

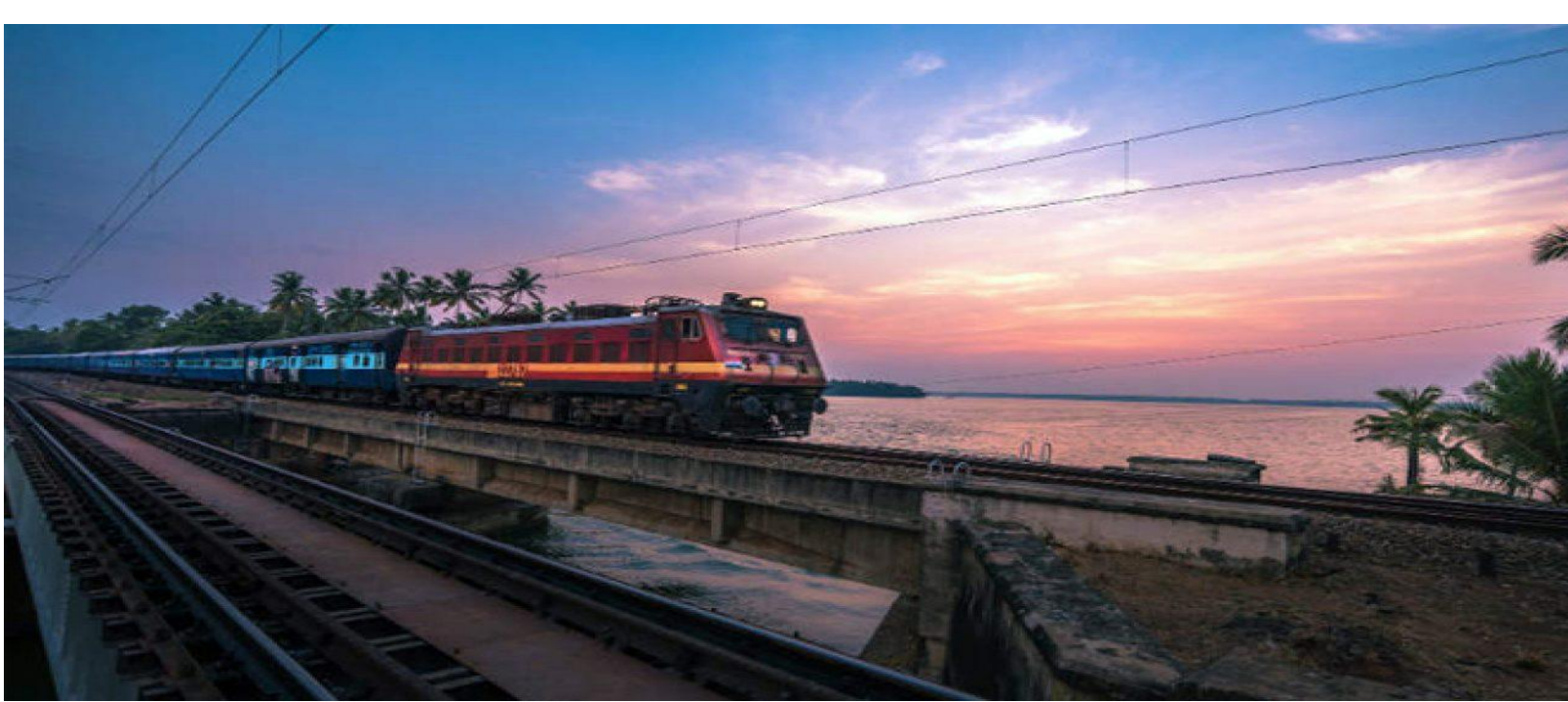
2021

# The Evolution of Indian Railways



## *Table of Contents*

1. Evolution of Indian Railways.....	
2. Market size of Rail Industry.....	
3. Sectoral Outlook.....	
4. Challenges faced by Indian Railway.....	
5. Strategies adopted by Indian Railways.....	
6. Role of Railways in covid-19.....	
7. Modernisation of Railways.....	
8. Export scenario .....	
9. Make in India.....	
10. Investment scenario in Indian Railway.....	
11. Future outlook.....	



## **Journey of Indian Railway**

## Evolution of Indian Railways

The Railways' rate of growth was very high during the British Raj. In less than 20 years after the steam engine came to India in 1853, all its major metropolitan centres – including Delhi, Bombay, Calcutta and Madras – were linked by an extensive railway network. The country's hill railways were laid in the next 50 years. Less than a century after the railways chugged

Year	Number of Locomotives		
	Steam	Diesel	Electric
1950-51	8,120	17	72
1960-61	10,312	181	131
1980-81	7,469	2,403	1,036
1990-91	2,915	3,759	1,743
2000-01	54	4,702	2,810
2002-03	52	4,699	2,930
2010-11	43	5,137	4,033
2013-14	43	5,633	4,823
2014-15	43	5,714	5,016

into India, as many as 54,000 kilometers of tracks were added to India's network at the annual rate of 600 km. However, in the 69 years since the country's Independence, successive governments managed to lay only around 10,000 km of new tracks – at the approximate rate of 160 km a year. While India's erstwhile British rulers had ensured that all the five hill railways in the country became operational by 1930, Independent India has been struggling to complete construction work on the Kashmir rail link for the last 69 years.

