CLOSING THE DIGITAL DIVIDE

Making Data Intelligence Valuable for Humanity

Dr. Tat Lam
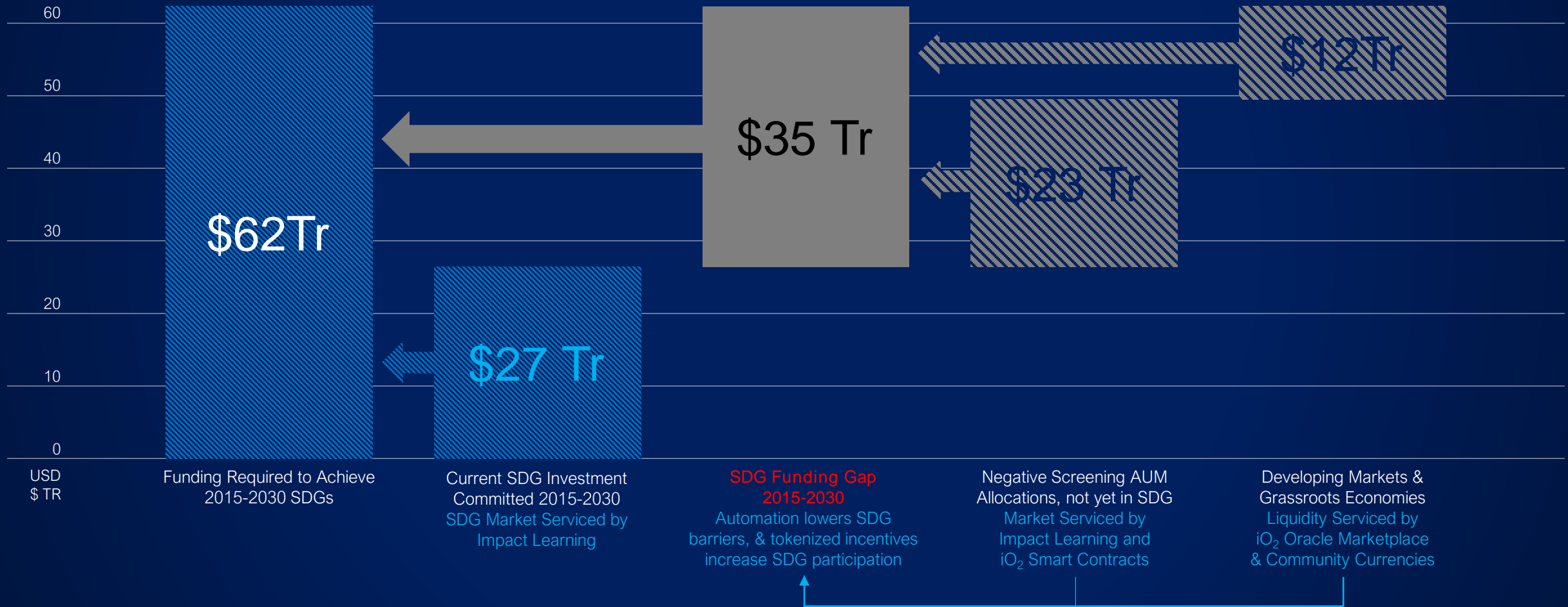CEO, Shanzhai City
Director, ixo.world AG

How to do good

1. **Fact check – Do we really know what is going on on the ground?**
2. **Intervention – Why do you think your actions will cause changes?**
3. **Outcome – How can you explain the change you make?**
4. **Investment – How to scale the change making with cash?**
5. **Return – What is the gains of everyone participating in it?**

How to do good digitally

1. *Fact check – big data vs lean data*
2. *Intervention – data model*
3. *Outcome – accountable and trusted data*
4. *Investment – automating transactions based on the model*
5. *Return – assetize and monetize impact data*

Unlock Developing Markets to Bridge SDG Funding Gap

The UN projects a $2.4Tr annual spending gap towards the SDGs , not for a lack of capital, but because Investors lack data to assess risk in SDG projects

Chart data:

Y-axis (USD $ TR)		
60		$12Tr
50	$35 Tr	
40		$23 Tr
30	$62Tr	
20		
10	$27 Tr	
0		

Funding Required to Achieve 2015-2030 SDGs

Current SDG Investment Committed 2015-2030
SDG Market Serviced by Impact Learning

SDG Funding Gap 2015-2030
Automation lowers SDG barriers, & tokenized incentives increase SDG participation

Negative Screening AUM Allocations, not yet in SDG
Market Serviced by Impact Learning and iO$_2$ Smart Contracts

Developing Markets & Grassroots Economies
Liquidity Serviced by iO$_2$ Oracle Marketplace & Community Currencies

Source: World Investment Report 2014, UNCTAD and Global Sustainable Investment Review 2016, GSIA
Note:
• Current investment rate of US$1.4 trillion with modest growth rate until 2030
• The sum of current AUM allocated to negative/exclusionary screening and corporate engagement/shareholding action have not been adjusted with potential double counting

China Development Research Foundation

CASE: China REACH Project to provide early childhood education to more than 14,000,000 children in China from family below poverty line, ONE VILLAGE AT A TIME.

Bijie County
❑ Guizhou Province
❑ Poorest region in China

China Development Research Foundation

CASE: China REACH Project to provide early childhood education to more than 14,000,000 children in China from family below poverty line, ONE VILLAGE AT A TIME.

Problem 1: Need data from the frontline to monitor and evaluate children's development, poverty alleviation condition, and screening deployment all rural China to scale up program

Zhang Yijie
- ❑ Grandmother
- ❑ 34 years old
- ❑ Primary school education

Liu Yi
- ❑ Bigger brother of Liu Yan
- ❑ Not in the program
- ❑ Give birth at house

Liu Minghua
- ❑ Guardian
- ❑ 36 years old
- ❑ Grandfather of child
- ❑ Primary school education

Liu Jiajia
- ❑ Home visitor
- ❑ 29 years old
- ❑ high school education

Liu Yan
- ❑ Target of intervention
- ❑ 2 years old
- ❑ Never receive education

Bijie County
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3k252jh3h1jh31jl14hqwjkk3h2h4k2lj2l
❑ Grandmother
❑ 34 years old
❑ Primary school education

3jk2hj432h4j31hj3k1hj3hkh13
❑ Bigger brother of Liu Yan
❑ Not in the program
❑ Give birth at house

sdakji121j12h3k1jh12h3h21h11k3jk1j3h1
❑ Guardian
❑ 36 years old
❑ Grandfather of child
❑ Primary school education

3jkhkj2h1j2h12h31kh432hh3kj4h2
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j2h413hg42g12gjk1h23h14hkj42l33h24h
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Problem 3: Identifying Need to Provide Aid (precision poverty alleviation), quantifying validated outcome and impact with automated frontline data sources

