<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive Summary</td>
<td>3</td>
</tr>
<tr>
<td>Advantage India</td>
<td>4</td>
</tr>
<tr>
<td>Market Overview</td>
<td>6</td>
</tr>
<tr>
<td>Recent Trends and Strategies</td>
<td>15</td>
</tr>
<tr>
<td>Growth Drivers and Opportunities</td>
<td>21</td>
</tr>
<tr>
<td>Key Industry Organisations</td>
<td>36</td>
</tr>
<tr>
<td>Useful Information</td>
<td>38</td>
</tr>
</tbody>
</table>
## EXECUTIVE SUMMARY

| World’s 3rd largest rail network | As of FY19, the Indian Railways had 13,523 passenger trains and 9,146 freight trains.  
| On the commercial front, freight traffic of Indian Railways increased to 1,221.39 million tonnes in FY19. As of January 2020, freight traffic in FY20 (provisional) stood at 999.51 million tonnes. |
| Growing public-private partnership (PPP) | Private sector companies are being encouraged to participate in rail projects, which were largely in the public domain. The cabinet approved ‘participative models for rail-connectivity and capacity augmented projects’, which allowed private ownership of some railway lines.  
| The second Tejas Express was flagged off in January 2020 on the Ahmedabad-Mumbai route. |
| Growth initiatives | India will build its first railway station inside a tunnel at a height of 3,000 meters and length of 27 km on Bilaspur-Manali-Leh line in Himachal Pradesh.  
| Under the Union Budget 2020-21, the Government allocated Rs. 72,216 crore (US$ 10.33 billion) to the Ministry of Railways.  
| In June 2020, Railways created a new world benchmark by commissioning first high rise Over Head Equipment (OHE) with a contact wire height of 7.57 metre and successfully running double stack containers in electrified territory on Western Railway.  
| Indian Railways plan to run on 100% electricity by 2024 and become a net-zero emission network by 2030. In July 2019, the longest electrified tunnel was built between Cherlopalli and Rapuru stations. |
| Modernisation/Technology upgradation | Indian Railways has undertaken modernisation of railway stations under the Adarsh station scheme. Out of the total 1,253 railway stations identified under the scheme, over 1,050 railway stations have already been modernised.  
| Various technologies such as electronic interlocking at all interlocked broad-gauge stations and automatic train protection (ATP) system have been introduced by Indian Railways.  
| All electric locomotives have been provided with vigilance control devices (VCD) to check the alertness of loco pilots (LPs).  
| The Government decided to manufacture only Linke Hoffman Bushce (LHB) type coaches from 2018-19 onwards and decided to adopt HOG system (Head on Generation technology) in all LHB Coaches trains in September 2019. |

**Note:** *Approximate  
Source: Make in India, Indian Railways, News Articles*
Increasing urbanisation and rising income (both urban and rural) are driving growth in the passenger segment.

Growing industrialisation across the country has increased freight traffic in the last decade.

India is projected to account for 40% of the total global share of rail activity by 2050.

Freight traffic is set to increase significantly due to rising investments and private sector participation.

Metro rail projects are being envisaged across many cities over the next ten years.

FDI inflow in railway-related components stood at US$ 1.12 billion from April 2000 to June 2020.

Investment in Railway’s infrastructure is estimated to increase from US$ 58.96 billion in 2013-17RE to US$ 124.13 billion in 2018-22E.\(^\text{1}\)

It is estimated that Railway’s infrastructure would need an investment of Rs. 50 lakh crores (US$ 715 billion) between 2018-30.

The Government has increased the scope of PPP beyond providing maintenance and other such supporting roles. PPP is being utilised in areas such as redevelopment of stations, building private freight terminals and private container train operations.

Government has allowed 100% FDI in the railway sector.

---

**Note:**

FDI - Foreign Direct Investment, \(^\text{1}\)As per CRISIL Infrastructure Yearbook 2017, RE - Revised Estimates, E - Estimate

**Source:**

Railway Budget 2019-20, Press Information Bureau, Department for Promotion of Industry and Internal Trade in source,, The Future of Rail Opportunities for energy report by International Energy Agency
MARKET OVERVIEW
Indian Railway (IR) is:
- a departmental undertaking of the Government of India, which owns and operates most of India's rail transport.
- overseen by the Ministry of Railways.

As of FY19, IR had a total route network of ~67,415 kms.
- It operates more than 22,669 trains daily.
- It has 0.289 million wagons, 74,003 coaches and 12,147 locomotives.

- Over 23 million passengers travel by train daily in India. The passenger traffic stood at 8,438.46 million in FY19 and is expected to increase to 15.18 billion by FY20.

- Around 1,221.39 million tonnes of freight was transported via trains in FY19 and 2,165 million tonnes is expected to be transported in FY20.
- These include a huge variety of goods such as mineral ores, iron, steel, fertilisers, petrochemicals and agricultural produce.

Source: Ministry of Railways, Make In India, Railway Budget 2019-20, Indian Railways Statistical Publications 2019-20
Revenue growth has been strong over the years. Indian Railways’ revenue reached US$ 24.78 billion in FY20.

