

# How to Deliver Broadband Services Quickly at Affordable Prices

Presented By:

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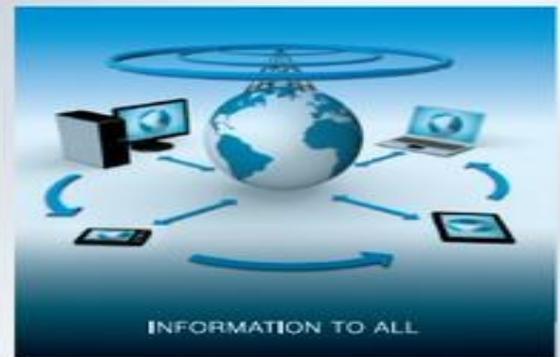
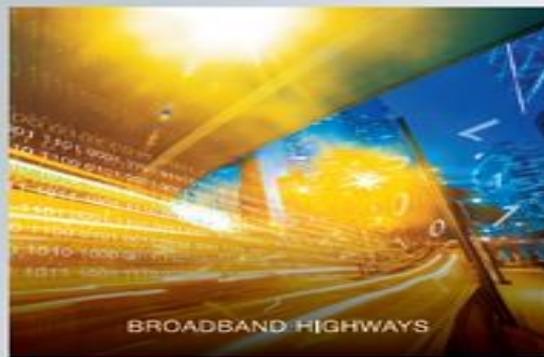
# Agenda

- Impact of Broadband
- Digital India
- Key challenges – broadband
- Key challenges - Wireline broadband
- Key Challenges – Wireless broadband
- Way Forward

# Impact of Broadband

- ICT in general and broadband in particular contribute to **GDP growth** and **poverty alleviation**.
- World bank study indicates that there is **1.38 % increase in GDP** for every **10% increase** in broadband penetration.
- Better connectivity provides a platform for **innovation**, improves **productivity** and enhances **competitiveness**
- Broadband promotes social media, e-governance, e-education, tele-medicine, e-commerce, online games, video streaming, entertainment etc.
- **Innovation boost employment opportunities** and **create entrepreneurship even in rural and remote areas**.
- Broadband is foundation for programs like **Digital India, Skill India, Make in India, Startup India and Smart Cities**.

# Digital India



# Key challenges - broadband

- Supply side:
  - Accessibility.
  - Slow speed.
- Demand side:
  - Affordability.
    - Device
    - Service
  - Digital literacy.
  - Availability of content and services in vernacular language.

# Key challenges - Wireline broadband

- Delays in getting right of way permissions.
- Higher cost for right of way.
- Poor penetration of wireline access network.
- Higher capital investment requirement for FTTH/FTTC.
- Underutilisation of cable TV network for broadband services.
- Delays in implementation of National Optical Fibre Network (NOFN).

# Key Challenges – Wireless broadband

- Limited availability of unlicensed spectrum.
- Restrictions imposed by state governments on erection of towers in non-commercial areas due to EMF radiations issue.
- Non-availability of sufficient quantity of spectrum in backhaul.
- Inadequate implementation of indoor connectivity solutions.
- Restricted access to satellite bandwidth.
- Release of new frequency bands for wireless broadband.

# Way Forward - Improving Infrastructure

- Share available wireline infrastructure to reduce cost of broadband services.
- Enunciate a Right of Way (RoW) Policy.
- Single-window clearance for RoW proposals.
- Single window clearance for erection of towers.
- Increase in awareness on EMF radiation issue.
- Explore public private partnership model for speedy rollout of National Optical Fibre Network.
- Encourage provisioning of broadband services using Cable TV networks.
- Nation-wide interoperable and scalable public Wi-Fi networks.

# Way Forward

## **Policy Initiatives:**

- Harmonise licensing framework for telecom and cable TV networks.
- Take appropriate steps to reduce price of devices.
- Financial incentives for 5 years to improve wireline broadband penetration.
- Work to improve digital literacy.
- Deliver e-Government services in local languages.

## **Spectrum Management:**

- Need for assigning additional spectrum for access and backhaul networks.
- Articulate objectives of auction of spectrum.
- Spectrum Audit and Re-farming.
- Spectrum sharing and trading.
- Release of additional unlicensed spectrum.
- Release of new high frequency bands for wireless broadband.

# Way Forward

## **Satellite Communication:**

- Open sky policy to allow service providers to access international satellites bandwidth
- Separation of licensor, regulator and operator in satellite domain.
- Open use of Ka band satellite transponders for communication services.

## **Development of Content Delivery Networks (CDNs):**

- Encouragement to build 'Data Centre Parks'.
- Deploy Content Delivery Networks to reduce cost of services.
- Anomaly to be addressed regarding licence fee on telecom companies for data centres



# Thank you