Driving Inclusion & Innovation at Scale

Digital ID as a core DPI Building Block

Dr. Pramod Varma

@pramodkvarma

Digital Public Infrastructure (DPI)

WHAT IS IT AND WHY SHOULD YOU CARE?

Core societal and government needs

Access

Affordability

Choice

Equity

Opportunity

Agency

Privacy

Trust

Sovereignty

Inclusion

Economy

Productivity

Innovation

Competition

Governance

Security

Societies are fast going digital

Countries should invest in **Digital Public Infrastructure (DPIs)** to ensure **inclusion and innovation** thus **creating access, choice, and fair market competition**

Digital Public Infrastructure (DPIs)

A set of **shared digital utilities**

powered by **interoperable open standards/specifications**

operated **under a set of enabling rules** (laws/regulations/policies)

having **open, transparent, and participatory governance**

with **open access** to individuals and/or institutions

addressing **sovereignty and control**

built as a set of **digital building blocks** (not as monolithic solutions)

to **drive innovation, inclusion, and fair competition** at scale

All Govt Approach
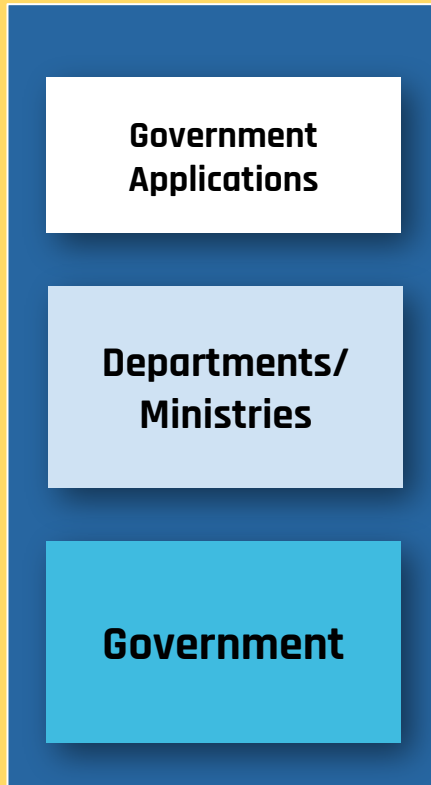
Single Provider
Slow Innovation

Government Applications
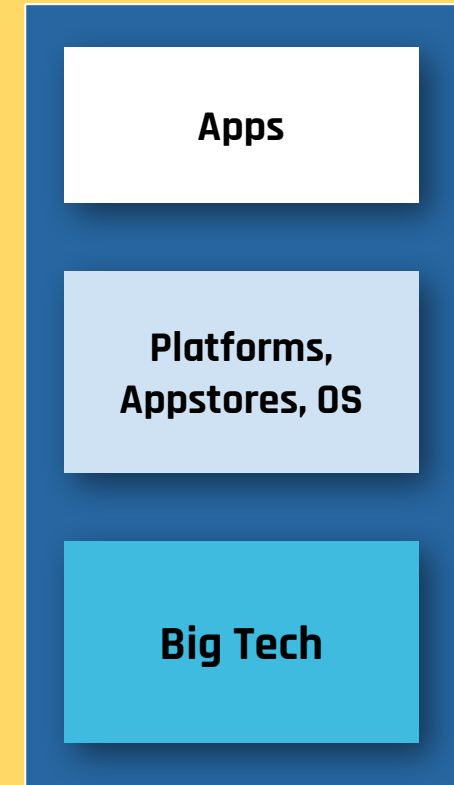
Departments/ Ministries

