

# INDIAN TELECOM SAGA

## *THE OSCILLATING 2G TO 5G AIR WAVES*

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**MD & CEO**  
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**April 2019**

Indian Economy & Telecom Sector Background

Telecom Technologies & Convergence

Policies & Regulations

Telecom Finance & Economics

M&A and Sectors Convergence

Spectrum Management and 5G

Key Drivers, Constraints and Way Forward

# INDIAN ECONOMY AT A GLANCE

**GDP Growth Rate at 7.2%**  
**GDP touched \$2.7 Trillion in 2018**

**Telecom Sector 6.5% Contribution to GDP , Of the total FDI, 10% was in Telecom Sector**

**World's Second Largest Population (about 1.3 Billion) & 65% of the population < 35 years**

**3<sup>rd</sup> largest Economy in PPP Terms \$2.6 Trillion**

**High Forex Reserves  
~ \$400 Billion**

**2018 YoY inflation Rate  
4.74%**

# TELECOMMUNICATIONS SECTOR IN INDIA

Around 1.2 Bn wireless subscribers

Around 23 Mn Wireline subscribers

Over 450 mn internet users

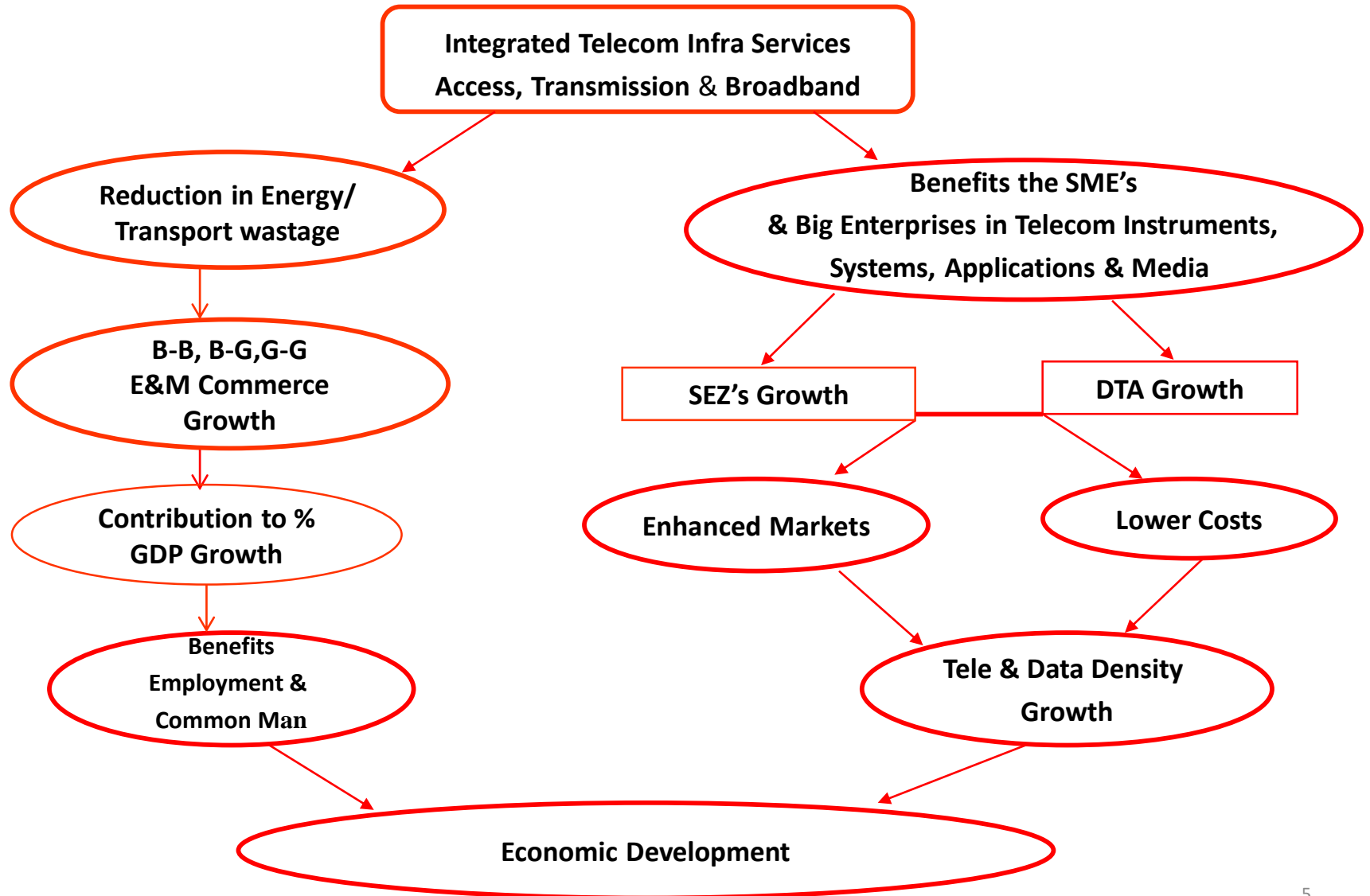
LTE & IP Technology Networks & Devices Eco-system growing from 2015

Convergence of Voice, Data & Media businesses growing leading to E&M-Commerce

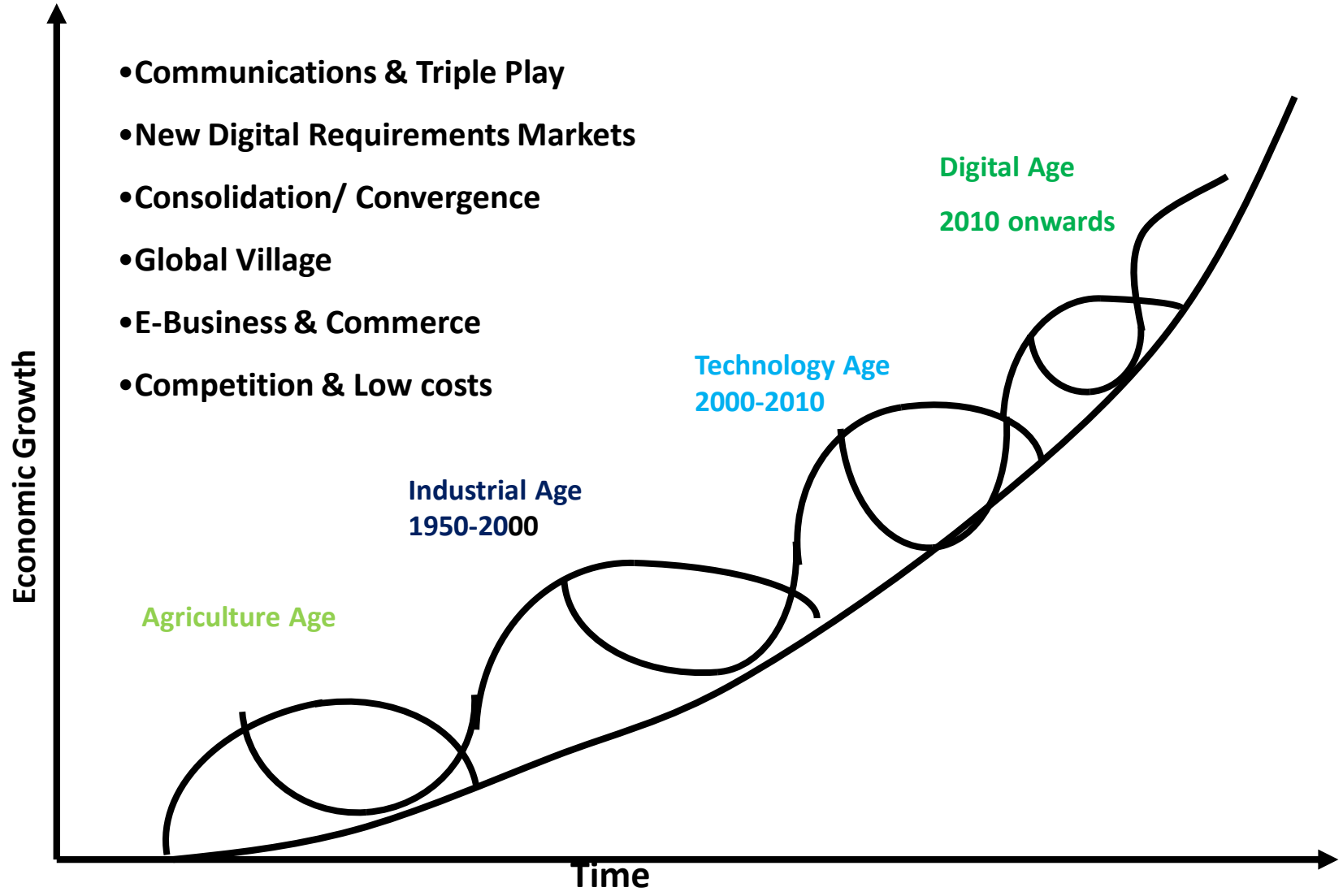
Telecom Services contributes around 6.5% to India's GDP