Indian Railways has undertaken various measures to boost revenues including:

- **Passenger Earnings** - introduction of new trains, operation of special trains during peak seasons, running premium special trains with dynamic pricing
- **Freight Earnings** - reduction in distance of mini rakes, withdrawal of port congestion charge, rationalisation of Merry-go-Round policy
- **Parcel Earnings** - leasing parcel space to private parties, liberalisation of parcel policy
- **Other Earnings** - adoption of bulk advertising rights, vinyl wrapping of trains, right of way charges

**Note:** CAGR - Compound Annual Growth Rate, E - Estimates, P - Provisional, FY - Indian Financial Year (April-March),

**Source:** Ministry of Railways
SEGMENT-WISE REVENUE GROWTH FOR INDIAN RAILWAYS

Revenue from passenger segment of Indian Railways increased at a CAGR of 1.25% to reach US$ 7.25 billion in FY20 from US$ 6.90 billion in FY16.


Increased carrying capacity, cost effectiveness, and improved service quality will see Railways incremental share from freight movement increasing from 35% to 50% by 2020.

With 637.2 km of metro rail in 13 cities and over two dozen metro projects lined up, India’s metro rail network is expanding at a fast pace.

In October 2020, Indian Railways freight loading stood at 108.16 million tonnes, compared with 93.75 million tonnes in the same month last year. The Indian Railways earned Rs. 10,405.12 crore (US$ 1.40 billion) from freight loading in October; this is higher by Rs. 868.90 crore (US$ 117.41 million) or 9% compared with Rs. 9,536.22 crore (US$ 1.28 billion) in the same month last year.

Notes: CAGR - Compound Annual Growth Rate, FY-Financial Year, Exchange Rates used are averages of the year, P - Provisional
Source: Ministry of Railways, News Article
FREIGHT ACCOUNTS FOR MORE THAN TWO-THIRDS OF RAILWAY’S REVENUES

- Freight business for Indian Railway is supported by 9 commodities, few of them being coal, iron, steel, iron ore, food grains, fertilizers, petroleum products.

- Indian Railways’ freight business increased nearly seven times in the last fifty years - from 167.39 million tonnes in 1970-71 to 1159.55 million tonnes in 2017-18.

- Freight remains the major revenue earning segment for Railways, accounting for 64% of the total revenue in FY20, followed by the passenger segment.

- Profit from the freight segment is used to cross-subsidise the passenger segment.

- Dedicated Freight Corridor Corp. of India Ltd (DFCCIL) is already building two freight corridors - Eastern Freight Corridor from Ludhiana to Dankuni (1,856 km), and Western Freight Corridor from Dadri to Jawaharlal Nehru Port (1,504 km), at a total cost of Rs. 81,000 crore (US$ 11.59 billion).

- A total of 1,231 freight customers are availing E-payment facility since November 2019.

- On July 27, 2020, the average speed of freight trains was 46.16 kmph, which is more than double as compared to last year on the same date (22.52 kmph), and total loading stood at 3.13 million tonnes.

- Indian Railways plans to achieve 2,024 MT (metric tonne) loading in 2024 from the current 1,200-1,300 MT.

*Note: Other Coaching includes service coaches such as pantry cars, parcel vans, mail vans, etc, * - Provisional

Source: Railway Budget 2019-20, Ministry of Railways
Train travel remains the preferred mean for long-distance travel for majority of Indians.

Increase in the demand for passenger trains is supported by urbanisation, improving income standards, etc.

The punctuality performance of Indian Railways for mail and express trains increased to 75.67% during April-December 2019 as compared to 68.19% in the same period last year.

During FY20P, passenger traffic in the country reached 8.10 billion.

In September 2020, Indian Railways planned to run more special trains as the government further relaxed Covid-19 related restrictions to revive the economy.

Note: CAGR - Compound Annual Growth Rate, E - Estimate, FY - Indian Financial Year (April-March), P - Provisional
Source: Make In India, Ministry of Railways
STRONG GROWTH IN FREIGHT TRAFFIC

- The Government is investing heavily in building rail infrastructure in the country.
- With increasing participation expected from private players, both domestic and foreign, due to favourable policy measures, freight traffic is expected to grow rapidly over medium to long term.
- Freight traffic carried by Indian Railways stood at 1,208.34 million tonnes in FY20.
- In October 2020, the Indian Railways loading was 108.16 million tonnes, including 46.97 million tonnes of coal, 14.68 million tonnes of iron ore, 5.03 million tonnes of foodgrains, 5.93 million tonnes of fertilisers and 6.62 million tonnes of cement (excluding clinker)
- In November 2020, India Railways announced that 40% of dedicated freight corridor (DFC) will be opened for traffic by end-FY21, while the entire 2,800 km route will be completed by June 2022.

**Note:** CAGR - Compound Annual Growth Rate, FY - Indian Financial Year (April-March), P - Provisional, ^CAGR is up to FY20

**Source:** Ministry of Railways, Vision 2020, Press Information Bureau
India was among the top 20 exporters of railways globally as of 2019.

India’s export of railways grew at a CAGR of 52.52% during 2010-2019 to reach US$ 635 million.

In 2019, Train 18, Indian Railways’ fastest engine-less self-propelled train, gained several queries for export.

On July 28, 2020, Railways handed over 10 Broad Gauge (BG) locomotives to Bangladesh, under grant assistance from the Government of India.