Government

All Govt Approach

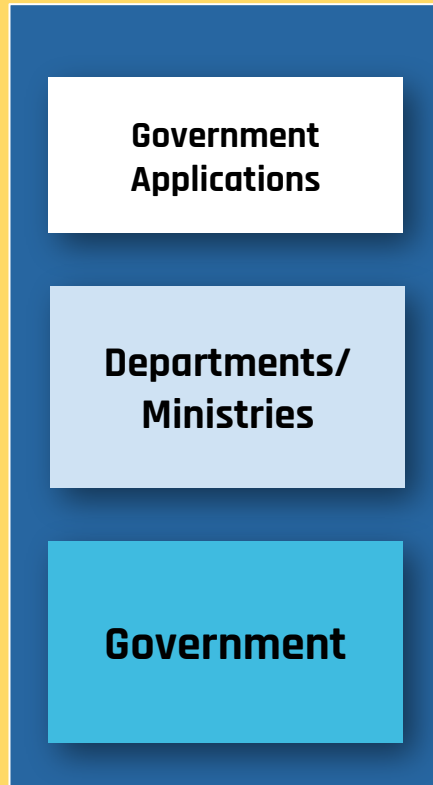*Single Provider*
Slow Innovation

Government Applications
Departments/ Ministries
Government

All Tech Approach

Apps
Platforms, Appstores, OS
Big Tech

All Govt Approach

*Single Provider
Slow Innovation*
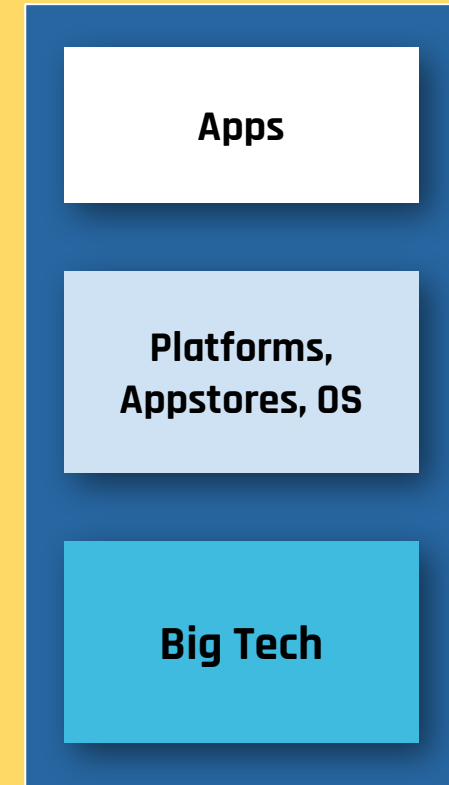
Government Applications

Departments/ Ministries

Government

DPI Approach

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

Diverse applications and market Innovation

Interoperable DPI
(open APIs/protocols, shared platforms, open networks, usage policies)

Government / Regulators
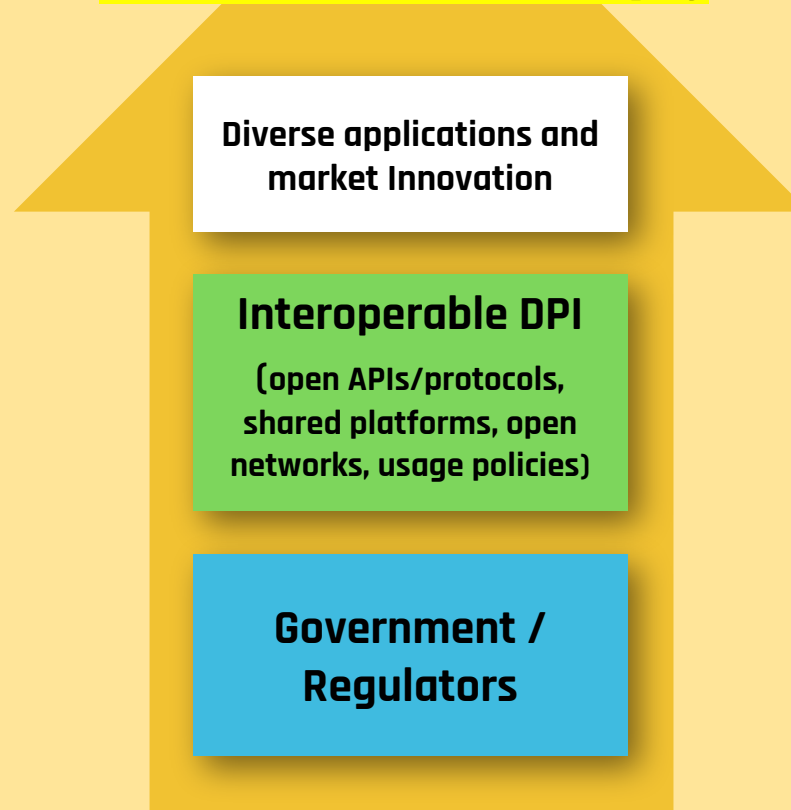
All Tech Approach

*Lack of interoperability
Lack of competition*

Apps

Platforms, Appstores, OS

Big Tech

India's DPI Journey

ADDRESSING ACCESS, CHOICE, EQUITY, AND INNOVATION @ SCALE

India is large and diverse

1.4 Billion people

22 official languages

1 Billion mobile connections

800 Million Internet Users

6% pay income tax

Back in 2008...

