

Digital Public Infrastructure (DPI)

Building Blocks for Resilient Economies

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Digital Public Infrastructure (DPI)

As a way to balance inclusion and innovation

Physical Infrastructure



Railways, Roads, Cell Towers, Internet cables

Digital Infrastructure
to catalyse digital services



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

Both drive
Public & Private Innovation

We all use global DPIs every day!

Telcom

Powered by common protocols and standards – **GSM, SMS**, ...

Ensuring **global voice communication** interoperability

Allows **innovation** – handsets, applications, ...

Adoption is **driven by ecosystem** by unlocking value to users

Internet

Powered by common protocols and standards – **HTTP, HTML, SMTP**, ...

Ensuring **global information exchange** interoperability

Allows **innovation** – devices, applications, ...

Adoption is **driven by ecosystem** by unlocking value to users

Defining Digital Public Infrastructure

A set of technology building blocks
powered by interoperable open standards/specifications
operated under a set of enabling rules
having open, transparent, and participatory governance
to drive innovation, inclusion, and competition *at scale*

India's Key DPI Efforts



Some of the key DPLs that drove India's Digital Transformation



Identity Infrastructure

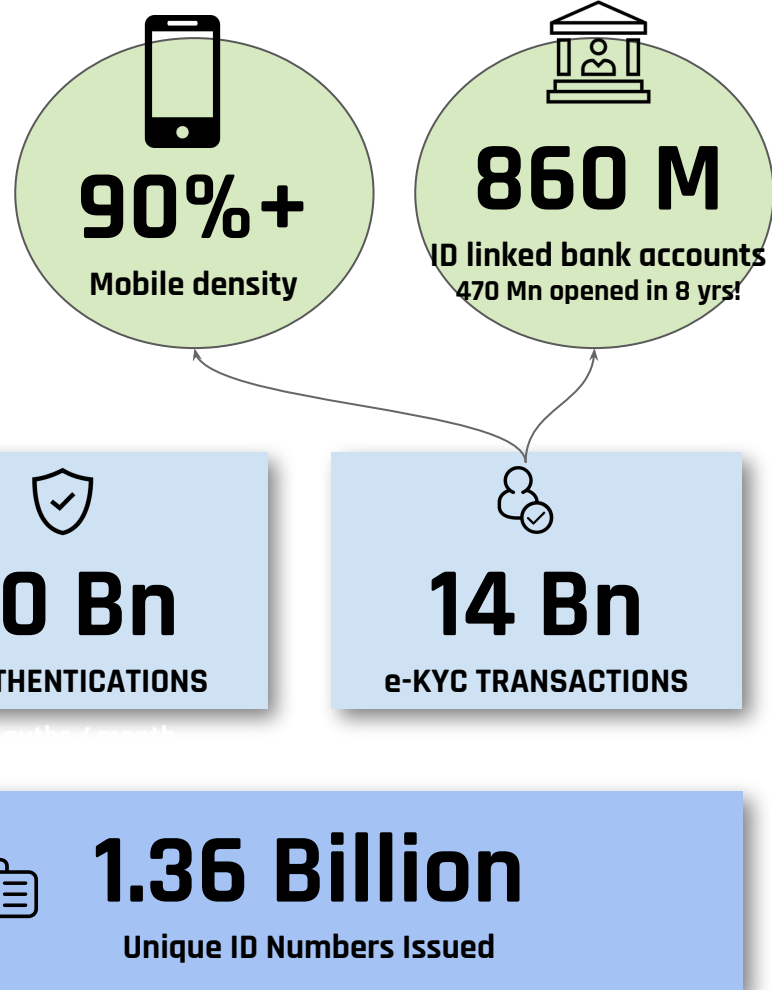
Digital ID for both public & private innovation



