



Digital India
Power To Empower



सत्यमेव जयते

Department
of Telecommunications

Digital Infrastructure in India

Symposium on

‘Collaborative Regulation for Digital Societies ‘

**Telecom Regulatory Authority of India
New Delhi**

25th August 2017

Flow of the Presentation

What is Digital
Infrastructure?

Digital
Infrastructure
in India

Implications &
way forward

What is Digital Infrastructure?

IT infrastructure?

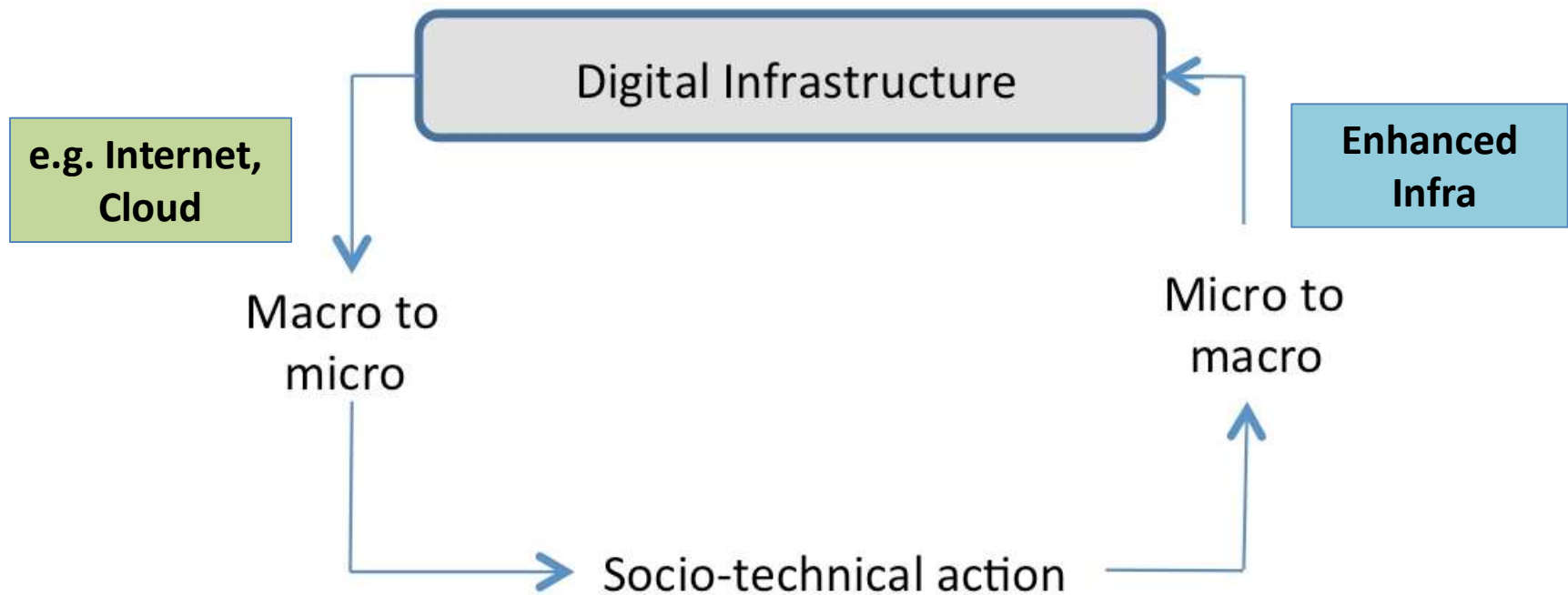
Information infrastructure?

e-service infrastructure?

Combination of all?