Indian NTP's 1994-2018 – a Telecom Revolution

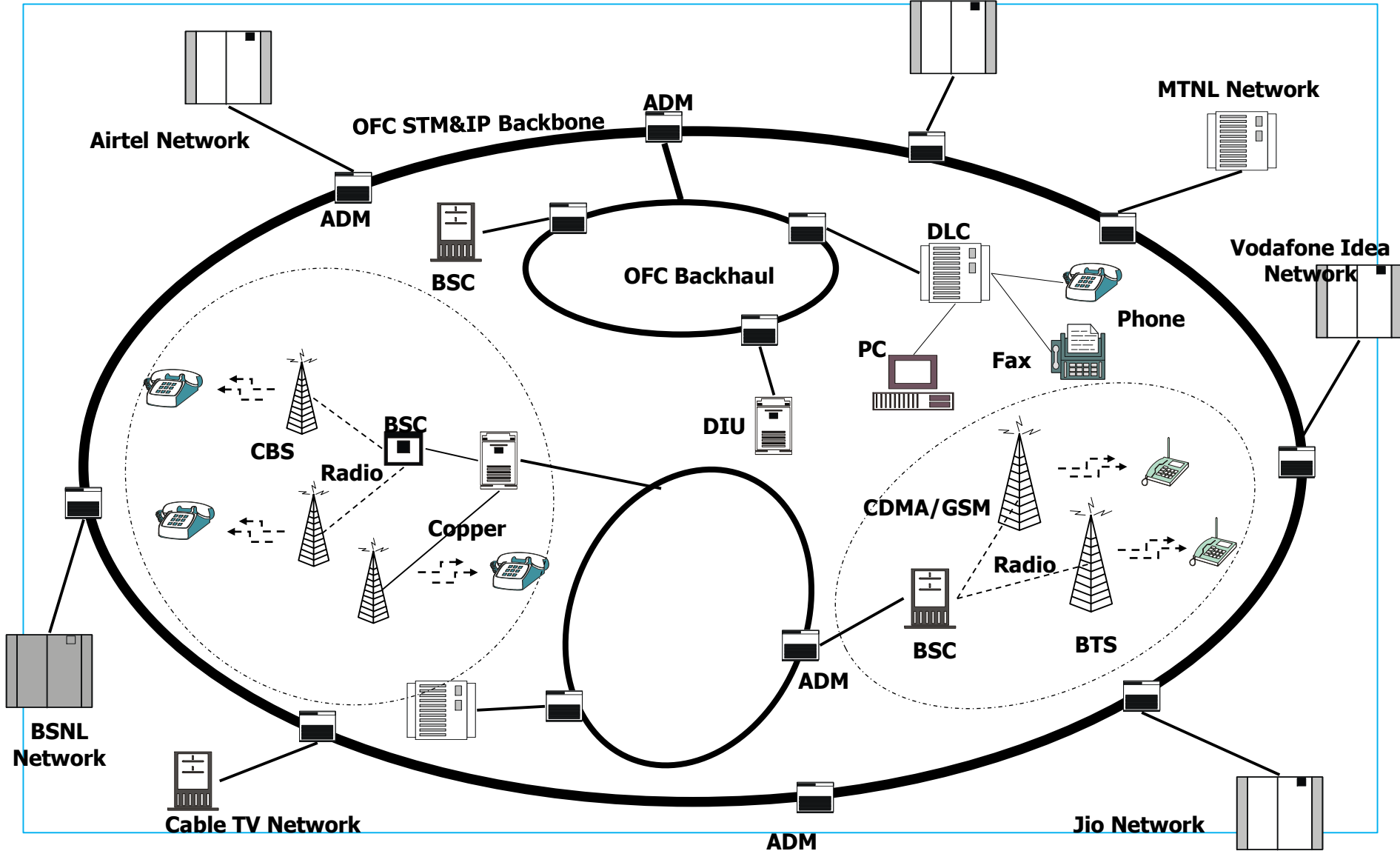
# INTEGRATED INDIAN TELECOM INFRASTRUCTURE DEVELOPMENT CONTRIBUTION TO GDP



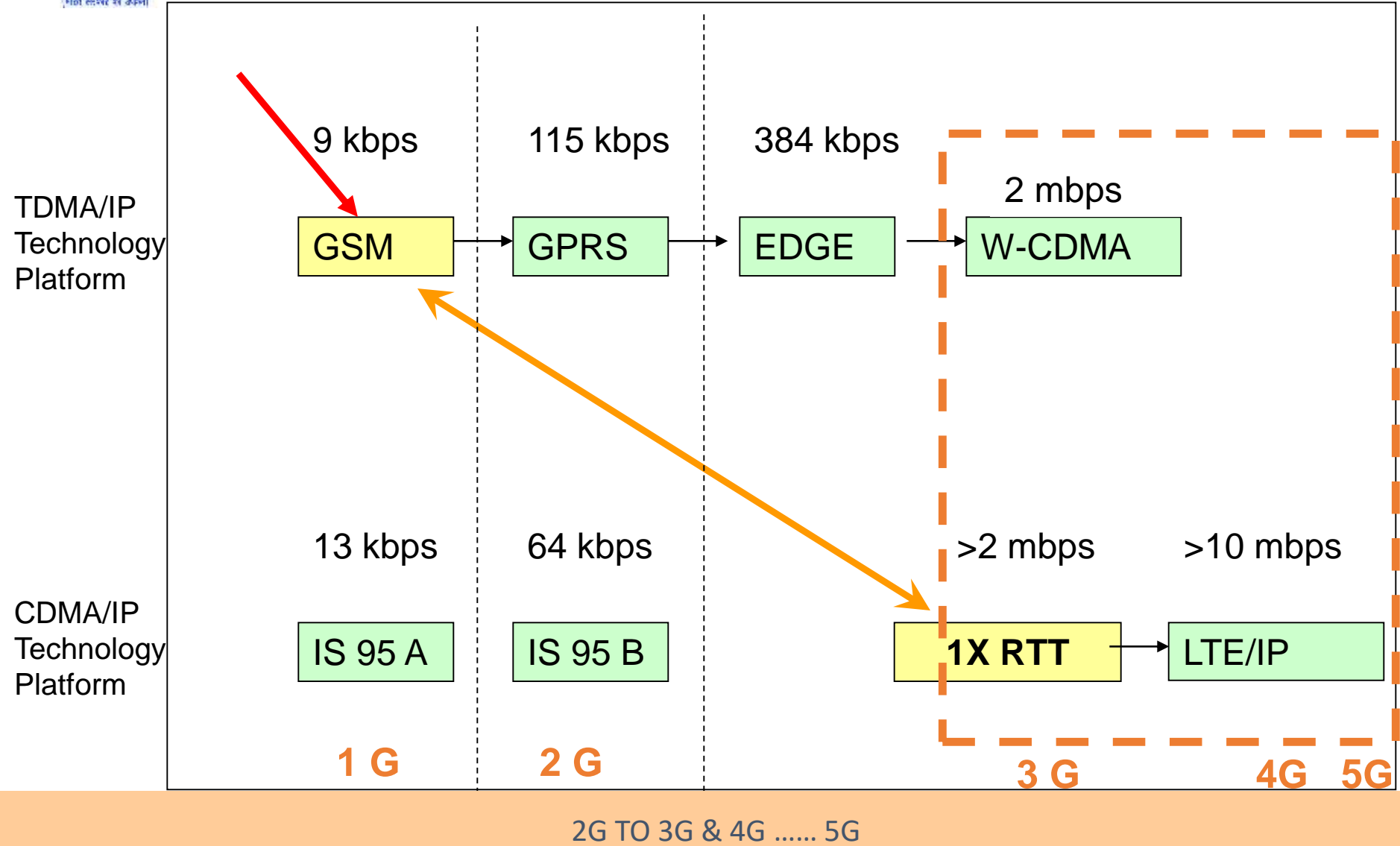
# INDIA MARCHING TOWARDS DIGITAL AGE & NEW ECONOMY