Bijie County
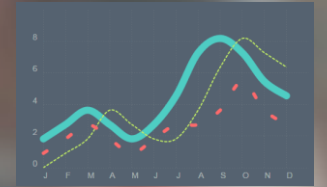❑ Guizhou Province
❑ Poorest region in China
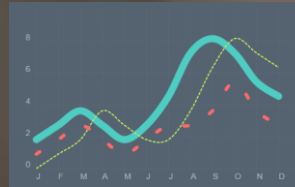
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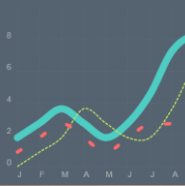
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Frontline Intelligence Agents Support Artificial Intelligence
Generating Value from Data for Humanity
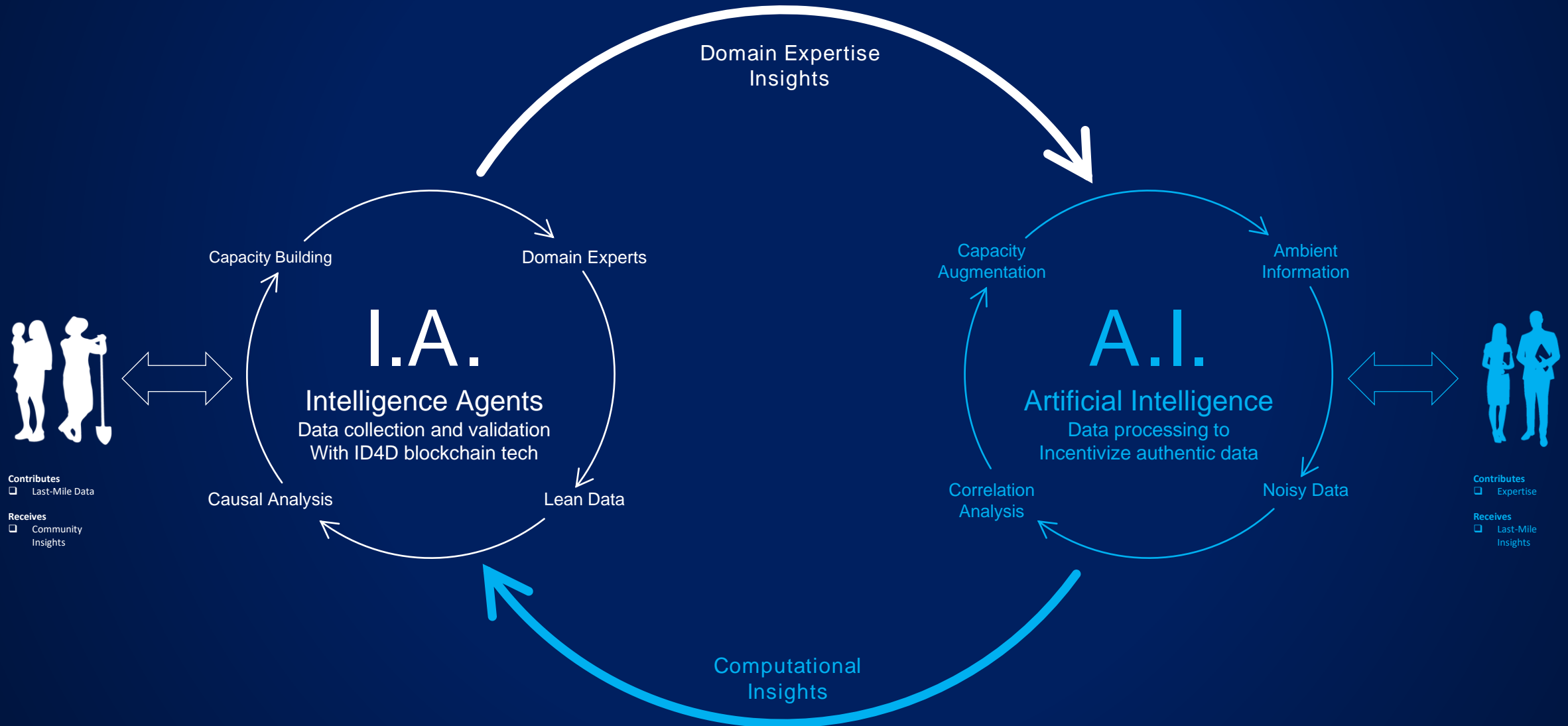
Digital Divide and Low Data Literacy Causes Modern Poverty

Impact Data Readiness Index (IDRI)

IDRI is metrics that identify the ability of beneficiaries, organizations, and regions to use digital tools on the frontlines – crucial for understanding how to deploy appropriate data solutions that can work with local conditions

Local Data Infrastructure

IDRI
Identifying challenges & constraints for frontline data collection

"Ability" to Access Data

Local Data Literacy of End-Users

"Desire" to Participate

Digital Divide &
Low Data Literacy
Causes Modern Poverty

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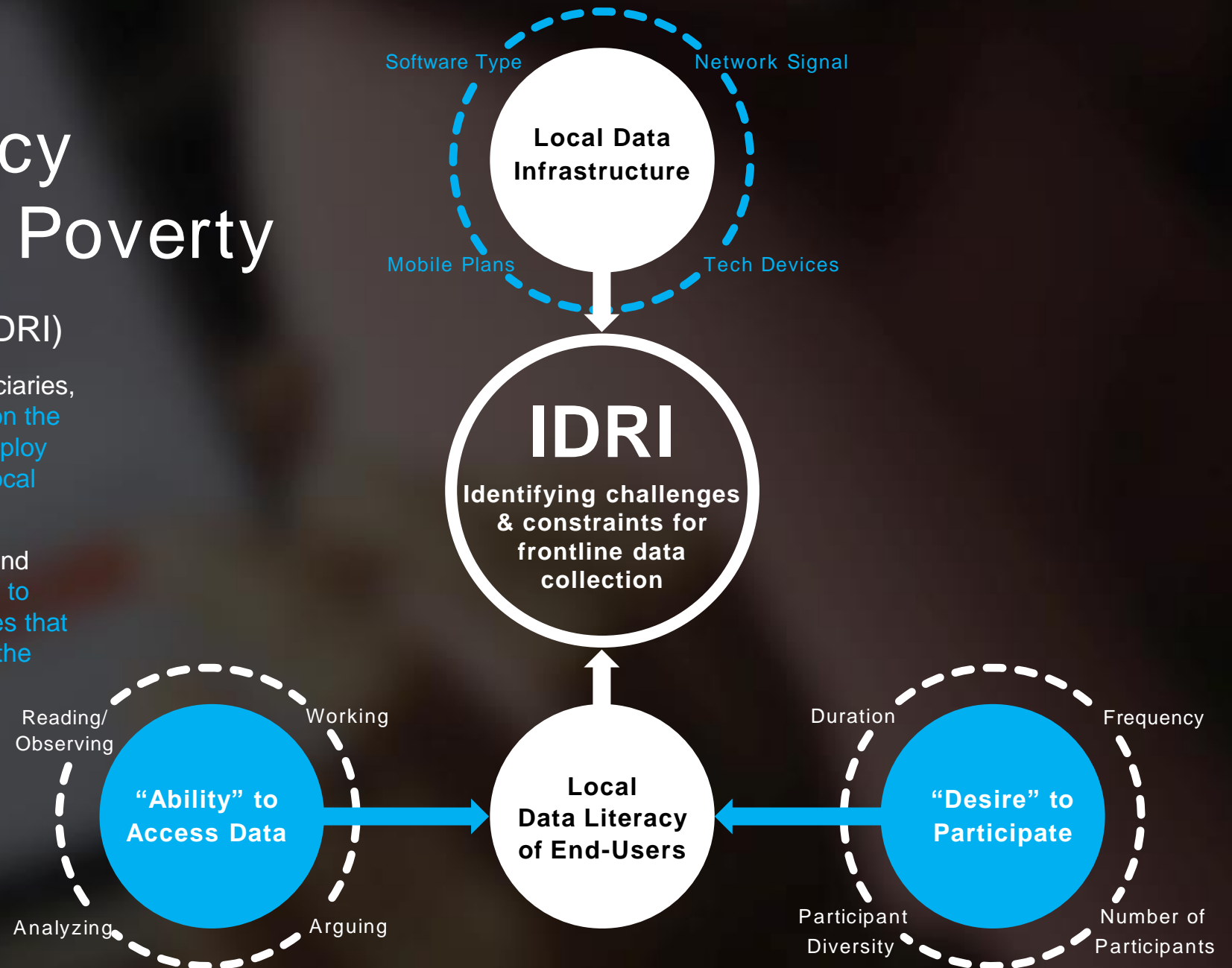
By understanding Local Data Infrastructure and Local Data Literacy of end-users, we are able to better design capacity-building user experiences that enable people to interact more effectively with the database, to gain more value from the data