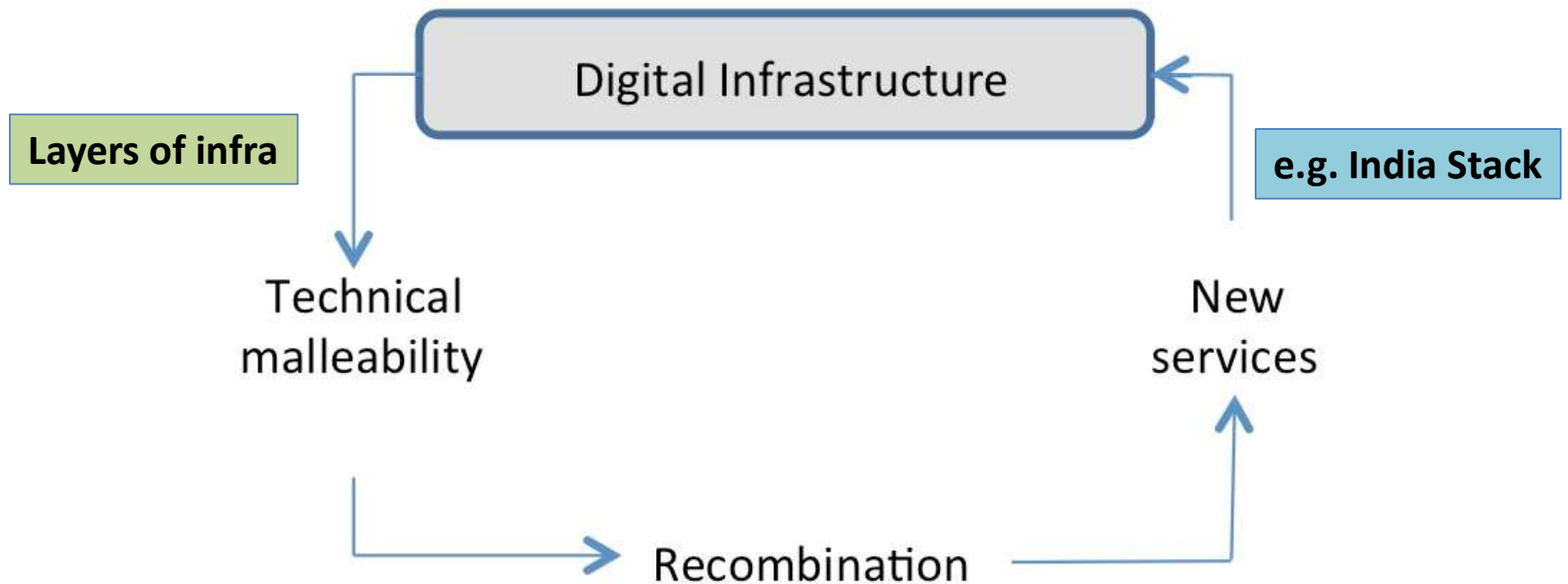
- **Definition:** Collection of *technological* and *human components, networks, systems,* and *processes* that contribute to the functioning of an information system.
(Braa et al. 2007; Tilson et al. 2010).
- Infrastructures often **evolve** into larger and more complex structures (such as the Internet)
 - **without any predefined end state** as they are continuously extended and
 - typically operate **outside the control of a single stakeholder.**

