DPI in Agriculture

July 11, 2024

DIASCA Workshop

Kamya Chandra

Chief Strategy Officer, Centre for DPI

kamya@cdpi.dev

Academic & Non Profit

Centre under IIIT-B University

Tech Architecture Advice

Pro bono, software neutral

Global Action Bias

Team of practitioners

Who, Why, and What We Are at the Centre for DPI

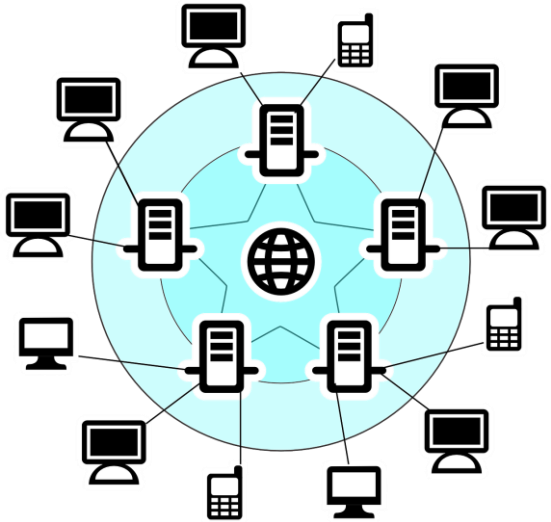
Digital Public Infrastructure (DPI)
drives exponential non-linear change

Physical Infrastructure → **Railways, Roads, Cell Towers, Internet cables**

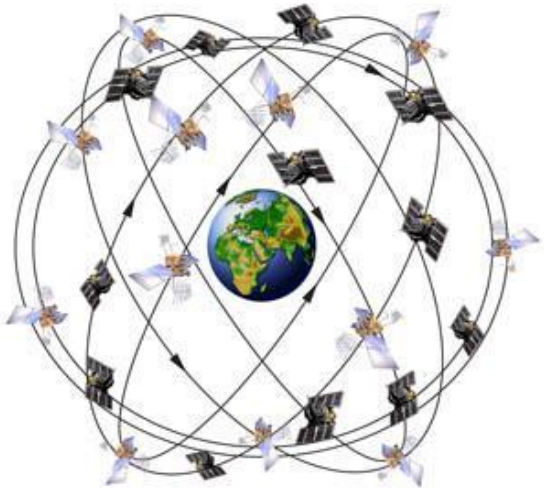
Digital Infrastructure to catalyse digital services → **Open tech standards & systems** for Identity, Signatures, Payments, Data, Fulfillment, and beyond

Both drive **Public & Private Innovation**

Inspired by the original digital infrastructure: Internet, GPS, and Mobile



Internet



GPS

Mobile/GSM

5 Foundational Digital Public Infra Categories
within & across sectors

Identities

Authenticating any noun in a digital ecosystem (people, entities, & objects) via Registries

Payments

Making financial transactions with ease

Data Sharing & Credentials

Sharing Data (history, profile, & attributes) or Models peer to peer or publicly

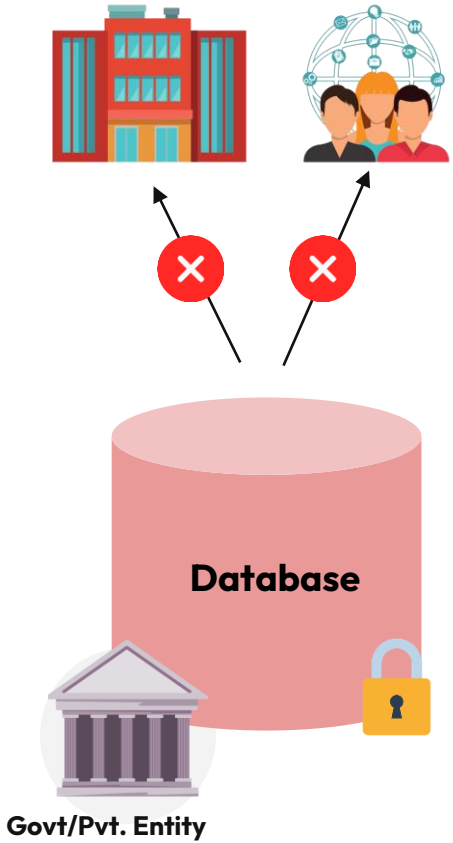
Trust Infra

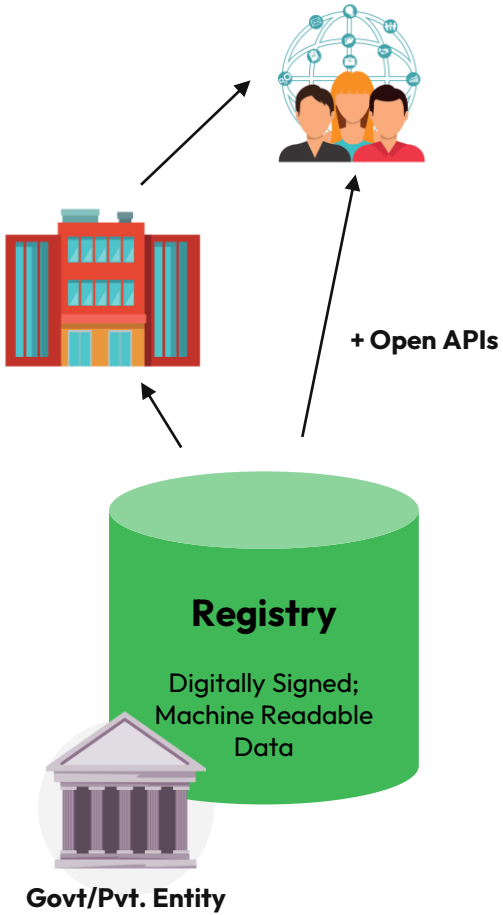
Enabling trust through signatures, consent, and beyond

Discovery & Fulfillment

Accessing goods and services via open protocols/APIs

Registries turn databases into reusable infra ensuring it stays updated & gets used by third parties!