**Export of Railways (US$ million)**

- **2016**: 178.97
- **2017**: 303.29
- **2018**: 507.90
- **2019E**: 635.00

**^CAGR 52.52%**

**Note:** CAGR - Compound Annual Growth Rate, ^Exports of Railway, Tramway Locomotives, Rolling Stock, Equipment, Data is the latest available, E-Estimated

**Source:** UN Comtrade, News Articles
### Key organisations supporting Indian Railways

<table>
<thead>
<tr>
<th>Company</th>
<th>Business description</th>
</tr>
</thead>
</table>
| ![Concor Logo](image) **Concor** | - Navratna PSU under India’s Ministry of Railways  
- Carrier, terminal operator and warehouse operator |
| ![DFCC Logo](image) **DFCC** | - SPV set up under the Ministry of Railways  
- Undertakes planning and development; mobilisation of financial resources; construction, maintenance and operation of the Dedicated Freight Corridor (DFC) |
| ![Rail Vikas Nigam Logo](image) **Rail Vikas Nigam Limited** | - SPV created by the Government of India  
- Builds engineering works required by Indian Railways |
| ![Railtel Logo](image) **Railtel** | - Mini Ratna PSU with one of the largest neutral telecom infrastructure providers in the country  
- Strives to modernise train control operation and safety system of Indian Railways |

**Notes:** PSU - Public Sector Undertaking, DFC - Dedicated Freight Corridor, SPV - Special Purpose Vehicle  
**Source:** Relevant Company Annual Reports and website
RECENT TRENDS AND STRATEGIES
NOTABLE TRENDS IN INDIAN RAILWAYS…(1/3)

### Demand for urban transport
- There is a rapid increase in demand for urban mass transportation systems in the country. Several metro rail projects are in progress to improve connectivity within cities.
- The central Government inaugurated the Pune Metro Rail project on December 24, 2016. The metro line would have 30 stations and the 1st phase would cover 31.25 km. The project is expected to be completed by 2021 at a cost of US$ 1.67 billion. In January 2019, the Department of Economic Affairs (DEA) and the French Development Agency (AFD) signed a credit facility framework agreement to extend funding to Rs. 20.27 billion (US$ 280.96 million).

### M-ticketing and E-ticketing
- As of July 2018, Indian Railways decided to start accepting soft copies of documents placed in DigiLocker of customers. In May 2018, IRCTC introduced its mobile android app to be utilised by IRCTC E-wallet users to book E-rail tickets. In FY19, the internet ticketing segment contributed 12.35% to IRCTC’s revenue.
- In October 2019, Indian Railway launched One Touch ATVM for fast ticketing at 42 suburban stations of Central Railway.

### International investment
- IR has attracted foreign investment through strategic alliances with various countries over the last few years.
- In November 2019, Indian Railways entered into procurement cum maintenance agreement with Madhepura Electric Locomotive Pvt Ltd (MELPL), a joint venture (JV) of Indian Railways and France-based Alstom to manufacture 800 electric locomotives for freight service and its associated maintenance.

### Travel Insurance Scheme
- Railways rolled out its insurance scheme for passengers, under which they can buy a premium of 1.52 cents while booking a ticket to get an insurance cover of up to US$ 1.5 thousand.

### Semi high-speed train projects
- IR intends to look for cost effective options to increase speed to 160-200 km per hour on existing routes such as Delhi-Chandigarh and Delhi-Agra.
- In February 2019, the Government launched India’s first semi-high-speed train, Vande Bharat Express, to run between Delhi and Varanasi. In October 2019, second semi-high-speed train called Delhi-Katra Vande Bharat Express was launched.

**Notes:** km/h - kilometre per hour  
**Source:** Ministry of Railways, Railway Budget 2019-20
NOTABLE TRENDS IN INDIAN RAILWAYS...(2/3)

Bullet trains

- Studies are being commissioned for other high-speed routes in the diamond quadrilateral.
- India is keen on manufacturing and exporting bullet train coaches to possibly bring down the operating cost of Shinkansen trains.
- For the upcoming Mumbai-Ahmedabad bullet train project, 24 bullet train sets are planned to be acquired from Japanese companies through tendering process.
- The estimated value of the project is US$ 14.52 billion, which will reduce the duration of the journey by 2 hours. Construction of the corridor is expected to be completed by 2023.
- Average speed of faster trains will increase from the existing 110-130 kmph to 160-200 kmph, respectively
- On September 22, 2020, the Indian Railways sanctioned a feasibility study for seven bullet train projects—all open to PPP investments.

High-speed trains projects

- Indian Railway has planned to build 7 high-speed rail corridors to provide faster rail connectivity across the country at a cost of US$ 17 million.
- Indian Railway has collaborated with the Government of Japan for the construction of high speed passenger train corridor between Ahmedabad and Mumbai. The Government has set a target of commencing the train by 2023.

New services/programmes launched

- In February 2019, Indian Railways decided to launch food packets with QR codes and give live kitchen feed.
- Nearly 4,100 km of railway lines were to be commissioned in 2018-19
- In November 2020, Indian Railway launched a completely digitised online Human Resource Management System (HRMS)—a high thrust project for Indian Railways to leverage improved productivity and employee satisfaction
- In November 2020, the National Rail and Transportation Institute (NRTI), Vadodara, launched 7 new programmes, 2 B.Tech UG programmes, 2 MBA and 3 MSc programmes on the core applied sector. These programmes are aimed at creating the best skills sets in railway infrastructure management, systems & communication engineering and transportation cum supply chain management.