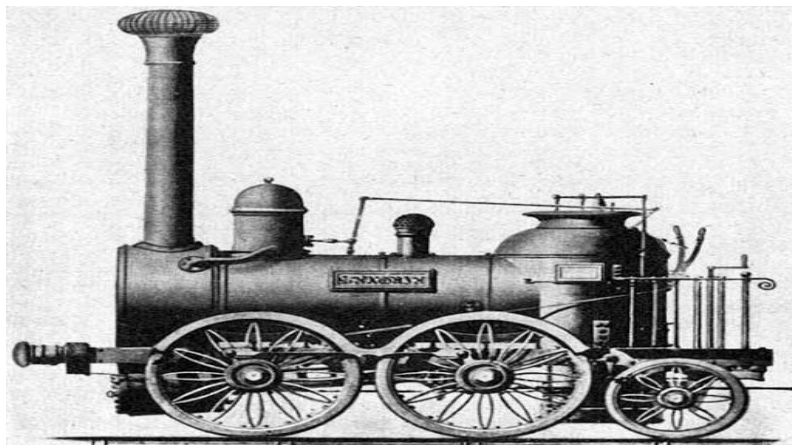
## Journey of Indian Railway system

### 1853-1869: Launching passenger rail services

Although rail services in India were initially proposed in the 1830s, historians cite 16 April 1853 as the kick starter for India's passenger rail revolution. On this date, the country's first passenger train set off on a 34km journey between Bombay's Bori Bunder station and Thane. It consisted of 14 cars being hauled by three steam locomotives, and carried 400 passengers. This early era of passenger travel was primarily funded by private companies under a guarantee system created by the British Parliament, which ensured they would receive a certain rate of interest on their capital investment. In total, eight railway companies were established between 1855 and 1860, including Eastern India Railway, Great India Peninsula Company, Madras Railway, Bombay Baroda and Central India Railway.

### **1901-1925: Moves towards centralisation**

After years of construction and financial investment the railways finally began to make a profit in 1901. Nevertheless, it was during the early years of this century that the scale of government intervention increased dramatically. GIPR was the first company to become state-owned in 1900. By 1907, the government had purchased all major lines and began leasing them back to private operators.



### **1925-1946: Electrification and hard times**

The first electric train ran between Bombay and Kurla on 3 February, 1925, setting a precedent for further electrification in the coming years. By 1929, the railway network had grown to an overall length of 66,000km and carried approximately 620 million passengers and 90 million tonnes of goods annually.

### **1980-2000: Technology and phasing out steam**

The 1980s saw a complete phase-out of steam locomotives, as electrification was spurred on by energy crises in the 1970s. Around 4,500km of track was electrified between 1980 and 1990. Meanwhile, India's first metro system opened in Calcutta in 1984.

Though economic stagnation and political upheaval blocked growth of the network in the 80s, the 90s saw the opening of the Konkan Railway; a 738km behemoth connecting the western coast of India with the rest of the country.

### **2000-2017: Moving online**

Since 2000, metro stations have continued to pop up in India's major cities, including Delhi (2002), Bangalore (2011), Gurgaon (2013) and Mumbai (2014). The noughties also saw the creation of the network's East Coast, South Western, South East Central, North Central and West Central Railway zones, in 2002. Nevertheless, arguably the greatest step forward for IR was the launch of online train reservations and ticketing through its IRCTC system in 2002. Passengers could now book their journeys online or buy tickets from thousands of agents across the country – a necessary addition, considering that passengers had reportedly traversed a distance of more than 4.5 billion kilometres on the railways in the period from 2000-2001

### **Hand Lantern Systems**



Every rail enthusiast must have seen this mascot of Indian Railways who is referred to as Bholu. The mascot is depicted as holding a hand lantern. The hand lanterns were once used to be a part of the signaling system of the Indian Railways. The hand lantern system for signaling was said to be introduced after the British Government laid down 34 kilometer long railway track in the year 1853 in Bombay division between Thane and Wadi Bunder station (seaport), the lighted lanterns were used at night, while in day time, hand-signals or semaphore signals were used which has iron arm painted with red and white stripes. After the introduction of electric traffic system in 1996 lanterns were declared useless. The lanterns which were used for signaling had two types of colored glass- red and green. When a train had to be stopped at stations or in between tracks, the guard of the train used to use red glass of the lanterns.

Indian Railways has attained an unimaginable growth over the years. During the span of 165 years, Indian Railways never stopped and continue to move forward. It transformed itself from a miniature to a colossal organization. From the first run of the very first train of India in 1853 to the immense growth of the railway network, it has come a long way. Carrying over a million passengers everyday and moving about 1,000 million tons of freight per year, Indian Railways continues to stand as the backbone of the transport system of India.

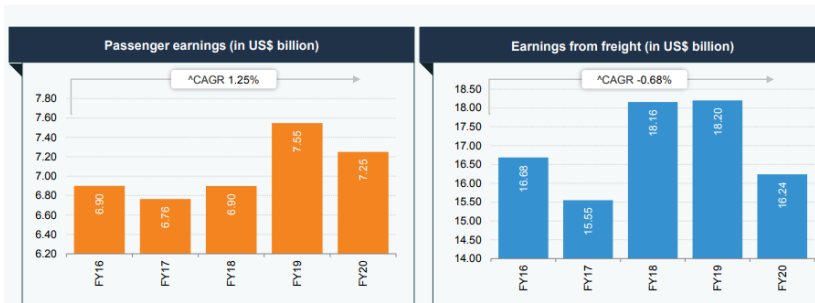
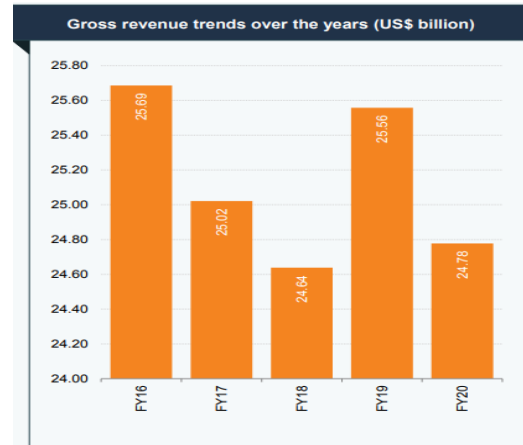


## Market Size

Indian Railways is among the world's largest rail network, and its route length network is spread over 67,956 kms, with 13,169 passenger trains and 8,479 freight trains, plying 23 million travellers and 3 million tonnes (MT) of freight daily from 7,349 stations. India's railway network is recognised as one of the largest railway systems in the world under single management.