Transparent Database for All Development Stakeholders

Beneficiary
Engagement Tools

Validate Data Points   Receive Feedback

Data Agent
Capacity Augmentation Tools

Submit Photo Survey

Program Manager
Data Analytics Tools
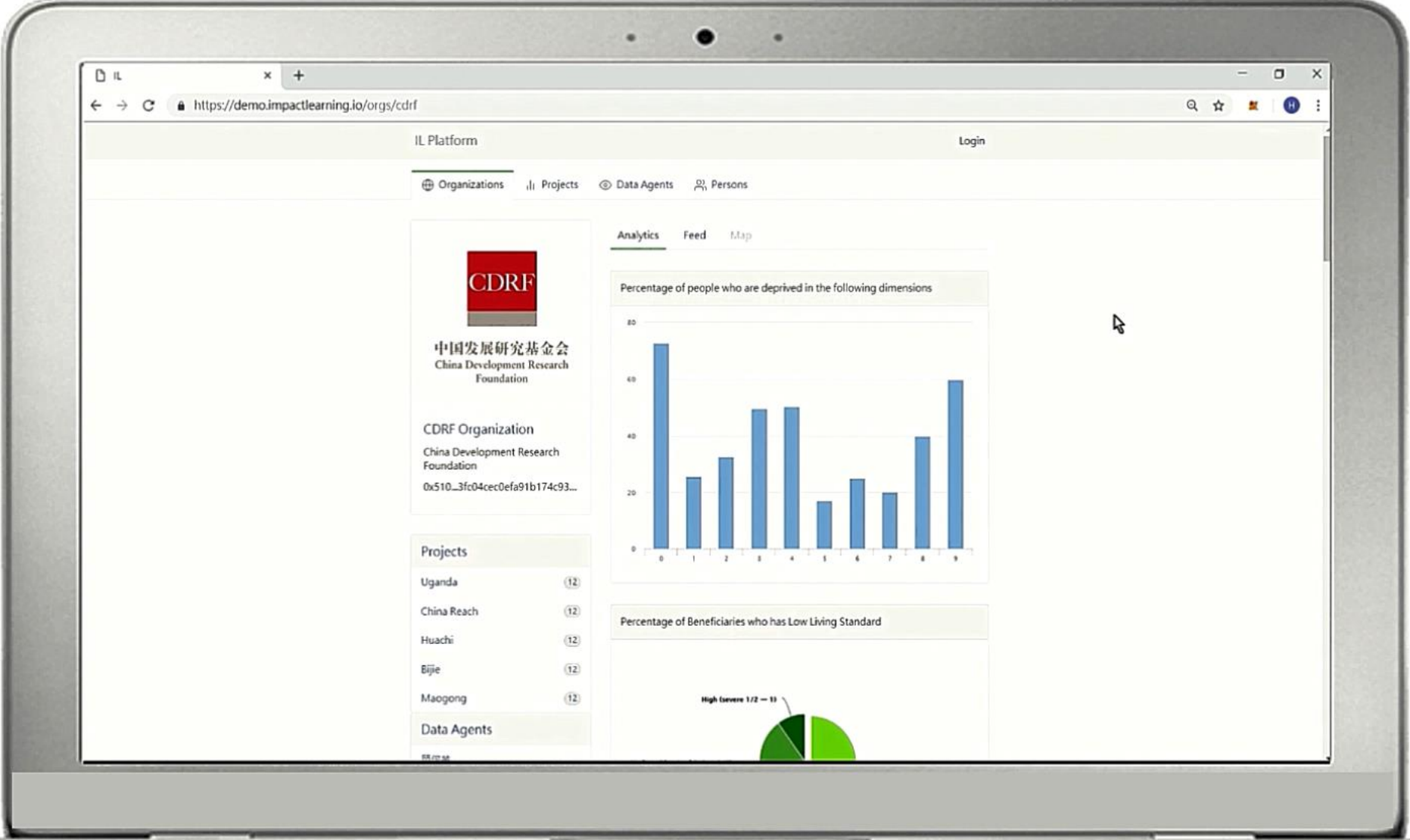

Manage Child's Profile & Make Decisions

Machine Learning for Capacity Augmentation

Poverty Indexing Evaluation Based on Visual Recognition for Ordinary People to Contribute Quality Data

Data Collection Methodology
Decentralized Last-Mile Information Workforce

Last-Mile Data
Data Validation

Blockchain
Immutable Data Trail

AI Cloud
Data Analysis

1.75m (eye level)

5m

1m

Environment
居住环境
- Geometric Analysis | 几何分析
- Structural Database | 结构数据库

Amateurized Photographic
Field Methodology
非专业化田野图像记录方法

Visual Pattern
Recognition
Metrics
图像识别体系

Materials
材料
- Metrics to relate material and quality of living | 材料与生活质量关联
- Gov. metrics for precise poverty identification | 国家精准扶贫识别体系

Interior
室内
- Appliance to relate poverty | 使用物器关联贫穷
- Mapping poverty typologies | 区分贫穷类型

SaaS Data Management Tools
Impact Metrics,
Monitoring & Evaluation,
Reporting

Integrated Database of Vulnerable Communities

But…

we previously paid too little attention to our data sovereignty while rapidly developing data channels

So we ask…

can AI serve grassroots communities directly so they can improve their own quality of life and economic development?

Baseline Infrastructure for Last-Mile Data Decentralized Identification (DID)

Implementation of DID (blockchain-based identification)
for end-beneficiaries in China and in vulnerable
community members in Brazil

Baseline Infrastructure for Last-Mile Data Decentralized Identification (DID)

Implementation of DID (blockchain-based identification) for end-beneficiaries in China and in vulnerable community members in Brazil

All users are with encrypted identity to protect privacy while contributing data to the cloud

