer program.

## Coordination across stakeholders is rarely formalized

- Digitizing G2P payments at scale requires inter-ministerial coordination structure

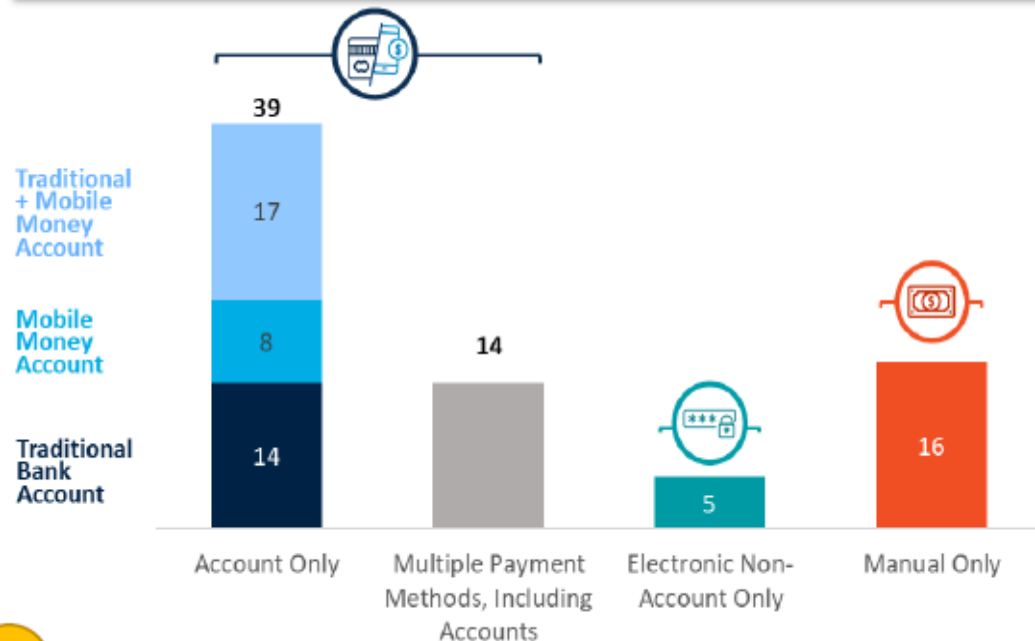
# When COVID hit, G2P digitization became even more important to scale up social assistance response

## Key Challenges

I. Expanding the list of eligible beneficiaries especially to those in the informal sector

II. Making payments safely and rapidly in the context of the pandemic

1 Many countries leveraged digital payment methods – especially mobile money accounts



2 Authorities implemented a set of policy responses to facilitate and increase adoption of digital cash transfers

1. Facilitate onboarding  
*Simplified/remote CDD*
2. Basic/no-frills accounts
3. Fee waivers & transaction limit increases
4. Expand cash-out networks  
*Focusing on interoperability*

Some countries adopted digital payments for the first time

*For example*



Togo – Mobile money account



Guatemala - OTP



Liberia – Mobile money account

The unprecedented size of the scale up led to an increase in financial access

*For example*



Brazil – 70 million beneficiaries received a digital savings account, for approx. 40% this was their first account.



Colombia – 3 million beneficiaries received payments through e-money accounts, for approx. 1/3 this was their first account.



# Top Strategic Technology Trends for 2022



**Data Fabric**



**Composable Applications**



**Distributed Enterprise**



**Cybersecurity Mesh**



**Decision Intelligence**



**Total Experience**



**Privacy-Enhancing Computation**



**Hyperautomation**



**Autonomic Systems**



**Cloud-Native Platforms**



**AI Engineering**



**Generative AI**

# POTENTIAL RISK EXPOSURES: Aligned to Principles for Financial Market Infrastructures

- **Governance arrangements**
- **Inappropriate Risk Management Frameworks**
- **Inappropriate Technology Planning and Deployment**
- **Operational Risk Exposures**
- **General Business Risks**



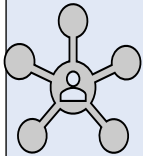
# Risks associated with the Evolution



Compliance Risk



Gap in Regulatory Oversight



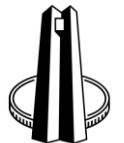
Operate in space without appropriate licensing



Costs implication



Adherence to regulatory objectives Such as Interoperability





**THANK  
YOU**

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