The railway network is also ideal for long-distance travel and movement of bulk commodities, apart from being an energy efficient and economic mode of conveyance and transport. Indian Railways is the preferred carrier of automobiles in the country.

Revenue growth has been strong over the years. Indian Railways' gross revenue stood at Rs 174,660.52 crore (US\$ 24.78 billion) in FY20. Freight earnings in FY20 stood at Rs 113,487.89 crore (US\$ 16.24 billion). Passenger earnings for Indian Railways was at 50,669.09 crore (US\$

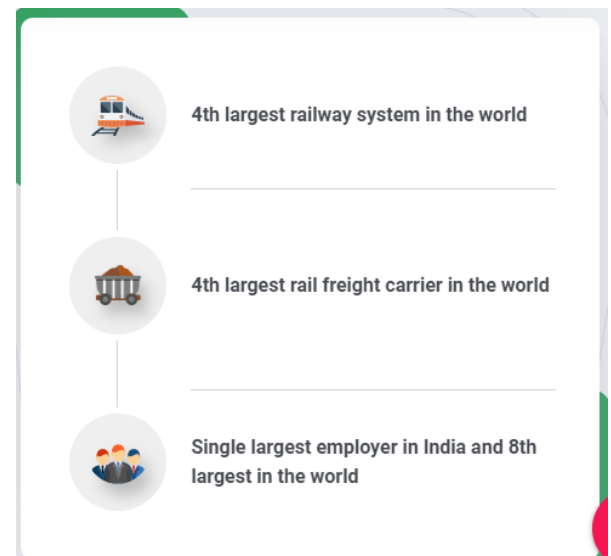


7.25 billion) in FY20. Freight remains the major revenue earning segment for Railways, accounting for 65% of its total revenue in FY20, followed by the passenger segment. RailTel, a PSU under the Railway Ministry, which provides fast and free Wi-Fi across the Indian

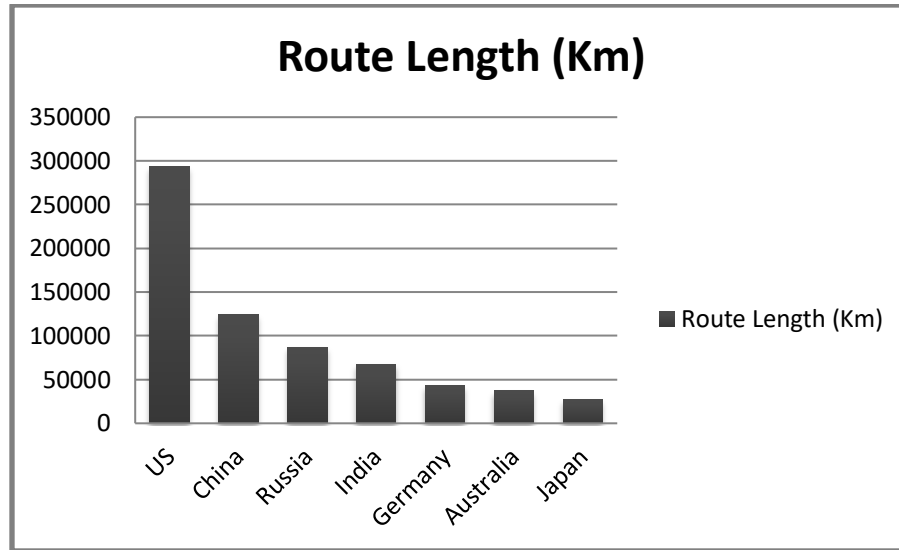
Railways network, announced its highest ever consolidated income of Rs. 11,660.05 million (US\$ 158.48 million) for FY19-20. This income figure is a growth of 12.3% over the consolidated income of the financial year FY18-19.

## Facts and Figures

In January 2021, Indian Railways achieved the highest freight loading of 119.79 million tonnes, surpassing its previous record of loading 119.74 MT freight in March 2019. The Indian Railways earned Rs. 10,657.66 crore (US\$ 1.44 billion) from freight loading; this increased by Rs.449.79 crore (US\$ 61.13 million) or 4% compared with Rs. 10,207.87 crore (US\$ 1.38 billion) in the same month last year.. Passenger traffic was valued at 7.25 billion and freight traffic at 1,208.34 million tonnes in FY20. India was among the top 20

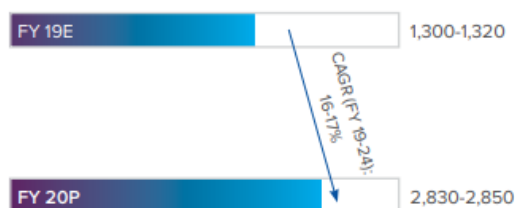


exporters of railways globally as of 2017. India's export of railways has grown at a CAGR of 31.51% during 2010-2018 to US\$ 507.90 million. Exports of railways in 2019E stood at US\$ 635 million.