# INDIAN INTEGRATED DIGITAL TELECOM NETWORK ARCHITECTURE



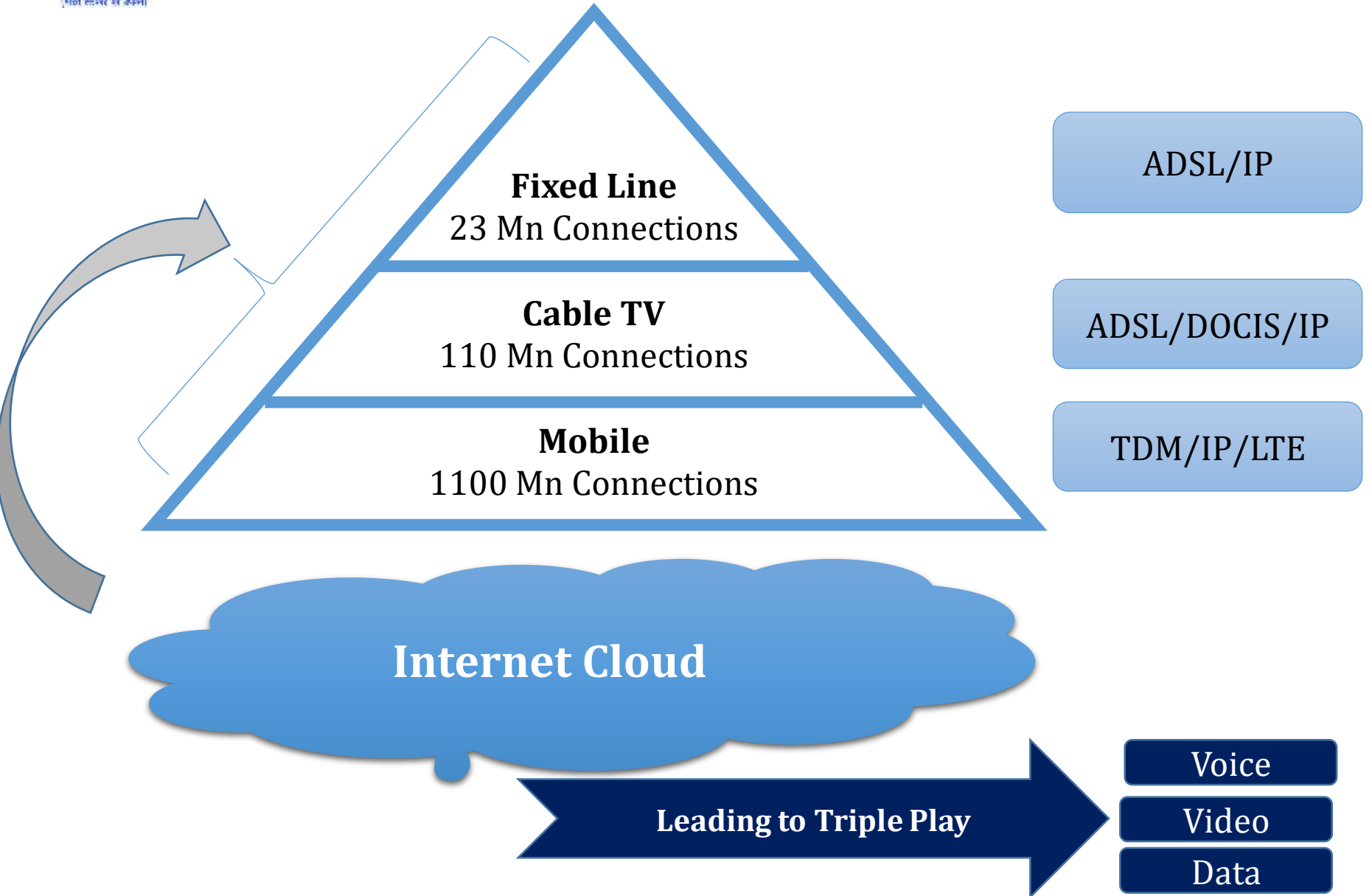
# TECHNOLOGY - MIGRATION PATHS TO 3G & 4G To 5G