Decentralized Identity provides data sovereignty so that users can own their data, control how it is used, and directly benefit from its monetization
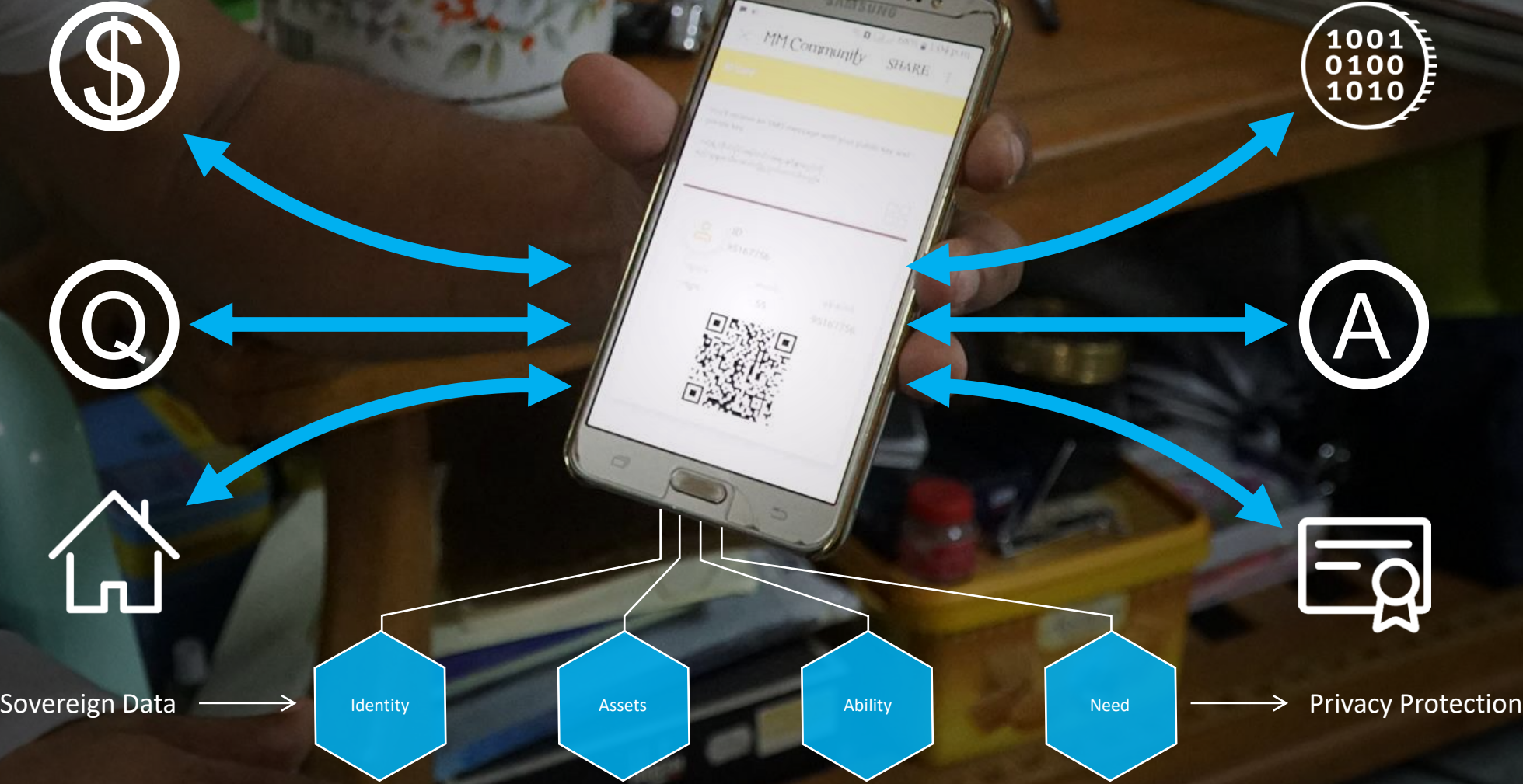
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- Self-Sovereign Identity
- Economic Inclusion
- Community Governance

Creating Data Sovereignty for Grassroots

User-owned data is a highly-valued asset, becoming a currency, tool, and actor in developing markets

Sovereign Data →

Identity

Assets

Ability

Need

→ Privacy Protection

Tokenize Assets to Bring Liquidity from Future Yields

Leverage indexing of tokenized last-mile assets to bring visibility into productivity & investment potential

Quality
- Color
- Texture

Stock
- SKU#
- Sealed
- Signed

Air Levels
- H_2O
- CO_2

Mass
- kg

Governance & Stewardship with Consensus Participation

Incentivize community buy-in, intellectual contributions, and sustained execution with Smart Contracts managed by the iO$_2$ Decentralized Autonomous Organization (DAO)

Preference Data Contribution

- ❑ Projects

- ❑ Funding

- ❑ Metrics

- ❑ Validation

Disintermediate Social Finance in Developing Markets

Bring innovative economic inclusion to communities that lack the support of institutional, government, or financial infrastructure
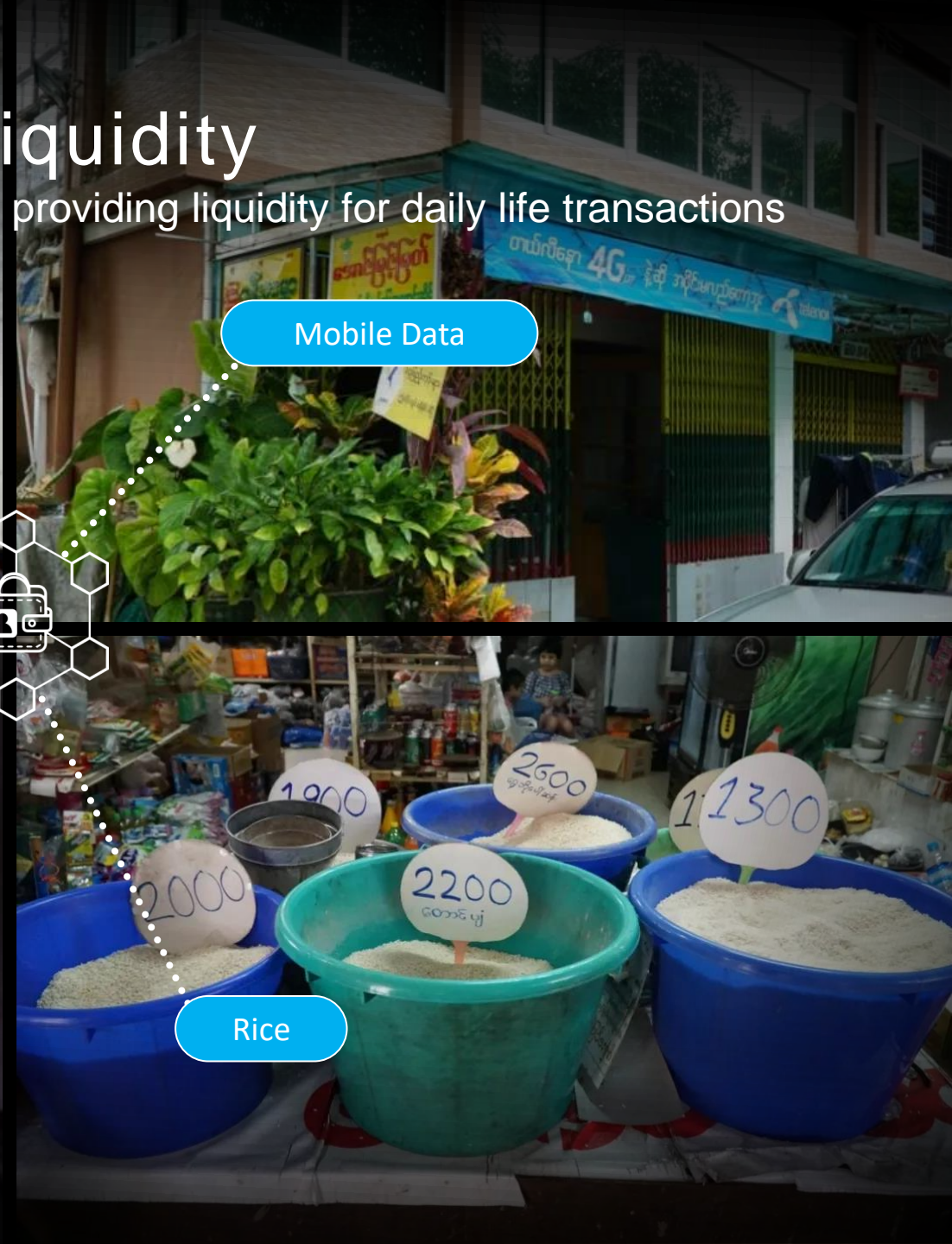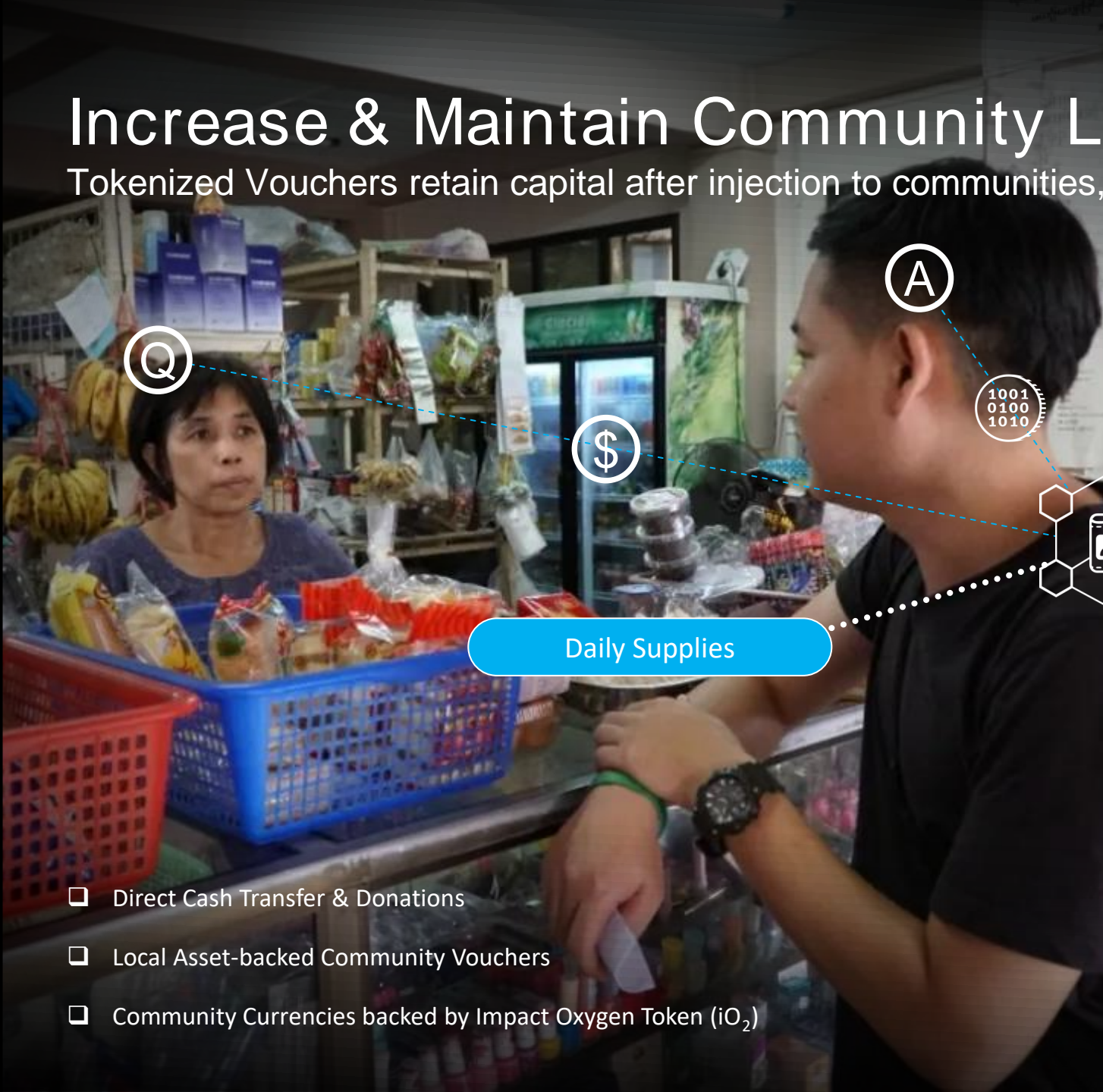
Community Impact Bond

