

Case Study

Indian Railways

1 Railway Sector Structure

1.1 *Railway Industry Organization*

The Ministry of Railways (MOR) oversees the Indian railway sector through the Indian Railway Board, MOR (IRB). The MOR (IRB) exercises all central government policy powers and administers, supervises, and directs the entities that provide most of the rail services in India. The MOR (IRB) also fulfils most industry regulatory roles, except for safety oversight and railway rate appeals.

Indian Railways (IR) is the generic term used to refer to the network of railway infrastructure and services that are delivered by 16 geographically-based Zonal Railway Authorities (ZRs). Each ZR has separate responsibilities and operates its own livery. However, the MOR (IRB) is fully responsible for establishing, merging, or abolishing these ZRs and for ZR governance. The MOR (IRB) appoints ZR general managers, oversees their compliance with MOR (IRB) policies, determines staffing and remuneration policies, allocates rolling stock, fixes tariffs, approves ZR operating and capital budgets, approves certain capital expenditures above specified limits, and reallocates cash deficits or surpluses of each ZR to maintain financial balance.

Production units directly under the MOR (IRB) manufacture rolling stock. This is supplied to the ZRs, which are responsible for maintenance. The ZRs operate all trains within their territorial jurisdiction, including inter-Zonal trains under a system for apportioning revenue, usually collected at the originating station.

India's railways are now governed by the 1989 Railways Act (as amended), which replaced the old Indian Railways Act of 1890, under which Government was envisaged primarily as coordinator and regulator. The railway was nationalized in 1951, and virtually the entire rail system became part of the Government of India. The 1989 Railways Act authorized government and non-government railways. Now, a few separate special-purpose railways exist as joint ventures between the MOR and other entities such as the Kutch Railway Company Ltd. and the Konkan Railway Corporation Ltd. However, the ZRs still carry over 99 percent of railway traffic. The statistics throughout this case study relate to IR's own network and operations.

During the 1990s, perceived failures in operational performance and a deteriorating financial situation prompted Government to appoint an independent expert group to examine IR's situation and make recommendations. The 2001 so-called Mohan Report, named for the expert group's chairman, criticized railway sector governance, corporate governance, and the IR business model.

Subsequent actions by the MOR (IRB) improved business substantially (see Section 2), but many of the criticisms identified in the Mohan Report are yet to be fully addressed. Subsequently, similar reports have been commissioned to study IR. The 2012 Report of the Expert Group for Modernization of Indian Railways presented strategies for improvement under the fundamental themes of safety and growth. More recently, the 2015 so-called Debroy Committee report, again named after the expert group's chairman, was commissioned by the current MOR. The report identifies mechanisms to better mobilize resources for railway projects through new methods of financing and improvements to current resource utilization. It offers further suggestions on how to restructure the MOR and IRB.

1.2 Rail Sector Strategy

In December 2009, the MOR (IRB) published Indian Railways, Vision 2020, a sector strategy that embraces rapid growth and abandons the earlier idea of incremental change. The objective, which remains relevant today, was to reverse the erosion of rail freight modal share, improve the quality of passenger services, and embark on the construction of dedicated freight corridors (DFCs) and high-speed passenger routes.

IR has recently been the subject of a number of high-level strategic reviews. Each of these reviews looks in depth at various aspects and areas for improvement within IR, but as the following box demonstrates, the same overarching recommendations are echoed in each report.

Box 1 Strategic Reviews of IR

Report of the Expert Group for Modernization of Indian Railways, 2012

Under the themes of safety and growth, the Expert Group gives recommendations for IR under a five-pronged strategy:

- Modernize core assets such as tracks and bridges, signaling, rolling stock, and stations and terminals
- Explore new revenue models including public-private partnerships (PPPs), land utilization, DFCs, and high-speed passenger services
- Review project implementation process for financial viability, social benefits, and timeliness
- Focus on key enablers, namely information and communications technology (ICT), indigenous development and safety
- Mobilize resources, including new strategies for funding, strengthened human resources (HR) and business-oriented organizational structures

National Transport Development Policy Committee (NTDPC): Moving India to 2032, published in 2013

In order to address what is seen as a lack of a comprehensive growth strategy, NTDPC suggested, among others, necessary shifts for IR:

- Develop passenger, and freight and parcel business plans to fully satisfy passenger demand in the market, target 50 percent freight market share by 2032, and shift long-distance parcel transport to rail

- Focus investment strategy on program objectives to increase speeds with high speed passenger projects and meet the 50 percent freight market share target through the development of priority DFCs
- Target better project execution, including the assurance of adequate funding for projects, more accountability on the management of project completion deadlines, and the creation of a partially independent authority to oversee construction projects
- Revamp research and development to focus on ICT upgrades and implementation
- Rationalize HR to align with the proposed reform goals

Debroy Commission Report, 2015

The Commission developed recommendations around the need for three major reforms within IR:

- Embrace commercial accounting practices
- Forego the ‘departmentalized’ structure of IR in favor of business-oriented HR strategies
- Establish an independent regulator to promote competition and protect stakeholders

The general consensus of the reviews and initiatives to improve IR favors enhancing the ‘effectiveness and accountability’ of IR through ‘necessary reforms at all levels’, particularly internal corporatization and commercialization of activities, but rejects the option of railway privatization. PPP structures are slated for a larger role in the industry—in station development, rolling stock manufacturing, logistics hubs, fiber-optic networks using railway right-of-way, and major new infrastructure projects such as high-speed rail lines and DFCs.

More recently, while presenting the 2015-2016 Railway Budget, the Minister of Railways, Suresh Prabhakar Prabhu, outlined a multifaceted ‘Transformation Strategy’ for India’s railways. The key elements of the strategy can be seen as a bottom-up strategy targeting four main focus areas (see Figure 1 below), setting forth similar objectives to those outlined above:

- Marketing and customers
- Business management
- Network investment
- Structural change