How can users authenticate themselves to get access to services?

Existing ID

Auth module

Digital ID with Auth

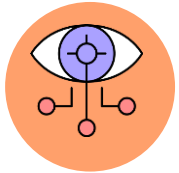
G2P benefits, onboarding for commerce, access to agri loans and many more!

A tailored approach to **data sharing**

Avoid centralisation
Accessibility to private agripreneurs

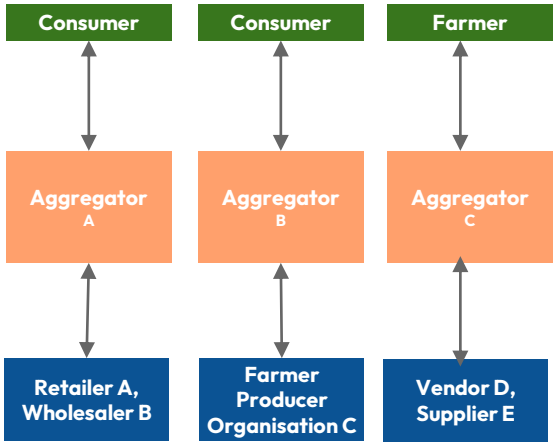
Realtime Information Exchange- Granular, extensive personal transaction data like **real time crop conditions, market prices**

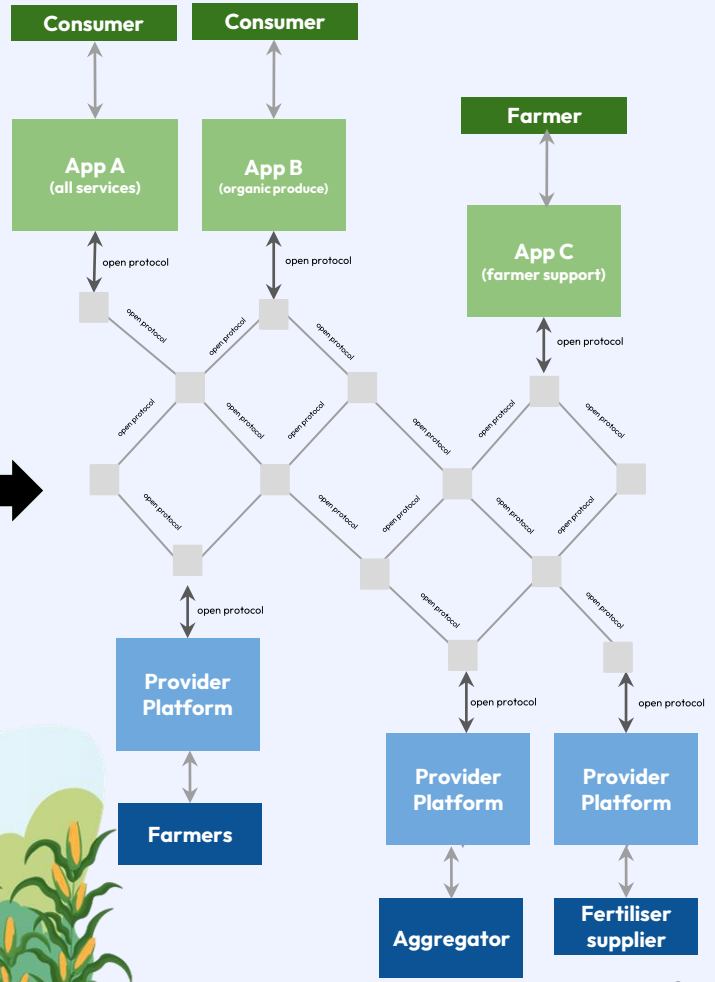
Verifiable Credentials - Brief profile fields or credential data like **land records**



Open datasets - Anonymised, aggregated data for research, monitoring like **climate data**

From Platforms to an Open Agri Network





Discovering services from any provider to any consumer via any app

5 DPI Technical Architecture Principles
make digitisation inclusive & scalable

1.

Interoperability driven by open specifications

2.

Minimalist, Reusable building blocks rather than end-to-end solutions

3.

Diverse, inclusive ecosystem innovation by both public + private actors via open & multi-modal access

4.

Federated & Decentralized with a preference for letting data stay where it's been collected

5.

Security & **Privacy** by design

Ideas for DPI Blocks for Agriculture!

Identifiers & Registries

- Land registry
- Livestock registry
- Business registry
- Farmer Profiles

Data Sharing, Credentials, & Models

- **Open Data** Data sharing API standards & schemas
- **Data Sharing** APIs for soil, climate & production data
- **VCs** Government issued credentials
- **AI Natural Language Models** Made open for reuse

Signatures & Consent

- **eSign** Sign agreements
- **PKI/Digital Signature** Make documents tamper proof
- **Consent Artefact** Electronic std For consent to share data

Discovery & Fulfilment

- **Commerce** Open interoperable supplier/ consumer network
- **Credit** Open protocols for financing & credit products

Payments

- **P2P/P2M Payments** Interoperable, Fast, Mobile, Programmable
- **G2P Benefit Transfers** Financial Address Mapper, etc.

Electronic toll collection interoperable tolls for transport

Thank you!

Centre for Digital
Public Infrastructure