

The Future of DPI

The background features a large, glowing digital globe made of white data points on a dark blue background. A hand is visible on the left, pointing towards the globe. In the bottom right, there's a circular logo with 'AI' in the center, surrounded by concentric circles and lines. The overall scene is set against a cityscape at night with illuminated buildings.

Dr. Pramod VARMA

Co-Creator FINTERNET & BECKN Protocol

Co-Founder & Chief Architect, Networks for Humanity (NFH)

Co-Chair, Center for DPI (CDPI)

Fmr Chief Architect of Aadhaar, UPI, Digilocker, eSign (India DPIs)



Digital Public Infrastructure (DPI) drives exponential non-linear change

Physical Infrastructure



Railways, Roads, Cell Towers, Internet cables

Digital Infrastructure
to catalyse digital services



Open tech standards & systems for Identity, Signatures, Payments, Data, Fulfillment, and beyond



Both drive
Public & Private Innovation

Essence of DPI thinking

If it can't be
reused by
others, it's
not DPI!



Innovation

Diverse public/private solutions by ecosystem

Governance

Transparent, participatory, open and user & ecosystem centric

Technology

Open specs, standards, protocols, ...

REUSE

generates

exponentiality

INTEROPERABILITY

creates

Competition

DPIs have made great strides impacting few billion lives!



Mass formalisation

Verifiable digital identity, registries



Frictionless payments

Inclusive P2P/M and G2P payments

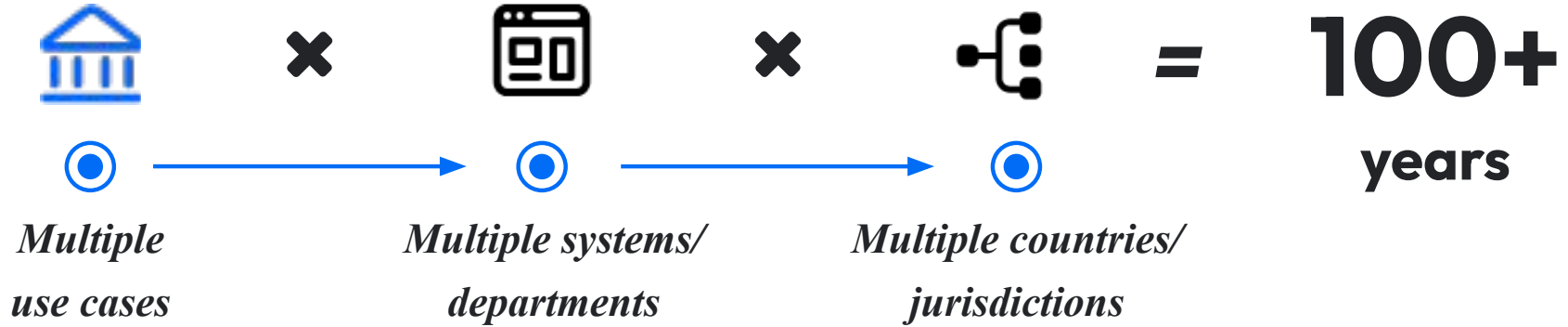


Personal data sharing

Credentials, wallets, data exchange

But, this approach of building purpose and jurisdiction specific DPLs is too slow!

It is like building a new road for every new vehicle!



While billions of people are being held back from accessing opportunities!

A woman with short dark hair, wearing a white blazer over a dark shirt, is holding a tablet computer. She is standing in a warehouse or industrial setting with shelves and equipment in the background. The lighting is bright, and the overall tone is professional and modern.

**Can we reimagine
DPIs that are more
universal and user-centric
and can leapfrog
190+ countries, 9+ bn people,
and 300+ mn businesses?**

DIGITAL IDENTITIES

Who I Am

Foundational IDs, Govt IDs,
Digital / self-sovereign IDs,
Authentication, SSO,
eKYC, Attestation



DIGITAL TRANSACTIONS

What I Do

Payments (P2P/P2M/B2B/G2P/G2B),
Transactions for trade/commerce/
healthcare/education/work/etc.

DIGITAL ASSETS

What I Have

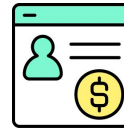
Digitized money,
Tokenized real-world assets,
Credentialed data/certificates/docs,
and other digital assets

Data is one the **most powerful economic asset** in digital age for individuals and businesses!

Free, user controlled flow of trusted, verifiable data is key to unlock growth!