Development of Digital Infrastructure



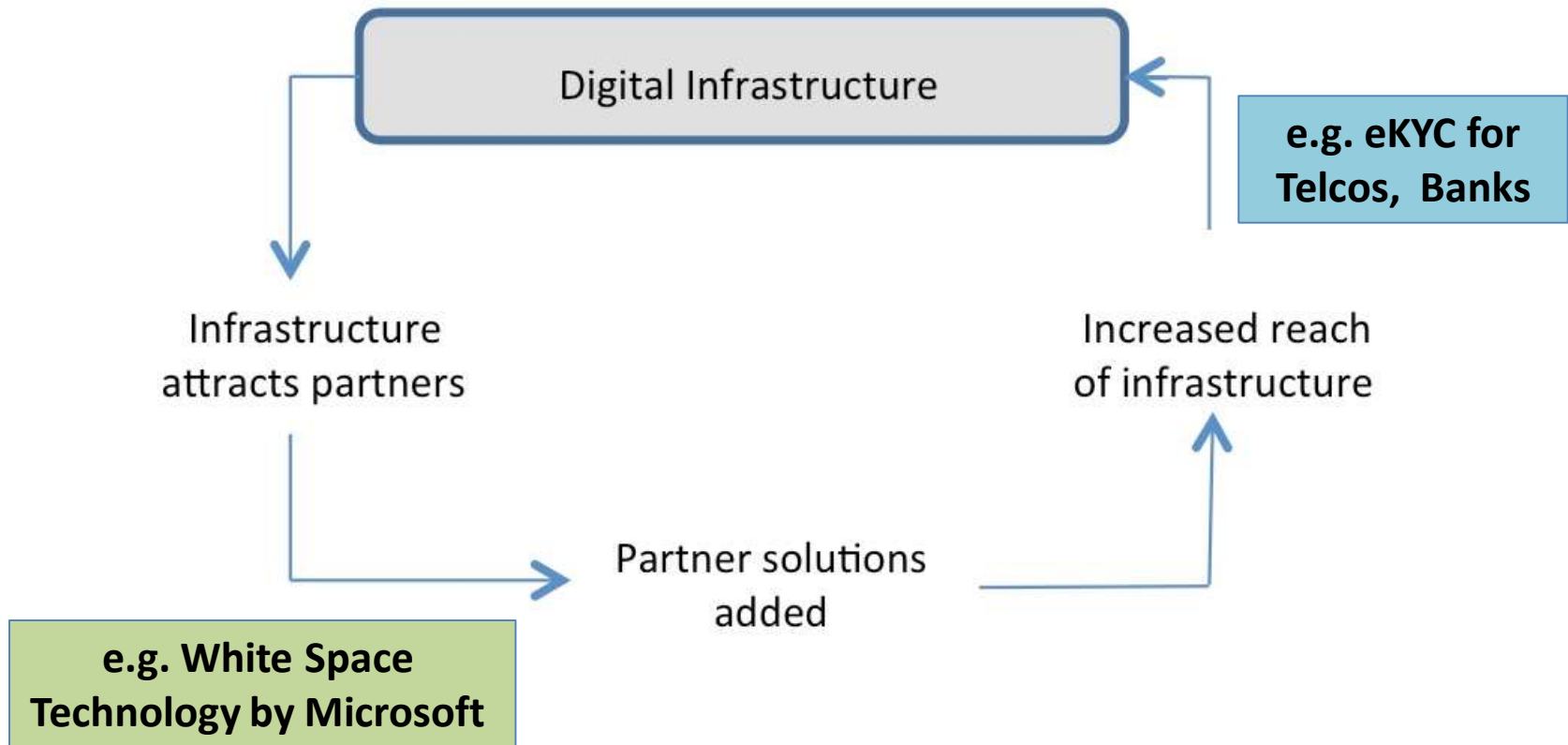
Adapted from: Henfridsson & Bygstad (2013)