# DIGITAL CONNECTIVITY

# TECHNOLOGY

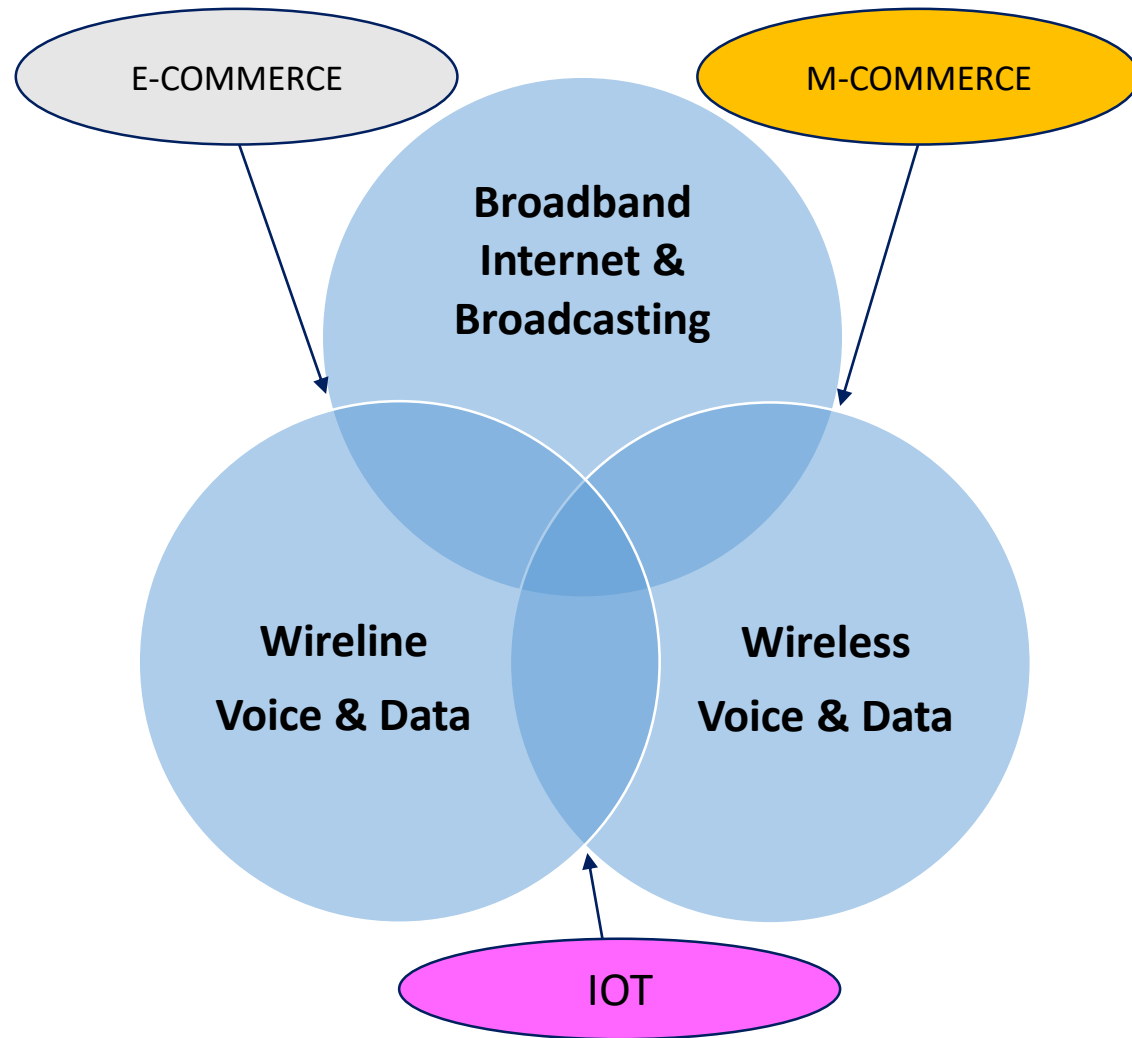


## Voice & Data Infrastructure :

- Access Switching
- Transmission
- Telecom & IT Instruments

## Media & Broadcasting Infrastructure :

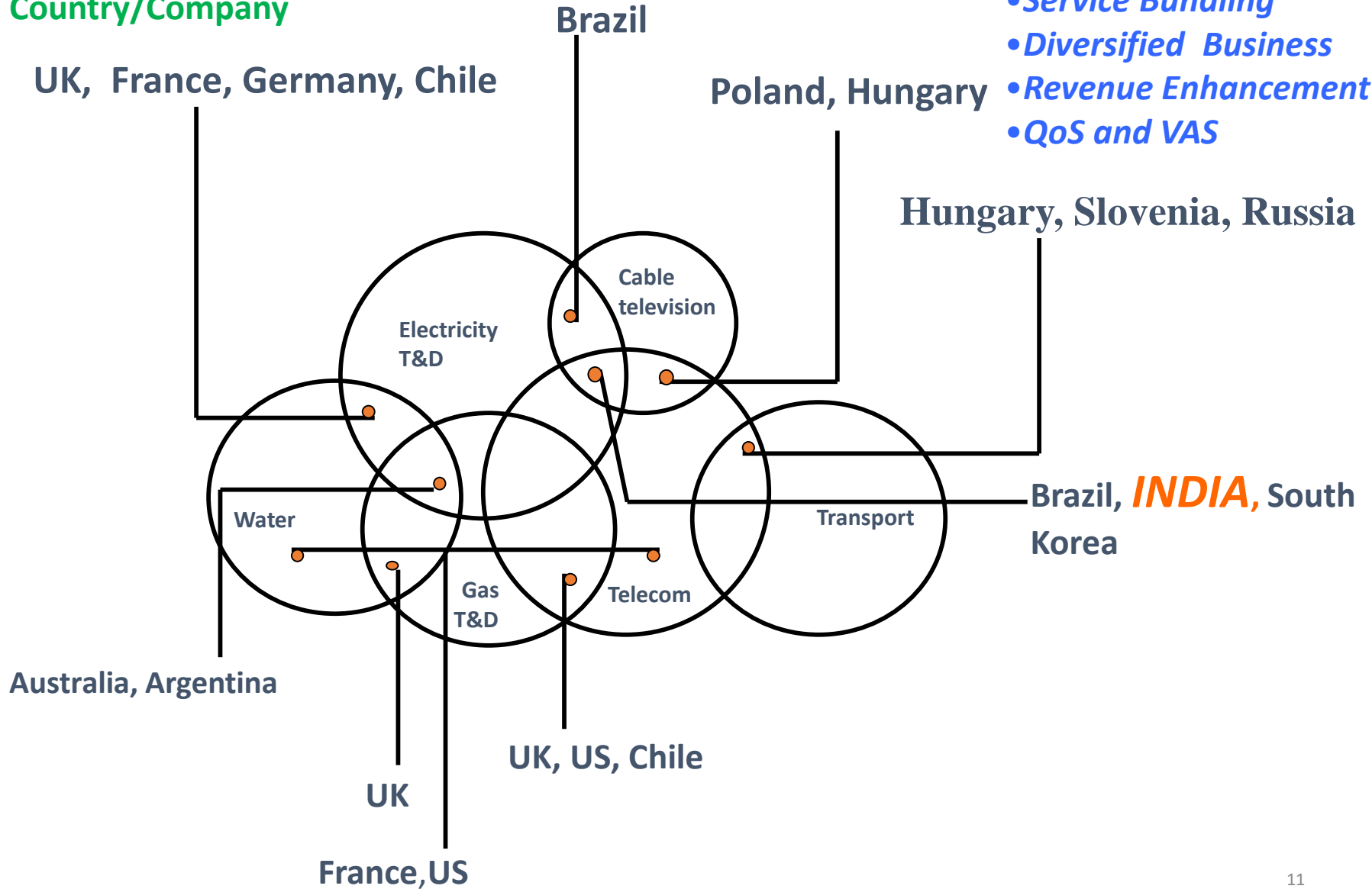
- Digital Content (King)
- Last Mile Connection (Queen)
- IOT