Figure 1 Summary of Indian Railways Transformation Strategy

Focus Area	Themes	Initiatives
Markets and Customers	Passenger Markets	<ul style="list-style-type: none"> Increase train speeds on semi-high speed corridors Improve comfort and amenity on trains and stations Increase passenger security and facilities for vulnerable groups Implement new 'customer care' and feedback measures
	Freight Markets	<ul style="list-style-type: none"> Increase rail freight haulage capacity through DFC lines Use transit capacity of DFC lines to improve freight service Target new, higher-value freight and logistics markets Appoint specific 'key customer' managers for major rail users Begin market-based tariff differentiation and explore contract concept
	Railway Safety	<ul style="list-style-type: none"> Install Train Collision Avoidance System on all high density corridors Phase-out all un-staffed level crossings
Business Management	Revenue Enhancement	<ul style="list-style-type: none"> Exploit IR real estate holdings through lease or development Cause IR manufacturing and service enterprises to seek non-rail customers Create utilization plan for core-network capacity freed by DFC lines
	Cost Management	<ul style="list-style-type: none"> Modernize procurement and consumption of goods, works and services Target energy cost savings through demand and supply measures Adopt modern financial and management accounting methods
System Investment	Investment Programs	<ul style="list-style-type: none"> Scale-up investment in the railway network Accelerate electrification and broad-gauge connectivity Accelerate construction of ongoing DFC lines and start planning for new DFC lines Create partnerships with States to develop suburban rail services Progress the first High Speed Line and investigate others
	Program Delivery	<ul style="list-style-type: none"> Decentralize and speed-up the project approvals process Adopt EPC and other fixed price forms of construction contract Change performance measure from construction to commissioning
	Financing	<ul style="list-style-type: none"> Identify and deploy new long-term sources of investment capital Encourage much greater private sector participation in qualifying projects Create JV companies with States to finance/develop qualifying projects
Institutions and Governance	Public Policy and Regulation	<ul style="list-style-type: none"> Create independent Rail Development Authority (RDA) to regulate railways Create a Rail Planning and Investment Organization (RPIO) to direct investment and long-term sector plans
	IR Organization and Management	<ul style="list-style-type: none"> Consolidate IRB financial divisions into more business-oriented lines Implement change through mission teams rather than IRB branch structures Empower Zonal Managers to increase responsibility/accountability Create new R&D organization and streamline RDSO technical approvals
	Manufacturing Enterprises	<ul style="list-style-type: none"> Explore transfer from IRB to a new Holding Company Private participation in locomotive manufacture

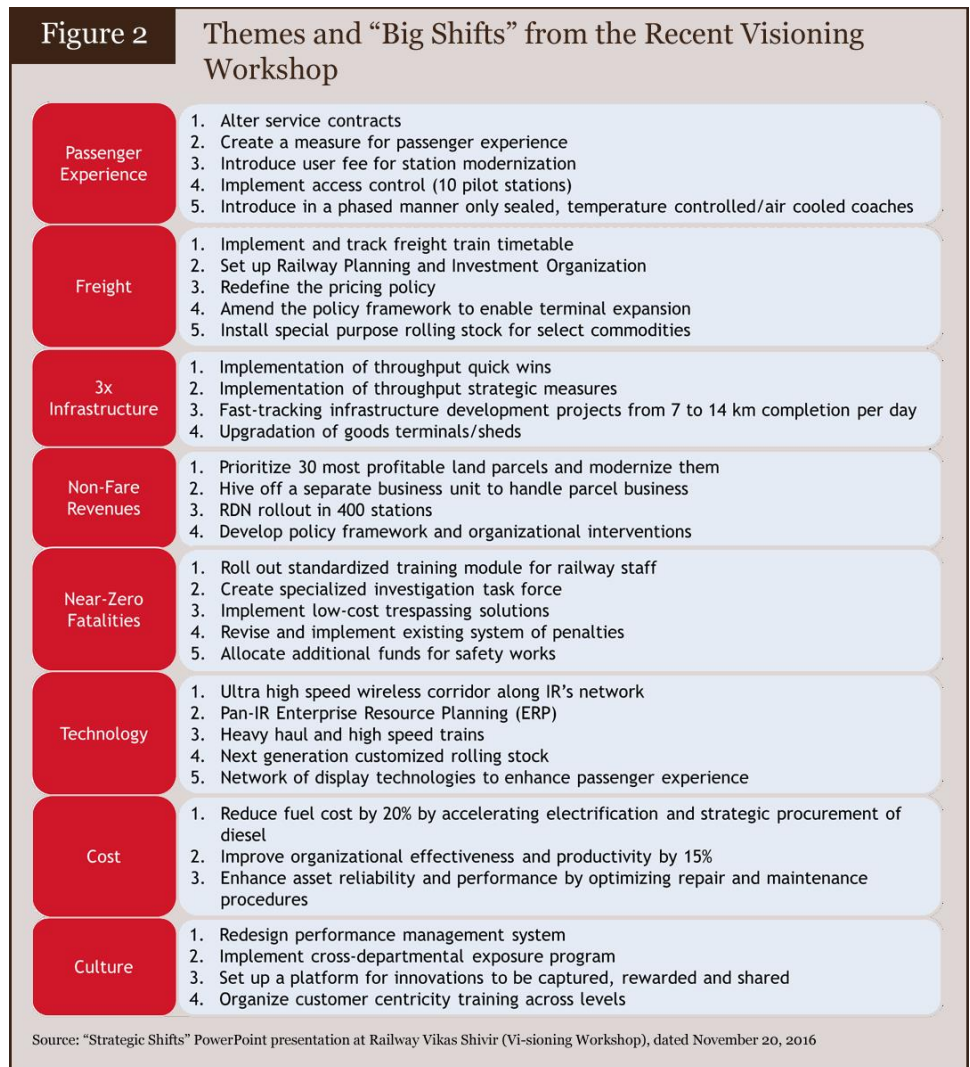
Significant progress has been made in India’s rail sector although many of the initiatives outlined in the strategy have yet to be implemented and are still in the conceptual or planning stages.

In late 2016, the MOR (IRB) held a Railway *Vikas Shivir* (Visioning Workshop) with approximately 600 MOR and IR managers to discuss the strategic vision of IR. The presentations and discussions centered on six identified challenges:

- Repositioning the railways to be a driver for growth in the economy
- Finding financial sustainability
- Regaining market share in freight
- Offering client-oriented services
- Expanding network capacity to meet future demand

- Modernizing the railway to ensure safety

The workshop detailed necessary actions under eight concrete themes made up of a series of ‘big shifts’ (Figure 2). A Dedicated Transformation Office has been established within IRB to drive implementation of the program and Mission Heads have been appointed to manage the strategic shifts under each theme. Over 800 strategies in line with the themes are set to be implemented at the zonal level.