AADHAAR

Unique digital identity

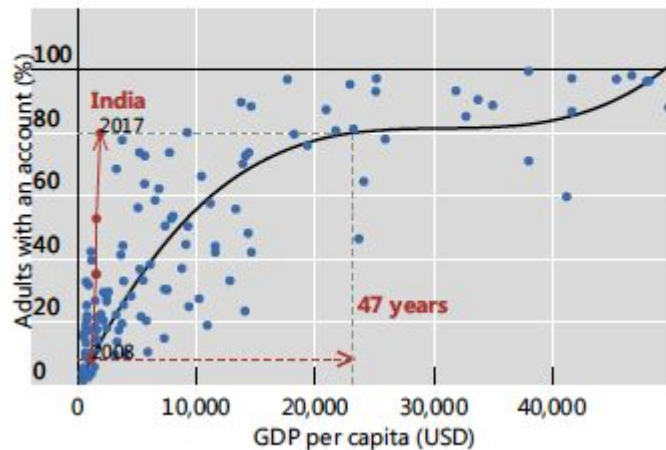
Foundational, Designed for innovation
Secure and Privacy Preserving



Digital ID eKYC **blitz-scaled** banking penetration from 17% to over 80%!

Leapfrogging traditional development processes

Positive relation between GDP per capita and adults with a bank account¹ in 2011



Per BIS, India did for financial Inclusion in less than a decade what would have taken **5 decades** by traditional means.

Impact of ID for G2P in India

\$322 Billion

Transferred

\$27 Billion

Savings

1000+

Programs

860 Million

Beneficiaries



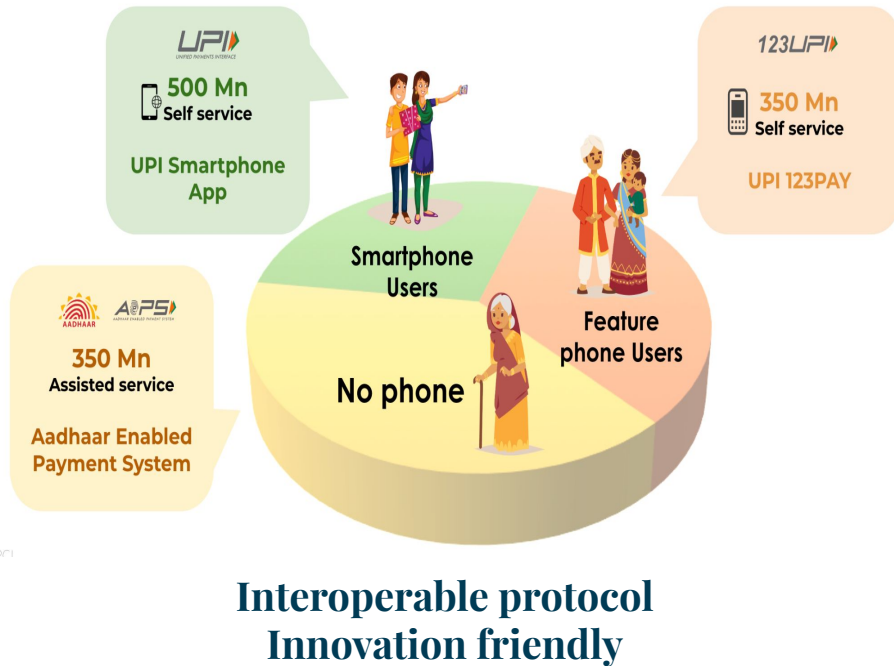
\$4.5 B

COVID Disbursals

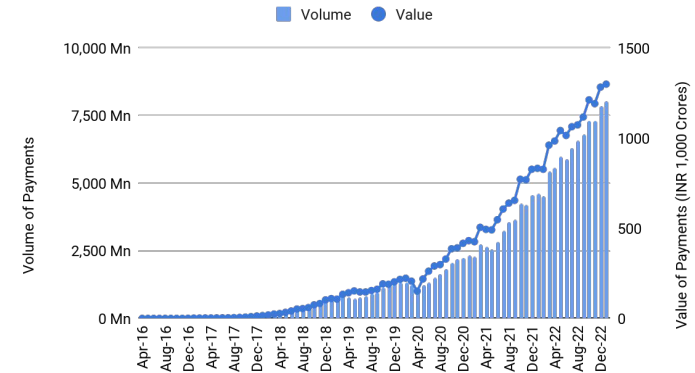
160+ M

COVID beneficiaries

Payments: Unified Payment Interface solved for P2P and P2M in a diverse and inclusive manner



UPI Growth



In 6 years, India had highest volume of digital payments globally

UPI growth driven by open ecosystem

~350 banks/wallets, 60+ apps, 22 languages, 60+ million merchants!



