



# How Digital Public Goods Are Bringing the \$10 Trillion Informal Economy Into the Digital Payments Loop

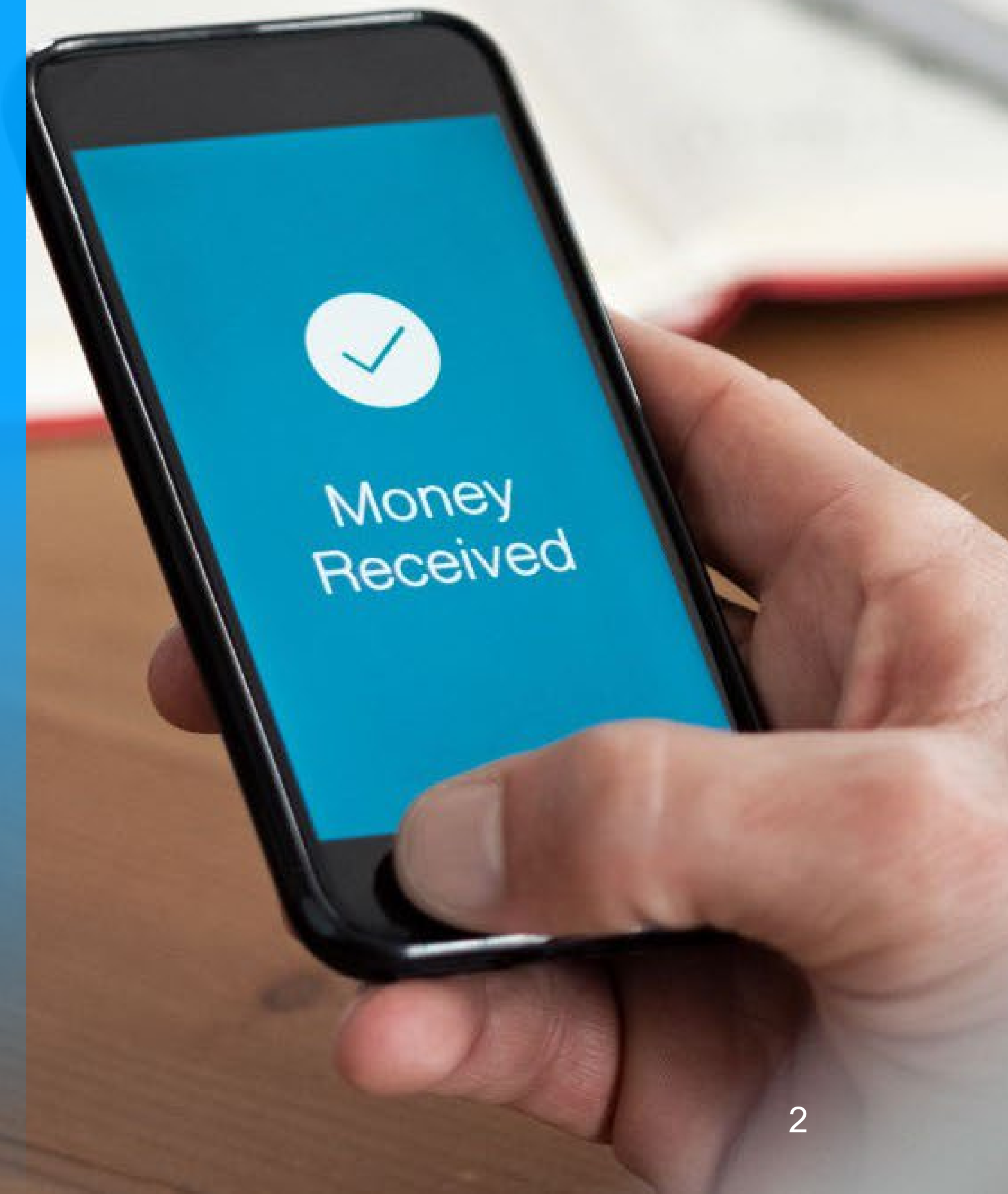
Open Source in Finance Forum 2022

**Paula Hunter**, *Executive Director, Mojaloop Foundation*



# Agenda

- About Digital Public Goods
- G2P Connect
- How Mojaloop is Leveraging OSS
- Can You Make a Difference?



