

# INFRASTRUCTURE OVERVIEW

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IRIMEE

# CONTENTS

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- ROAD SECTOR
- AVIATION SECTOR
- RAILWAYS
- SNAPSHOT

# ROAD SECTOR- HISTORY

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- GT Road – 1545 AD
- British Era – PWD
- 1950-
  - Length- 399,942 Km
  - Freight share - 12%( 15MT)
- 1980-81- Length 1,485,421 Km
- 2015-16- Length 5,693,293 Km
- % increase in Road length over 1950- 1423.5%

# ROAD SECTOR

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- 2015-16
  - Total Length- 5,693,293 Km
  - Share of Passenger Traffic- 85%
  - Share of Freight Traffic- 65%( 2223 MT)
  - Share of NH – 2%
  - Contribution of Road Sector to GDP- 5% (\$ 140 Bn )
  - %Increase in Freight Traffic over 1950- 15,000%

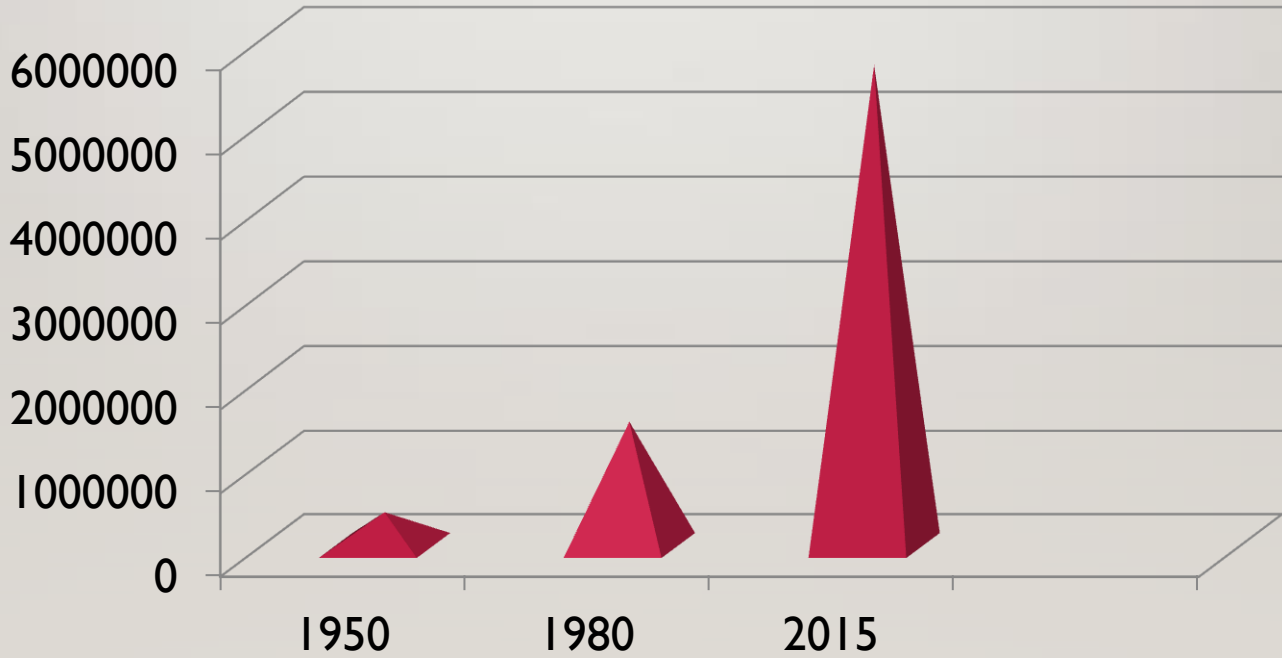
# ROAD SECTOR

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- 2% NH carry 40% Traffic
- 14% NH, State Highways - Four lane or better ( 60% traffic)
- Road Construction Pace-
  - 12 Km/ day- 2014-15
  - 30 Km / Day 2018-19
- Growth 12-15% over last 20 years .
- FDI 2000 to 2019- US\$-25.5 Bn