Smart Impact Bond

Increase & Maintain Community Liquidity

Tokenized Vouchers retain capital after injection to communities, providing liquidity for daily life transactions

Mobile Data

Daily Supplies

Rice

❑ Direct Cash Transfer & Donations

❑ Local Asset-backed Community Vouchers

❑ Community Currencies backed by Impact Oxygen Token (iO$_2$)

Digital Wallet

Paper Wallet

Basic Collaborative Economy
Towards Peer-to-Peer Micro Services

Paper Record Keeping
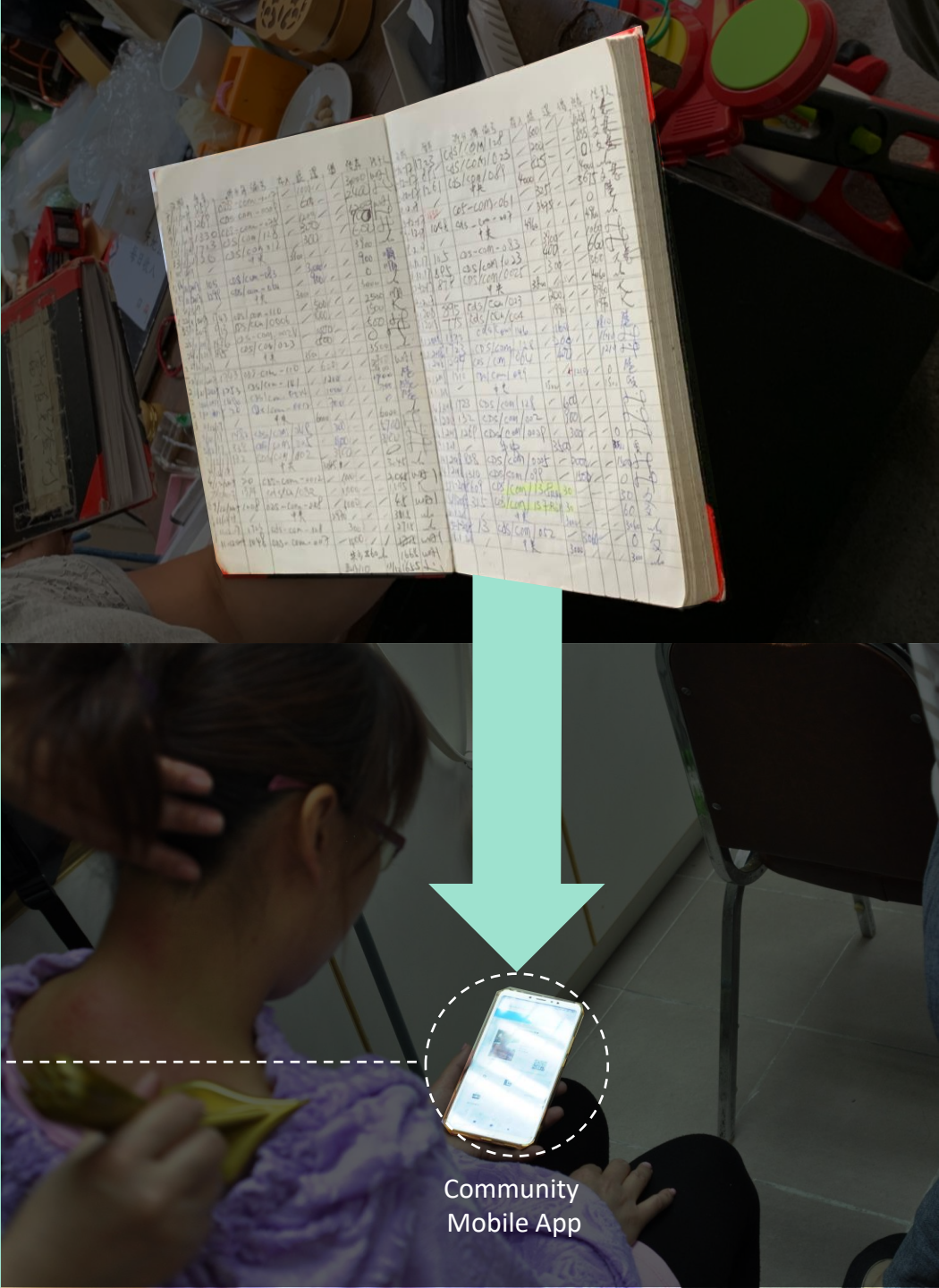At Community Center

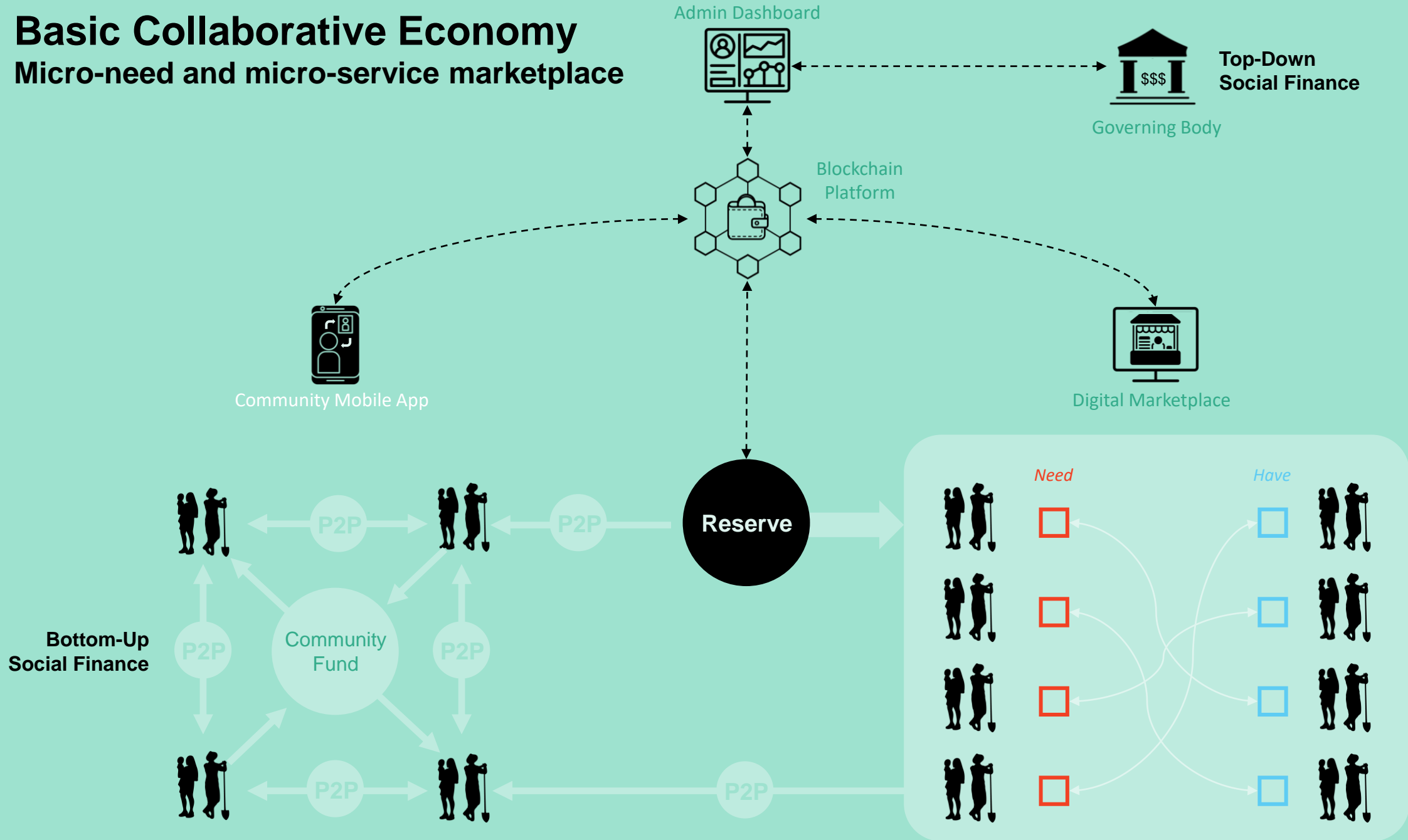Physical Vouchers

P2P

Digital Vouchers

Community
Mobile App

Blockchain
Platform

Community
Mobile App

Basic Collaborative Economy
Micro-need and micro-service marketplace

Admin Dashboard

Top-Down