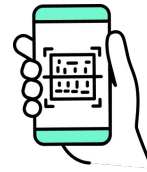
Identity & Identity related data



Certificates and Documents



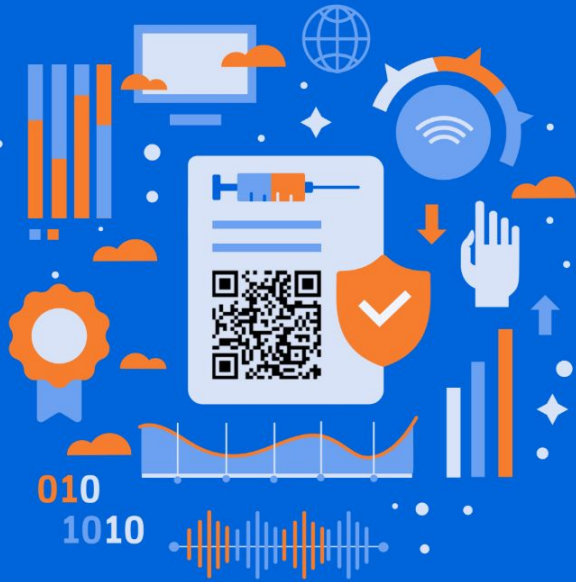
Affiliations & entitlements data



Transactional data

User-Centric Credentialing and Personal Data Sharing

VISION PAPER

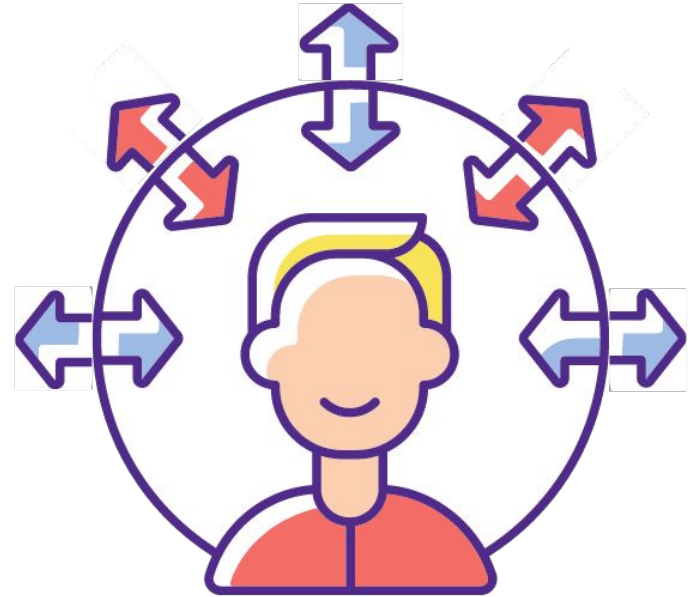


2025 | Licensed under CC by-SA 4.0



*Scan to visit the site and
download the paper*

For humanity scale impact,
we must imagine a more
**unified, universal,
user-centric vision**
for all forms of assets -
digital, physical - across
sector and geographies



Good news is that, tokenization & cryptographic technology advancements are taking us **back to the future**



Tokens are **self-describing** and **self-contained** information **packets** that can be **verified and transacted**



Cryptographic advances in **portability, immutability, verifiability, security, and privacy**

Tokenization

of assets restores
control back to users
(individuals and
businesses)
and enables
**programmable
transactability!**

All **real world and digital
assets** can be
represented as verifiable
and transactable tokens

- User controlled assets
- Attested assets,
- Registered assets
- Regulated assets

An aerial night view of a city with glowing skyscrapers and streets. Overlaid on the image are several semi-transparent icons: a dollar sign (\$) in a circle at the top center, a shopping cart in a circle on the right, a large dollar sign (\$) in a circle in the center, and another dollar sign (\$) in a circle at the bottom right. There are also faint lines connecting these icons, suggesting a network or ecosystem.

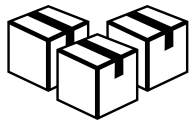
Finternet: A vision to credential and tokenize any form of assets in a user-centric way

<https://finternetlab.io>

An interconnected asset ecosystem that empowers individuals, businesses via a unified and universal infrastructure!

Today, we have many **fragmented, poorly connected micro economies** with high transaction costs!