Notes: km/h - kilometre per hour
Source: Ministry of Railways, Railway Budget 2015-16, Railway Budget 2016-1
The Indian Railways reviewed its security, crowd management and enforcement to meet the COVID-19 protocols as the footfalls are likely to increase ahead of the festive season. The new mandate includes the field officers to conduct intensive awareness campaigns among passengers on guidelines issued by the Railway administration to prevent outbreaks in trains and at stations.

A new campaign ‘Meri Saheli’ was launched to provide safety to female passengers and effectively respond to any security-related issues faced or seen by female passengers. This initiative is two-pronged and will also aim to curb human trafficking of women and children.

Indian Railways is scheduled to run 392 festival trains to and from Kolkata, Lucknow, Patna and Varanasi starting from mid-October 2020 until end-November 2020 to cater to the growing demand during Durga Puja, Dussehra, Diwali and Chhatt Puja festivities.

Furthering the revenue maximisation agenda, these special trains will have 10-30% higher ticket prices including a special surcharge.

Under the Union Budget 2019-20, the Government allotted Rs. 2,200 crore (US$ 304.92 million) for gauge conversion, Rs. 700 crore (US$ 97.02 million) for doubling tracks, Rs. 6,114.82 crore (US$ 847.51 million) for rollingstock and Rs. 1,750 crore (US$ 242.55 million) for signalling and telecom.

In November 2020, Indian Railways (with the objective of bringing hospital management on a single architecture to prevent pilferage and making operations seamless) entrusted RailTel Corporation of India Limited (“RailTel”) with the implementation of a hospital management information system (“HMIS”)—an integrated clinical information system for its 125 health facilities and 650 polyclinics across India for improved hospital administration and patient healthcare.

Notes: km/h - kilometre per hour
Source: Ministry of Railways, Press Releases
Revenue-based strategies

- Provision of online rail bookings, hotel reservations and retiring rooms by IRCTC adds to revenue of Indian Railways. IR is focusing on international tourists and have also produced many tour packages for foreigners.
- Indian Railway has set a target of US$ 5.95 billion in revenue from monetising railways in the next 10 years. By doing so, IR aims to increase earnings through traditional as well as non-traditional sources and reduce expenditure.
- Plans are in place to remove pantry car services from 300 trains and replace them with AC-3 tier coaches to increase revenue by Rs. 1,400 crore. Meal service will rely on base kitchens at railway stations, e-catering and train-side vending machines according to the Railway Ministry.
- Replacing reusable linen sets with disposable linens is another revenue sharing strategy under review since the pandemic. Contracts are being distributed to private vendors for selling disposable sheets, towels and pillows at train stations to prevent covid outbreaks. This will reduce the railways maintenance overheads by passing the cost to the passenger.
- These decisions have been made in response to a revenue and expense audit report compiled by the AIRF.

Turnaround strategies for freight traffic

- Axle load was increased from 20.3 tonnes to 22.9 tonnes and 25 tonnes for selected routes and freight discounts were offered to customers offering high tariffs.
- The average speed of freight trains would increase to 50 kmph and Mail/Express trains to 80 kmph by end of 2020.
- Freight rates on cement, coal, urea, kerosene, LPG and food grain and pulses have been hiked by 10% to bring additional revenue of US$ 655.1 million per year.

Notes: IRCTC - Indian Railway Catering and Tourism Corporation
Source: Ministry of Finance, Railway Budget 2019-20, News articles
STRATEGIES ADOPTED BY INDIAN RAILWAYS (2/2)

- Fare for premium classes were reduced to compete with airlines, luxury buses and personal transport vehicles.
- The length of popular trains was increased from 16-18 coaches to 24-26 coaches.
- Private participation is encouraged. Information Technology was used to make ticket reservation more feasible to passengers along with an airline-style upgradation facility from lower class to higher class.
- The speed is expected to be raised to 160 kmph on Delhi-Mumbai and Delhi-Howrah routes by 2022-23. The passenger trains have got approval to raise 60% increase in average speed.
- Rajdhani train journeys will become fully overnight.
- In September 2020, the Indian Railways announced the ‘Clone Train Scheme’, wherein it plans to run a clone train with the train of the same number, to help and provide relief to waitlisted passengers over heavy passenger traffic routes.

Notes: IRCTC - Indian Railway Catering and Tourism Corporation
Source: Ministry of Finance, Railway Budget 2019-20, News articles
GROWTH DRIVERS AND OPPORTUNITIES
STRONG DEMAND AND POLICY SUPPORT DRIVING INVESTMENTS

- Government focus on infrastructure building
- Growth of freight traffic due to industrialisation
- Rising demand for urban mass transportation
- Improved safety and modernisation
- Increasing private sector participation
Increasing incomes in urban and rural areas have made rail travel affordable to large number of Indians.

Improvement of urban-rural connectivity has been another major contributor to the growth of Railways in the country.

Population residing in urban areas is expected to increase from 460.78 million\(^/^\) in 2018 to 542.74 million\(^/^\) in 2025\(^/^\). The percentage of India’s total population residing in urban areas is expected to increase from 34.03%\(^/^\) in 2018 to 37.38%\(^/^\) in 2025\(^/^\).

**Note:** \(^/^\) data relates to mid-year, E - Estimate, F - Forecast

**Source:** Ministry of Railways, IMF World Economic Outlook April 2018, United Nations World Urbanisation Prospects 2018
It is estimated that India will require US$ 4.5 trillion of infrastructure investment by 2040 to enhance economic growth and community well-being.