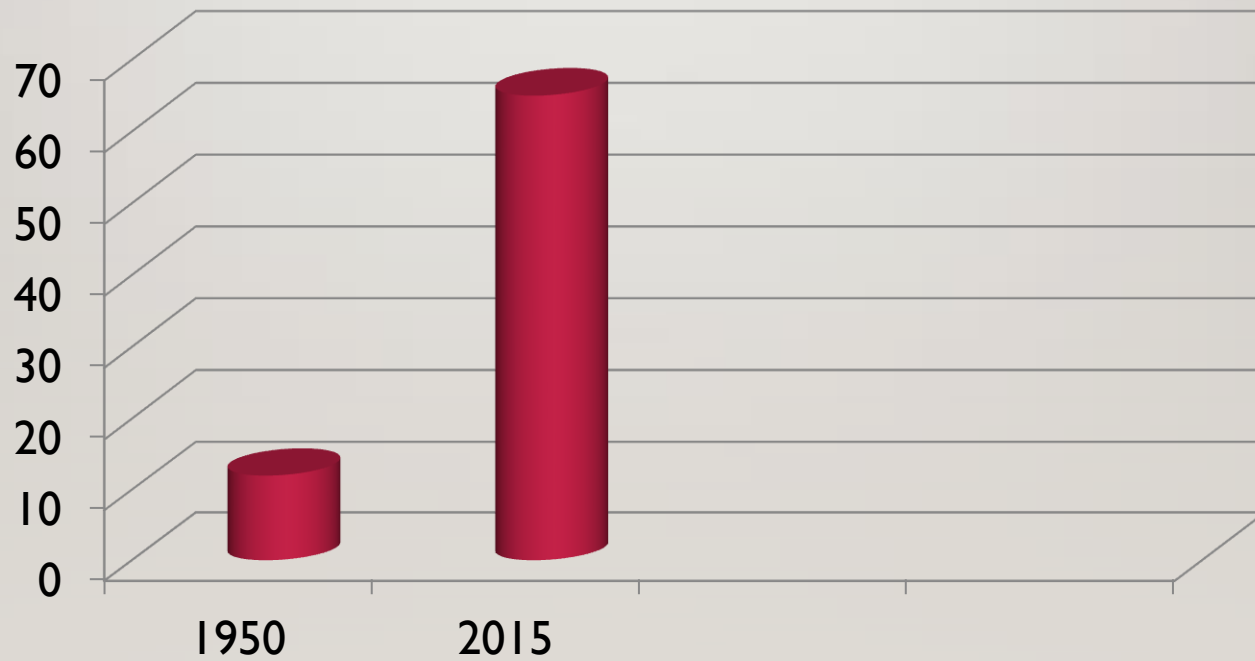
# GROWTH IN ROAD LENGTH

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# FREIGHT CARRIED BY ROAD SECTOR (%)

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# AGENCIES & FUNDING

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- National Highway
  - NHAI- set up in 1988
  - BRO
- State Highways –  
State Govt
  - PWD
- Min of Rural Development, Panchayat - for Rural road,
- **Maximum Investment -PPP Mode**
- 100% FDI permitted



# FUNDING

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- BOT (Toll)
- BOT( Annuity )
- EPC
- Hybrid Annuity- 40 % construction support , 60% annuity
- International Finding Agencies- ADB,WB, JICA
- Masala Bond ( London Stock Exc) – NHA1 2017- 450 Mn US\$
- 2019-20 Union Budget- Rs2,80,000/ Cr  
Road Transport & Safety

# FUTURE

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- Multi Axle Trucks
- Luxury Buses
- High speed four Lane Roads
- Synergizes with Auto sector growth
- Advantages - Single Handling
- Simplification with GST- eway bill – savings in transit time

# CHALLENGES TO ROAD SECTOR

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- Environmental affects
- BS Norms , switch over to Electric Vehicle
- Dependence on Market for Funding on long term basis coupled
- Difficult lending ( Banks)
- IL & FS crisis ( Rs 91,000 Cr)
- Difficult Land acquisition- Land acquisition Act 2013
- **Poor Road safety Records ~2 Lakh Deaths/ annum**

# CIVIL AVIATION

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- First Flight in India –1911
- JRD Tata- 15 Oct 1932 -Karachi to Mumbai (Puss Moth)
- Tata Air Services - 1932
- Air India – 1946
- Nationalized- 1953 for International routes
- 7 other Pvt domestic airlines – Merged with Indian Airlines
- 1990- Economic Liberalization- Monopoly of IA ends