## Sectoral Outlook

Online Booking Market Size  
(₹ in Billion)

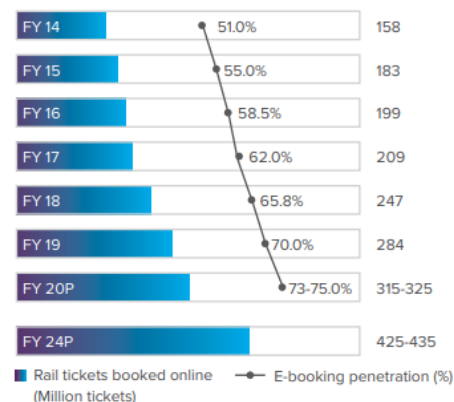


## E-Booking Industry

The Indian booking industry, both online and offline comprises of airline travel booking, railway booking and hotel booking. With growing internet penetration and emergence of Artificial Intelligence (AI), the online travel industry in India is gaining traction. A large number of people are now turning to web portals and mobile apps

for better travel deals. The online air ticketing segment accounts for 59-61% of the overall online booking market.<sup>5</sup> It was further aided by rising internet and smart phone penetration, incentivized rates offered through airline loyalty programmes, increased usage of Online Travel Agencies (OTAs) for competitive airfares and price comparisons. Rail bookings, on the other hand, account for 24-26% of the online booking industry in India. E-booking is estimated to stand at 73-75% of the total

Online penetration of Railway ticket booking in India



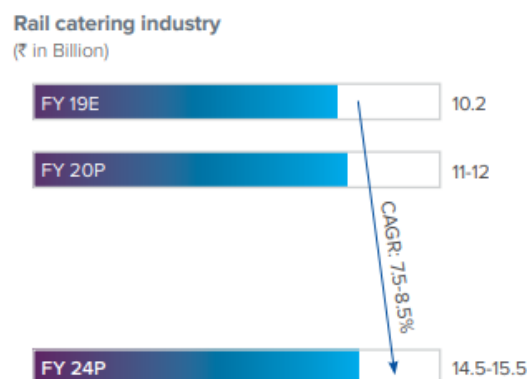


railway booking in FY 2019-20 and is anticipated to reach 81-83%, with 425-435 Million tickets estimated to be booked online by FY 2023-24.<sup>6</sup> The online booking market is estimated to reach H 2380-2850 Billion by FY 2023-24, growing at a CAGR of 16-17% from FY 2019- 24.

### Food catering services

The Indian food industry was valued at H 4.24 trillion in FY 2018- 19, registering a CAGR of 11% from 2016-2019. The growth will be primarily driven by urbanization, rising income levels, internet penetration and due to a varied choice of cuisines available in India.

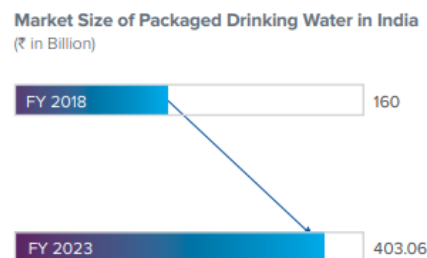
The rail catering industry is expected to be valued at H 14.5-15 Billion by FY 2023-24, growing at a CAGR of 7.5-8.5% from FY 2019-24. The growth in the catering industry will be on account of a likely increase in passenger traffic, due to the addition of long distance trains.



### Packaged Drinking Water

Packaged drinking water is anticipated to be valued at more than H 400 Billion by 2023, growing at a CAGR of ~20.75% between 2018 and 2023. Increasing awareness about the importance of safe drinking water to maintain good health along with rise in per capita income is creating a demand for bottled water in India.

The revenue in the bottled water segment is expected to stand at US\$ 6464 Million in 2020. In relation to India's total population of 135 Crores, the estimated revenue generation from packaged drinking water is likely to be US\$ 4.68, per person, in 2020 and the average per capita consumption is expected to stand at 17.5 litres. In India, bottled water is sold in one-litre bottles, two-litre bottles, 500 milliliter bottles, 250 milliliter bottles, pouches, and barrels of 15-20 litres.



## **Challenges in Indian Railway sector**

### **1. Railways continues to master Fiscal Jugglery**

The working of Indian Railways is caught up between making it a self-sufficient organisation and serving it as a transport system for the poor. The result being no rise in passenger fares and new trains and routes being decided on non-commercial reasons. The passenger fares usually remain static for years, burdening the Union Budget. In order to keep finances in check, freight charges have been raised in the past. But the discrepancy between freight charges and passenger fares seem to distort the Railways' performance. The recent decision of surge pricing of tickets in premium trains is a move in a correct direction. But biggest headache for Railways is expansion of their freight basket.

### **2. Operating Efficiency**

An Indian railway has a huge employee base of 1.3 million, which includes powerful workers' unions. It has become a centralised organisation with hierarchical decision-making. As a result, even simple decisions take years to resolve. Operating ratios are likely to get worse as costs pile up, including money for the 7th Pay Commission recommendations which is nearly Rs 28,000 crore this year to retirees and serving employees of Railways. The Railways is only ministry at present which gives back dividend on Gross Budgetary Support. Last year, they paid Rs 7,000 Cr to the finance ministry.

### **3. General inefficiencies**

Indian Railways lags behind on a lot of parameters. In the previous fiscal, it missed most of its targets, including of electrification, track renewals, bridge works, and doubling of tracks. In 2014/15, projects worth Rs 6.5 lakh crore were stuck, including works related to doubling, new lines, gauge conversion, traffic facilities, and electrification. Today Railways faces a burden of Rs 4, 83,511 crore for the execution of 458 unfinished projects.

### **4. Stranded projects**

Suresh Prabhu is trying to complete unfinished projects. He has appointed mission directors to ensure smooth execution of these projects. He has started few trains in the past two years. He has come up with a five-year plan. Any faulty execution of projects could land Railways in a debt trap. Prabhu is focusing on station redevelopment, construction of new lines, debottlenecking the existing freight corridors, formulation of new suburban railway networks, restricting the lethargic Railway Board etc.

### **5. Durability**

As demand for freight and passenger trains increases, so too does the physical demand on the railway lines themselves; increasing the need for durable cable protection that can withstand the physical strains of repeated use. All our products are tested beyond industry standard to ensure that, however high the demand, our applications protect those cables time and time again.