Railway plans to invest Rs. 50 lakh crore (US$ 715.41 billion) by 2030 to build infrastructure.

As per Union Budget 2020-21, Ministry of Railways has been allocated Rs. 72,216 crore (US$ 10.33 billion).

In FY20, 15 critical projects of around 562 kms track length worth Rs. 5,622 crore (US$ 797.56 million) were completed, and out of these, 13 were commissioned by railways. Railways completed electrification of around 5,782 route kms during the same year.

Rail Land Development Authority (RLDA) is working on Rs. 25,000 crore (US$ 3.37 billion) long-term planned projects for the redevelopment of 123 railway stations, across the country, on a self-sustainable model, which is in line with smart city projects. The committee aims to meet the cost of redevelopment by leveraging commercial development of spare railway land and air space.

In June 2020, Railways created a new world benchmark by commissioning first high rise Over Head Equipment (OHE) with a contact wire height of 7.57 metre and successfully running double stack containers in electrified territory on Western Railway.

In December 2019, the Government of India launched National Infrastructure Pipeline, under which, Rs. 100 lakh crore (US$ 1.43 trillion) investment is expected over the next five years.

Notes: RE - Revised Estimates, E- Estimate
EXPANDING SCOPE OF PUBLIC PRIVATE PARTNERSHIP (PPP)

- In December 2012, the cabinet approved the new policy of participative models for rail-connectivity and capacity augmented projects. The policy addressed the issues of ownership of the railway line and repayment of investment.

- Since the launch of the policy, railway authorities have received various proposals from private investors and have already given approval (can now acquire land and begin construction) for four port connectivity projects to ease congestion.

- Areas proposed for private investment during this period would include elevated rail corridor in Mumbai, some parts of dedicated freight corridor, freight terminals, redevelopment of stations and power generation/energy saving projects.

- Other measures taken/proposed include:
  - Setting up of a modern signalling equipment facility at Chandigarh through PPP
  - Construction of new lines - Bhupdeopur-Raigarh (Mand Colliery) and Gevra Road-Pendara Road; Doubling of Palanpur-Samakhiali section through PPP.
  - Setting up of 2 locomotive plants through PPP is crucial for the development of infrastructure sector.
  - Setting up joint ventures (JV) with major public sector customers for fulfilling the requirements of new lines.

- As per Union Budget 2019-20, Government enhanced the metro railway initiative by encouraging more purchasing power parity initiatives and ensuring completion of sanctioned works, while supporting transit-oriented development (TOD) to ensure commercial activity around transit hubs.

- Purchasing power parity projects in railways is expected to receive investment of Rs. 50 trillion (US$ 750 billion) by 2030.

- Indian Railways and AltPro, a Croatian company, signed a deal worth Rs. 450 million (US$ 6.06 million) to upgrade the safety and signaling equipment for rolling stock and infrastructure.

- Western Railways division has signed a deal with the logistics partner of Amazon India for speedy transportation of parcels in Rajdhani Express. The division completed its first consignment journey from Mumbai to New Delhi in October 2020. The deal stipulates consignment deliveries for 113 days form October 2020 to February 2021 with an estimated good transportation of 2,712 tonnes; this will help generate a revenue of Rs. 2 crore.

Notes: PPP - Public Private Partnership; MUTP-III: Mumbai Urban Transport Project-III
Source: Ministry of Railways, Make in India
To modernise Indian Railways, the focus is on two fundamental drivers, safety and growth along with a 5-pronged strategy:

- Modernise core assets - key revenue generating assets
- Explore new revenue models - to meet the funding needs for modernisation and growth
- Review projects - to ensure financial viability, social benefits and timely implementation
- Focus on enablers - for a holistic and long-term approach to modernisation and execution
- Mobilise resources - to capitalise on an opportunity

Information Technology - to improve operational efficiency

### Key focus areas

<table>
<thead>
<tr>
<th>Core assets</th>
<th>Track and bridges</th>
<th>Signalling</th>
<th>Rolling stock</th>
<th>Stations and terminals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue models</td>
<td>PPPs</td>
<td>Land</td>
<td>Dedicated freight corridors</td>
<td>High-speed trains</td>
</tr>
<tr>
<td>Projects</td>
<td>Review of existing and proposed projects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enablers</td>
<td>ICT</td>
<td>Indigenous development</td>
<td>Safety</td>
<td></td>
</tr>
<tr>
<td>Resources</td>
<td>Funding</td>
<td>Human resource</td>
<td>Organisation</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** ICT - Information and Communication Technology, PPP - Public Private Partnership  
**Source:** Ministry of Railways
### MODERNISATION: NEW THEME OF INDIAN RAILWAYS  
... (2/2)

#### Track Upgradation and Welded Rails

- Sleepers have been upgraded from wooden, steel and CST-9 to PSC sleepers.
- Heavier section and high tensile strength rails are being used (52 kg/60 kg 90 UTS rails are being used in place of 90 R/52 kg 72 UTS rails).
- Under Union Budget 2019-20, 36,000 km rail track is being targeted for renewal.
- Replacing analogue type machines with digital type machines and promotion of better and improved welding techniques.