# STATISTICS

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- Airports and Air strips- 449
- AAI – 126 Scheduled airports ( 100 receive regular flights)
- Passenger Traffic - 14M ( 2001-02)
- Passenger Traffic- 344 M( 2018-19)
- Domestic- 274 M
- International- 70 M
- Freight Traffic- 3.5 MT
- **CAGR 2006-2017- 12% ( 18% in last 5 years upto FY 18)**
- **3.24% in 2019**
- Plan under UDAN-43 Cities to be connected

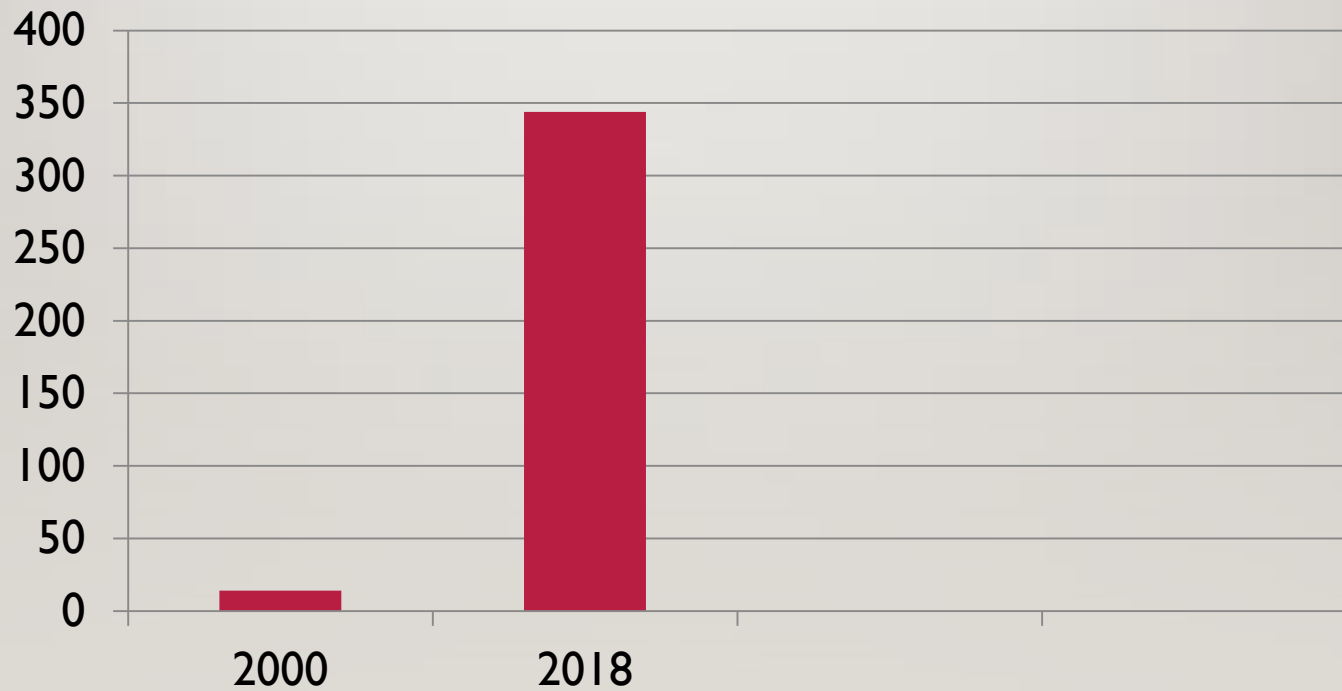
# STATISTICS

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- Revenue – US\$ 16 Bn ( Rs 115 Lakh Cr)
- Domestic- **US \$ 8.6 Bn( Rs 60,500 Cr)**
- Yield per Passenger ( Domestic)-Rs2200
- Cost Breakup –
  - 40% -ATF
  - Crew Cost – 20-30% second major component
  - FDI 49% in Direct Route

# AIR TRAFFIC GROWTH (MILLION)

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# FUTURE

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- Indian Market for Aviation- Untapped
- UDAN scheme
- Market in Tier III cities offers huge potential
- Upwardly mobile Middle class
- Moderate Crude prices
- Fierce competition likely to keep prices low
- Dynamic pricing in Rajdhani- Incentive to Move to Air