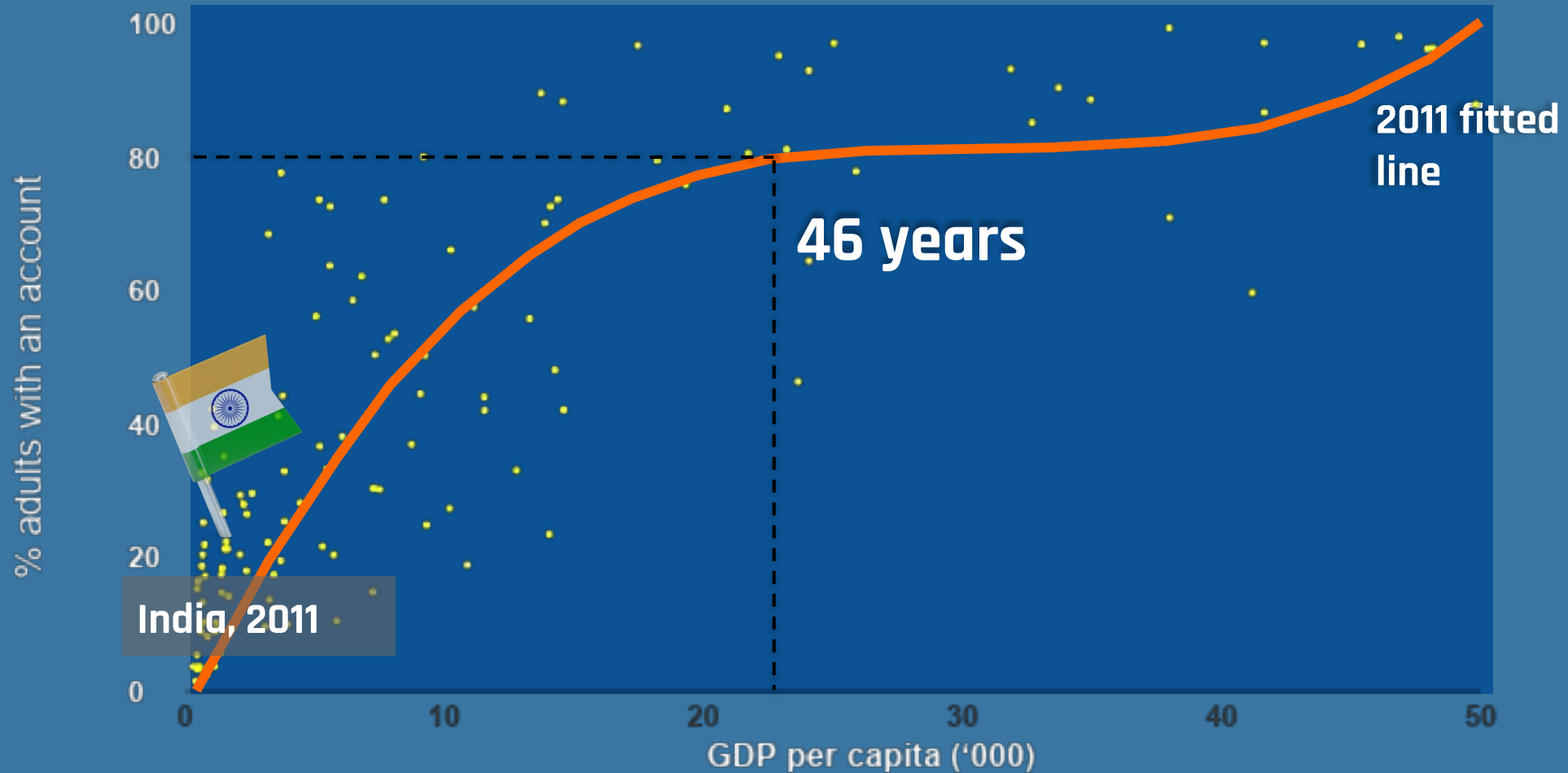only **17%**

had bank accounts

Financial exclusion

~$50 B

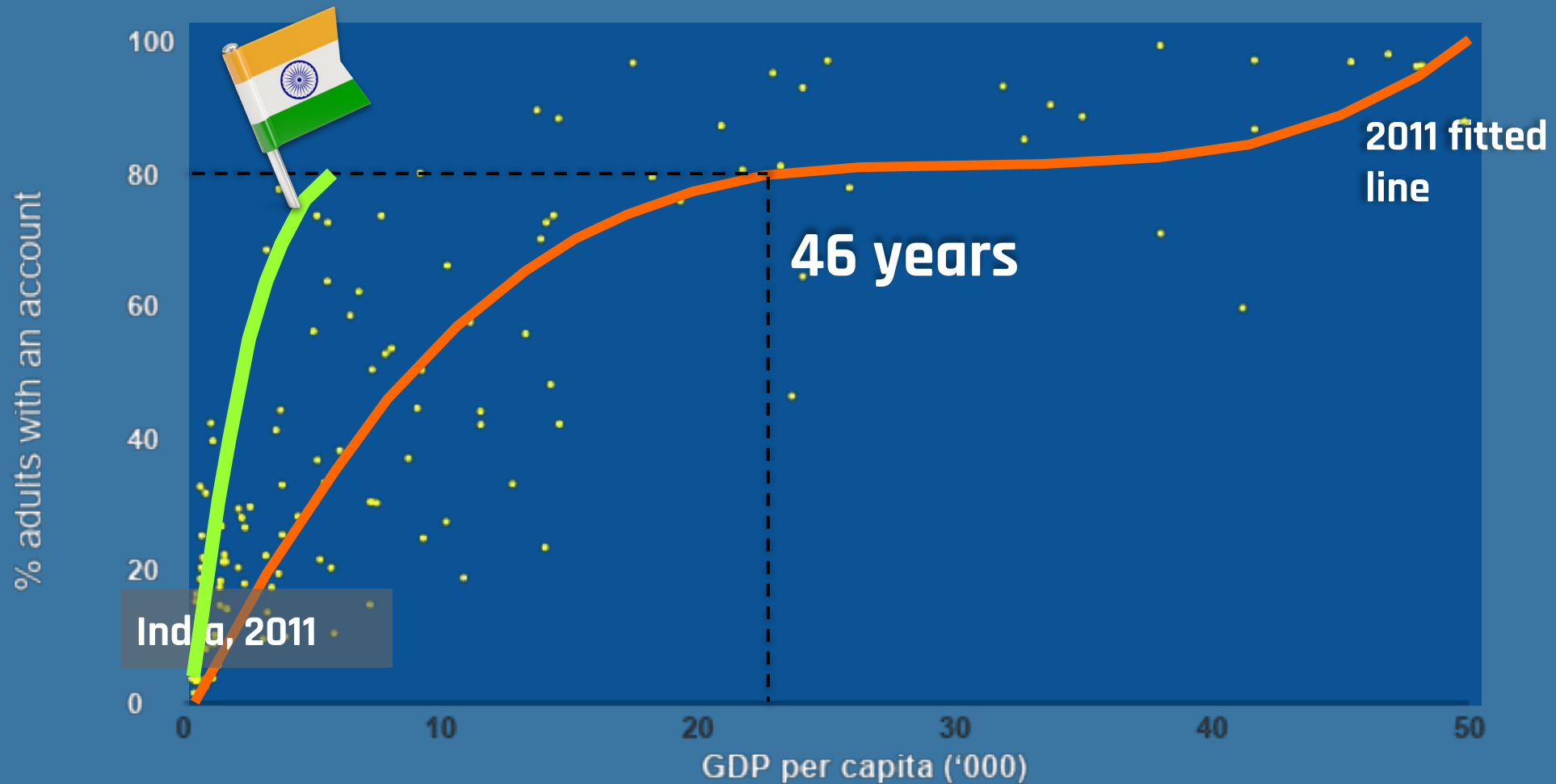## was spent on direct subsidy

Diversion and leakage

Source : A Demirgüç-Kunt, L Klapper, D Singer, S Ansar, and J Hess, "The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution", World Bank, 2017

India would have taken 46 years to get to above 80% bank account penetration

2011 fitted line

46 years

India, 2011

% adults with an account

100
80
60
40
20
0

GDP per capita ('000)

0   10   20   30   40   50

… but it only took 6 years to achieve the target!!!