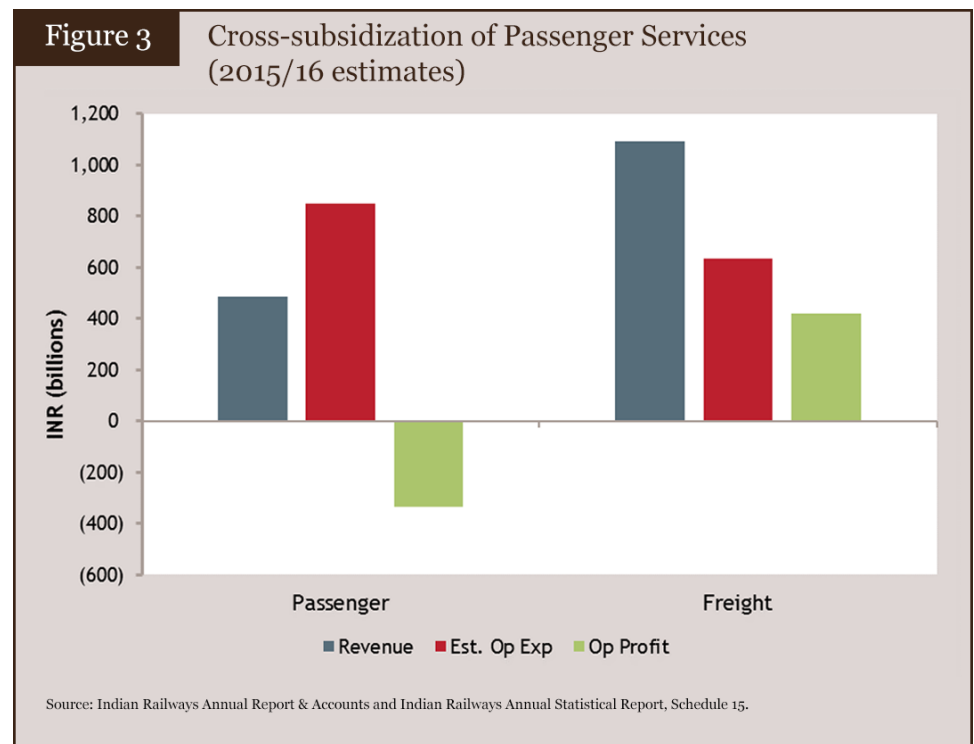


1.3 Purchase of Transport Services

No policy or system of explicit payments exists for loss-making passenger Public Service Obligations (PSOs) in IR, but substantial internal cross-subsidy takes place for train operations within the passenger sector, as it does between individual ZRs. Also, most of the aggregate burden of infrastructure costs falls on freight customers. Therefore, the MOR (IRB) has accepted internal cross-subsidy of passenger services and an implicit tax on freight, rather than direct subsidy, to fund passenger service obligations.

Historically, railway revenues covered railway operating costs and contributed about a third of capital investment. However, as of late, IR is facing difficulties balancing the budget. Passenger losses are placing an increasingly high burden on

freight (Figure 3). Freight services in turn must compensate with high tariffs, reducing its competitiveness.



1.4 Industry Regulation

The MOR (IRB) is responsible for most aspects of railway economic regulation, but the Research Design and Standards Organization (RDSO), which has legal status equal to ZRs, supplies technical advice to the MOR (IRB), and the operating ZRs and their production units, on railway infrastructure and equipment design, technology, materials, product standards, testing, and so forth.

The office of the Chief Commissioner of Railway Safety (CCRS) is responsible for all safety-related aspects of IR operations and is assisted by Commissioners of Railway Safety (CRSs). To maintain independence from IR, the CCRS is under the Ministry of Civil Aviation, not the MOR. The CRS certifies permanent way and rolling stock, conducts routine inspections of IR facilities and equipment, and investigates serious railway accidents.

Government is legally responsible for passenger and freight tariffs, which are set by the MOR (IRB). The 1989 Railway Law is silent on pricing principles or objectives, and frequently tariff structures and levels are subject to wider political influences. However, an independent Railway Rates Tribunal, comprising a senior judge and two members, can examine complaints regarding freight tariffs, ancillary charges, or preferential treatment given to specific customers or commodities.

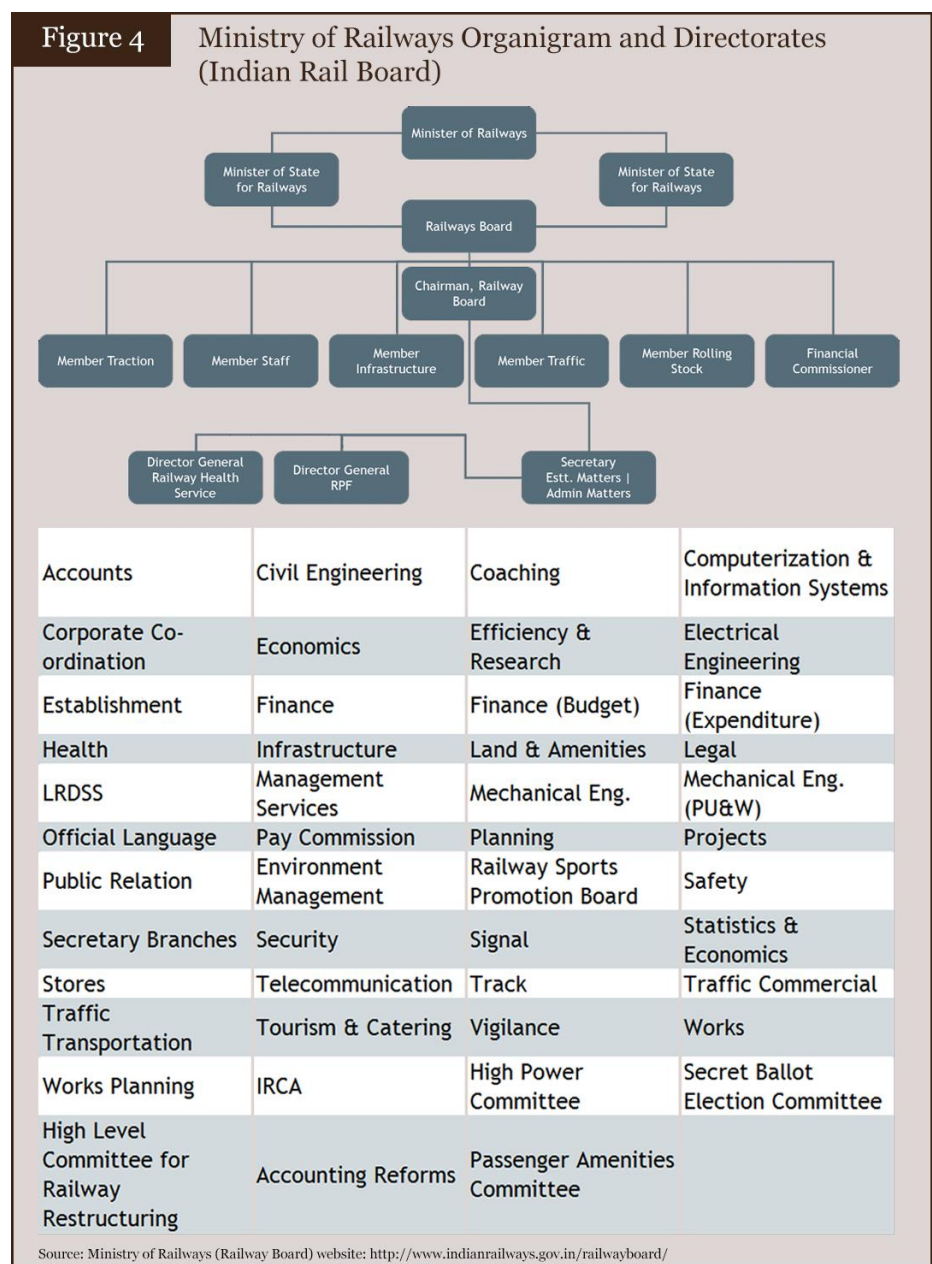
The recent Transformation Strategy does not propose to remodel the structure of the MOR (IRB) and the ZRs, but instead recommends the creation of new regulatory body, the Rail Development Authority (RDA) and to strengthen IR’s planning processes and coordination of investment through creation of the Rail Planning

and Investment Organisation (RPIO) and the Special Unit for Transportation Research & Analysis (SUTRA).