# What is a Digital Public Good (DPG)?

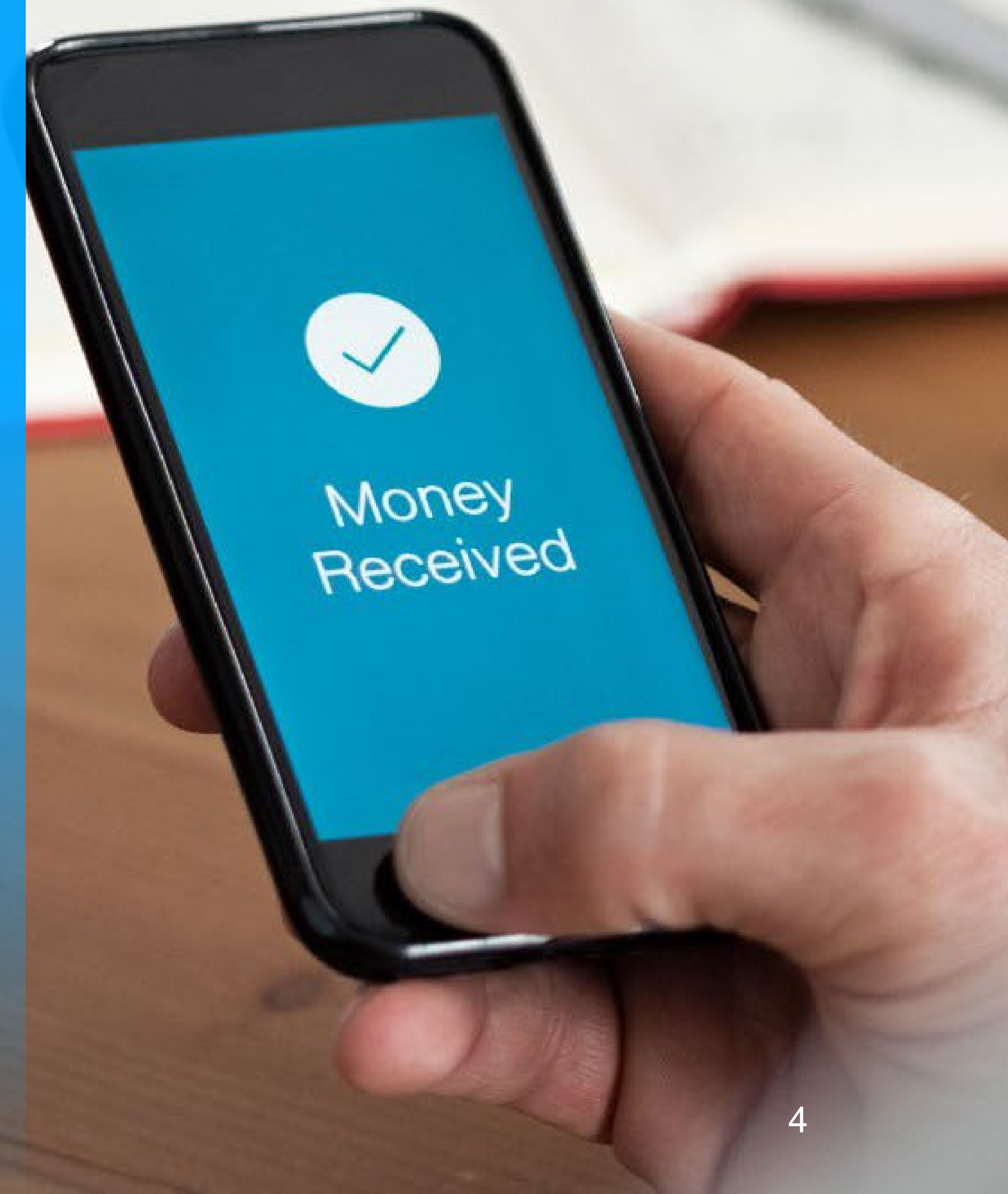
- Digital public goods (DPGs) combine three fundamental characteristics: they are **non-rivalrous**, **non-excludable** and **globally available**. These properties give DPGs the opportunity to counteract limited access to information and technologies and thus the deepening global digital divide.