#### Adarsh Scheme

- As of June 2019, 1,253 stations were identified under the scheme, of which, 1,103 stations have been developed as per norms.
- Total allocation for the scheme increased from Rs. 1,470.79 crore (US$ 228.21 million) in 2017-18 to Rs. 1,657 crore (US$ 236.23 million) in 2019-20.
- Moula-Ali station has been developed under Adarsh Station Scheme at a cost of Rs. 3.5 crore (US$ 0.49 million).

#### Increasing Operational Efficiency

- Design and development of 5500 HP WDG5 diesel locomotive for faster, longer and heavier trains. Development of 25 KV HV connector for multiple operation of WAP5 locomotives with 1 pantograph in raised condition.
- Development of high-sensitivity thermal imaging camera with online scanning facility to improve the reliability of electric traction system.
- Launch of a zero-based timetable to increase efficiency by pruning 600 trains and eliminating halts at 10,200 train stations; this will boost revenue by Rs. 2,000 crore (US$ 262 million)

#### Unreserved Ticketing Services (UTS)

- UTS was made functional at 5,778 locations with 10,760 terminals. Currently, 90% of unreserved tickets are generated through UTS. The app received 10,62,560 new users till January 2019.
- By June 2019, 3.87 lakh passengers purchased the unreserved tickets through online application.
- Indian Railways introduced a mobile app, “utsonmobile”, in Chennai to allow passengers a paperless ticketing system. It is being considered to extend across all metros.
- Restoration of the second reservation chart, posting 30 minutes prior to scheduled departure, came into effect on October 10, 2020.

**Note:** Km - Kilometres, IR - Indian Railways, UTS - Ultimate Tensile Strength, CST9 - Central Standard Trial-9, PSC - Pre Stressed Concrete  
**Source:** Ministry of Railways
Note: Ministry of Railways
DFCCIL, a special purpose vehicle, was set up for implementing the DFC project under the administrative control of Ministry of Railways.

The plan is to construct dedicated freight lines along the eastern (1856 km route length) and western (1504 km route length) parts of India.

Total length: 2,8243 kms; total estimated cost: US$ 11.66 billion as on September 2019; financial progress stands at 63.6% and physical progress stands 67.5%.

The World Bank granted loan of US$ 1,100 million for EDFC-2 and sanctioned loan of US$ 650 million for EDFC-3 in October, 2016.

Note: DFC - Dedicated Freight Corridor, DFCCIL - Dedicated Freight Corridor, Corporation of India Limited, JV - Joint Venture, EDFC - Eastern Dedicated Freight Corridor

Source: Ministry of Railways
To increase its share in automobiles transportation, Indian Railways notified a new scheme in March 2013, Automobile Freight Train Operator. The scheme provides logistic service providers and road transporters an opportunity to introduce their own special wagons to run on the railways’ network and avail of freight rebates in return. The requirements for the scheme are laid down as under:

- Companies with minimum net worth of US$ 3.7 million or annual turnover of US$ 5.5 million are eligible to participate in this scheme.
- A registration fee of US$ 0.9 million is required to be paid to the Railway Ministry on approval as AFTOs.
- Companies are required to introduce at least 3 rakes and make them operational within 6 months from the commissioning of the 1st rake.
- The freight rates would be notified from time to time for specific stock to be moved by AFTOs.
- The freight rebate would be incorporated in the freight rates specified for transport of automobiles.
- Special wagons would be designed and developed by Research, Design and Standards Organisation (RDSO) for induction by 3rd party logistics providers and road transporters.
- Each rake is to have a capacity to carry 318 small cars. The rake should be tested by RDSO.

To make the policy more effective, Ministry of Railways liberalised the AFTO policy by reducing registration fees from Rs. 5 crore (US$ 0.78 million) to Rs. 3 crore (US$ 0.47 million). Also, the requirement of minimum procurement of at least 3 rakes under the scheme has been relaxed to 1 rake.

Source: Times of India, Ministry of Railways
### POLICY AND REGULATORY FRAMEWORK … (2/5)

<table>
<thead>
<tr>
<th><strong>R3i policy</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ The policy aims to attract private sector participation in rail connectivity projects to create additional rail transport capacity.</td>
</tr>
<tr>
<td>▪ The policy allows for 4 models: (a) Cost Sharing-Freight Rebate; (b) Full Contribution- Apportioned Earnings; (c) Special Purpose Vehicle (SPV); and (d) Private Line.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>R2CI</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ This new policy was initiated to improve rail connectivity to coal and iron ore mines.</td>
</tr>
<tr>
<td>▪ The policy offers the developer involved in the construction of the line to levy a surcharge on the freight over a period of 10-25 years.</td>
</tr>
<tr>
<td>▪ The policy has two models: Capital Cost and SPV Models. The Capital Cost Model is relevant when there are 2 players, whereas the SPV Model is intended for a large number of players.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Public Private Partnership (PPP)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Connectivity to the major ports through PPP funding. Approval has been granted for 7 ports amounting to US$ 0.7 billion.</td>
</tr>
<tr>
<td>▪ Development of the major stations to equip them with international level of amenities and services.</td>
</tr>
<tr>
<td>▪ As of October 2020, the Railway Ministry issued a policy to develop shed facilities at small/roadside railway stations aimed at augmenting terminal capacity through the participation of the private sector. Private parties are allowed to develop a goods wharf, utilities for labourers (resting space, drinking water, etc.), approach roads, loading and unloading docks and other related infrastructure.</td>
</tr>
<tr>
<td>▪ All facility developments will require approval from the Indian Railways and need to comply with their designs, standards and specifications.</td>
</tr>
</tbody>
</table>

**Note:** R3i - Railways’ Infrastructure for Industry Initiative, SPV - Special Purpose Vehicle, R2CI - Railways Policy for Connectivity to Coal and Iron Ore Mines  
**Source:** Ministry of Railways, Make in India website
Under Union Budget 2020-21, the Government of India has allocated Rs. 72,216 crore (US$ 10.35 billion) as capital support for Indian Railways.