The RDA, approved by the Government on April 5, 2017, may be the most fundamentally transformational aspect of the new plan. The RDA will be an independent body, funded through the annual railway budget.²³⁰ The RDA’s responsibilities will include: tariff setting, with the goal to reduce cross-subsidies of freight to passenger services; ensuring a competitive and fair environment for private investment; establishing and monitoring performance standards; and collecting and disseminating data and statistics pertaining to the rail sector.

1.5 Ministerial Apparatus

The MOR (IRB) organigram and IRB Directorates are presented in Figure 4.



²³⁰ RDA will be made functional by executive order.

2 Indian Railways

2.1 Governance and Organization of Railways

The MOR (IRB) has formal responsibility for governance of the 16 ZRs, which therefore have no separate or independent Boards of Directors, but are subject to independent oversight from the CCRS on safety matters. Employees of IR are public servants or are deemed public servants.

The 16 ZRs have general managers reporting to the MOR, and typically, each ZR headquarters has around 15 function-based departments—accounts, administration, commercial, conversion, electrical, engineering,²³¹ IT, mechanical, medical, operating, personnel, press, signaling and telecommunications, safety, security, stores, and vigilance. Department Heads report directly to General Managers and have a functional reporting line to the appropriate functional MOR (IRB) Board Members.

The 16 ZRs are sub-divided into 67 divisions, each with divisional headquarters. The divisions can include workshop and construction divisions, but most are operating divisions that comprise the primary production units of IR; each has its own functional management structure mirroring the organization of ZR headquarters. Accounts maintained by each division (operating division or workshop) are consolidated at the ZR level, and further consolidated at the MOR (IRB), including accounts of production units and other activity units directly under the MOR (IRB).

Since the 1989 Railway Law was introduced, the traditional organization and governance of IR has remained unchanged. Nevertheless, the MOR (IRB) policies have established corporatized entities to manage selected railway business segments outside the full bureaucratic and public service framework of ZRs. These entities include the following organizations, among others:

- IRCON International Ltd - a transport infrastructure construction company (formerly Indian Railway Construction Company)
- Container Corporation of India Ltd (CONCOR) - operates a network of about 60 container terminals, offering rail and road container services between the hinterland and ports, and between major metropolitan areas (but IR retains responsibility for providing locomotives, train crews and train dispatching)
- Indian Railways Finance Corporation (IRFC) - a dedicated financing arm of the MOR
- Rail Vikas Nigam Limited (RVNL) - created to develop projects, mobilize financial resources, and implement projects to strengthen so-called golden quadrilateral lines (the four main long-distance transport corridors in India) and connections to ports
- Rail Land Development Authority (RLDA) - statutory authority for generating revenue by developing vacant railway land for commercial use

²³¹ The engineering department is responsible for track and other civil works.

- Dedicated Freight Corridors Corporation of India Ltd (DFCCIL) - established to procure and operate selected new DFCs, now wholly owned by MOR (IRB)
- RITES - a domestic and international railway and transport consulting company

2.2 Network

IR’s network is just over 66,000 route-kms (Figure 5).²³² The network has been progressively duplicated and electrified. Since 1990, upwards of 25,000 route-kms have been standardized to the broad gauge (1,676 mm).

Figure 5 Indian Railways Network Characteristics 1990/91-2015/16

	1990/91	1995/96	2000/01	2005/06	2010/11	2015/16
Route-kms	62,367	62,915	63,028	63,332	64,460	66,687
Track-kms (running line)	78,607	80,441	81,865	84,370	87,114	92,081
Track-kms (total)	108,858	108,336	108,706	109,808	114,037	119,630
Route-kms with multiple track	14,331	15,156	16,010	16,896	19,223	21,237
Electrified route-kms	9,968	12,306	14,856	17,907	19,607	23,555
Broad gauge route-kms	34,880	40,620	44,776	48,574	55,188	60,510

Source: Indian Railways Statistical Data

IR is investing heavily in its infrastructure. Capital expenditure in 2015-2016 was estimated at 940 billion INR (14.7 billion USD²³³) with the commissioning of 2,500 km of new broad gauge rail during the year²³⁴. This investment is 95 percent higher than the cumulative investment made in the five previous years, and a further 1,210 billion INR (18.1 billion USD) is planned for 2016-2017, which will result in 2,800 km more of new broad gauge rail²³⁵. The plan also targets the electrification of more than 10,000 km of the network from 2015 to 2019. For the first time, the availability of funds are assured to help completion targets.

2.3 Railway Transport Markets

In terms of total traffic volume, IR is the world’s second largest passenger railway and fourth largest freight railway after the U.S.A., China, and Russia. India’s large and rapidly expanding population provided steady but relatively slow growth in railway passenger traffic during the last decades of the twentieth century as other modes gained market share. During the last decade, accelerated economic development increased purchasing power and, in combination with politically imposed low fares, boosted railway passenger traffic growth by nearly 100 percent.

India has a mix of passenger services. Over the last 30 years, as cities have expanded, suburban passenger journey length has increased from an average of

²³² In March 2015, IR had 66,030 route-km of which 58,825 were broad gauge (1,676mm), 4,907 km meter gauge (1000 mm) and 2,297 narrow gauge (762 and 610 mm). Broad gauge generated 99.9 percent of freight output (ntkm) and 98.7 percent of passenger output (pkm).