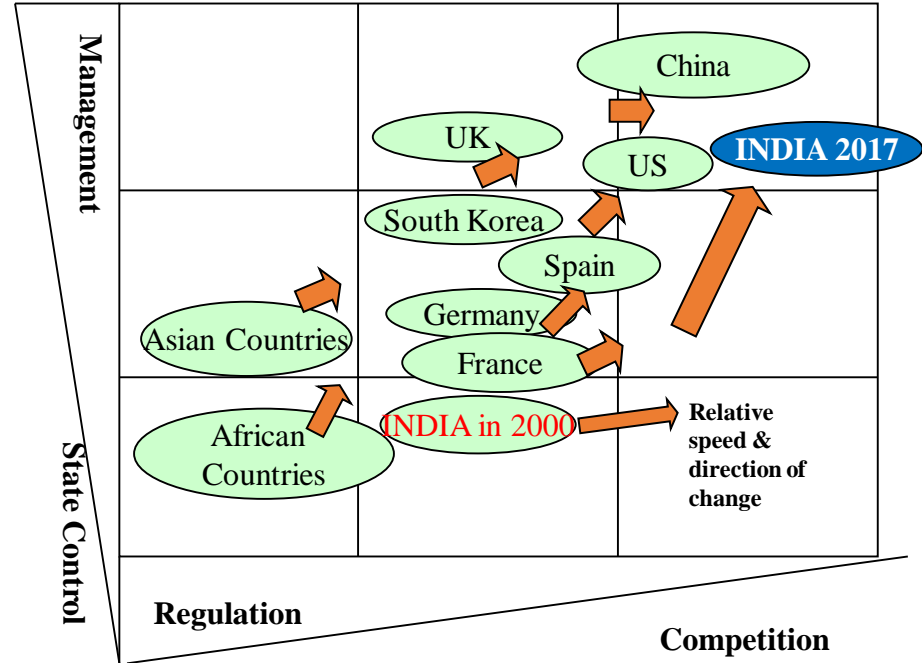
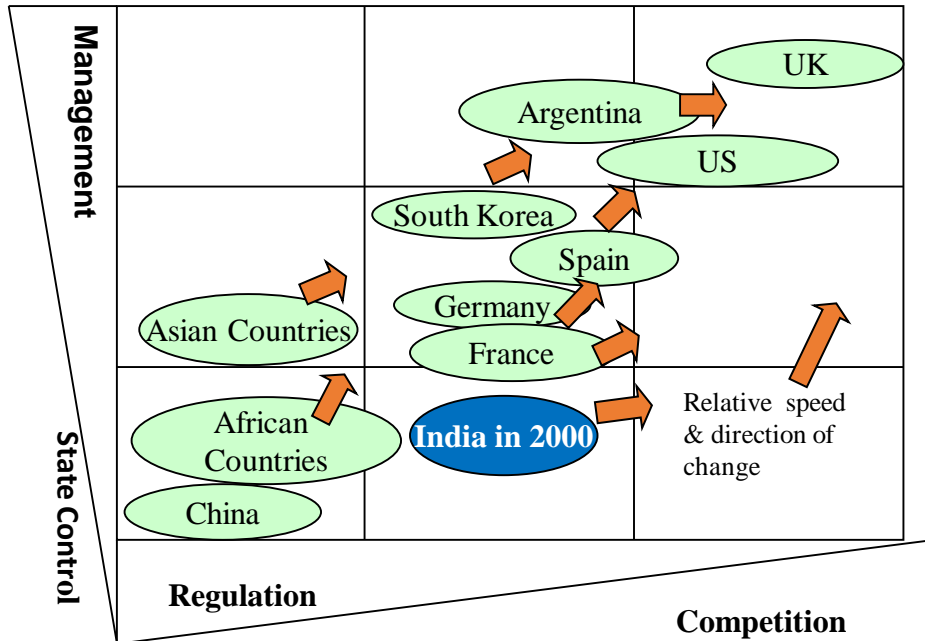
The Telecom will compliment businesses opportunities in e&m-Commerce, Media, Logistics, Banking and AI in a big way in the next 5 years in India

**Country/Company**

- *Service Bundling*
- *Diversified Business*
- *Revenue Enhancement*
- *QoS and VAS*



# 1994 - 2017 REFORMS UNLOCKING THE TELECOM VALUE



**1994 – 2000 REFORMS**

**2000-2017 REFORMS**  
India Leading the Way in the Telecom Sector Reforms in the Globe

# INDIA NTP POLICY MIGRATION FROM 1994, 1999, 2012 AND NOW NTP 2018

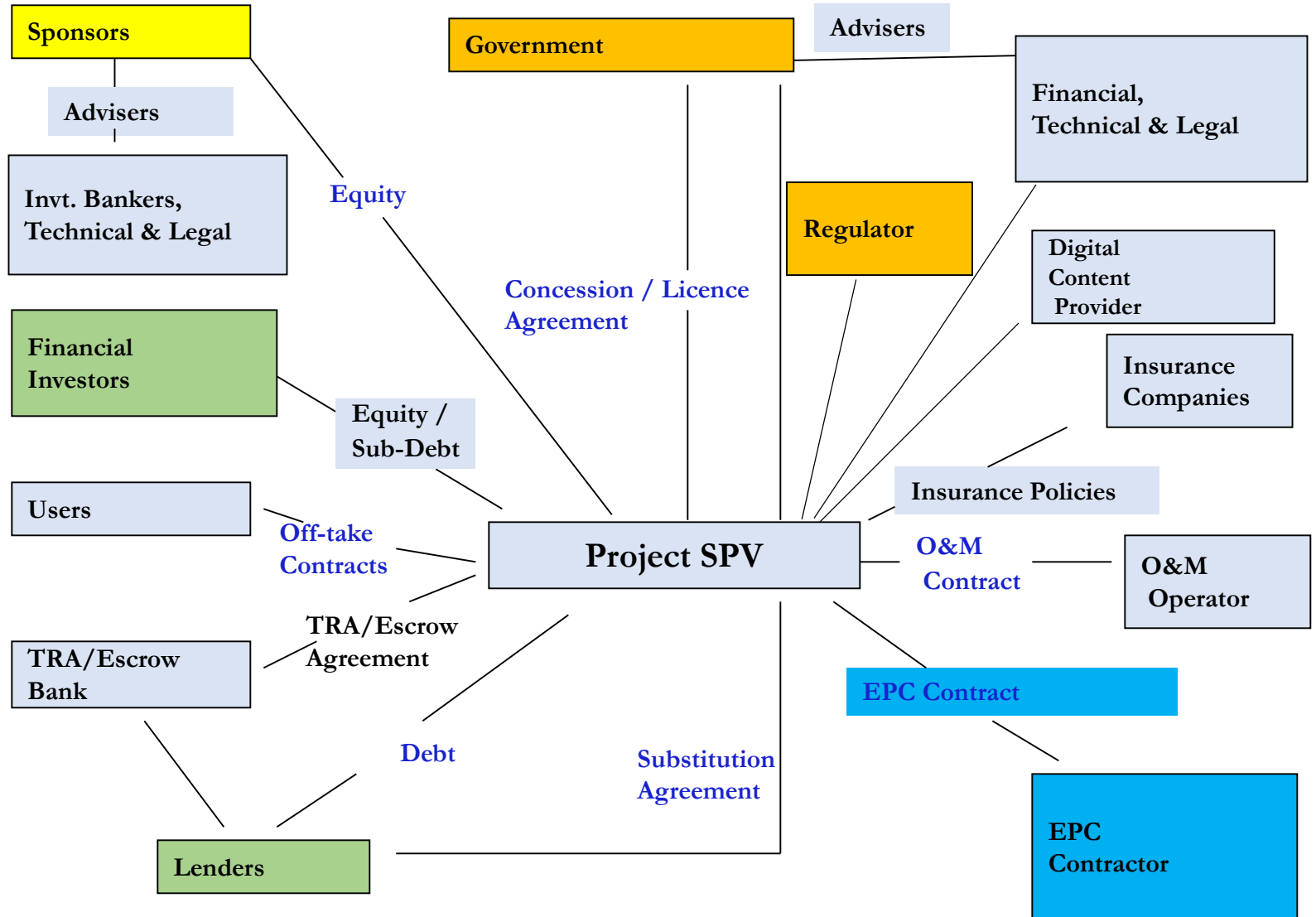
NTP (National Telecom Policy)	Services Providers Per Circle		
	Basic	Cellular	Wireless
NTP 1994	1	2	-
NTP 1999	No Limit	4 (Including BSNL/MTNL)	-
NTP 2012	-	-	8-12
NTP 2018	2		4