**giz** Deutsche Gesellschaft  
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Zusammenarbeit (GIZ) GmbH



# Why DPGs Matter

- **Adoptability:** DPGs can be freely adopted by governments or agencies.
- **Avoid Vendor Lock-in:** Because DPGs are open source, they do not lock the user into one technology vendor to ensure compatibility.
- **Scalability:** Adopting DPGs that have been successfully implemented at scale elsewhere can save countries and institutions resources and enable lower risk experimentation, piloting, and roll-out.



A photograph of a smiling woman with dark skin, wearing a patterned headwrap and a light-colored sleeveless top with a decorative neckline. She is standing in a field of tall green grass, looking down at something in her hands. The background is a bright, slightly cloudy sky.

# Why DPGs Matter

- Adaptability: DPGs can be adapted to fit local needs which can also help build long-term ownership and agency of implementing countries.
- Collaboration: Any users of a particular DPG can collaborate and share best practices, as is the case in most communities of practice.
- Project sustainability: Adaptations and iterations in countries can be supported by open-source communities. New features and best-practices developed by implementing countries can be merged into the generic DPG.



# Why DPGs Matter

- **Country ownership and capacity:** DPGs can enable deep involvement of local expertise in country-specific implementations and can be deployed together with dedicated efforts to build long-term local capacity to maintain and iterate these implementations for future needs.
- **Transparency and accountability:** The open-source licensing of DPGs means that their code base can be independently scrutinized and audited. This also facilitates accountability and public discourse around issues such as incorporating best practices and designing DPGs with the aim of doing no harm.



# How do DPGs differ from other OSS organizations?

- Typically, if the organization is located in the US, a DPG operates as a 501c(3)
  - Allows philanthropic entities to provide grant funds
  - Requires grants to fund:
    - Operations
    - Development (the full spectrum)
    - Deployment Assistance
  - May also be a membership organization, but cannot deliver value to members - such as the Linux Foundation, as a 501c(6)
- Vendor ecosystem not nearly as mature as you find in markets that have long embraced OSS, thus more dependent on grant making institutions

# The DPG ecosystem

- Grant Making entities
- Government funded NGOs and initiatives
- Technology Vendors
- Systems Integrators
- DPG Organizations, providing:
  - OSS Product Management, Dev/Ops, Release Management, Workstream Oversight, Testing, Infrastructure, Community Management...
  - Advocacy and Education
  - Operations



# Challenges in the DPG World

- OSS development model is dependent on contributors
  - Central banks wary of making contributions
  - Developing countries lack skills and capacity
  - Markets are not fully evolved; thus vendors are hesitant to invest
- Ecosystem is highly dependent on philanthropic funding for deployments
  - Longer “sales” cycle
    - Securing grants, finding and/or training in country resources
  - Added complexity
- DPG needs grants to sustain project
  - Operating grants are the hardest to secure, deployment funds much more readily available.



# G2P Connect

An **open source collective effort**  
to create integrated G2P solution blueprint using  
various digital public goods



# Mission of this collective effort

This is an open source collective effort to offer an integrated G2P solution blueprint using a plug-n-play architecture to enable choice of components, a set of integration specifications to ensure interoperability, a design that addresses privacy & security, and an integration sandbox for various DPG providers to join the effort adhering to the blueprint and specifications to offer a well architected, well documented, and integrated G2P solution.