²³³ 1 USD = 64.1 INR (2015), Global Economic Monitor (GEM), World Bank

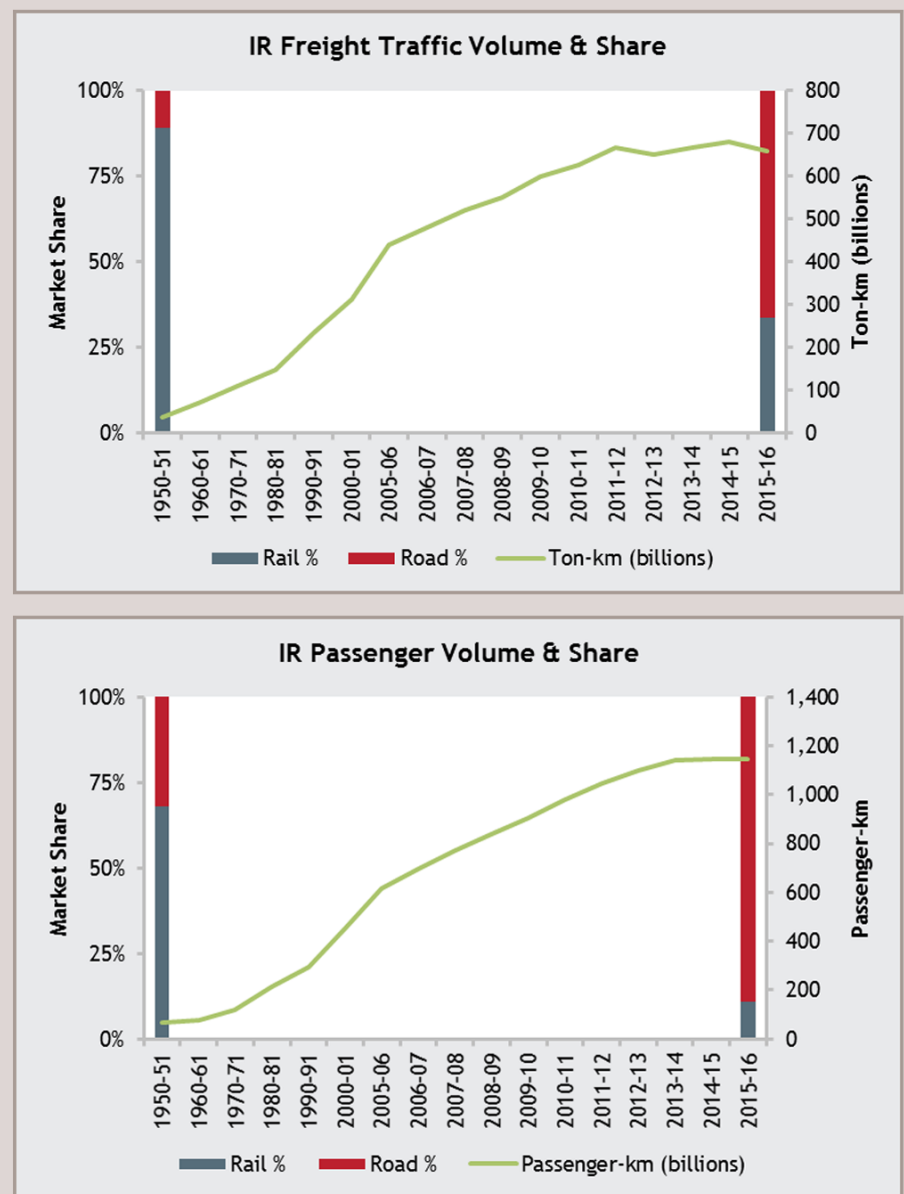
²³⁴ Between 2009 and 2014, 1,520 km of new broad gauge rail was commissioned.

²³⁵ Indian Railways Presentation, “Transformation Underway”

about 20 kms/trip to 34 kms/trip, and average journey lengths for inter-city services increased from about 87 kms/trip to 268 kms/trip. In terms of modal share, IR is estimated to carry about 15 percent of non-urban passenger traffic.

Historically, IR’s passenger transport services could be categorized as poor to mid-dling quality, suffering from long ticketing queues, slow travel times, and limited journey comfort and amenities. However, a series of investments in faster lines and customer-services initiatives have resulted in continual improvement and customer satisfaction.

Figure 6 Indian Railways Passenger and Freight Volumes and Shares 1950/51-2015/16



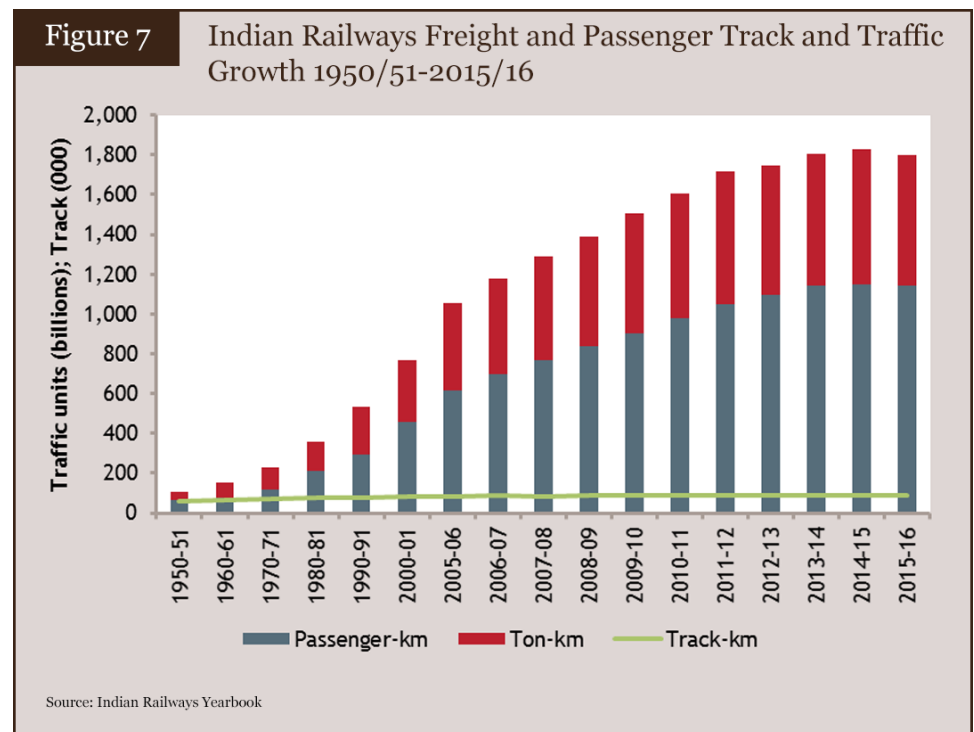
Source: Indian Railways Yearbook & NTDP, India Transport Report

At the present phase of development, India’s economy generates large volumes of freight types that are well-suited to railway transport and carried for relatively long distances. In 2015, coal comprised an estimated 45 percent of rail freight ton-km,

followed by grain, 10.1 percent, cement, 8.9 percent, and iron ore, 5.5 percent. Rapidly growing container traffic now constitutes 13 percent of traffic task. The average freight haulage length is 620 kms, and IR carries an estimated one-third of national inland freight task.

Despite what appears as significant absolute growth in passenger volumes and a freight market that is on the surface conducive of rail transport, IR’s market share since the 1950s has been severely eroded by a shift to road transport (Figure 6). While rail market shares of the 1950s are unlikely to be achieved, considerable potential exists to increase Indian Railways market share of freight.

One of the major challenges for the freight rail market has been insufficient capacity for freight trains. Nearly two-thirds of the IR network is allocated to passenger trains, and freight trains are dispatched with no timetable and with the lowest operational priority. In addition, the fact is that investment in expansion of the rail network has not kept up with the immense growth of the Indian economy. The issue of insufficient capacity, combined with IR being slow in improving its service offerings, led to stagnated growth in both passenger and freight traffic. (Figure 7).



A series of programs aim to address the above challenges, most notably improvements to passenger speeds and new DFCs. ‘Mission Raftaar’, a semi high-speed corridor program, targets an increase of average speed by 25 km/h along key passenger links over the next five years. The Delhi-Agra link (which pre-dates Raftaar) is already operational, known as the Gatiman Express. Additionally, a special purpose company, High Speed Rail Corporation of India Ltd. (HSRC), has been established with the Government of Japan to plan and implement a 350 km/h dedicated passenger line from Mumbai to Ahmedabad.