For passenger safety, a Rashtriya Rail Sanraksha Kosh will be created with a corpus of Rs. 1 lakh crore (US$ 15.61 billion) over a period of 5 years. It is proposed to feed about 7,000 stations with solar power in the medium term.

By 2024, Indian railways will run completely on electricity.

The Government is going to come up with a ‘National Rail Plan’, which will enable the country to integrate its rail network with other modes of transport and develop a multi-modal transportation network.

By 2019, all coaches of Indian Railways were fitted with bio toilets. In the next 3 years, the throughput is proposed to be enhanced by 10%.

Indian Railways will commence Kisan Rail, a special Parcel Train from Devlali (Maharashtra) to Danapur (Bihar) on August 07, 2020.

Indian Railways has completed eight major capacity enhancement projects by taking advantage of the coronavirus lockdown. These projects included three super critical projects with a combined length of 68km, three critical projects with a combined length of 45km, upgradation of the 389km railway line from Jhajha in Bihar to Pandit Deen Dayal Upadhyaya Junction in Uttar Pradesh and a new 82km port connectivity line to Paradip.

As a part of the Railways’ plans to upgrade its network, the Ministry announced that all non-AC sleeper coaches will be replaced by AC coaches for trains running >130 kmph. This move has been taken as a technical necessity for high speed trains with the bonus of improving passenger experience.

Note: R3i - Railways’ Infrastructure for Industry Initiative, SPV - Special Purpose Vehicle, R2CI - Railways Policy for Connectivity to Coal and Iron Ore Mines
Source: Ministry of Railways, Make in India website
Key modernisation initiatives

- Government of India preponed its target of install bio-toilets in the entire fleet of coaches by 2019. As of March 2018, bio-toilets were installed in around 60% of all passenger-carrying coaches of Indian Railways.
- Introduced ‘Operation 5 minutes’ scheme for passengers travelling unreserved, which provided the passengers time to purchase tickets within 5 minutes.
- Introducing 24/7 All-India helpline number through which passengers could address their problems on a real-time basis. Toll-free number, 138, has been launched as 24/7 All-India helpline number and availability of toll-free number, 182, for security related complaints.
- In an initiative to decarbonize rail transport, Indian Railways will be collaborating with various public sector enterprises to speed up the process of electrification of railway tracks. Electrification of 6,000 km of routes was planned for 2018-19. A total of 1,106 Route kilometre (RKM) has been electrified across the entire Indian Railways network.
- In February 2019, Government of India launched Rail Drishti Dashboard to promote transparency and accountability. It brings information from various sources on a single platform and gives access to key statistics and parameters to every citizen of the country.
- In October 2019, Indian Railways launched 09 ‘Sewa Service’ trains to connect smaller towns around major cities.
- In October 2019, RailTel completed phase-I execution of NIC E-office for Indian Railways, and 58 units are using E-office for paperless work.
- Railways is leading India’s fight against climate challenge and is taking significant steps towards meeting its ambitious goal of being a net zero carbon emissions organisation by 2030 and meeting India’s Intended Nationally Determined Contributions (INDC) targets.

Source: Ministry of Railways, Railway Budget 201 - 16, News Articles; Press Information Bureau
This policy supersedes the R3i and R2CI policies notified earlier.

The policy provides for supplementing Government’s investment in rail infrastructure projects by private capital flows.

The policy contains the following models: non-Government railway; JV with equity participation by railways; capacity augmentation through funding by customers; capacity augmentation - annuity model applicability; and BOT.

Few projects undertaken under the participative policy of Ministry of Railways include Jaigarh Port-Digni Port, Hamarpur-Rewas Port, Chiplun-Karad, Vaibhavwadi-Kolhapur and Indore-Mammad.

Indian Railways launched the Wagon Investment Scheme in 2005 to offer freight rebates and supply a guaranteed number of rakes for a period of 7 to 15 years for different types of wagons.

Ministry of Railways proposed to set up 5 wagon factories in Secunderabad, Bardhaman, Bhubaneswar/Kalahandi, Guwahati and Haldia under the JV/PPP model.

Till May 2019, 77 general-purpose rakes were approved by IR under the GPWIS policy for multiple private investors. Two rakes are already operational in the east coast zone.

Note: kms - Kilometers
Source: Ministry of Railways, Railway Budget 2015-16, Press Information Bureau
From April 2000 to March 2020, FDI in railways-related components industry stood at US$ 1.12 billion.

In July 2020, the Ministry of Railways decided to create a special cell, Project Development Cell (PDC), in the railway board to increase investments and inflow of foreign direct investment (FDI).