India, 2011

46 years

2011 fitted line

% adults with an account

GDP per capita ('000)

13

During last decade
India built the world's largest direct benefit transfer system

310+ federal schemes
600+ state schemes

$322 Bn
transferred directly so far

~860 Mn
people can now receive money digitally

Savings > **$27 Bn**
Just across key federal schemes

$4.5 Bn disbursed during the COVID pandemic to **160 Million** beneficiaries

14

India is solving these population scale challenges via

A set of **Digital Public Infrastructure** building blocks

ushering inclusive, exponential transformation

Identity Infrastructure

Digital ID for both public and private innovation

AADHAAR
Unique digital identity

Foundational, Designed for innovation, Secure and Privacy Preserving

1.35 Bn
IDs issued

860 M
ID linked bank accounts
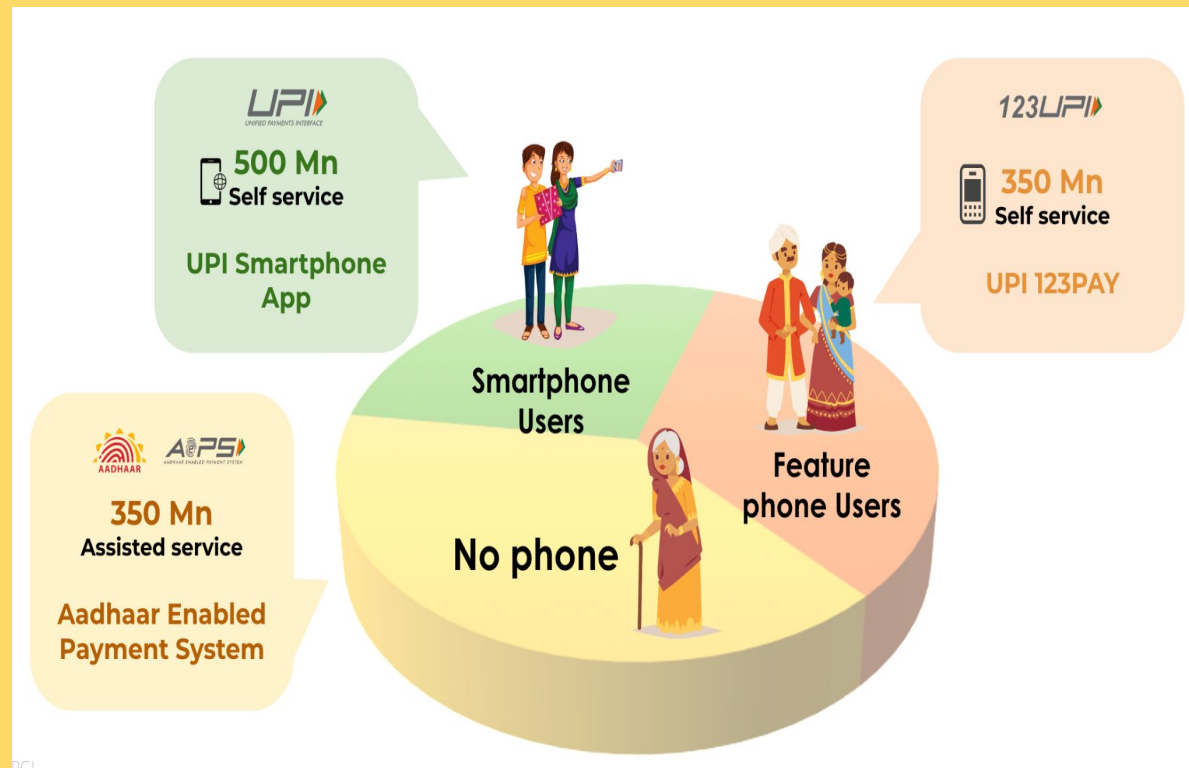470 Mn opened in last 8 years!!

79 Bn
ID authentications

13 Bn
e-KYC transactions

Entity Digital IDs and various functional digital IDs via electronic registries are also being built with open APIs for the ecosystem to innovate