The MOR has also modernized on-board passenger comfort and amenities, including on-line ticket purchasing; free WiFi at major terminals; setting targets for

cleanliness standards along with independent monitoring of compliance; station beautification investment; and the installation of bio-toilets in trains, among others. One of the most recognized and lauded initiatives has been the implementation of real-time customer care and feedback. The MOR has introduced the use of social media platforms to allow customers to receive quick and publicly visible feedback from the Ministry. CCTV surveillance has also been installed in all major stations, and the MOR has introduced a national telephone helpline.

The commissioning of DFCs is intended to increase freight capacity along the targeted corridors by three-fold. The Western Corridor (Delhi-Mumbai) is 1,499 km long and is in the early stages of implementation; the Eastern Corridor is 1,839 km (Ludhiana to Kolkata) and is due to open in 2019. The lines will be built with a maximum speed of 100 km/h, will carry 6,000 or 12,000 gross tons at 25 axles load, and have the ability to migrate to 32.5 tons axle load in the future. Perhaps most importantly, the DFC will operate on timetables and will not need to cede priority to passenger trains. The strategy will also review the tariff policy, with the intention of creating a more competitive rate structure, including the principle of rate differentiation by route in order to drive up traffic on less utilized routes. Finally, it is anticipated that, by creating a faster, reliable, and more competitive offer, the DFC program will attract underrepresented market players onto the rail network.

2.4 Transport Operations

Trends in operational indices are summarized in Figure 8; most resource utilization indicators show significant improvement. Over the last two decades, passenger train speeds have increased by 27 percent, and passenger loadings per railcar by 88 percent. Freight train weight has increased by 61 percent, and output per freight locomotive has increased by about one-third.

Figure 8 Indian Railways Operating Indicators 1990/91-2015/16

	1990/91	2000/01	2005/06	2010/11	2015/16*
Percentage of traction task (freight)					
Steam	1	0	0	0	0
Diesel	58	40	39	36	35
Electric	41	60	61	64	65
Average commercial speed (km/h)					
Passenger, EMU broad gauge	34		41	44	
Freight, broad gauge	22	24	23	26	24
Average weight of freight train, broad gauge (gross tonnes)					
Passenger-kms/coach/year (000)	7,677	10,714	12,386	16,408	16,273
Ntkm/bogie wagon/year (000)	701	1,420	2,124	2,724	2,609
Average freight haul (kms)	709	644	657	674	620
Average wagon turnaround (days)	11.5	7.5	6.1	5.0	5.0
Traffic Density					
Passenger (million pkm/route-km)	4.7	7.3	9.7	15.2	17.1
Freight (million ntkm/route-km)	3.9	5.0	7.0	9.7	9.8
Labour productivity (000 traffic units/staff)	326	500	749	1,205	1,351

* In select instances, data is taken from the 2009-10 fiscal years when corresponding data was not available
Source: Indian Railways Statistics

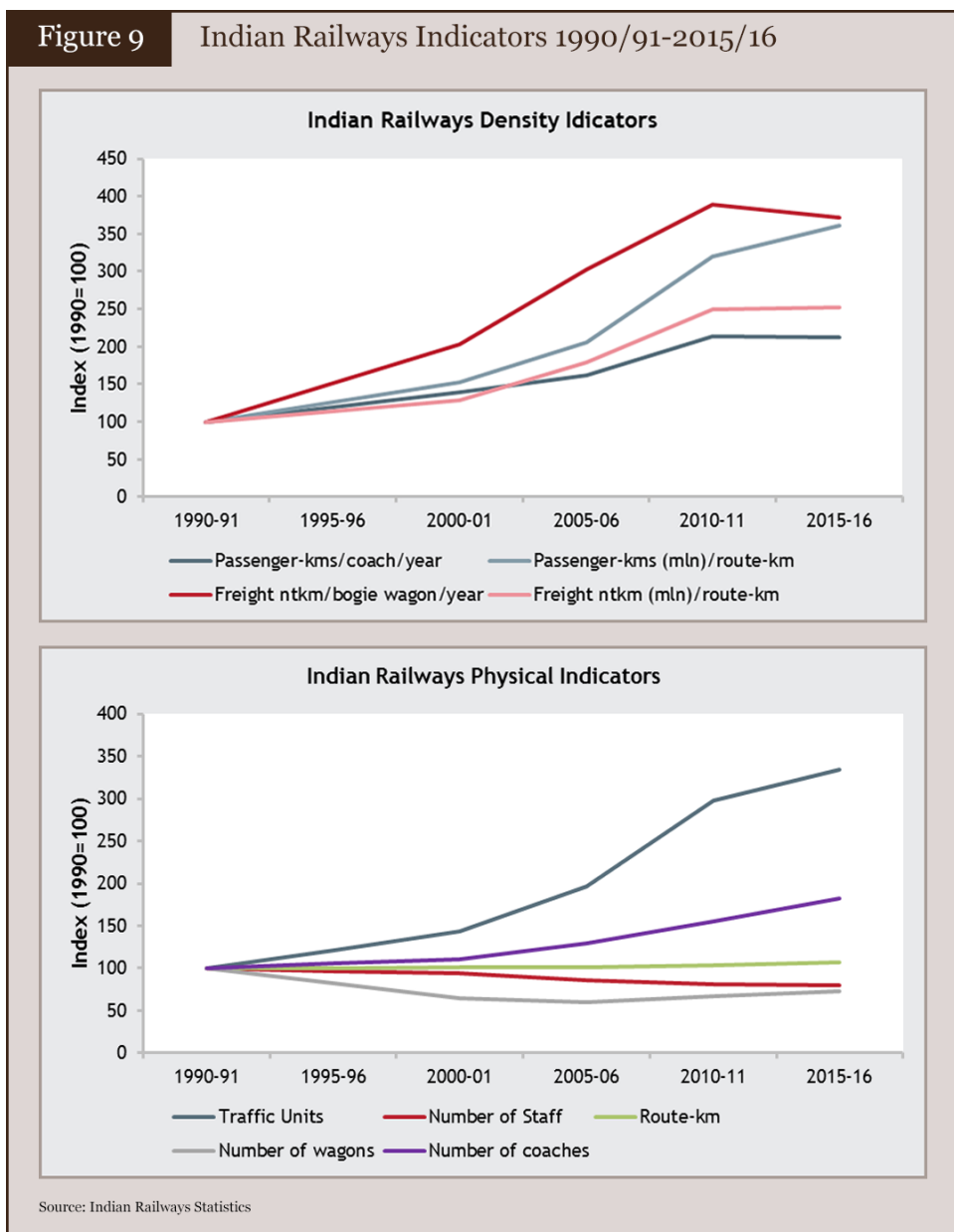
In 2001, the Mohan Report criticized IR's transport operations, citing an outdated business structure, inefficiency and low productivity, low-quality overpriced rail freight services, lack of customer focus in freight and passenger services, and a serious infrastructure maintenance and renewal backlog. At that time, the IR system was run down and floundering under huge arrears of renewals and replacements,

high asset failure rates, and a poor and deteriorating financial operating ratio. Although more recent reports highlight ongoing issues that IR continues to face, many improvements were indeed made. In less than a decade, IR eliminated maintenance deferrals, paid back Government for deferred dividends, replenished its depreciation reserves, and earned record surpluses.