Innovation in Digital Infrastructure



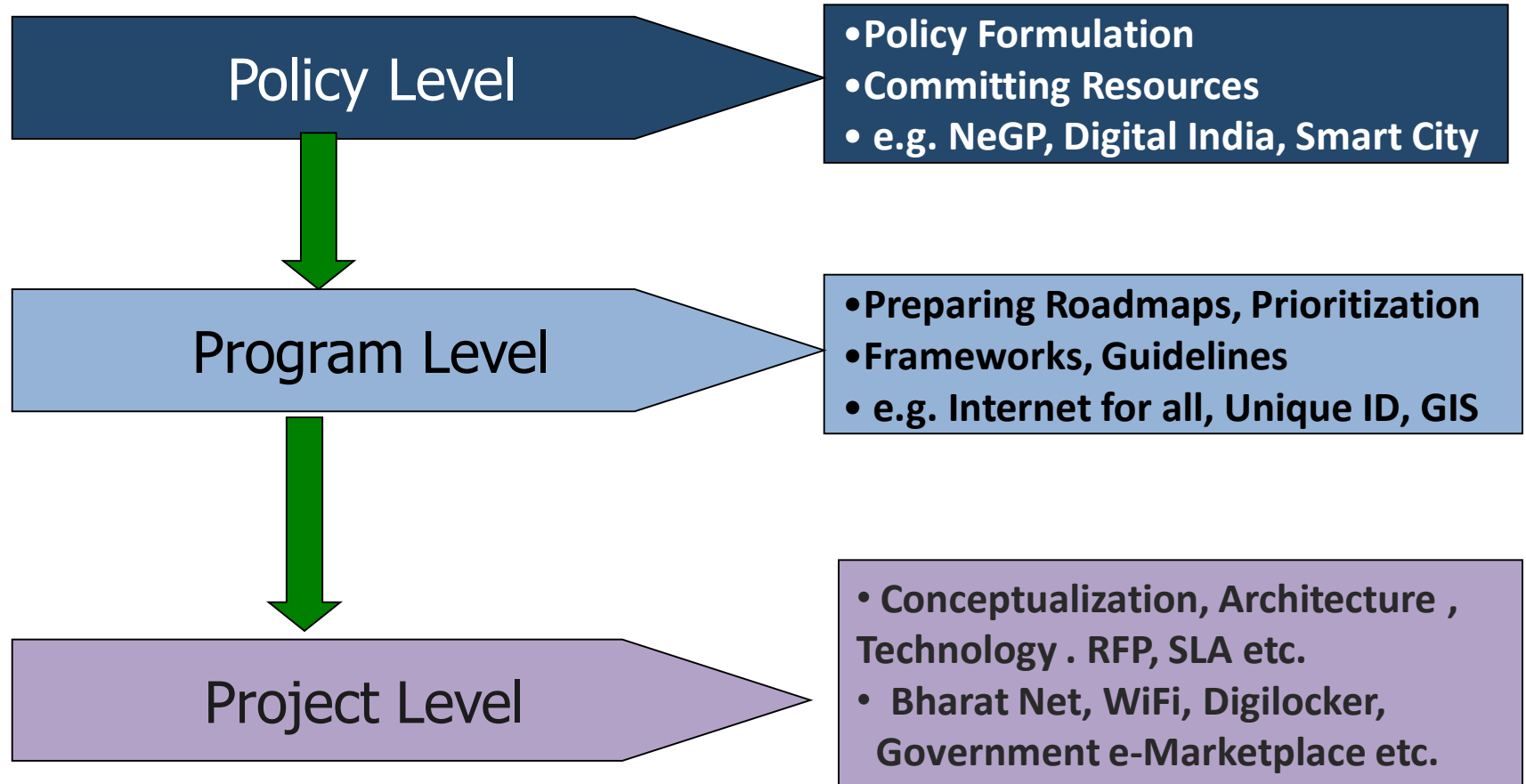
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Scaling-up of Digital Infrastructure



Adapted from: Henfridsson & Bygstad (2013)

Hierarchy of Digital Infrastructure



Evolution of Digital Infrastructure in India

1970s

- Automation of government functions in defense, economic planning, census etc.

1980s

- NIC connects all district headquarters with VSAT .

1990s

- Computerization of Railway's PRS
- Initiatives by state governments e.g. *Gyandoot* in (information sharing) MP, *Bhoomi* (land record) in Karnataka, *Akshaya* (e-literacy) in Kerala.

2006

- **National e-Governance Policy (NeGP) unveiled**

The Turning Point- NeGP (2006)

- 31 Mission Mode Projects (MMPs) identified for according priority to the e-Government initiatives.
- Core infrastructure components
 - Common Service Centers (CSC) for service delivery.
 - Wide Area Networks (WAN) for connectivity.
 - Data Centers for storing data and programs.
- Process re-engineering, change management and project management.
- Web-enabled delivery of services.
- Emphasis on Public-Private Partnership (PPP) wherever feasible.

The Digital India Program

- *'Digital India'* program launched by the Government of India in **July 2015** at an estimated cost of Rs 1,13,000 crores.
- The program has the vision to **transform** India into a **digitally empowered society** and **knowledge economy**.
- Three primary **focus areas** of the *'Digital India'* program are
 - **Creation of Digital Infrastructure**
 - Electronic delivery of services and digital literacy
 - Empowerment of citizens with e-participation in governance.

Digital India Vision Areas



Digital Infrastructure to every citizen



Digital Services and Governance on demand



Digital Empowerment of citizens

Digital Infrastructure as a Vision Area

Digital Infrastructure as a Utility to Every Citizen

- High speed internet
- Unique digital identity
- Mobile phone & bank account
- Access to a Common Service Centre
- Private space on Cloud
- Secure cyber-space