# CHALLENGES

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- High ATF – Highest Taxation in India on ATF
- Volatility in Crude Price – W.Asia
- Price sensitivity of market- Demand highly elastic
- High Failure Rate (Failed Airlines) - Jet, Kingfisher, Air Sahara, Modiluft , Peagus, Vayu dut...( 12 others )

# CHALLENGES( CONT..)

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- Rupee depreciation
  - Mandatory service to loss making sectors
  - Grounding of Aircraft -
    - P&W – A 320 Neo ( gearbox, Combustion chamber problems) – 120 Aircraft in India
    - 737 Max Grounding - Lion Air, Ethiopian Air crash- 300 world wide
- Malfunction due to faulty sensor and MCAS

# SHIPPING SECTOR

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- 95% Trade by Volume
- 12 Major 200 notified ports
- 679 MT traffic handled
- Investment planned- 22 Bn US\$( 1lakh 40 K Cr) in next 5 years
- Inland Water Ways – 0.1% share
- Cost of transport by water ways 50p/Km against Rs 1 by Railways

# RAILWAYS

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- Route Length –67,312 Km
- No of Passenger Trains ( Daily)– 12600
- No of Freight Trains ( Daily) - 7415
- Passenger Journeys ( M)( 18-19) - 8286
- Freight ( MT) (18-19)- 1223 ( share 33%)
- Passenger Earning ( Rs Cr)-52,100
- Freight ( Rs Cr)- 129,750
- Gross Revenue( Rs Cr)- 196,714
- NFR ( Rs Cr)- 14864
- % contribution to GDP - 1%

# GROWTH

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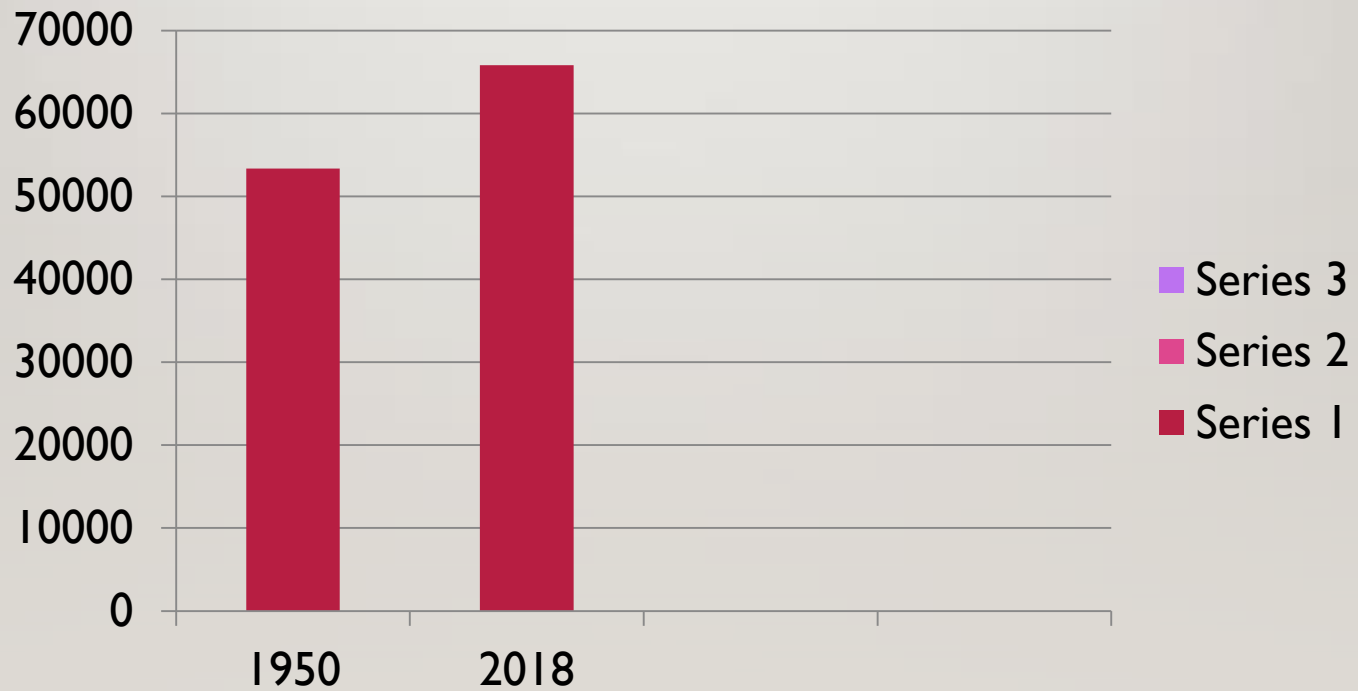
- Passenger CAGR ( 2007-20019)- 5.48%
- Freight CAGR ( 2007-19)- 5.84%
- Inflation rate – 5%8%