BRAZIL



E-COMMERCE

Only **6-7%**
MSMEs sell on
online platforms

NIGERIA



LOGISTICS

<5 trucks owners
serve **80% of**
transports

INDONESIA



MOBILITY

Ride-hailing serves
<7 Mn of 100 Mn+
daily public trips

MEXICO



EV CHARGING

Closed-loop access
to **1200+** public EV
charging facilities



**How can DPIs help reimagine
the fragmented, high cost,
low trust transaction
economy?**

Emerging economies need to make a shift from



Fragmented, offline,
informal, low-productivity
micro economies



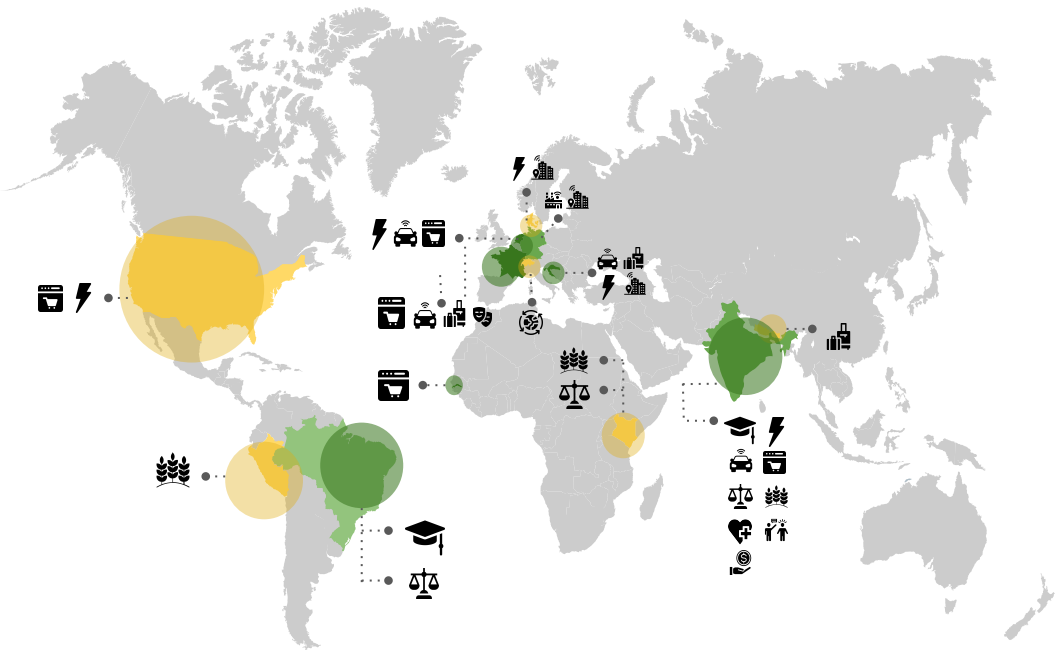
Unified, phygital/online,
formal, high-productivity,
mega economy

This must happen by placing **individuals & SMEs**
at the **center of the design!**

Open networks are transforming **many** sectors ...



... and are being created globally



Legends ● Live Applications ● Ongoing Ventures

- Skilling & Education
- Climate & Energy
- Mobility
- Digital Commerce
- Agriculture
- Tourism & Hospitality
- Smart cities
- Tele-law
- Healthcare
- Smart Manufacturing
- Logistics
- Culture
- Circular Economy
- Financial Services
- Online Dispute Resolution

7
Live Networks

~15
Countries

15+
Domains Identified

60+
Projects in different stages

A photograph of a busy market stall, likely a spice or food market. The stall is filled with various colorful goods, including what appears to be spices, beans, and other food items, arranged in large piles and trays. Several people are visible, some standing and some moving through the stall. The lighting is somewhat dim, and the overall atmosphere is one of a bustling, traditional market.

Open Networks as a means to imagine an
“Internet of Value”

<https://becknprotocol.io>

by moving away from “closed centralized platforms” to
“open decentralized networks”

AI and DPIs can supercharge the economy

Overcoming
**language and
productivity
barriers** for
billions of people!





India farms using AI

BBC NEWS



AI growing usage across sectors

**DPI thinking can
be applied to AI**
to usher in an
intelligent era in
an equitable way

Democratised compute
Open data repositories
Open source models
Smaller use case first LLMs

Future of DPLs is



Universal and unified infra
Contextual and sovereign flows
Interoperable network by design
User-centric, Innovation friendly



Thank you!

Dr. Pramod VARMA

Co-Founder & Chief Architect, Networks for Humanity (NFH)

Co-Creator FINTERNET & BECKN Protocol

Co-Chair, Center for DPI (CDPI)

Fmr Chief Architect of Aadhaar, UPI, Digilocker, eSign (India DPIs)