~350

Banks/Wallets



60+ Mn

Acceptance Points



8.9 Bn

MOBILE txns

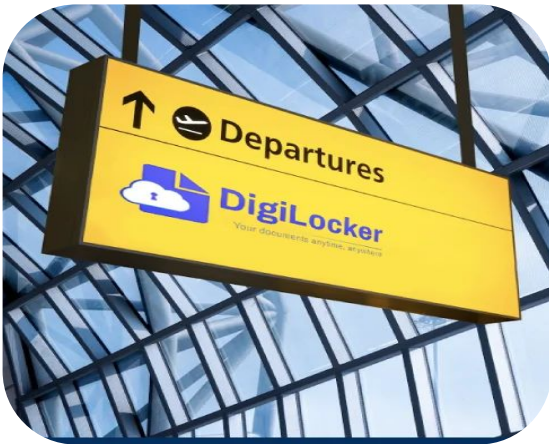


384 mn

NO-PHONE txns

Digilocker made transactions paperless

paper certificates to digitally verifiable credentials



160 Mn
users

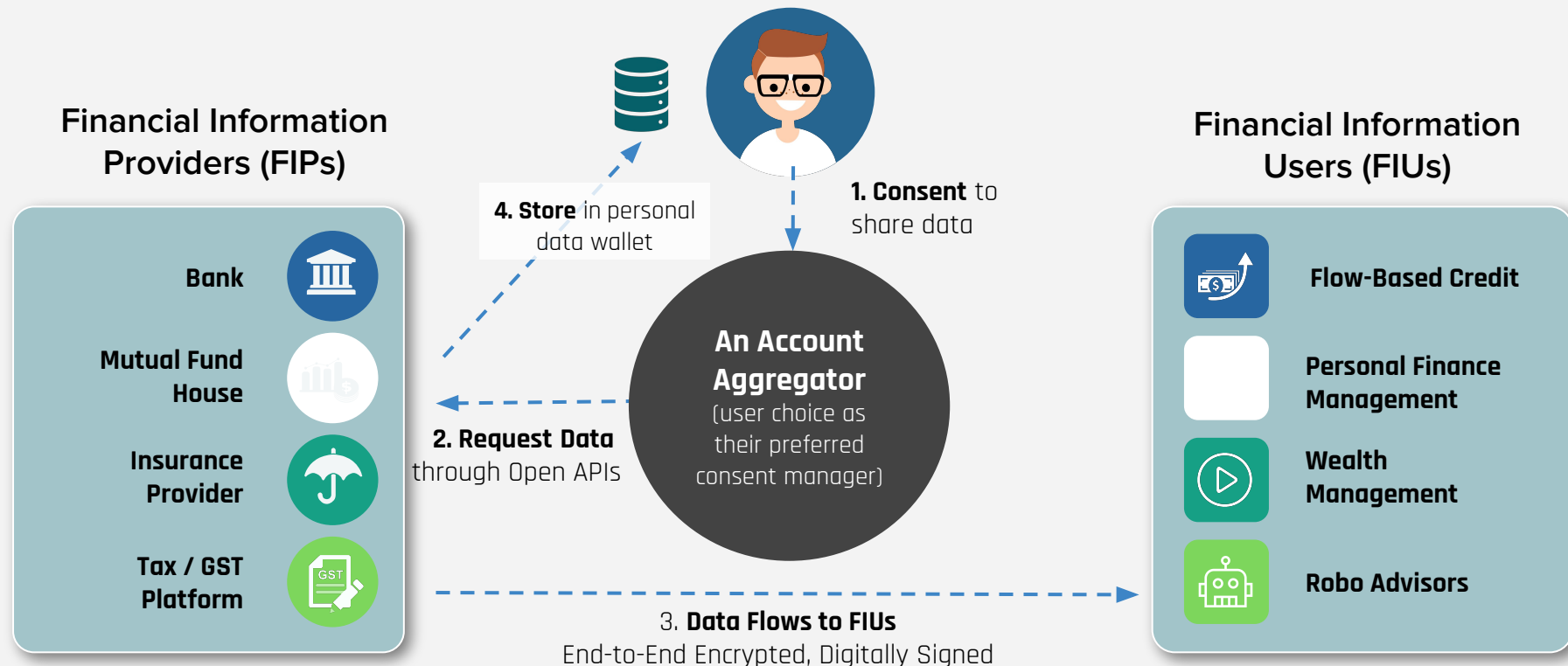


5.6 Bn
digital docs

2311
issuers

India's **Account Aggregator** network is a unified way to let **individuals control their financial data**, no matter who has it.