# RAILWAY GROWTH

Desc	1950	2013-14	2018	Growth 1950 to 2018( %)
Passenger Km ( Bn)	66.5	1158.7	1177.7	1769
Freight( MT)	73	1054	1223	1675
Route Km	53596	65806	67312	125

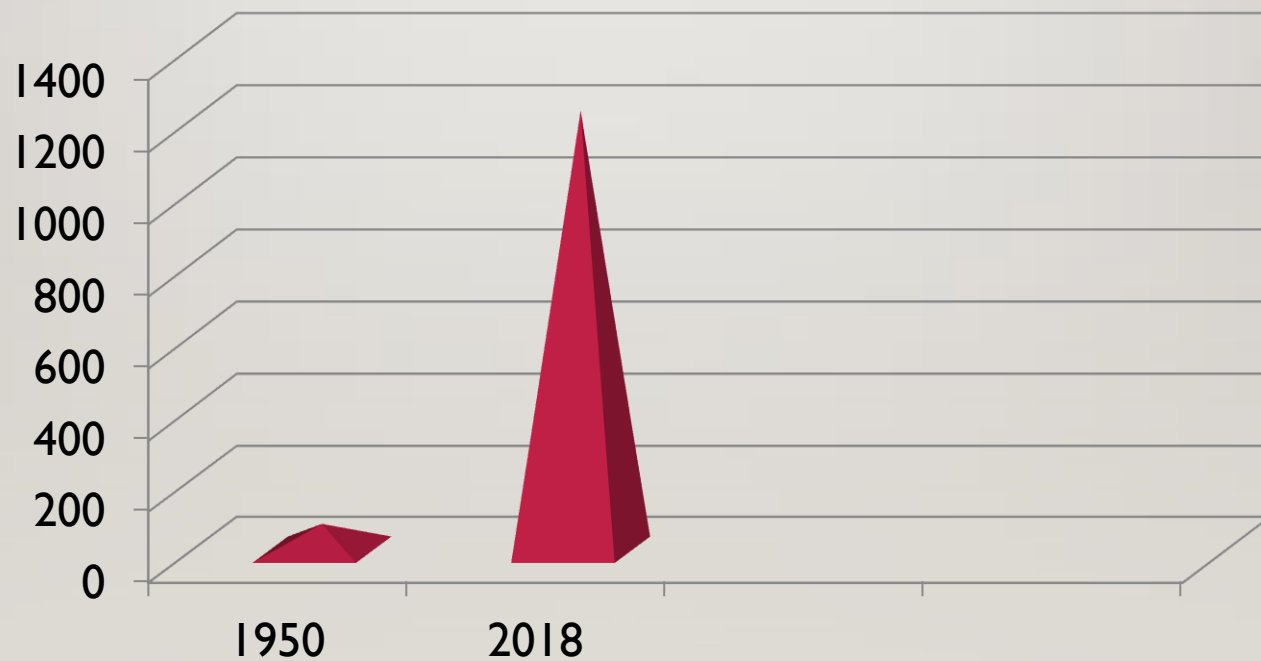
# GROWTH IN ROUTE KM

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# FREIGHT CARRIED RAILWAYS(MT)