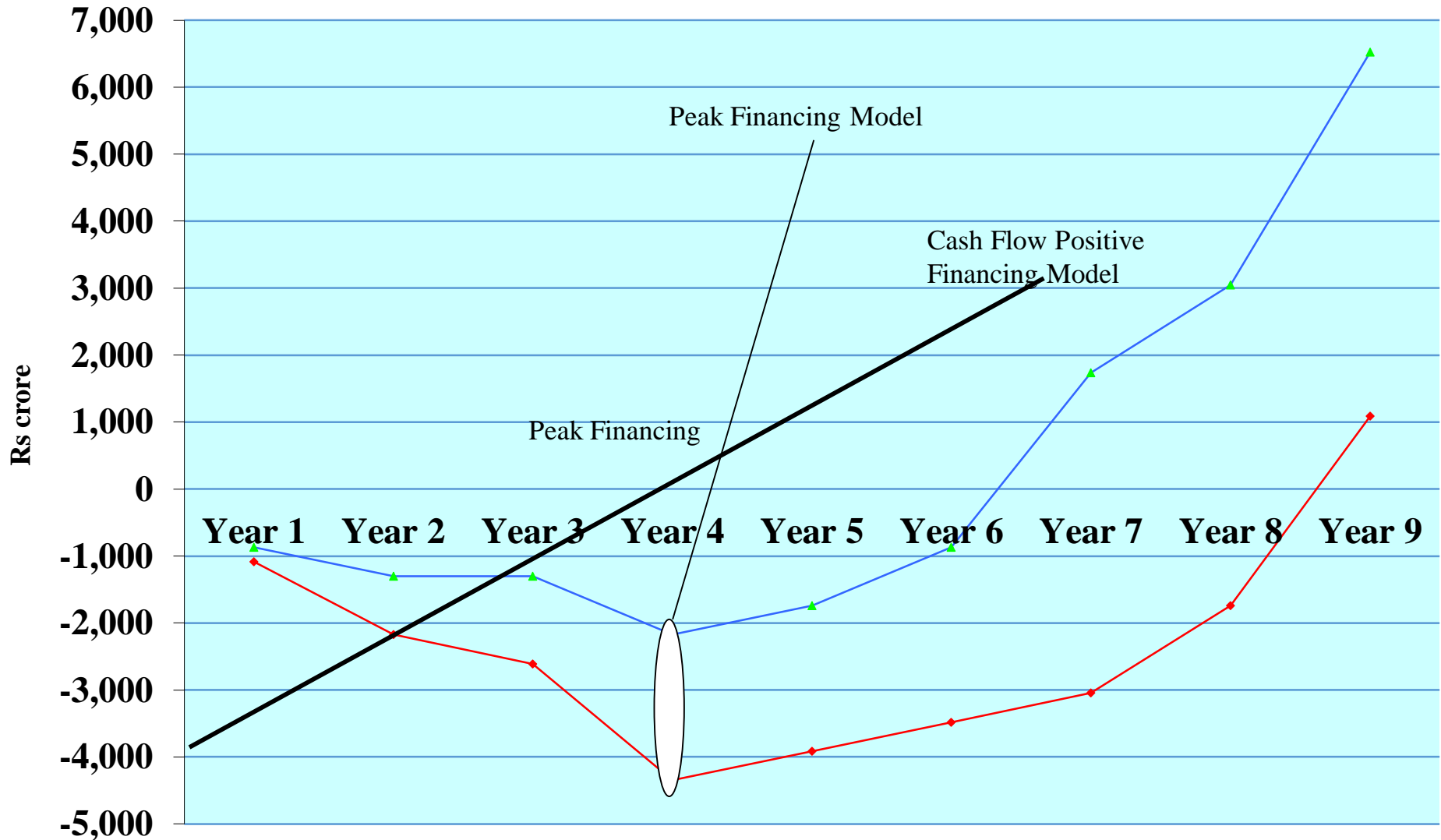
# GOOD POLICIES & REGULATIONS = GOOD PROGRESS

	E-Commerce & Logistics	Telecom	Ports	Roads	Airlines	Airports	Power
Competition	●	●	●	●	●	●	●
Private Participation	●	●	●	●	●	◐	●
Effective Regulation	◐	◐	◐	●	◐	◐	◐
Progress	◐	●	◐	●	●	◐	◐

● HIGH  
 ○ LOW

|







- Integrated Telecom Financing is an Art due to Digital Convergence leading to Triple Play
- Telecom Services Revenue Models are more Complex and derives from License Agreement, Regulations, Convergence Sectors Assumptions for deriving
  1. Project Cost Estimation and
  2. Appropriate Means of Finance
- Today where are the proven Telecom Project Finance Models like
  1. Cash Flow Positive Model ?
  2. Peak Funding Model ?
- Today's Telecom Financing models are more Non-Scientific at the cost of subscriber base and market share grabbing
- Today a minimum of Rs 1.7 Tn Capex & Opex investment is needed in next 2 years to have full 4 G networks and Cell sites to move to 5G

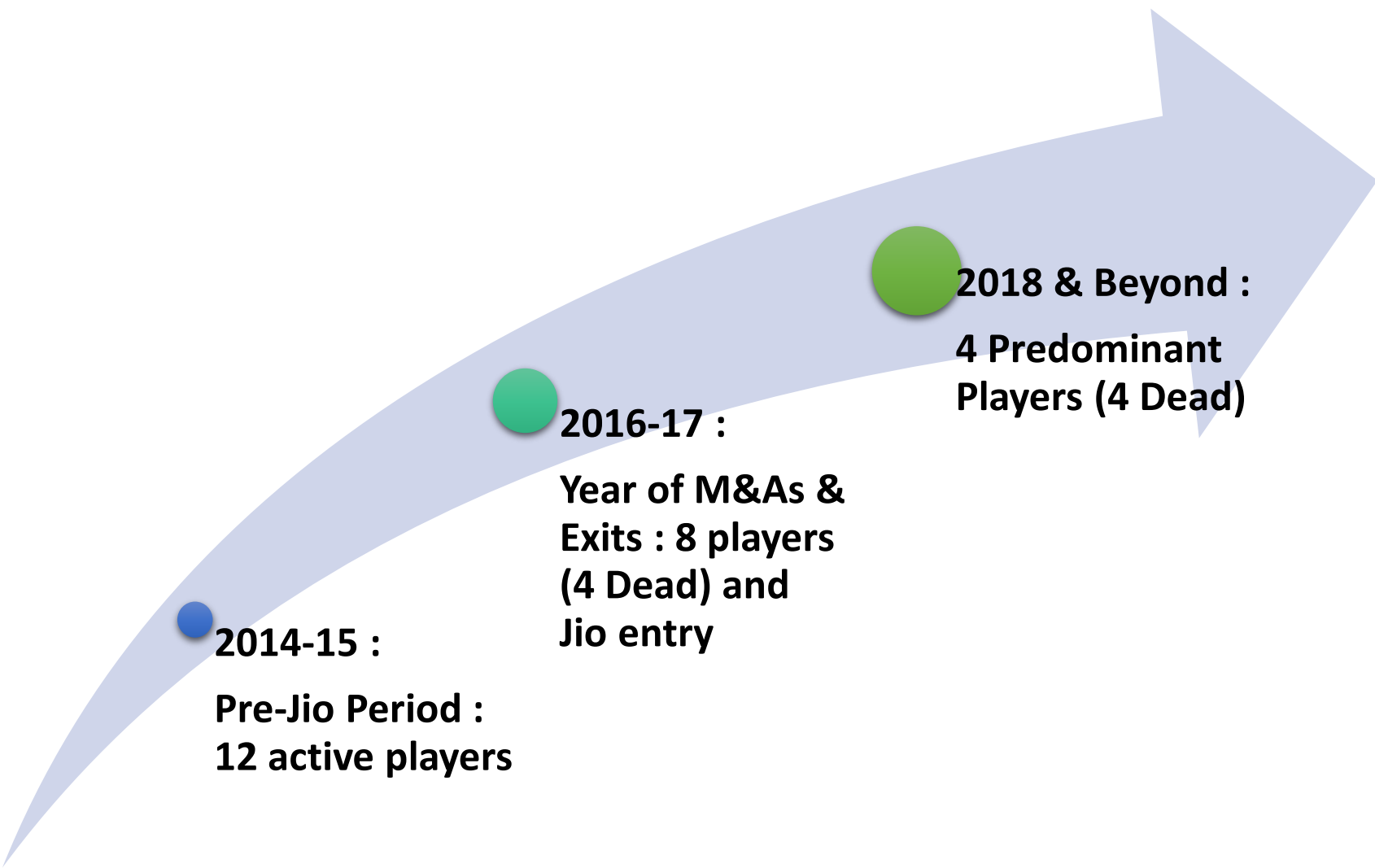
- Reduction in IUC (14 p/min to 6 p/min), International Termination Charges (53 p/min to 30 p/min) and below cost tariffs impacted profitability of operators to southward from 2017 onwards.
- Current Profitability Impacting Parameters a Decline from 2017:
  - ❖ ARPU: < \$1.5 (RPM fallen nearly from 46 p to 16 p)
  - ❖ Revenue: Down by around 20% to 25%
  - ❖ EBIDTA: Down to around 25%
  - ❖ Debt/EBIDTA: Up by nearly 8.5 X from 4 X
  - ❖ Interest Coverage: Down to around 1.6X from 4X
  - ❖ MOU rose to around 645 min from 390 min, but less RPM
- Incumbents enhancing 4G Capex and re-farming 2G is increasing the financing cost without proportionate revenues increase and likely to cause stress on debt servicing and returns in near future
- The Banking & Finance sector may be stressed in the near terms on the outstanding debt of around Rs 4 Tn