Source: https://uidai.gov.in/

Real time payment Infrastructure

Banks, PPIs, apps, multiple interfaces, all on common interoperable digital rails

UPI
500 Mn
Self service
UPI Smartphone App

123UPI
350 Mn
Self service
UPI 123PAY

AADHAAR **AePS**
350 Mn
Assisted service
Aadhaar Enabled Payment System

Smartphone Users

No phone

Feature phone Users

$322 Bn
Total G2P (DBT) so far

$1.5 Tn
P2P & P2M - YTD ('22)
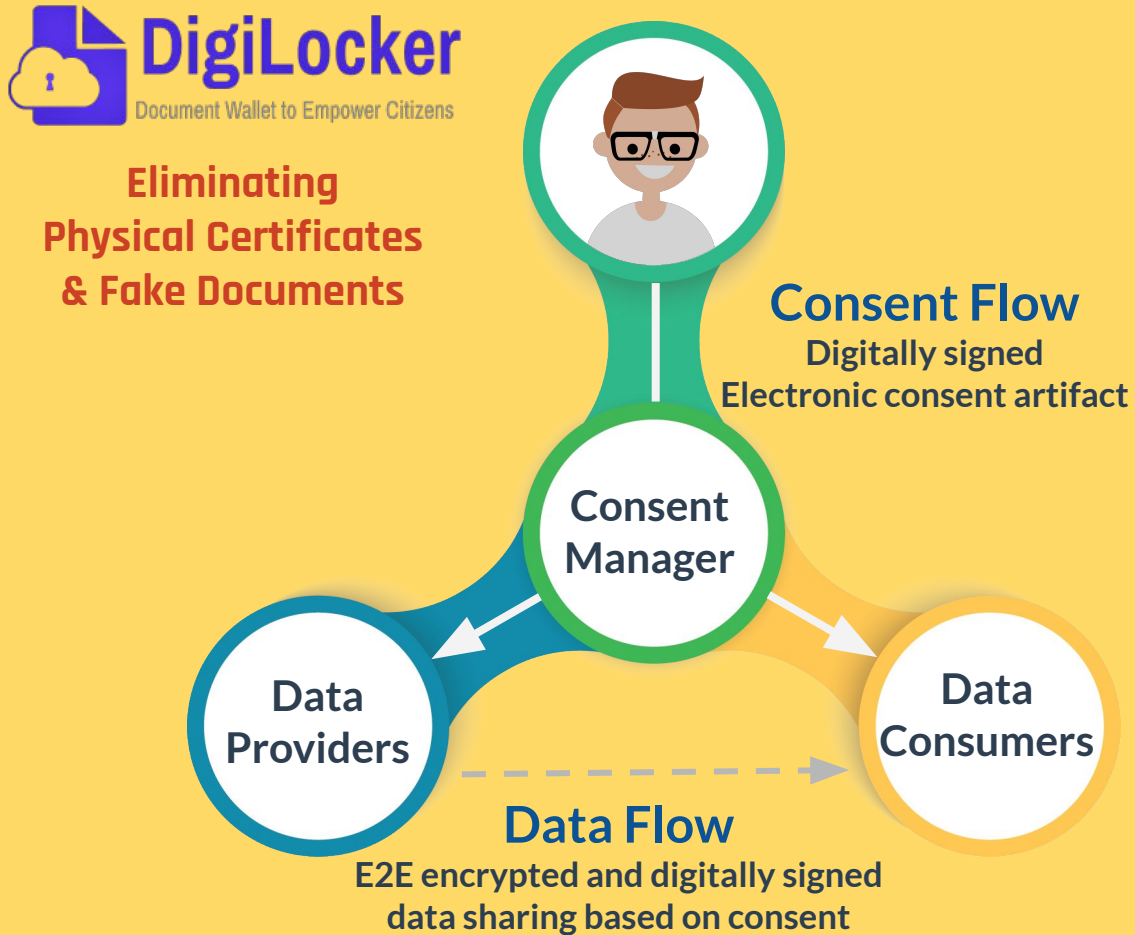
7.8 Bn
UPI txns in Dec '22