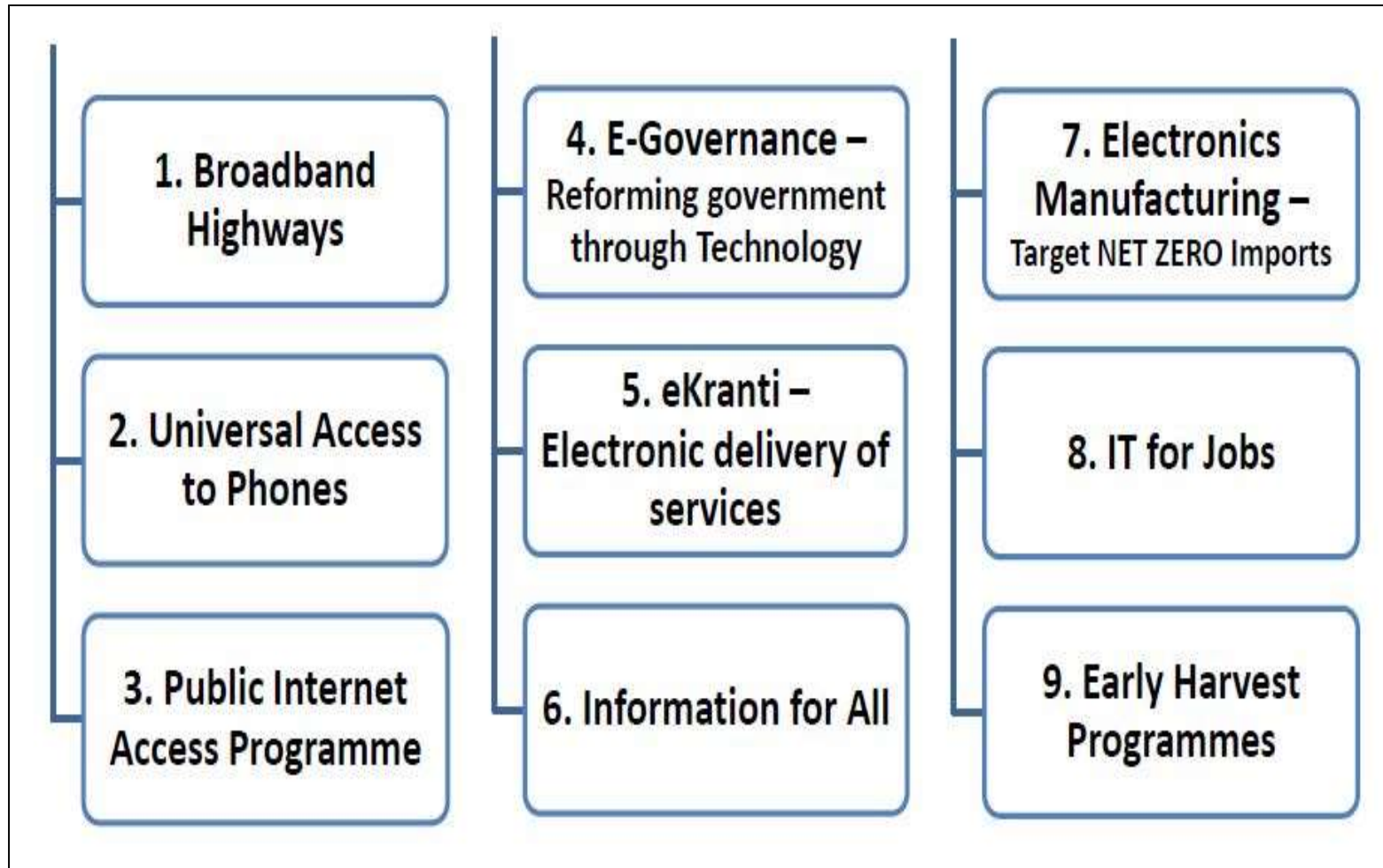
Governance & Services on Demand

- Integrated services
- Availability of services through online & mobile platforms
- Portable Citizen entitlements on Cloud
- Ease of doing business
- Financial transactions electronic & cashless
- Geospatial Information Systems (GIS) as Decision Support System

Digital Empowerment of Citizens

- Digital literacy
- Digital resources
- Digital resources / services in Indian languages
- Collaborative digital platforms
- No physical submission of documents

Nine Pillars of Digital India Program



Pillar 1 for Digital Infrastructure

**Broadband
for all
Urban and
Rural**

- High Speed Internet in all Urban and Rural areas even in remotest parts of the country including hilly terrains.