- The Funding Modes in the current prevailing scenario is by :
  - ✓ Equity raising by rights Issue or FDI or other means ( Likely to improve the Leverage and Debt/EBIDTA and Rating Profile)
  - ✓ Monetization of Cell Towers and other Non-Core Assets
  - ✓ Corporate Finance by way of Bonds and Reg-S or 144 A
  
- Likely Funds Raising in FY19-20 :
  - ✓ By Equity/Rights/FDI issue around Rs 50,000 Cr
  - ✓ By Monetization of non-core assets around Rs 25,000 Cr
  - ✓ By Corporate Finance Loans/Bonds/Reg-s/144-A around Rs 25,000 Cr

# INDIAN TELECOM ECONOMICS

	2001-2005	2010-16	2018
<b>Valuation/ Sub</b>	<b>\$600- \$1000</b>	<b>\$100 - \$135</b>	<b>&lt; \$100</b>
<b>Capex Cost/Sub</b>	<b>\$150</b>	<b>\$40 to \$80</b>	<b>\$60-\$100</b>
	<b>2G</b>	<b>2G&amp;3G</b>	<b>4G/LTE</b>
<b>Acquisition Cost /Sub</b>	<b>Rs.800</b>	<b>Rs.1600</b>	<b>Rs.1600</b>
<b>Churn</b>	<b>5%</b>	<b>15%</b>	<b>5%</b>
<b>Tele-Density</b>	<b>Real</b>	<b>60%</b>	<b>90%</b>
<b>ARPU</b>	<b>\$8</b>	<b>\$2.2</b>	<b>&lt;\$1.5</b>
<b>MOU</b>	<b>200 Minutes</b>	<b>400 Minutes</b>	<b>650 Minutes</b>

# INDIAN TELECOM SECTOR M&A CONSOLIDATION

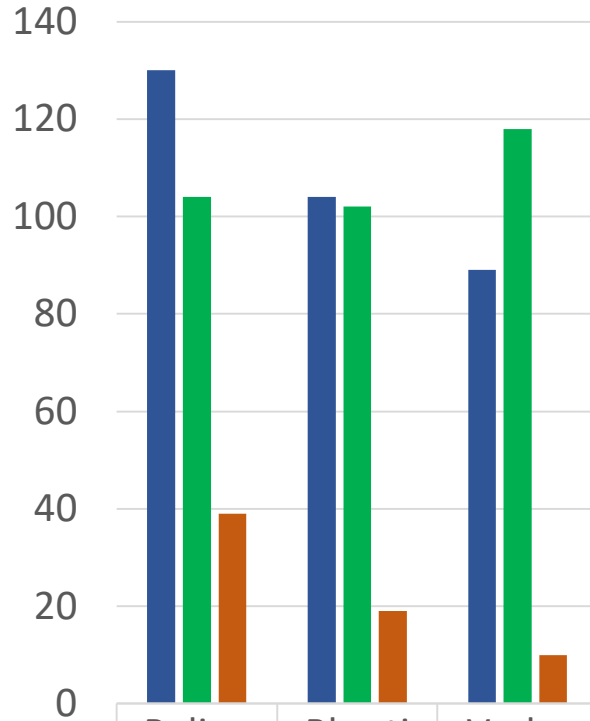


**2014-15 :**  
**Pre-Jio Period :**  
**12 active players**

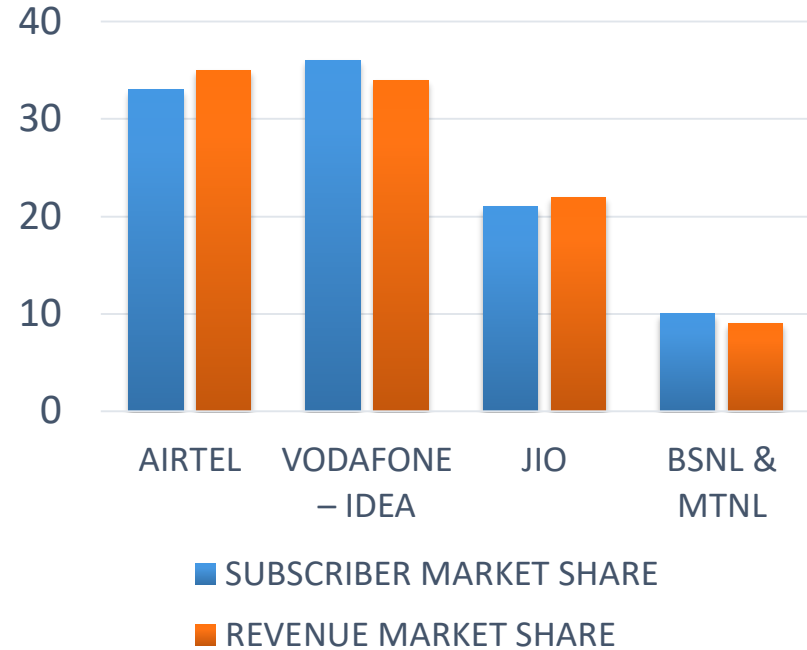
**2016-17 :**  
**Year of M&As &**  
**Exits : 8 players**  
**(4 Dead) and**  
**Jio entry**