Social Finance

Governing Body

Blockchain
Platform

Community Mobile App

Digital Marketplace

Reserve

P2P

P2P

Bottom-Up
Social Finance

Community
Fund

P2P

P2P

P2P

P2P

Need

Have

Basic Collaborative Economy
Social Service Integration

Legend:
- P2P — Timebank Token
- SSV — Social Service Voucher

Blockchain Platform

Community Mobile App

Admin Dashboard

Digital Marketplace

Cash Reimbursement

Service Vendors i.e. NGO, NPO, Local Stores

Provides Services

Reserve
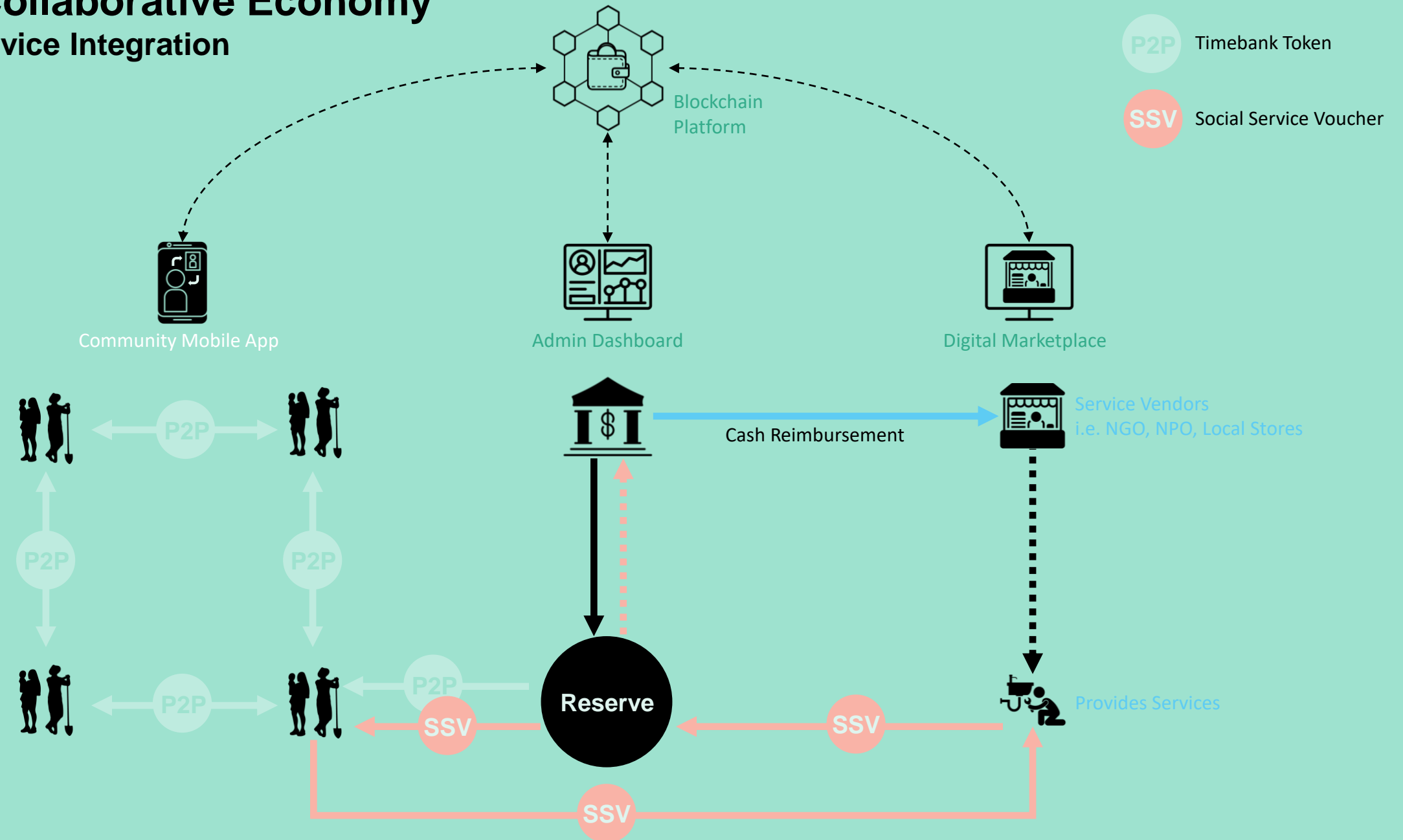
Target Problem: Children drop out from Public Schools due to poverty, Covid-19 related education restrictions, imminent threat of violence resulting from the coup, and ongoing boycott against the authoritarian government-related education programs.