384 mn
Aadhaar based txns in Dec '22

UPI growth was driven by the ecosystem

380+ banks/PPIs, 66 apps, 22 languages, 50+ million merchants, 7.8 Billion txns/month

Data & Credentialing Infrastructure

Driving data driven innovation towards 'high trust, low cost' environment

DigiLocker
Document Wallet to Empower Citizens

Eliminating Physical Certificates & Fake Documents

Consent Flow
Digitally signed
Electronic consent artifact

Consent Manager

Data Providers

Data Consumers

Data Flow
E2E encrypted and digitally signed
data sharing based on consent

5.6+ Bn
verifiable certs/credentials

140+ Mn
DigiLocker Users

250+
AA network participants

1 Bn
AA linkable accounts

Source: https://digilocker.gov.in/ and https://sahamati.org.in/

India is laying digital infrastructure across domains
with individuals and small businesses at the center

Health Stack (ABDM, PHR, UHI)

Digital Infra for Education (DIKSHA, NDEAR)

Urban Governance (NUS)

Financial Rails beyond payment (AA, GSTN, SAHAY)

ETC - FasTag eWayBill

Open Networks for Commerce (ONDC, KOMN)

India Stack

Bringing it together

ALIGNING TECHNOLOGY, POLICY, AND MARKET

Creating an inclusive and equitable economy
and accelerating formalization

Friction Reduction
Reduces cost of doing business, and expands markets

Increased Trust
Digital & portable attestations, verifiable claims

Compliance
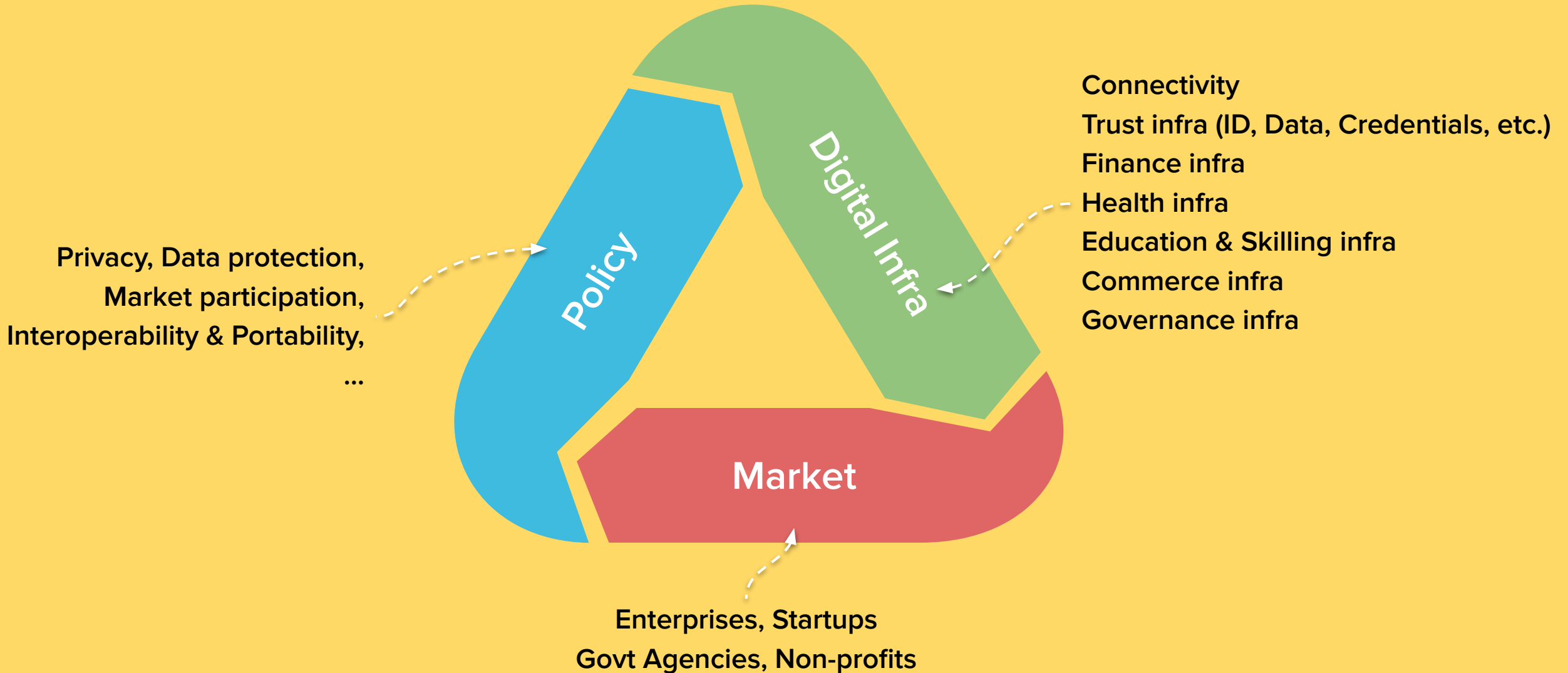Make it easier to comply through automation