**2018 & Beyond :**  
**4 Predominant**  
**Players (4 Dead)**

## VOICE & DATA – EXPONENTIAL GROWTH AND MARKET SHARES AT COST OF PROFITABILITY

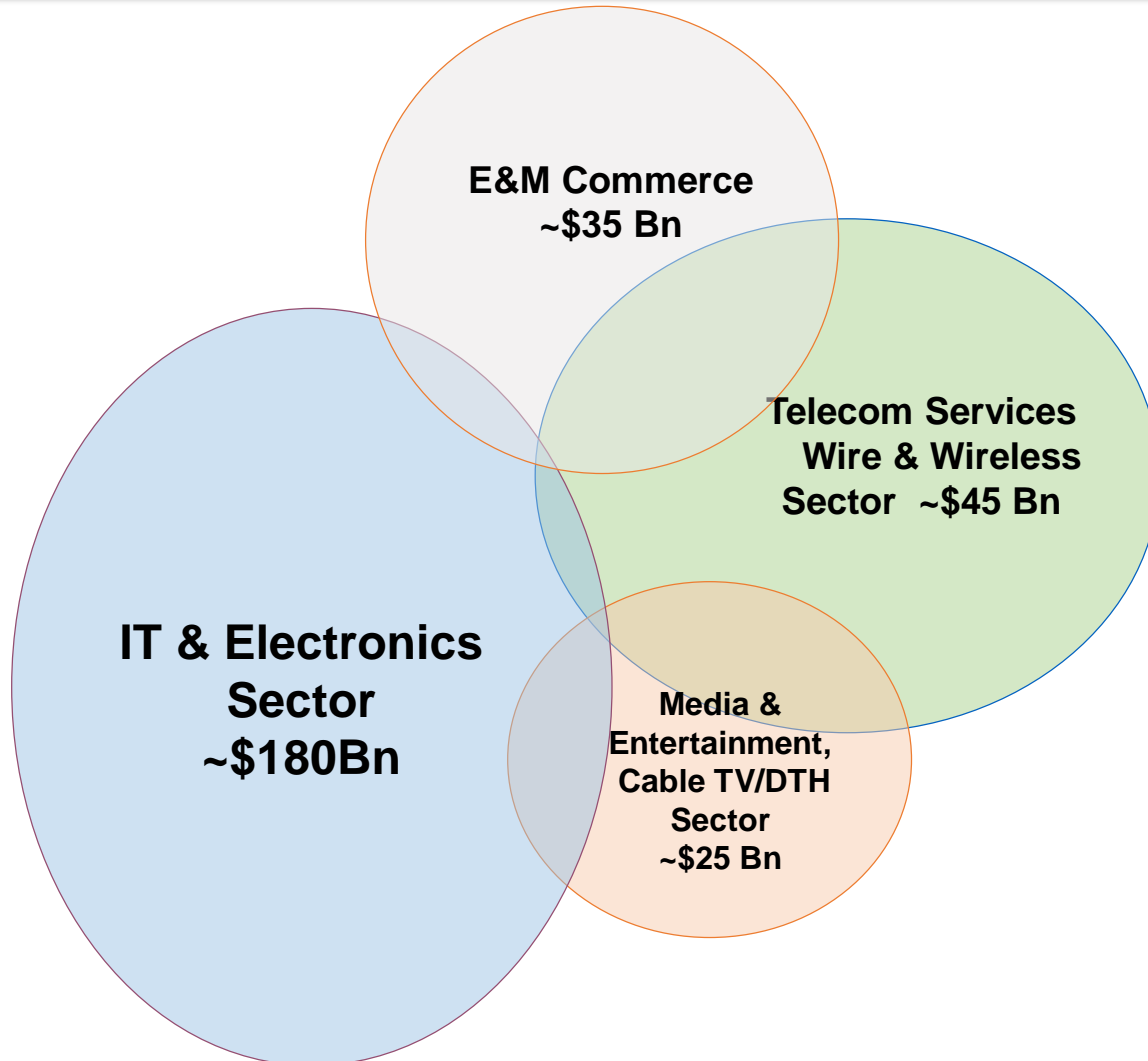


■ ARPU (INR)	130	104	89
■ REVENUE (BN INR)	104	102	118
■ EBITDA MARGIN(%)	39	19	10



MARKET SHARE DEC 2018 (%)	AIRTEL	VODAFONE – IDEA	JIO	BSNL & MTNL
<b>SUBSCRIBER MARKET SHARE</b>	<b>33</b>	<b>36</b>	<b>21</b>	<b>10</b>
<b>REVENUE MARKET SHARE</b>	<b>35</b>	<b>34</b>	<b>22</b>	<b>9</b>

# RELATED INDUSTRY CONVERGENCE IN 2018



***Convergence Leading the World to a Global Village***

# M&As by INCUMBENT OPERATORS – SWOT ANALYSIS





# SPECTRUM MANAGEMENT

- Effective Spectrum Management & Pricing for Voice & Data is key for **Citizen's Access, Quality, Affordability**
- Spectrum Management with proper Public Policy Pricing and Auctioning with level playing helps Service Providers for **Effective Networks Utilisation, Optimisation, Profitability and O&M**
- Spectrum Sweet Spots 700 (yet to be auctioned) , 800 & 900 Mhz to be effectively used by **Incumbents by re-farming from 2G to 4G** and migrate nearly 50% of 2G voice to 1800 Mhz to maximise data revenue
- Effectively the cell sites to be upgraded with appropriate Capex on the present ~4,65,000 cell towers for servicing 2G, 3G, 4G and LTE and install additional cell towers for **Minimising Call Drops for good Quality of Service**
- Incumbents with **level playing field to migrate to 4G** and minimise 2G users (right now 58% of total subscribers) by 2021 and the 4G handsets price will drop and make affordable to the common man in the rural areas
- In the present context in India, **5G spectrum** may be desirable **for testing and policy making** and put to real commercial/bid use by 2021-22 **once 4G matures with level playing across the players and telecom services stabilises in terms of profitability, Quality of Services and Affordability.**
- Today, the incumbents are saddled with high acquisition costs of 2G, 3G and 4G spectrum & networks with less realisation of Revenues and EBITDA due to **new LTE technology use by all the operators**

# 5G TELECOM SERVICES : PROS & CHALLENGES

## PROS :

- Faster Speed, Low Latency & High Capacity
- IOT Devices Connectivity for Health, Utilities & Time Critical Applications
- Huge investments expected in AI and IOT's ecosystem in the next 5 years
- New Non-Voice Revenues to operators and new business models with other industries including sports

## CHALLENGES :

- Needs at least 60% BTS fibre connectivity for backhaul
- Critical Connectivity Reliability up to last mile needed
- More micro & macro cell sites needed on higher spectrum band
- Upgradation of 4G/LTE networks and re-farming the 2G & 3G spectrum and networks with high cost
- Manpower capabilities have to be upgraded with AI skills

## ➤ Key Drivers For Growth & Investment :

1. Fully liberalized policy framework from NTP1994- 2018
2. Affordability, Competition, low tariffs and huge demand
3. Value Added Services and Data Services likely to be 50% of total revenues in next 2 years
4. High usage of services by Youth.
5. Increase in Income Levels leading to high spending nature for the telecom services
6. E- Commerce and M-Commerce Growth and Industry in Logistics, Banking and Media
7. Falling Capex & Reducing Hand set prices
8. Opportunity for New Job Creations in 5G, AI and Data Analytics in Telecom & Others sectors
9. AI & IOT Echo-System & Human resources Development with 5G in the near future

## ➤ Constraints to Operators :

1. Appropriate Spectrum Pricing Policy & Availability
2. I U C charges & issues
3. Legal and Policy Issues between Operators
4. Effective Regulation for Level Playing between Operators
5. Incumbents to Migrate to 4G from Legacy 2G Networks and high capex
6. Quality of Service is poor due to non expansion in network cell sites and towers
7. High Taxations and New Technology adaption stress on operators Profitability and inability to expand & modernize the networks due to high capex

Indian Telecom Sector likely to grow rapidly into Convergence of Communications & IT, Entertainment, E&M Commerce and e-Banking and provide value to all the Stake Holders and create new human resources in AI & Data Analytics and contribute to GDP Growth

# THANK YOU

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