Note: FDI - Foreign Direct Investment
Source: Department for Promotion of Industry and Internal Trade
KEY INDUSTRY ORGANISATIONS
## KEY INDUSTRY ORGANISATIONS

<table>
<thead>
<tr>
<th>Indian Railways</th>
<th>RITES Limited</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Address:</strong> Rail Bhavan, Raisina Road</td>
<td><strong>Address:</strong> Rites Bhawan, Gurgaon Sector 29,</td>
</tr>
<tr>
<td>New Delhi-110001</td>
<td>Gurgram, Haryana - 122002</td>
</tr>
<tr>
<td><strong>Tel:</strong> 91 11 23411173</td>
<td><strong>Tel:</strong> 91 124 2571666/2818999</td>
</tr>
<tr>
<td><strong>Website:</strong> <a href="http://www.indianrail.gov.in">www.indianrail.gov.in</a></td>
<td><strong>Fax:</strong> 91 124 2571660</td>
</tr>
<tr>
<td></td>
<td><strong>Mail:</strong> <a href="mailto:info@rites.com">info@rites.com</a></td>
</tr>
<tr>
<td></td>
<td><strong>Website:</strong> <a href="http://www.rites.in">www.rites.in</a></td>
</tr>
</tbody>
</table>
USEFUL INFORMATION
GLOSSARY

- CAGR: Compound Annual Growth Rate
- FDI: Foreign Direct Investment
- FY: Indian Financial Year (April-March)
- FY12 implies April 2011 to March 2012
- DFC: Dedicated Freight Corridor
- DFCCIL: Dedicated Freight Corridor Corporation of India Limited
- PPP: Public-Private Partnership
- IIP: Index of Industrial Production
- R2CI: Railways Policy for Connectivity to Coal and Iron Ore Mines
- R3i: Railways' Infrastructure for Industry Initiative
- CST - 9: Central Standard Trial-9
- SPV: Special Purpose Vehicle
- US$ : US Dollar
- Wherever applicable, numbers have been rounded off to the nearest whole number
## Exchange Rates

### Exchange Rates (Fiscal Year)

<table>
<thead>
<tr>
<th>Year</th>
<th>Rs.</th>
<th>Rs. Equivalent of one US$</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004-05</td>
<td>44.95</td>
<td></td>
</tr>
<tr>
<td>2005-06</td>
<td>44.28</td>
<td></td>
</tr>
<tr>
<td>2006-07</td>
<td>45.29</td>
<td></td>
</tr>
<tr>
<td>2007-08</td>
<td>40.24</td>
<td></td>
</tr>
<tr>
<td>2008-09</td>
<td>45.91</td>
<td></td>
</tr>
<tr>
<td>2009-10</td>
<td>47.42</td>
<td></td>
</tr>
<tr>
<td>2010-11</td>
<td>45.58</td>
<td></td>
</tr>
<tr>
<td>2011-12</td>
<td>47.95</td>
<td></td>
</tr>
<tr>
<td>2012-13</td>
<td>54.45</td>
<td></td>
</tr>
<tr>
<td>2013-14</td>
<td>60.50</td>
<td></td>
</tr>
<tr>
<td>2014-15</td>
<td>61.15</td>
<td></td>
</tr>
<tr>
<td>2015-16</td>
<td>65.46</td>
<td></td>
</tr>
<tr>
<td>2016-17</td>
<td>67.09</td>
<td></td>
</tr>
<tr>
<td>2017-18</td>
<td>64.45</td>
<td></td>
</tr>
<tr>
<td>2018-19</td>
<td>69.89</td>
<td></td>
</tr>
<tr>
<td>2019-20</td>
<td>70.49</td>
<td></td>
</tr>
</tbody>
</table>

### Exchange Rates (Calendar Year)

<table>
<thead>
<tr>
<th>Year</th>
<th>Rs.</th>
<th>Rs. Equivalent of one US$</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>44.11</td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>45.33</td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td>41.29</td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>43.42</td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td>48.35</td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td>45.74</td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td>46.67</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>53.49</td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>58.63</td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>61.03</td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>64.15</td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>67.21</td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>65.12</td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td>68.36</td>
<td></td>
</tr>
<tr>
<td>2019</td>
<td>69.89</td>
<td></td>
</tr>
</tbody>
</table>

**Source:** Reserve Bank of India, Average for the year
India Brand Equity Foundation (IBEF) engaged Sutherland Global Services private Limited to prepare/update this presentation.

All rights reserved. All copyright in this presentation and related works is solely and exclusively owned by IBEF, delivered during the course of engagement under the Professional Service Agreement signed by the Parties. The same may not be reproduced, wholly or in part in any material form (including photocopying or storing it in any medium by electronic means and whether or not transiently or incidentally to some other use of this presentation), modified or in any manner communicated to any third party except with the written approval of IBEF.

This presentation is for information purposes only. While due care has been taken during the compilation of this presentation to ensure that the information is accurate to the best of Sutherland Global Services’ Private Limited and IBEF’s knowledge and belief, the content is not to be construed in any manner whatsoever as a substitute for professional advice.

Sutherland Global Services Private Limited and IBEF neither recommend nor endorse any specific products or services that may have been mentioned in this presentation and nor do they assume any liability, damages or responsibility for the outcome of decisions taken as a result of any reliance placed on this presentation.

Neither Sutherland Global Services Private Limited nor IBEF shall be liable for any special, direct, indirect or consequential damages that may arise due to any act or omission on the part of the user due to any reliance placed or guidance taken from any portion of this presentation.