Same decentralized, open protocol driven framework is being deployed in healthcare and other domains



Combining DPI 'blocks'



Brings small ticket lending to life!

₹160 loan (\$2)

disbursed within

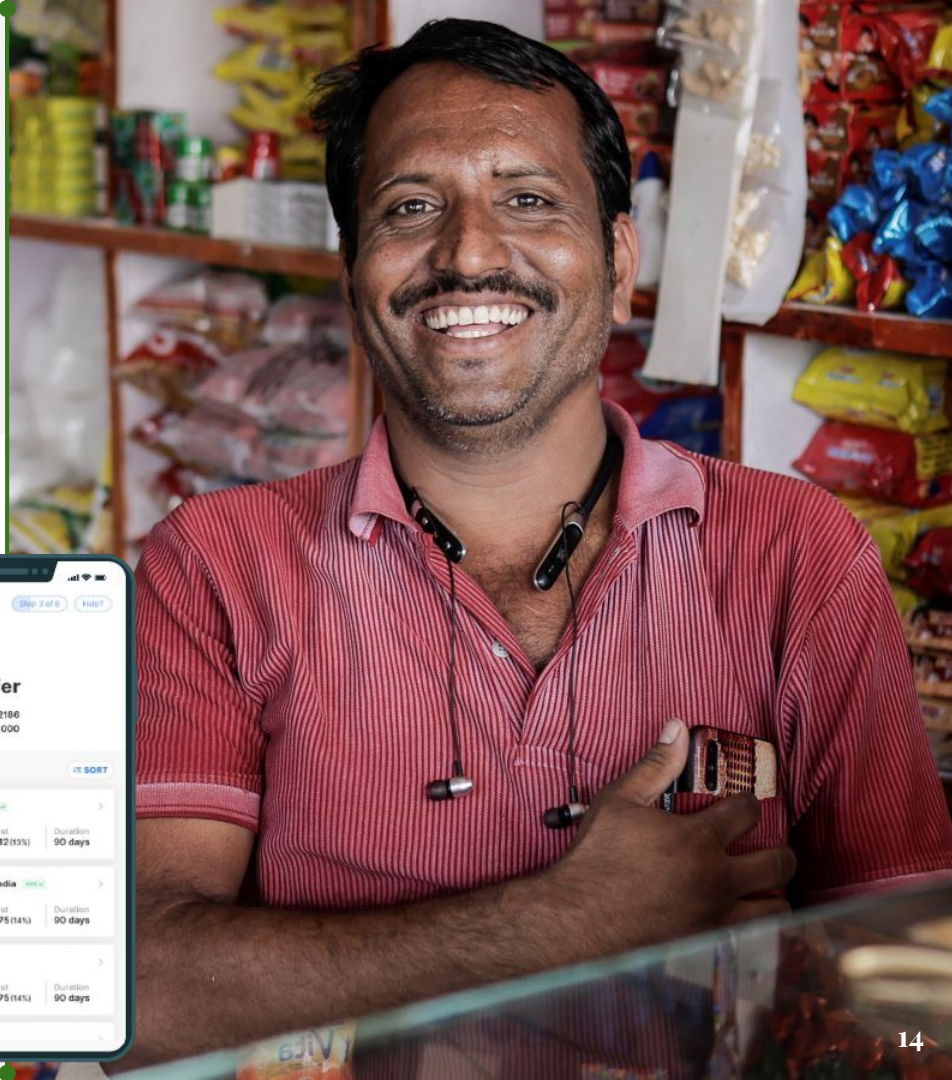
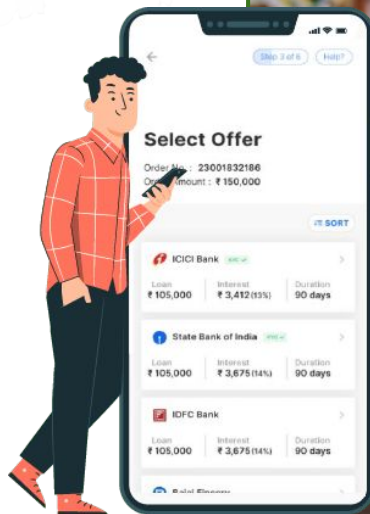
5-10 mins via mobile

to be repaid in **42 days**

Fully digitally.