# Current participants of this collective effort

G2P Connect itself is not an entity/organization, nor attached to a single organization, and will not have any separate brand identity (other than the name of the initiative)



*in collaboration with*





In the context of this project,  
the **G2P solution** refers to the **set of digital platforms working together**  
to **enable Governments to send money**  
**via mobile money or bank accounts or as non-transferable vouchers**  
to **individuals**.

For the scope of this project, the G2P payments use case of focus will be limited to cash or near-cash social assistance payments. **This solution blueprint does NOT address other types of benefits** such as health insurance, delivering physical goods, food, etc.

**However, its components and design can be adapted to also serve other G2P payment use cases such as public wages, subsidy payments, etc.**

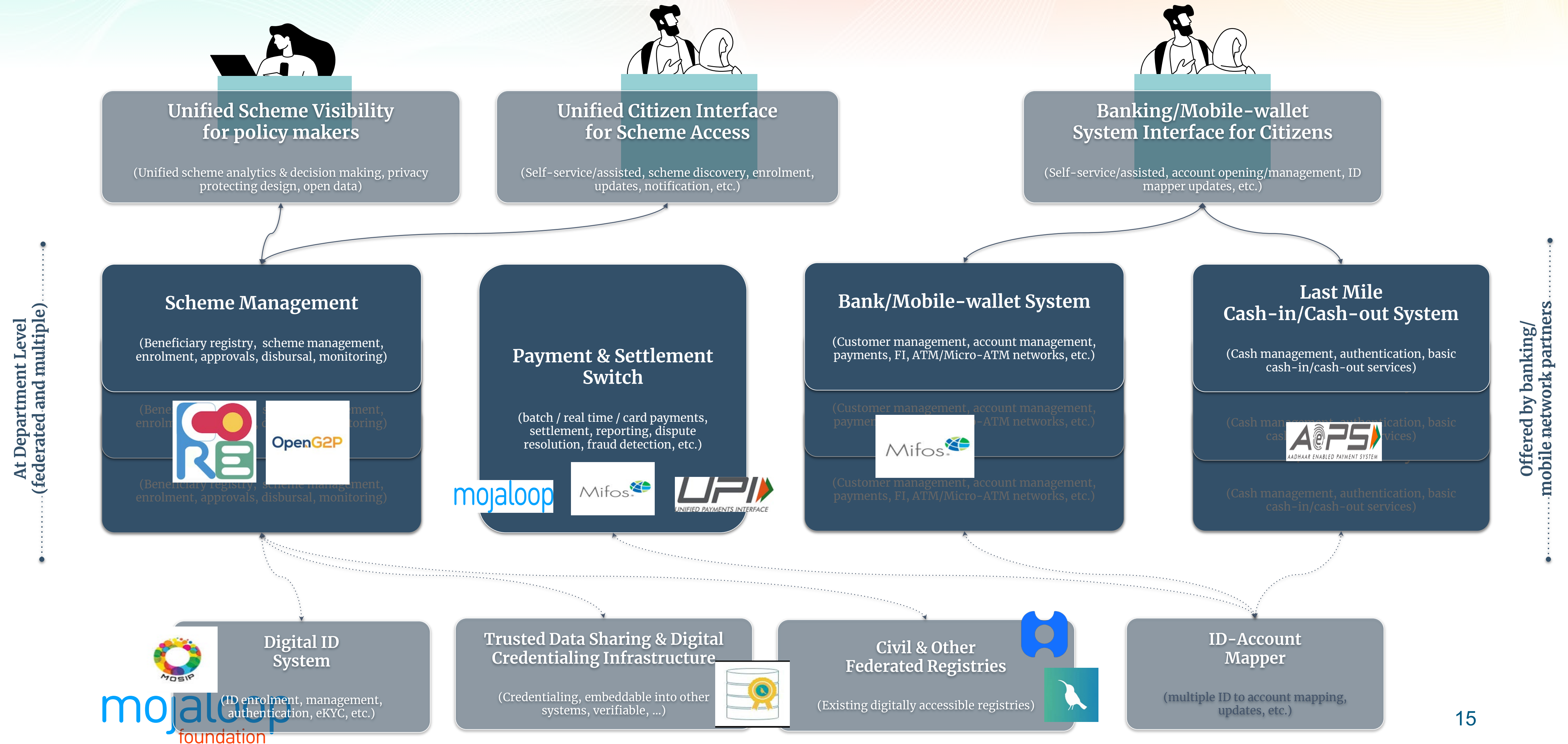


# DPG Architecture Principles

1	Integrated	• From Enrolment to disbursement; Continual update;
2	Trust	• Through technology and accountability;
3	Choice	• Of DPG's blocks or with existing platforms to deliver complete G2P solution;
4	Inclusive	• To ensure diverse groups by design; Accessible across all channels;
5	Federated	• Respecting federal nature and autonomy of entities that are managing registries and benefit schemes;
6	Privacy	• Respecting privacy of individuals while enabling out-reach;
7	Efficiency	• Robust, low cost, open software and standards; Enabling efficient delivery;