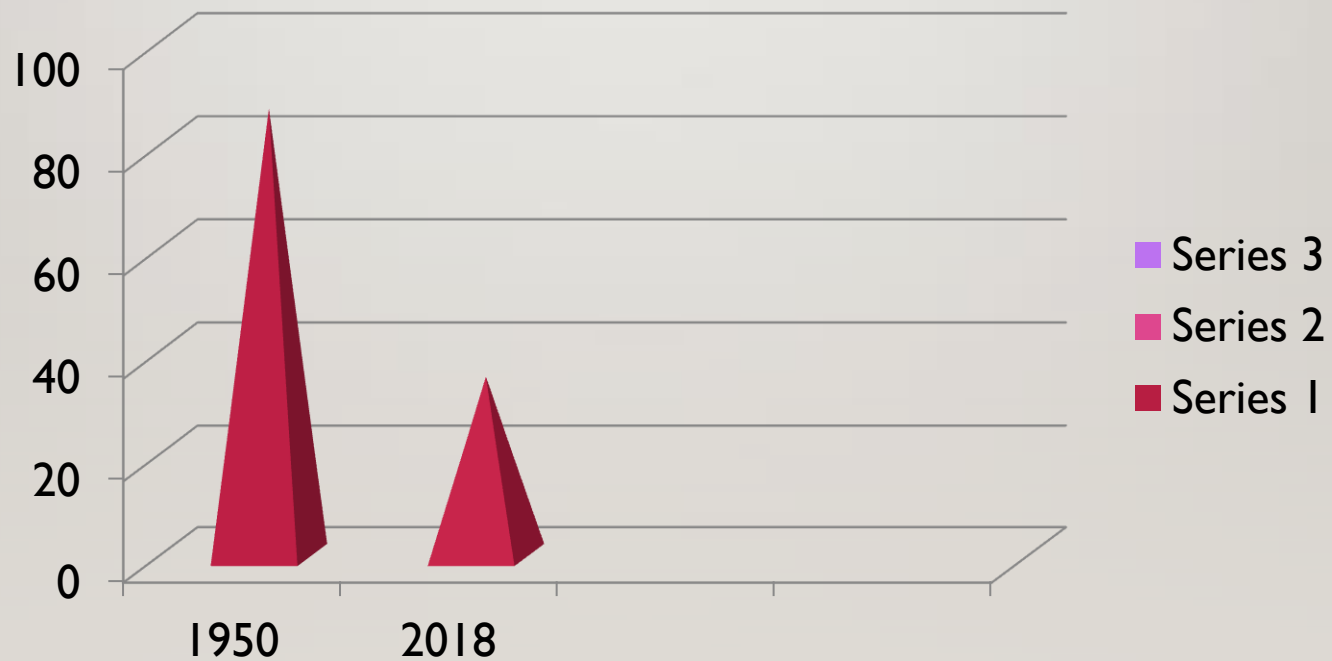
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# FREIGHT SHARE OF RAILWAYS(%)

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# NEW LINES

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- Average Rate ( 2006-2015)- 360 Km
- New Lines 2018- 953 Km

# PASSENGER BUSINESS ( 2017-18)

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Class	Nos. in M ( %)	Revenue Rs Cr ( %)
Upper	159(1.92)	15930(32.75)
Second M/E	1390(16.75)	24315(49.99)
Second ( ordinary)	2072(25)	5593(11.5)
Suburban	4665(56.3)	2803(5.76)
Total	8286	48614

# SUBURBAN TRAFFIC COMPARISON WITH DMRC

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- 2017-18
  - DMRC- ( Rs 6018 Cr Including Grants , consultancy )
  - Earning ( Traffic)- 3027 Cr
  - Riders 926 M,
- IR 10 times Cheaper ??

# PPP IN RAILWAYS

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- 100 % permitted after 2015. Inflow between 2000-2018- 920 US\$
- Station development
- RLDA and IRSDC ( JV of RLDA & IRCON)
- Colony Development
- Alstom India- Electric Loco Manufacture- Madhepura
- GE Global Sourcing India Pvt Ltd Diesel Loco Manf. - Marohra
- Container Train Operators
- Private Passenger Trains- Tourist Trains+ Tejas

# FUTURE

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- Projected Investment – Rs 150,000 Cr annually
- Possibility – Rs 50 Lakh Cr in next 12 years
- Climate Change- Opportunity for Rail due to low carbon emission (0.5 Kg/ Pass Km vs 0.11Kg/ Pass Km in car)
- Passenger fare in lower segment – opportunity
- Freight – Challenge (Rates, DFCCIL, CTOs)

# CHALLENGES

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- Operating Ratio- 96%
- Competition from Road,Air
- Rationalization of fare and Freight
- Structural reforms
- Freight movement over DFCCIL,
- Container traffic with CTOs
- Electric Vehicle – Environmental Advantage with Move back to Road



# PROMISING FUTURE