## Strategies adapted by Indian Railways

### 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 has 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.

### GO GREEN STRATEGY

According to NITI Aayog, carbon dioxide emission from Indian Railways was around 6.84 million tons in 2014 and Indian Railways intends to cut down this figure substantially in the coming years with a goal of transforming Indian Railways into 100% Green Railways in the next ten years. In fact, work is already underway to make Indian Railways the world's first net-zero railway to help reduce environmental pollution. IR has set a target of 100% electrification of its tracks by 2022. This will not only help reduce its carbon footprint but also enable financial savings through reduction in fuel cost.



Indian Railways has already provided 100 per cent LED lighting at all the railway stations, and solar panels in many stations. To improve the green coverage, Indian Railways is also planting one crore saplings every year and around 15,000 square kms of land has been provided with green coverage.

Some of the other steps taken by Indian Railways in promoting energy sustainability initiatives include adopting energy efficiency practices, enabling fuel efficiency, setting up solar energy installations and switching to bio-diesel.

**Bio-toilets:** Bio-digester toilets, which break down solid waste into carbon dioxide, methane and water, are being considered, with December 2018 being a deadline, as against 2019. The Railways plan to install bio-toilets will help in the long run, as the waste coming out of trains, corrodes tracks and sleepers, necessitating more than regular maintenance work. The waste is also a terrible inconvenience for people living around railway lines and can enter and contaminate groundwater.



### 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.

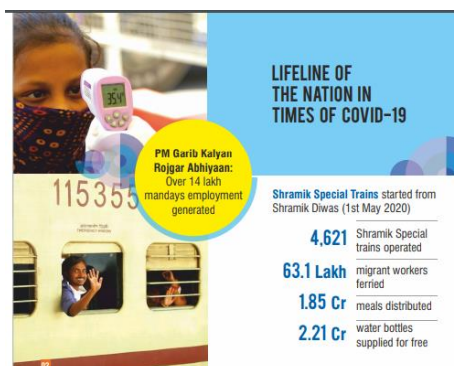




## **Lifeline in times of covid-19: Indian Railways**

## Role of Indian Railway in Covid-19

Indian Railways plays a vital role in the economy and the lives of people in India. While the overall intermodal share of rail in freight traffic is around 35 per cent, it continues to account for a major share in transportation of bulk commodities – such as coal, iron ore, cement and food grains – which are drivers of the economy. The year 2020 showed India a glimpse of how life would be without trains. As the coronavirus lockdown was announced on March 24, the Railways for the first time in its 167-year-old history shut down all its services.



It was on May 1 that the wheels of trains started chugging again. This time, to ferry migrant workers home. Between May 1 and August 30, the Railways ferried 63.15 such workers home across 23 states in over 4,000 Shramik Special trains, not only bringing huge relief to the stranded migrants, but also hope for the others that their lifeline was down, but not out.

It was, however, the **Shramik Special** trains which saw the Railways being criticised by the Opposition parties over the fares being charged from the

migrant workers. While the Railways said that it did not charge a penny from the workers and spent more than Rs 2,000 crore on their transportation, the politics over the issue continued.

## Special Trains for Migrants

Currently, the Railways is operating 1,089 special train services, while Kolkata Metro was running 60 per cent of its services, Mumbai suburban was running on 88 per cent and 50 per cent of Chennai suburban services were in operation. While passenger movement dipped resulting in an estimated loss of 87 per cent as compared to last year, the Railways' made drastic changes in their freight movement, introducing parcel services, carrying essentials like milk, medicines and even ventilators.

The Railways also launched eight Kissan Rail Services to enable farmers to send their produce across the nation with enhanced speed and reduced cost.



### Converted Coaches into Covid Ward

Indian Railways has converted its coaches into COVID-19 care Coaches. At present, according to the Railway Ministry, as many as 4,002 converted coaches are available with Indian Railways in its 16 zones and these Covid care coaches can be made available for the state governments on request. In a bid to address the problem of bed crunch in hospitals amid the rising COVID-19 cases, Indian Railways have started to deploy isolation coaches at various places for the treatment of covid-19 patients. The isolation coaches, which were deployed last year in only some states as COVID care centres, are now being put to use again. These modified coaches for coronavirus patients have been divided into eight bays or 'cabins' with each having 16 beds. Every coach has three toilets -- one western and two Indian style -- and a bathroom with hand showers, buckets, mugs and bathroom stools.

### Oxygen Express

Given the rapid increase in Covid-19 cases, Railways operated 'Oxygen Express' trains to transport liquid medical oxygen (LMO) and oxygen cylinders for patients across India, using green corridors for expeditious delivery. Oxygen is critical in the treatment of certain medical conditions in Covid infection and the national transporter has made a movement plan for dispatch of 10 empty tankers on April 19.



### **Challenges faced by Railways in Covid-19 times**

The main challenge in transporting Medical Oxygen Tankers is to find the shortest suitable railway route from origin to destination. The physical dimension of the tanker loaded on the railway wagon (Over Dimensional Consignment (ODC) in railway's technical language can safely pass through various fixed railway installations without any infringement. There are several other constraints like the presence of low height fixed structures like Road over Bridges (ROB), low height overhead equipment wires, restrictions on bridges, curves, and running through platforms were examined expeditiously and a suitable route was identified from Mumbai to Visakhapatnam.

#### **But it was a success.....**

Efforts were made to ensure intensive monitoring and route mapping has ensured that the train could cover this distance in a short time. The top management of Railways i.e., the Railway Board, Zonal/Divisional level management has spent a lot of time to make this happen in the shortest time to bail out Mumbai city out of the oxygen crisis. This all was done despite Covid pandemic and shortage of working staff and resources and running all coaching and freight trains. This movement was successfully planned as a green initiative project (green corridor). This also required coordination with states, industry and other stakeholders viz Ministry of Road Transport & Highways & DPIIT etc.

This quick and effective action is contrary to the rigid image Railways has been bearing for decades. They have shown proactiveness and flexibility in their approach to making this endeavour a success.