Pillar 2 for Digital Infrastructure

Universal Access to Phones

- Mobile connectivity in remaining 55,000 villages. Comprehensive Plan has been developed for hilly states and remotest villages.

Pillar 3 for Digital Infrastructure

Common Services Centres (CSCs) –

Viable, Multi-functional e-Services delivery outlets closer to the doorsteps of citizen

- Currently over 166,000 CSCs operational; Target - 250,000 (at least 1 CSC per 5000 persons)
- These centres are also being leveraged for Digital Literacy Programme.

Post Offices to become Multi-Service Centres

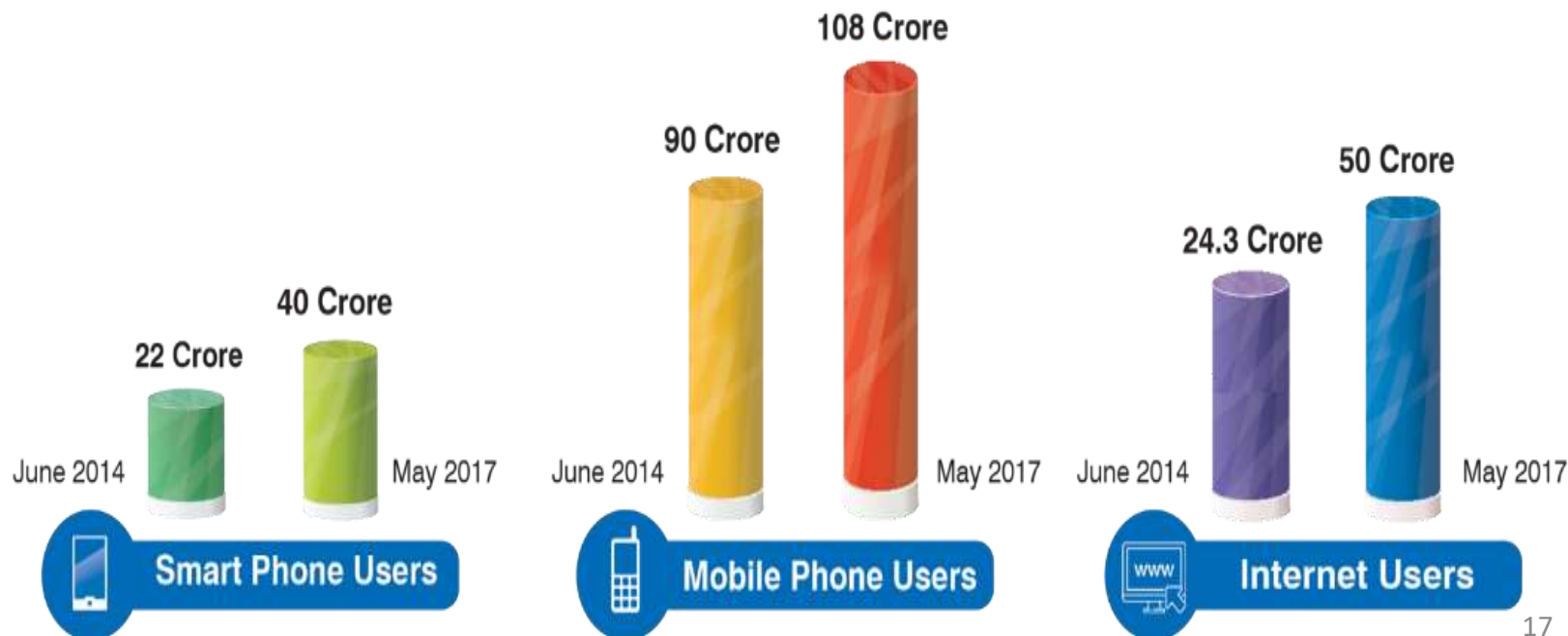
- with a network of 154,000 Post Offices, India has the largest postal network in the world.
- Post Offices are being modernized to provide financial services including Core Banking Solutions, Insurance Solutions & ATM Services.