Without collateral

At bank interest rates





Putting it together

5 **foundational DPI categories**



**Digital IDs &
Electronic
Registries**



**Digital
Signature,
PKI, & Trust
Infra**



**Data &
Credentialing
Infra**

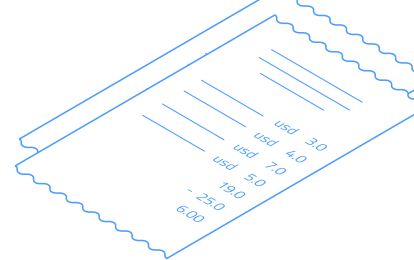


**Digital
Payment
Networks**



**Discovery &
Fulfillment
Networks**

5 DPI architecture principles



01.

Interoperability
driven by open
specifications

02.

**Minimalist
building
blocks,**
not full
solutions

03.

**Diverse
innovation**
by the
ecosystem

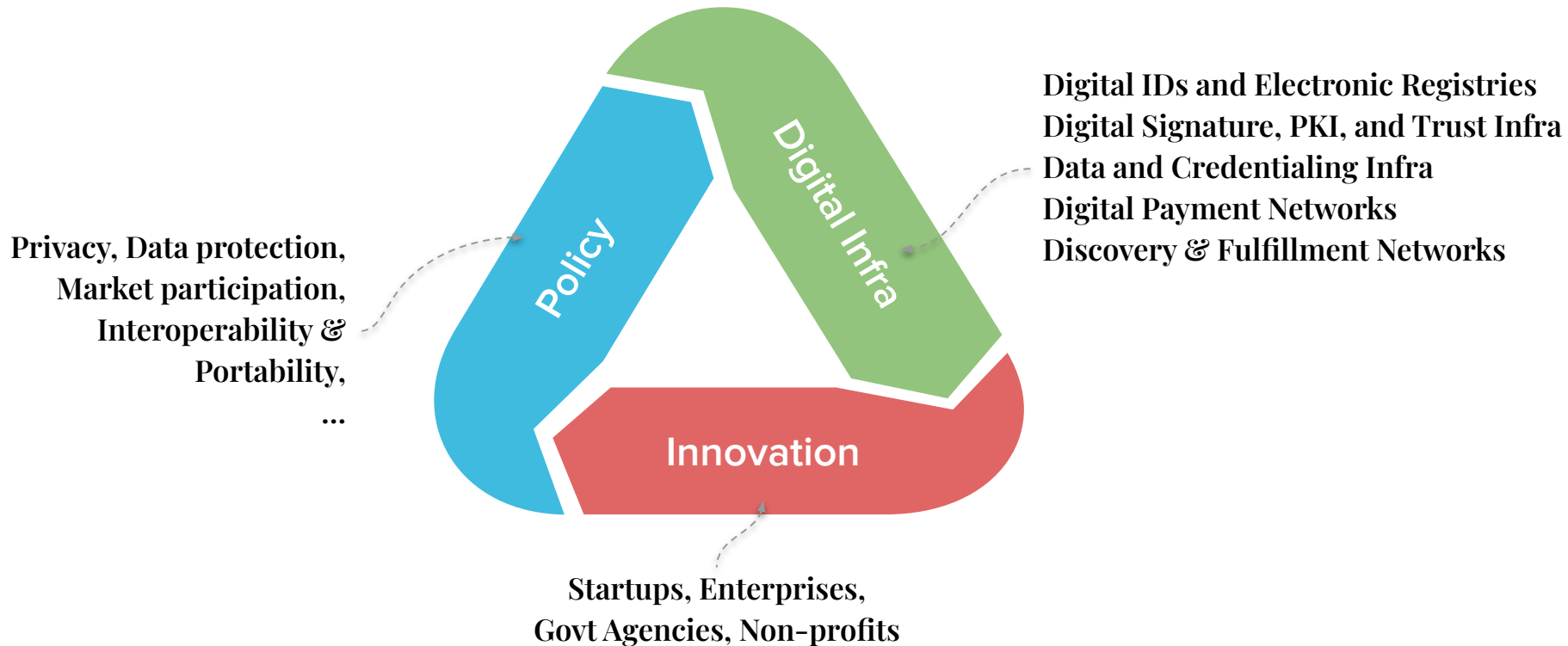
04.