Main Challenge: promoting reenrollment and continued education amidst this crisis

Solutions Exploration:

- **Cash**: Cash transfer (USD$10 per month per child) to households with children of age to attend first year of middle school (where the highest dropout rate occurs) which helps them to face daily precarity, keep kids in education facilities, and ultimately overcome intergenerational poverty.
  - If a child drops out of school but household doesn't move away from the district, they will continue receiving benefits.
  - If the household moves away from the district, they will stop receiving benefits.
- **Cash + :** Cash transfer to households plus an additional amount of funding for the education program(s) to decide how to help households make better decisions
- **Cash + Consensus** – Cash transfer to households and additional funding to the organization for which the use of proceeds may be proposed and voted on by the community stakeholders

The people of Myanmar live in **multi-dimensional precarity** as the global pandemic and the coup are leaving the population with the irreversibly catastrophic social, economic, political and health impacts without access to social safety nets. In the worst case, nearly half of the population of Myanmar (48.2 percent) will live in poverty in 2022 (compared to the 24.8 percent in 2017).

It is expected that **women and children** will bear the heaviest brunt of the combined impact of COVID-19 and the political crisis.

COVID-19 as well as **coup-related school restrictions and closures** have negatively impacted the household incomes, where parents are forced to reduce work in order to care for their children, causing overwhelming additional expenditures (such as associated costs with online education like networked digital devices, internet access, and monthly tuition).

These multi-dimensional burdens further exacerbate intergenerational transmission of poverty which will lead to devastating impacts on the human capital of future generations to come left without humanitarian intervention.

PROBLEMS: INEFFICIENCY, PARTICIPATION, CORRUPTION

1. Needs Unmet
or Unequally Addressed

- Inaccurate Targeting & Beneficiary Identification
- Inappropriate Success Metrics and M&E
- Mismatched Program Design

2. Trust Degraded
or Collapsed

- Beneficiaries – Cut off from services due to ill-conceived changes in targeting criteria
- Government – Cannot risk collaboration due to lack of evidence of success
- Funders – Don't want to provide capital due to low transparency and accountability
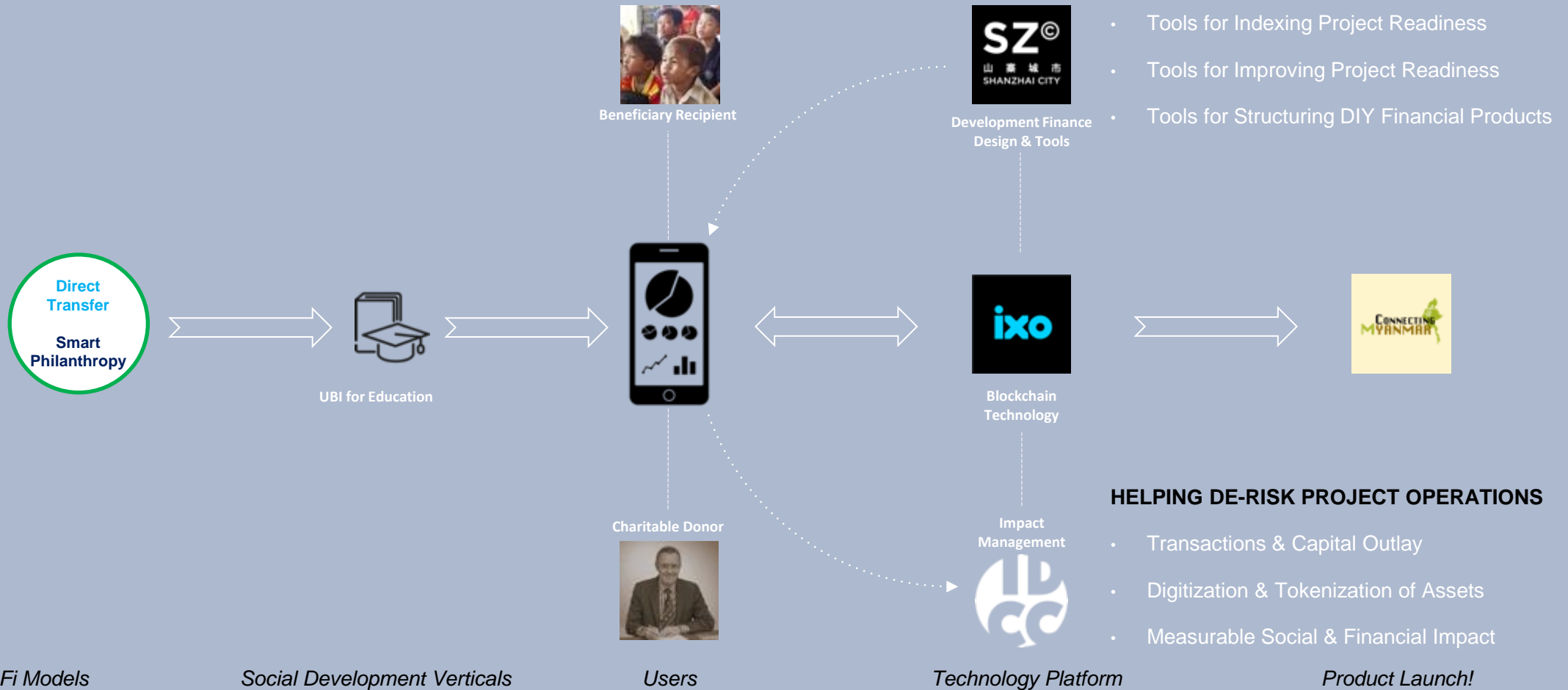
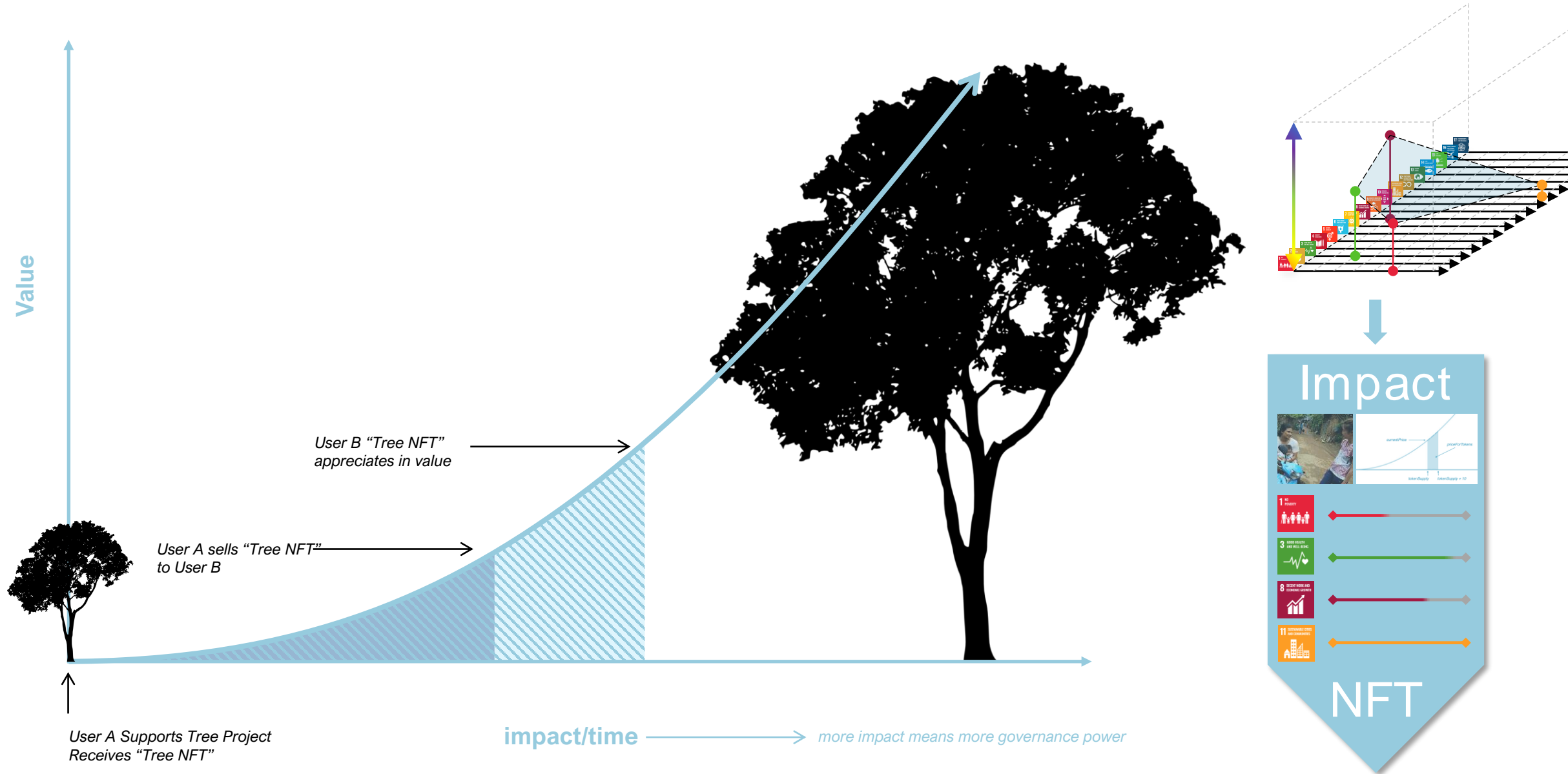**3. Money Undelivered**
or Delivered Inefficiently