## **Modernisation Plan 2025**

## Modernisation of Railways

### Reform, Perform and Transform

The unmet demand level necessitates substantial investments in capacity augmentation and technology. The time has come to modernise the Indian Railways, make it world-class, and a key driver of the country's growth in the post-Covid era. The overall travel experience of the common man needs to be transformed; high-quality in-transit experience needs to be supplemented by best-in-class railway stations.



NEW DELHI STATION

### Need for Modernisation

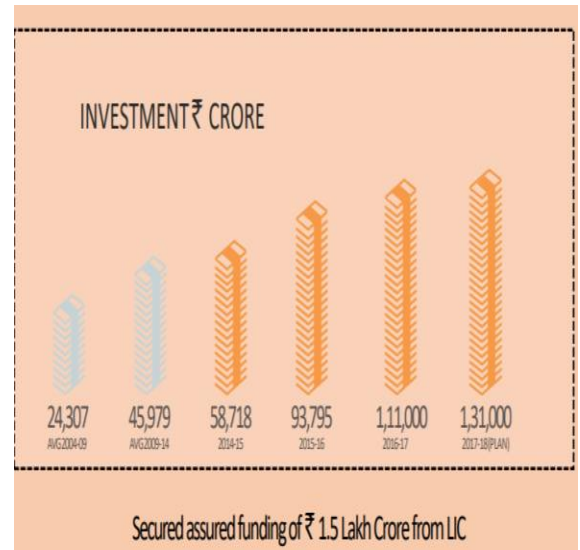
1. **Overstretched Infrastructure:** With more than 60% of routes being more than 100% utilized. In the last 64 years while the freight loading has grown by 1344% and passenger kms by 1642%, the Route kms have grown by only 23%.
2. **Lack of Customer Focus:** Inability to meet the demands of its both freight and passenger customers Apart from the quantum of investment, quality of delivery an issue Cleanliness, punctuality of services, safety, quality of terminals, capacity of trains, quality of food, security of passengers and ease of booking tickets among major customer focus issues.
3. **Low internal generation of resources:** Passenger trains utilise two-thirds of capacity and generate only one-third of revenues High freight tariff leading to getting out-priced in market Inadequate carrying capacity leading to decreasing modal share in freight and huge unmet passenger demand Negligible diversification in commodities being catered for Negligible proportion of 'Non-fare' revenues.
4. **Organisation rigidity:** Slow decision making, inadequate market orientation and silo working Long project approval duration- average 24 months.

#### Transformative Agenda for Infrastructure:

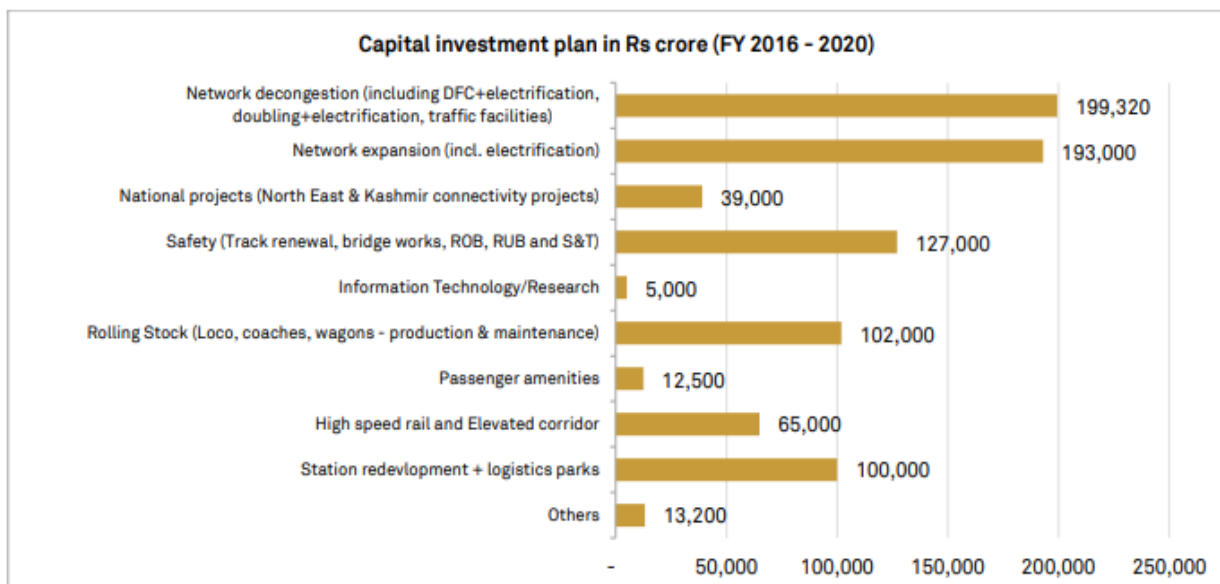
1. Decongested network due to DFC commissioning and additional 16000 kms of double lines: Speed of Infrastructure creation (Doubling) has already increased from 4Km/ day in 2014 to the current 7 Km/ day. Target to increase to 9.5 Km/ day in 2017-18 to 19Km/ day by 2022.
2. **90% of routes Electrified:** 16,000 Km to be electrified in the next 3 years Leveraging other PSUs e.g., PGCIL for implementation.
3. **100+ REDEVELOPED MODERN STATIONS:** 25+ stations under various stages of bidding Construction already started at 2 stations Leveraging PSUs like NBCC, MRVC for development of stations.
4. **20% REVENUES FROM NON FARE SOURCES:** Dedicated directorate set up in Railway Board Station development program launched Major policy changes initiated to enable partnerships with Advertisement industry leaders Land monetisation is being expanded.
5. **ZERO DISCHARGE OF HUMAN WASTE:** Over 70,000 bio toilets already fitted, 2 corridors already declared as discharge free All new coaches to be fitted with bio toilets Bio toilets in every coach by 2019.
6. Speed of freight trains @50kmph & Mail/Express trains @ 80 kmph. Semi high speed trains along golden quadrilateral.
7. **37% MODAL SHARE IN FREIGHT:** Growth in tonnage from 1.1bn tonnes to 2.4 bn tonnes by 2025 requires IR to grow at 8.5% CAGR Incremental tonnage required after adjusting for BAU: Cement – 200mn tonnes Steel – 50mn tonnes Share gain from Road in new markets – 230mn tonnes Other commodities – 250mn tonnes New delivery models to be explored to capture incremental traffic e.g., Dwarf containers have already been rolled out.
8. **PUNCTUALITY@ 95%:** Decongestion of network and DFC commissioning to release capacity which would lead to operational streamlining and hence higher punctuality and Predictive maintenance regime being incorporated to further enhance asset reliability.
9. **FULLY FUNCTIONAL RAILWAY UNIVERSITY:** Consultants already working on DPR for formation of university Application for deemed university status due in September.