Access to learning

Access to healthcare

Access to products & services

Harnessing and align 3 key pillars

Creating level playing ground, drive innovation, competition, and productivity gains

Policy

Digital Infra

Market

Privacy, Data protection,
Market participation,
Interoperability & Portability,
...

Connectivity
Trust infra (ID, Data, Credentials, etc.)
Finance infra
Health infra
Education & Skilling infra
Commerce infra
Governance infra

Enterprises, Startups
Govt Agencies, Non-profits

Key building blocks
for an inclusive digital economy
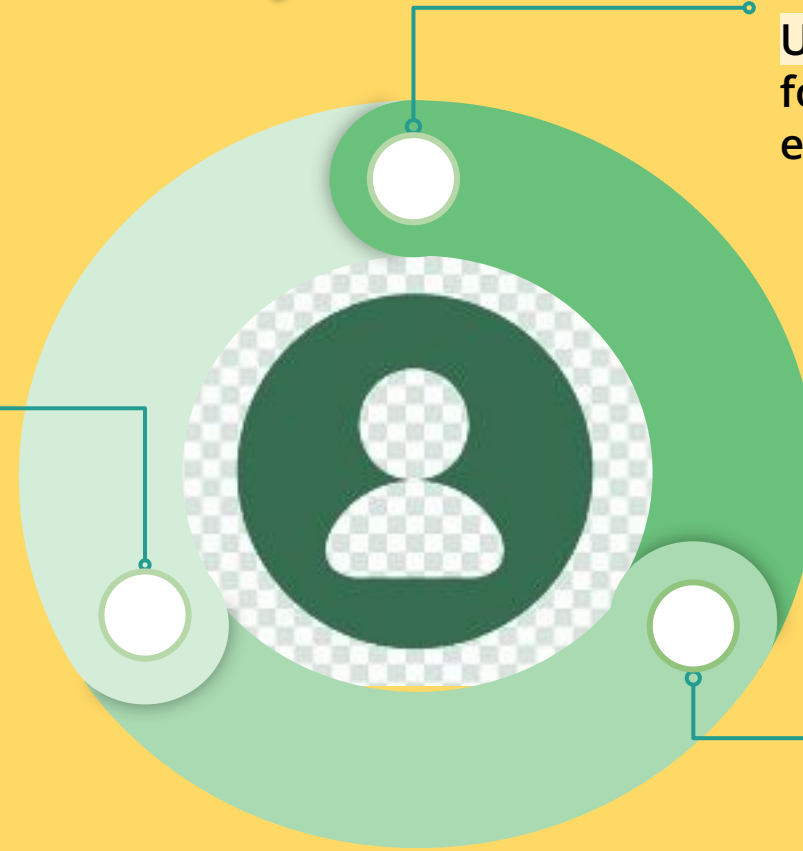
DIGITAL TRANSACTIONS
What I Do

Unlocking opportunities via open networks for Payment, fin services, trade/commerce, education, skilling/jobs, healthcare, etc.

DIGITAL IDENTITIES
Who I Am

Digitally authenticable
Foundational & Functional IDs,
Electronic Registries,
Authentication, SSO, eKYC

DIGITAL ASSETS
What I Have

Verifiable and non-repudiable
Electronic data & credentials,
Electronic Signatures,
Digital money, Other digital assets

All implemented as a set of decentralized interoperable building blocks

23

Thank You!

Dr. Pramod Varma

@pramodkvarma