- Low/No Access
- Crippled Financial Infrastructure
- Cross Border Challenges

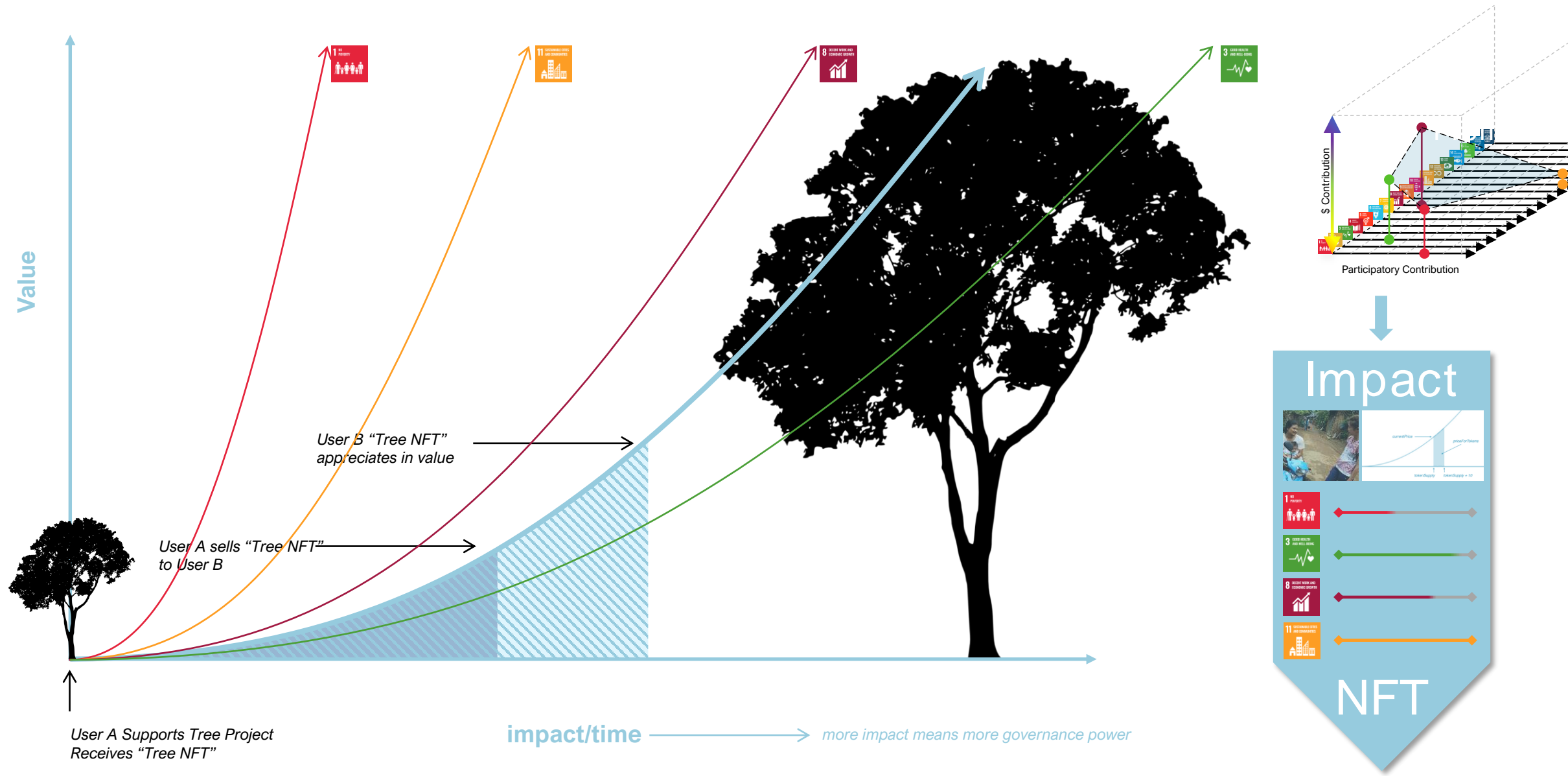# FUTURE IMPACT NFTs INCREASE IN VALUE OVER TIME

Value

User B "Tree NFT"
appreciates in value

User A sells "Tree NFT"
to User B

User A Supports Tree Project
Receives "Tree NFT"

impact/time → *more impact means more governance power*

Impact

NFT

TRACKING IMPACT DATA ENRICHES VALUE

Value

User B "Tree NFT" appreciates in value

User A sells "Tree NFT" to User B

User A Supports Tree Project Receives "Tree NFT"

impact/time ⟶ more impact means more governance power

$ Contribution

Participatory Contribution

Impact

NFT

Lower Barriers to Financial Inclusion Solutions

Reducing friction in SDG Markets and transforming grassroots economies to close the SDG funding gap

$2.4 Trillion Dollar Gap

2.6 Billion People Gap

Structured Economic Systems

Free Market Systems

Civic Finance	Conditional Finance	Community Debt	P2P Futures	P2P Lending	P2P Trade
Public Private Partnership	Impact Investment	Smart Impact Bond	Community Currency	Micro Finance	Oracle Marketplace