8	Scalable	• To any country size or department size needs;
9	Interoperable	• Be made interoperable with existing software (proprietary & open systems);
10	Configurable	• Be able to manage multiple scheme requirements;



# DPG Mapping to Solution blueprint





# For More Details

- Website:  
<https://g2pconnect.global>
- Github link:  
<https://github.com/G2P-Connect>
- Discussion forum: (create a [Github ID](#) using your email so that you can participate)  
<https://github.com/orgs/G2P-Connect/discussions>
- Documentation index page: <https://github.com/G2P-Connect/common/tree/main/docs>



A photograph of a woman and a young child. The woman, on the left, is wearing a bright red headscarf and a yellow top. She has a warm smile and is looking towards the camera. The child, on the right, is wearing a pink and white striped long-sleeved shirt and is also smiling, looking slightly to the side. They are in a simple, possibly outdoor or semi-outdoor, setting with a textured wall in the background.

# Everyone Benefits

From an Economy that

# Includes Everyone

## How Does Mojaloop Help?

Inclusive, Interoperable, Real-Time Payments



# Digital Public Goods Key To Achieving Financial Inclusion



## Mojaloop: An Open Source Public Good

*“Financial services companies, government regulators and others are using open source software like Mojaloop to take on the challenges of interoperability of financial systems to deepen financial inclusion.” - Convergences*