### Reform Agenda for Investment

- JVs with State Governments:** Railway & State Governments to be shareholders Revenue streams from tariff and commercial exploitation of space rights.
- RIDF (Railways of India Development Fund):** Fund proposed to finance Rail Infrastructure; independent of Railway Budget Will tap international pension, insurance and sovereign wealth funds and provide for entire Rail sector in India, not just Ministry of Railways.
- OFF-BUDGET DEBT IR** to tie up long- term fund for projects IR PSUs to leverage free reserves/ equity for raising debt.



### Accelerated Investments







### **Railway's PPP Model to Invest "Make in India"**

The Model of Public-Private Partnerships has come into existence by the introduction of Private Finance initiative projects initiated by the Government of Britain. Later the concept has been taken up by many Governments in the name of PPP. PPP generally brings inefficiencies in infrastructure projects construction & maintenance and brings in additional resources through private funding (often international investments). Further, PPPs minimize the risks for the Government Agencies. Often brings in technological innovations as well, thereby greater efficiencies. However, we need to be careful that public monopolies should not be replaced with private monopolies.

Indian Railways (IR) over the years has modified the PPP model. NonGovernment Railway Model is the only Model allowed until December 2012 for Rail-Port connectivity projects. R3i Policy of 2011 did not enable last-mile rail connectivity on the NGR model to other than seaports. As part of the 2012 PPP policy, the following five models have been allowed.

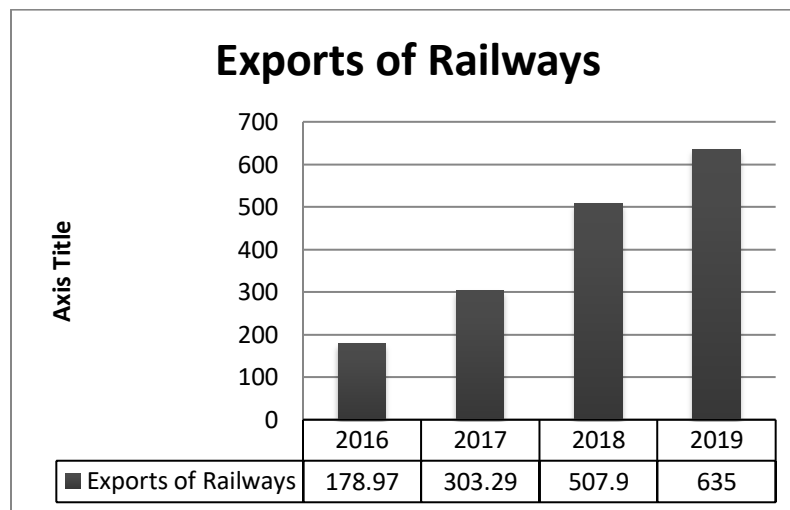
1. Non-Govt. Lines Model on revenue sharing
2. Joint Ventures Model on revenue sharing
3. Built Own Operate and Transfer Model on revenue sharing
4. Annuity Model of fixed fee recovery basis
5. Customer Funded Model on discount on freight moved on the line
6. Foreign Direct Investment (FDI) into Asset Creation

### **Initiatives under Make in India**

- Setting up of a modern signaling 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.
- High Speed Rail project will be a major 'Make in India' initiative where Indian companies and contractors are encouraged to take part in open and transparent competitive bidding process for various work planned to be carried out for this project.

### Exports in Indian Railways

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. In January 2021, Hyundai Motor India Ltd. (HMIL) has announced that it has exported 125 cars to Nepal via the Indian Railways. The export is claimed to be eco-friendly and the first-ever by the company. With this step, the company is aiming to reduce carbon footprint by 20,260 tonnes.



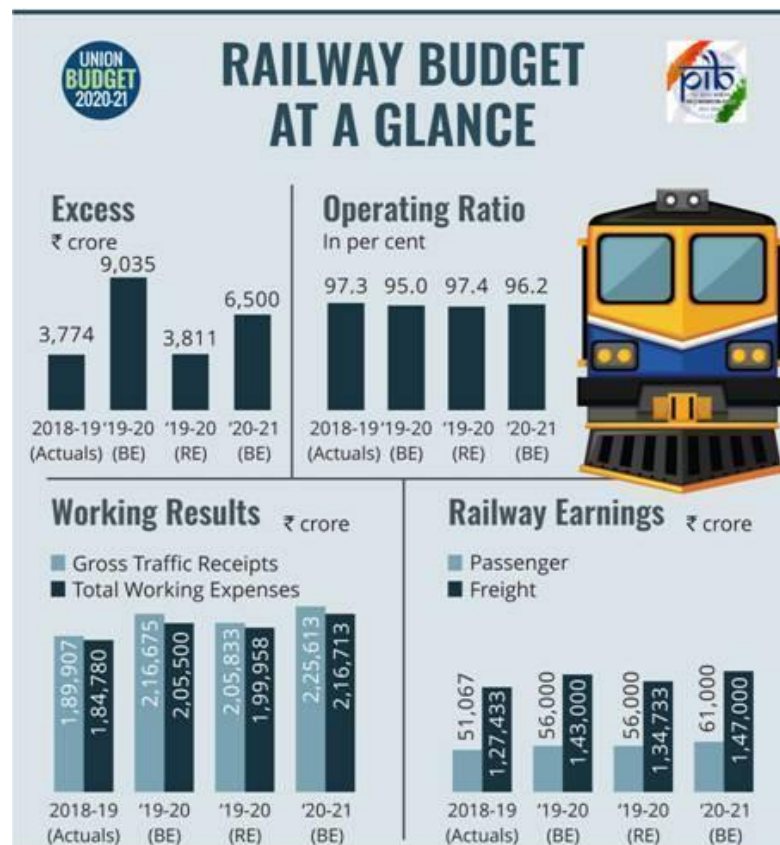
### CONSTRAINTS AFFECTING RAILWAY EXPORTS