Digital Infrastructure- Mobile & Broadband

May 2014 - June 2017

Smart phone, mobile phone and internet users

India became second largest market of smartphones in the world



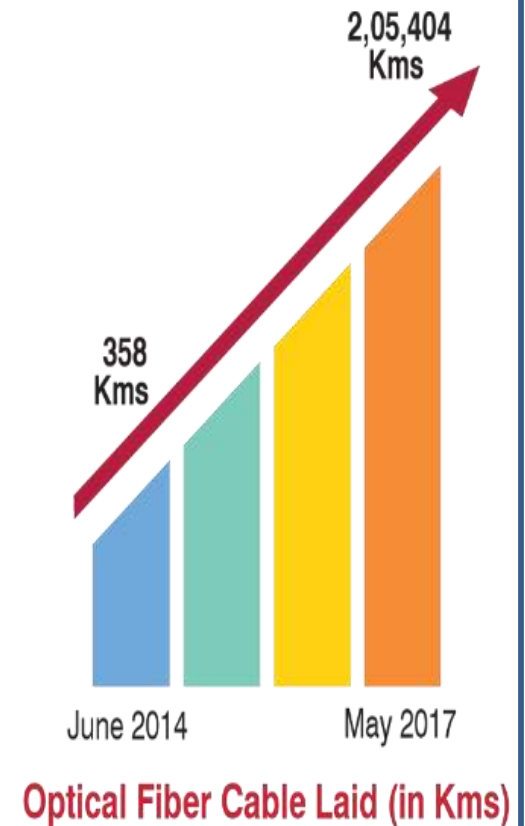
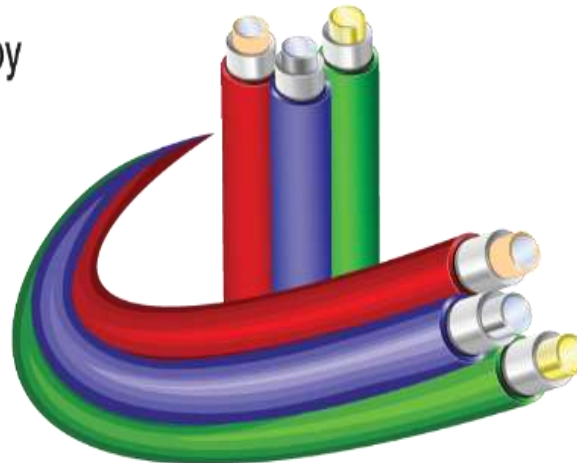
Digital Infrastructure- Optical Fibre Network

May 2014 - June 2017

BharatNet

To connect 2.5 Lakh Gram Panchayats by
Optical Fibre Network

Connected
90,966
Gram Panchayats



Digital Infrastructure- Common Service Centre

May 2014 - June 2017

Common Services Centres (CSC)

Digital Service Kiosks

- Creating digital entrepreneurs including in small towns and villages
- Empowering women, poor and marginalized sections of society
- 34,000 women working in CSC

Major Services Delivered

- ✓ Voter ID Card
- ✓ Utility Bill Payments
- ✓ Aadhaar Services
- ✓ Online Ticket Booking
- ✓ PAN Card
- ✓ Land Records
- ✓ Tele Medicine
- ✓ Digital Literacy
- ✓ Insurance Services
- ✓ Banking Services
- ✓ Jan Aushadhi Medicines
- ✓ Tele Legal Aid

Growth of CSC



Digital Infrastructure- Universal Digital Identity



WORLD'S LARGEST BIOMETRIC DATABASE

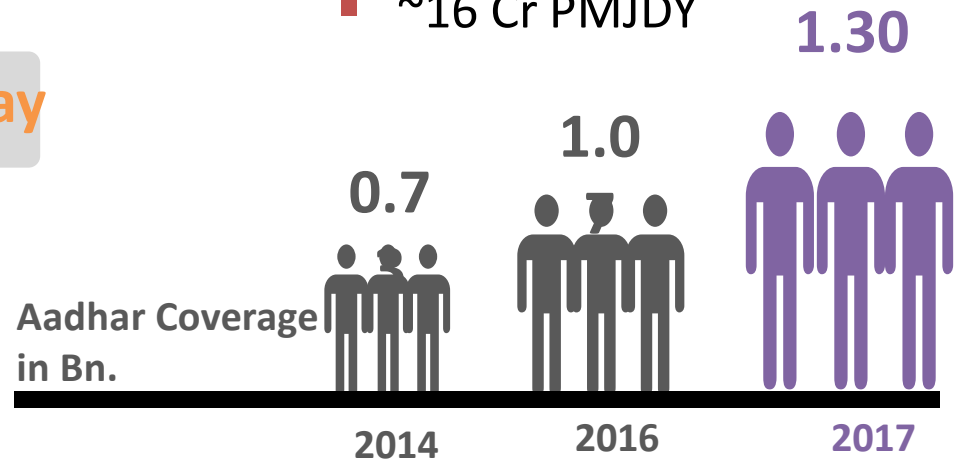
117 cr. biometric identities issued

Adult population coverage: **~ 99%**

2 Cr. Authentication / Day

Aadhaar seeded schemes:

- ~40 Cr bank accounts
- 16.77 Cr LPG connections
- 17.51 Cr Ration Cards
- 8.99 Cr MGNREGA cards
- ~16 Cr PMJDY



Digital Infrastructure- Meghraj

ANYTIME, ANYWHERE – VIRTUAL DATA CENTRE

■ **Cloud First** Policy

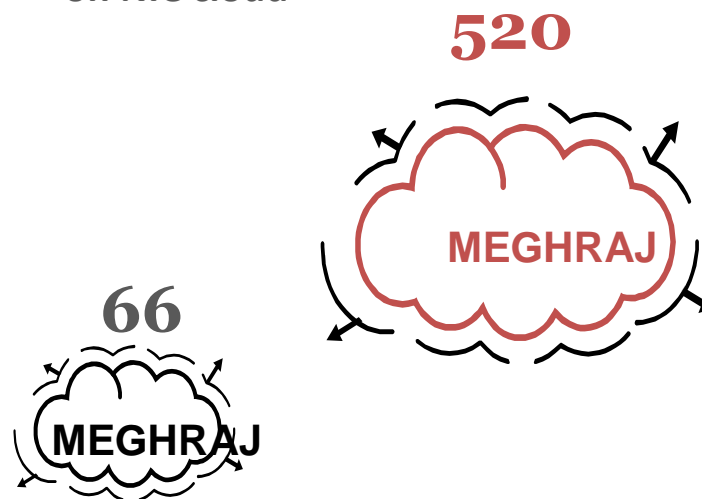
■ **520 Applications** on NIC cloud; **8,100 virtual servers**

■ **11 Cloud Service Providers** empanelled

■ **Ready to use scalable** infrastructure

■ Huge reduction in **cost and time**

No. of applications on NIC cloud



2014

2017*

*End of Jan

Moving to Paperless Transactions: Digital Locker

24 AGENCIES ISSUING DOCUMENTS TO CITIZENS VIA DIGITAL LOCKER



150+ TYPES OF DOCUMENTS – AADHAR, DRIVING LICENSE, PASSPORT, PAN, VOTER ID INTEGRATED

**No. of issued documents : 174Cr
User accounts: Over 73.77 Lakh
No. of User Organizations : 24
No. of Acceptor organizations: 7**

Digi Locker (users-mn.)



Dec, 2015

June, 2017

- The IT (Controller of Digital Locker) Rules, 2016
- The Digital Locker Authority Appointed
- The Rules for Certification of Digital Locker Service Providers (DLSP) / DL REPOSITORIES notified

Unique Digital Signature: eSign

INDIA'S OWN DIGITAL SIGNATURE TECHNOLOGY

■ 87+ Lakhs e-Signs

■ ₹ 5 /signature. Cost reducing

■ **Legally tenable**; recognized under Indian Information Technology Act

■ Ecosystem **growing**





Way Ahead

**Meeting expectations for Good
Governance with Digital
Infrastructure**

Digital Infrastructure



Cradle to grave digital identity
unique, lifelong, online, authenticable



High speed internet
as a core utility



Mobile phone & Bank account
enabling participation in digital & financial space



Easy access to a Common Service Centre



Shareable private space on Public Cloud



Safe and secure Cyber-space

Progress So Far

Way Forward & Challenges

◆ **Digital Infrastructure for bridging the Digital Divide.**

◆ **Digital Infrastructure for Sustainable Development Goals.**

◆ **Digital Infrastructure for safe and secure Cyberspace.**

◆ **Digital Infrastructure for seamless connectivity of systems-
promoting Interoperability feature.**

◆ **Digital Infrastructure for Citizen Participation.**

Thank you!

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