**Security
& Privacy**
by design

05.

**Decentralized
design &
Asynchronous
adoption**

DPIs must harness and align tech and policy to bring the best out of market innovation



The DPI approach works by using **open tech standards** & **enabling policy** to bring the best out of **markets**



Market: Public and private innovation; Competitive market players designing diverse solutions;

Governance: Legal and institutional framework; Public programs to drive adoption; Ecosystem facilitation; Participatory governance;

Open Standards & Building Blocks: Open interoperability specifications and protocols; Shared core platforms; Addresses digital identity, payments, data & credentialing, discovery & transactions;

**DPI success
necessitates
incentive aligning
the entire
ecosystem to
create the domino
effect!**

**Govt/ Regulators/
Non-profits** enabling and
facilitating Digital Public
Infrastructure (DPIs)

**Demand & Innovation
Ecosystem** leveraging
DPIs/DPGs (diverse choice
of products and solutions
built using DPI building
blocks)

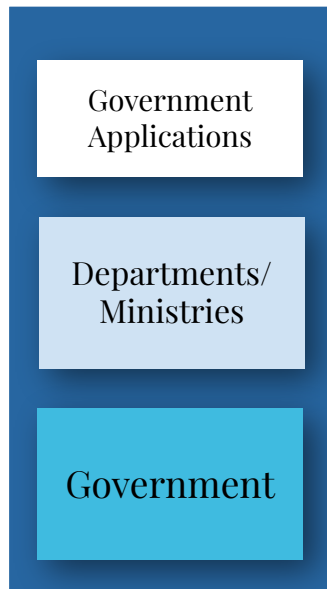
+

**Open Source
Communities** building
specifications, protocols,
components, and solutions
as Digital Public Goods
(DPGs)

**Supply & Capacity
Ecosystem** supporting
DPI/DPG efforts (SIs,
Academic institutes,
experts, think tanks, etc.)

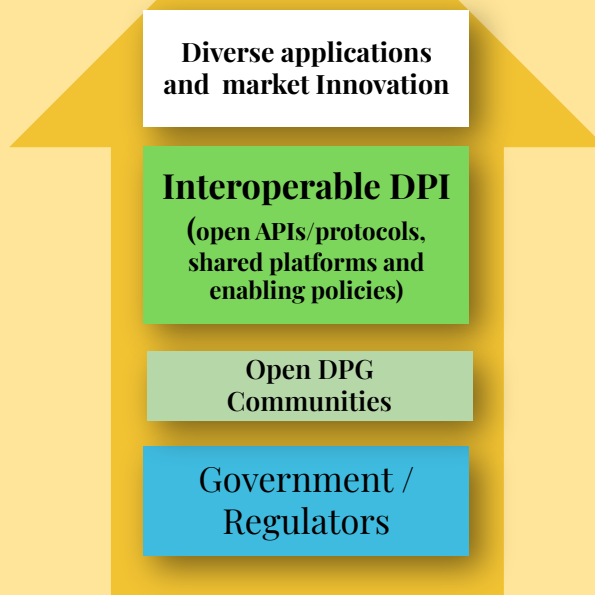
All Govt Approach

Single Provider
Slow Innovation



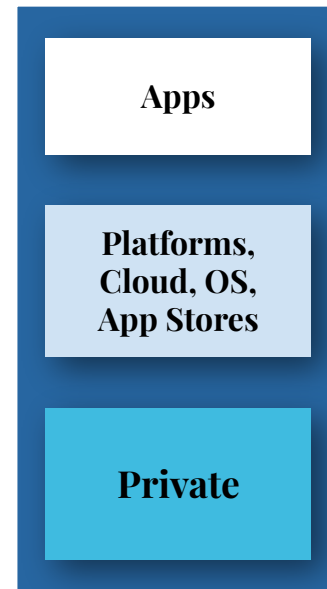
DPI Approach

Addresses diversity & choice
Encourages Innovation & competition,
Ensures openness and sovereignty



All Private Approach

Lack of interoperability
Lack of competition



DPI approach helps accelerate formalization

... and creates a sustainable, inclusive, and innovative economic development



Thank you!

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