In 2007, the World Bank commissioned independent research on this remarkable turnaround. The study found that some accounting changes had improved the operating ratio, but even allowing for that, IR had improved its real commercial performance and financial results substantially, based on the following:

- **Traffic growth.** IR enjoyed a period of increasing volumes; most incremental railway traffic can be carried at a marginal cost much lower than average cost, thus improving financial performance (Figures 7 and 9).
- **Tariff increases.** Gains due to higher volumes and lower average costs were magnified by real increases in freight rates during the early- to mid-2000s, implemented as part of a revised and simplified tariff system.
- **Labor productivity.** Beginning in 2001, labor productivity accelerated and, by mid-2000, had almost doubled, reflecting traffic growth and a policy of labor force downsizing.
- **Revenue density of freight trains.** IR increased the permissible axle-loading for major commodities such as coal and iron-ore and charged accordingly, thereby capturing revenue from some existing customers who were already (contrary to regulation) overloading, and attracting real extra volume and revenue from customers who had not previously loaded beyond nominal limits (Figure 9).
- **Revenue density of passenger trains.** Responding to a growing market, IR increased train length, seating capacity, and occupancy, and optimized train consists and coach layouts. Ancillary passenger income was increased and losses were reduced on catering and parcels services (Figure 9).
- **Wagon utilization.** IR significantly improved rolling stock utilization by increasing wagon velocity through infrastructure improvements and management. These improvements encouraged customers to consign full rakes of wagons, to avoid hoarding wagons, and to strive for quick turnaround—at the same time, IR rationalized train examination procedures, reduced in-service delays, and improved wagon tracking and management.
- **Public Infrastructure Investment.** After Government established a dedicated Railway Safety Fund to improve rail infrastructure, IR renewed and upgraded substantial portions of the main line with heavier rail, improved bridges, new signaling, and upgraded information systems. This laid the foundation for raising axle loading and line capacity, and improving equipment utilization.

Figure 9 Indian Railways Indicators 1990/91-2015/16

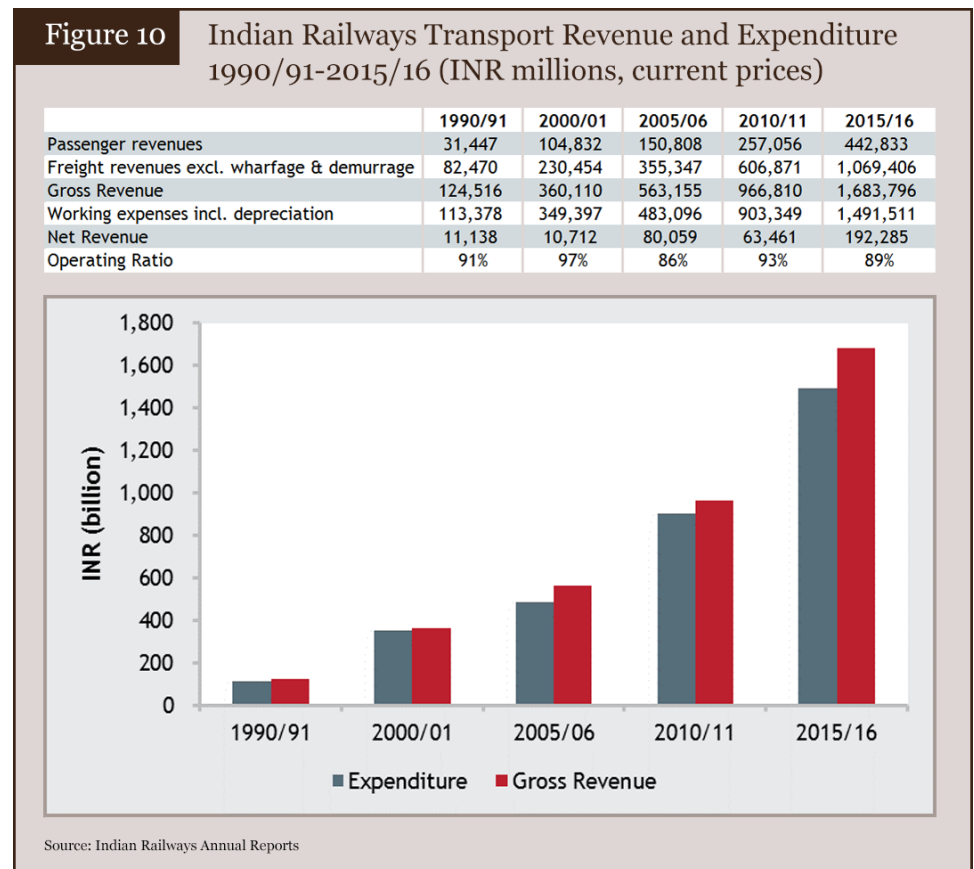


Many of the trends have continued to show positive results beyond the year of the initial research, and can therefore still be attributed to IRs overall success.

These improvements boosted financial performance substantially after 2004-05, but by 2008-09, most of the gain was distributed in substantial pay increases to staff, returning the ratio of expenditure to revenue to the 2004-05 level. Some improvements also contributed to better customer service, but IR still has a seller’s market—demand exceeds supply in both freight and passenger sectors, the former in part due to an as-yet underdeveloped highway network and the latter partly due to fares that have lagged inflation substantially under political intervention. Vision 2020 stressed the need for better service and customer care, and the Transformation Strategy of 2016 similarly identified the need to improve passenger and freight services to remain competitive; recent investment and customer-centered initiatives seem to be paying off.

2.5 Financial Performance

Figure 10 shows financial performance indicators²³⁶ for the MOR (IRB) railway component for selected years.