The following factors are affecting exports of Railway equipment and services

1. Non availability of off the shelf designs for the target market.
2. Surplus manufacturing capacity not identified.
3. Excessive time taken in responding to market requirements.

4. Market forecasts not shared with all stakeholders.
5. Businesses process not amenable to quick decision making, in time response to market needs giving advantage to competitors like China.
6. Lack of platform for exchange of information, intelligence, capabilities between stakeholders like Exim Bank, Railways, PU's, PSU's, RITES, Private industry and RDSO.
7. Quality issues with products.
8. Lack off differentiated vendor list.
9. Value engineering based on customer inputs is not practiced.
10. IT strength not being leveraged as CRIS is not a commercial organization.

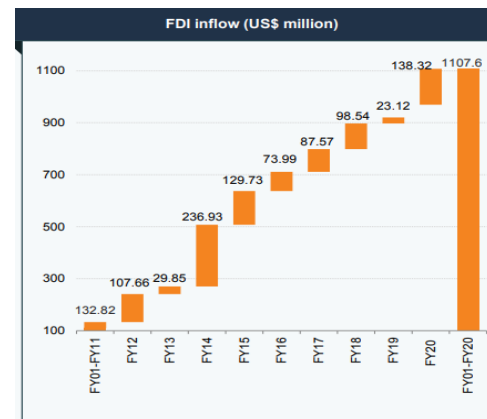
Railways in India have been a tool for development, equity and integration of all parts of the mainstream. Railway Help in transporting goods and raw materials from different industries. Therefore all industries would benefit from it. Advancement in technology and making India a Railway hub will also help in travelling amenities to passengers and further also develop the services as well as tourism.



## Investment Scenario in Indian Railways

### FDI Inflow

- From April 2000 to September 2020, FDI inflow 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).



### Wagon Investment Scheme

- 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.

### Participative models attracting capital

- 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.





## **Future Outlook of Railways**

### **Future Ahead: Privatisation of Railways**

With the objective of improving user experience, the MOR had been discussing the initiative of permitting private entities to undertake passenger train operations on selected routes. The MOR has taken the first step in this regard by issuing request for qualification (RFQ) on 1 July 2020. Till now, the Indian Railway Catering and Tourism Corporation Limited (a Government of India owned listed entity) was the only private entity permitted to operate passenger trains on select routes.

#### **Private players to alter the landscape of the Indian Railway network**

The award of concession will be for a period of thirty-five years on the basis of a two-stage competitive bidding process comprising of the RFQ and the RFP. The RFQ process is aimed at pre-qualification and shortlisting of bidders based on their financial capacity, who will be required to offer share in the gross revenue at the RFP stage.

The MOR will be providing non-discriminatory access to private train operators to the Indian Railway track and signaling network. The operation of passenger trains by private parties is likely to alter the landscape of the Indian Railway network. Effectively, the overarching control of the Ministry of Railways on rolling stock, railway tracks and manpower engaged in services will diminish.

While the existing trains would continue to operate, the running time of the trains being operated by private parties would be comparable to the fastest train of the Indian Railway operating between such stations on that route. There are several speculations around the fact that operation of trains by Indian Railways and private parties on the same routes may lead to malpractices and increased corruption.

**Profitable enterprise, newer revenue models:** The government has clearly indicated its intention to reduce the budgetary support to the Indian Railways to run its operations. With the government balance sheets stretched even further due to the pandemic, the railways will increasingly have to focus on profitability without giving up its social responsibilities. The Indian Railways has a clear road map here where it wants to focus on the profitable freight operations, while the passenger operations will be outsourced to private players. In order to do that, the railway has been focusing on building the dedicated freight corridor (DFC) where it can introduce more freight services.

**Modernization, the five-year window:** While the primary goal of the Indian Railways is to cater to the masses of the country, the railway will also have to play a role in a world where urbanization is increasing at a rapid pace. For India to be competent at a global level, the Indian Railways will have to invest in modern transport infrastructures like the various suburban Metro

being built in cities such as Delhi, Mumbai, etc, or building bullet trains along the Mumbai-Ahmedabad corridor. These projects will have to be built increasingly with an eye on global competitiveness, some futuristic transport modes like hyperloops, etc., that may become relatively popular in the next 5 years.

**Social enterprise, increasing reliance on AI:** The pandemic has sharply brought into focus the need for ‘safe’ travel especially to prevent further outbreaks of the pandemic. As a reaction to this, the railways have banned travel by waitlist tickets which had been the backbone for many stranded passengers. However, this may not be enough as still a good proportion of railway passengers travel by RAC (half seats) that may not be very conducive to social distancing. Going ahead into 2021, the Indian Railways will also play a critical role in the distribution of vaccines in a country of 125 crore people as there is no mass transportation system in the country that matches the penetration of the Indian Railways.