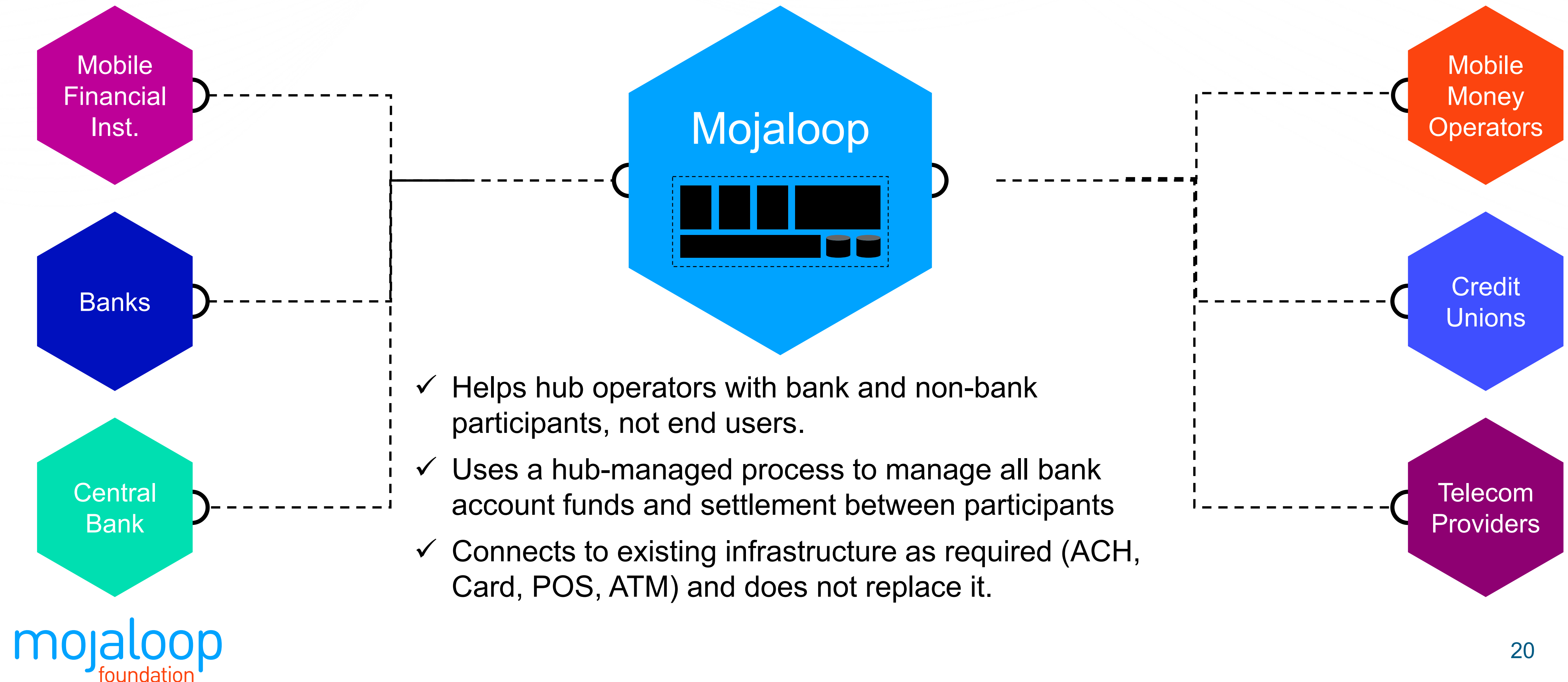
# Ecosystem Growth Dependent on Inclusive, Open Payment Systems

- ✓ Interoperable between services and providers
- ✓ Instantaneous, affordable, safe and accessible
- ✓ "Pushed" not "Pulled"
- ✓ Address regulators and central banks requirements
- ✓ Have varying levels of KYC



# Mojaloop Is Open Source Software For Helping Hub Operators with Instant Payments Clearing

Developed “ground up” with mobile payments enablement at its core, ready to lower the cost of connecting multiple different types of actors directly with each other.



# Core Technologies



kubernetes



TypeScript



Linux



NODEJS CODING STANDARDS AND BEST PRACTICES



Hosting: “infrastructure agnostic” AWS, Azure, on-premise installations

For more details on tools and technologies check:

<https://docs.mojaloop.io/documentation/contributors-guide/tools-and-technologies/>



# Advantages of Mojaloop as Open Source



**Locally  
Owned**



**Locally  
Operated**



**Locally  
Governed**

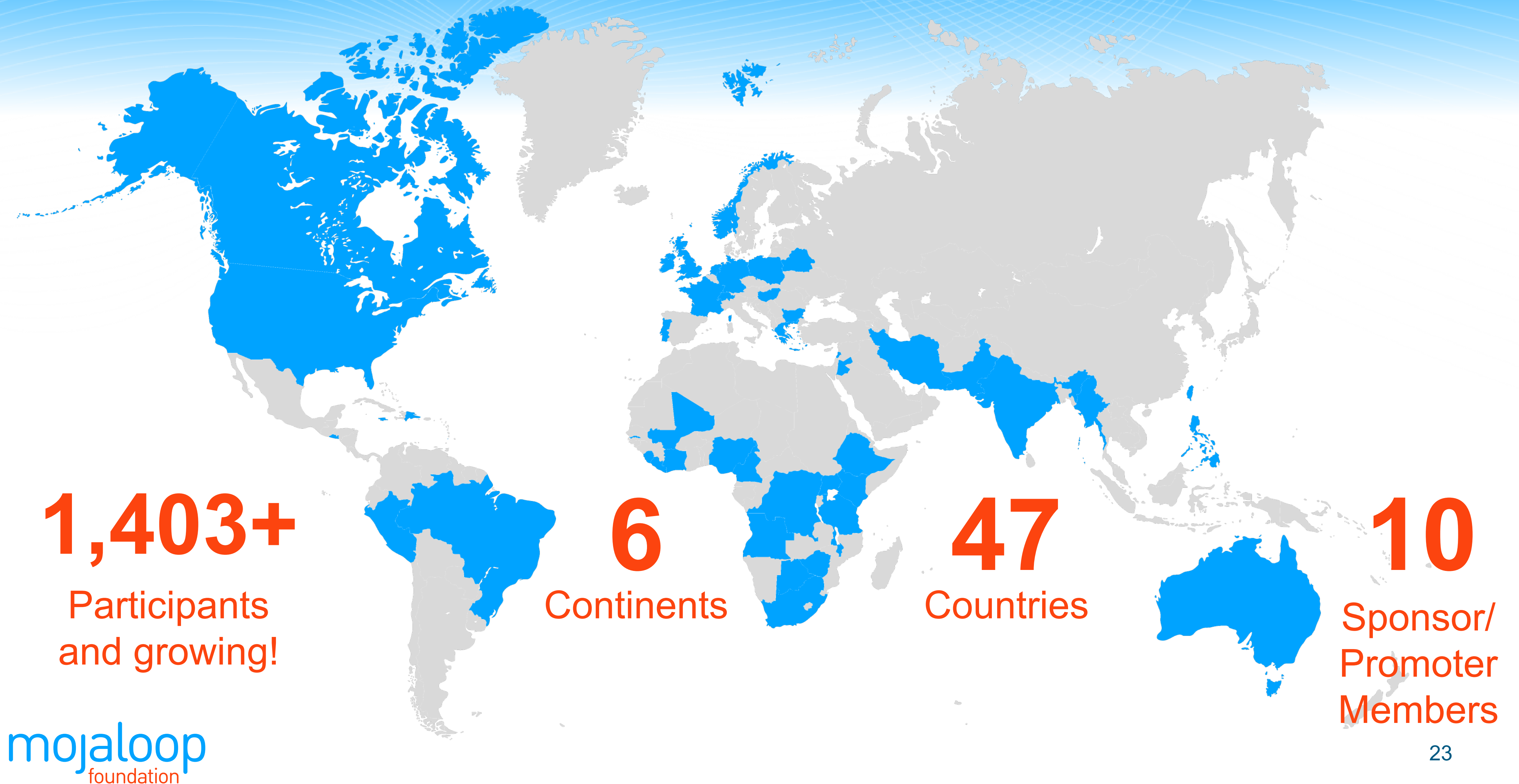


**Locally  
Stored**

- ✓ Lowers change and modification costs
- ✓ Enables fee structure that match policy and rules
- ✓ Offers Applies no “per transaction” technology costs

- ✓ Includes open-source integration tools to reduce participation barriers.
- ✓ Enables local SIs and fintechs to support, maintain and upgrade use cases to keep expertise in country

# The Mojaloop Community





# Notable Projects



# Tanzania Instant Payment System

- **The Platform:** Tanzania Instant Payment System (TIPS) is an interoperable digital platform which facilitates real-time payments between different Digital Financial Service Providers (DFSPs), both banks and non-banks such as e-money issuers
- **The Actors:** The TIPS platform is built and will be managed by the Bank of Tanzania in collaboration with other Government Institutions. While it is based on the Mojaloop Technology, it also includes custom software that the bank built specifically for TIPS
- **Use Cases:** The platform will include use cases such as P2P, P2B, Tax and Bulk Payments
- **Milestones:** The pilot began towards the end of 2021 and included a closed user group of 3 Banks and 2 MNOs

## Mojaloop Community

BILL & MELINDA  
GATES foundation

ROCKEFELLER  
Philanthropy  
Advisors



## Impact

Once in full capacity, TIPS will connect and serve;



**62** banks and  
**7** MNOs



About **2.1**  
Billion digital  
financial  
transactions



**60%** of the  
population  
(around  
35million  
people)

**Status as of Q1 2022:** The first phase is expected to begin in Q1 of 2022 and will include use cases such as person- to- person and person-to-business payments and the later stages will include tax and bulk payments



# The Myanmar Microfinance Digitization

**The Platform:** MMD project has deployed the first open-source platform for interoperable real-time payments. The Platform is called WynePay and has been built on the Mojaloo Technology to connect Banks, MNOs and MFIs

**The Actors:** Wynepay was developed by UNCDF and Modusbox and the MFI Industry in Myanmar. The platform will be operated by a Local System Integrator, Thitsaworks, while the Central Bank of Myanmar will provide settlement services.

**Use cases:** The platform will priorities Loan repayment and Loan disbursement use cases, but opportunity to add P2P and G2P

**Milestones:** Wynepay has completed functional testing trials in March 22 and is onboarding about 30 DFSPs for a close user group testing in April 2022

Mojaloo Community

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GATES foundation



MODUSBOX



VISA

## Impact

Once in full capacity, Wynepay will connect and serve the entire country. Improvements to OSS. Potential new members in VISA and UNCDF



**30** financial institutions (18 MFIs, 10 wallets, 2 NGOs and 1 NBFI)



About **2** Billion digital financial transactions



**2.5m** initially, growth to **30m**



Status as of Q1 2022: The project is in pilot stage has completed functional testing and will begin a closed user group testing in April 2022

# Rwanda National Digital Payment System 2.0

**The Platform:** Rwanda National Digital Payment System (R-NDPS 2.0) is an interoperable instant payment system that will connect DFSPs across the country. The platform will be built on the Mojaloop Technology.

**The Actors:** R-NDS 2.0 is being developed by the Government of Rwanda through Rwanda Information Society Authority and will be operated by Rswitch, a local system integrator. The development is being supported by Modusbox, Google, Africa Nenda and BMGF

**Use cases:** RSwitch has prioritized P2P, P2G, P2B, and B2P use cases

**Milestones:** Phase one has been completed which included development of scheme rules for governance and business model operations

## Mojaloop Community

BILL & MELINDA  
GATES foundation



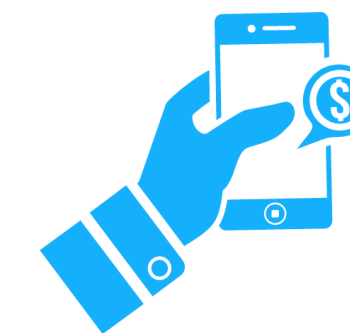
MODUSBOX

Google



## Impact

Launch points for EAC  
Growth of the community of developers and implementers



**5.1** million  
active mobile  
money  
subscribers



About **124**  
thousand  
agents



Up to  
**10.4** million  
transaction  
values from  
mobile and  
merchant  
payments

**Status as of Q1 2022:** RSwitch are currently executing a Proof of Concept (POC) to simulate merchant payment transactions under R-NDPS 2.0 scheme the outcome would be a fully executed demo of a simulated transaction flow between a bank customer and a mobile wallet merchant by end of March 2022



# Building An Ecosystem That Benefits Everyone



## FINTECHS

Fintechs and banks can use the code to modify internal systems so that they easily interoperate with other payments providers



## CENTRAL BANKS

Central banks can speed up deployment of national payments gateways with commercial partners



## GOVERNMENTS

Government could use Mojaloop to deliver support payments to citizens right into their mobile wallets, etc.



## MERCHANTS

Customers can pay their bills directly from their phones



## USERS

Customers don't need to pay significant fees to send money to their relatives in rural areas



**Visit [mojaloop.io](https://mojaloop.io) to learn more**







# Thank You!

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[www.mojaloop.io](http://www.mojaloop.io)