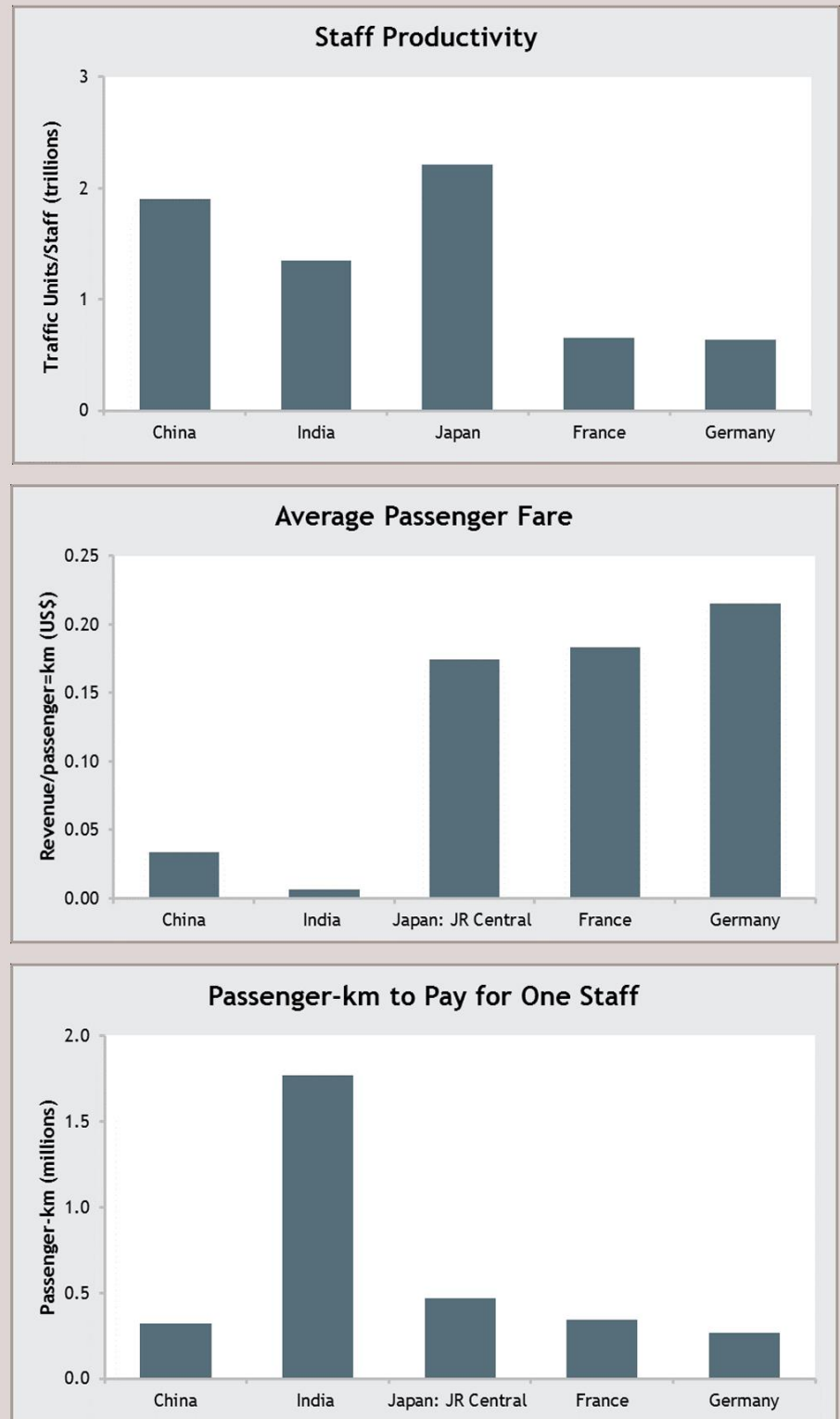


IR is basically a self-funding organization through extensive internal cross-subsidization. It receives no operating subsidies from India’s central budget, but receives significant capital investment support from Government. The current strategy assumes a substantial injection of new public finance.

Passenger fares are still heavily subsidized and offer cheap transportation options for India’s poorest population. In comparison to other countries, IR performs well in terms of staff productivity, equal to 70 percent of China and more than twice that of France or Germany. However, that ticket revenues of IR are significantly lower than in other countries. IR’s revenue per passenger-km is less than one fifth that of China, while the average salary is approximately the same. The result is a very high passenger-km to salary ratio. (Figure 11)

²³⁶ Financial statements deviate from accepted international accounting standards and should be treated with care.

Figure 11 International Comparison of IR Staff Productivity, Passenger Fare Revenues, and Labor Costs



Source: International Railway Union, Indian Railways Statistics, China Railway Statistics, Russian Railways Annual Report, JR Central Annual Report.

The fares are cross-subsidized within IR from freight service revenues, which has in part led to uncompetitive freight tariffs. The rail sector is also now more than ever experiencing competition from the road sector.

The subsidization of passenger rail fares is a widely accepted social policy, and is not itself inherently problematic. However, if IR wants freight to compete with road on an equal playing field, it needs to reconsider the use of cross-subsidization to meet this goal. MOR must look to build new revenue sources for passenger services, including a direct Government subsidy through a PSO, in order to support needed investment and service improvement.

3 Conclusions

Not only does India have one of the largest and busiest railways in the world, but also, IR is arguably the most traditional and monolithic in its basic structure. In fact, it closely resembles the archetypal railway described in this toolkit—prior to considering the alternatives (Chapter 5). Traffic growth has underpinned management initiatives to attain steady and significant improvements in staff productivity and equipment utilization. Nevertheless, IR was historically not notably innovative in using modern rail technology, nor in transforming to more commercial management structures, nor focused on service quality or market-responsiveness. Instead, when seeking commercial focus, it has tended to create semi-autonomous enterprises that bypass its own structures. The burst of improvements and achievements in business processes during 2004-08, described in Section 2 above, appear to have been originated and driven by specific Ministerial leadership, rather than emerging from the permanent institutions of industry structure.²³⁷ And the subsequent diversion of a large part of those gains into the wage bill is a common feature of politically driven enterprises.

Without losing sight of IR's institutional and structural shortcomings, recent improvements stemming from the Transformation Strategy under the current Minister of Railways, Suresh Prabhakar Prabhu, warrant praise. The modernization and overall improvement to customer relations are remarkable and is a demonstrable shift toward market-oriented decision-making. Recent capital expenditure – intended to increase average speeds, build high-speed rail lines, expand the broad gauge network, and revitalize the sorely neglected rail freight industry (most notably the DFC program) – eclipses previous spending. Under the strategy, PPPs are intended as the main mode of delivery for various projects, most notably DFCs and high-speed passenger rail development. Indeed, in 2014, Government opened up the sector to PPPs in a series of rail activities previously limited to the public sector, including: construction, operation and maintenance of suburban corridors, high speed rail, DFCs, rolling stock, railway electrification, signaling, freight terminals, passenger terminals, infrastructure in industrial parks, industrial connections and rapid transit.

Railway policy-making and regulation are ultimately about discerning long-term public interest in railway transport and then protecting it. Now, these MOR (IRB) responsibilities are by statute and design wholly interwoven with responsibility and accountability for the commercial service delivery of ZRs. This structure appears to be based on implicit assumptions that the interests of IR and the public are one and the same—or that any conflicts that arise between IR interests and public interests are best resolved by a single body with both policy and commercial

²³⁷ Sudhir Kumar and Shagun Mehrotra, *Bankruptcy to Billions-How the Indian Railways Transformed*, (Oxford University Press, 2009).

responsibilities. However, these assumptions are no longer accepted in most economic sectors and in most countries. Instead, modern business eschews these structures on the grounds that they barricade institutions against encroachment, discourage innovation by new participants, undermine market focus, and inhibit commercial instincts. The Indian experience does little to contradict the theoretical structural weaknesses of the monolithic railways structure.

The overall degree of private sector participation in India's rail sector is currently low by international standards, and it will be interesting to monitor the success of the newly minted PPPs as they mature. In practice, these PPPs should reduce the industry's monolithic nature. It remains to be seen, however, whether policy change in favor of private sector participation will result in the institution truly embracing a more pluralistic industry. The liberalization of the market (not to be understood as privatization) would promote competition by allowing the entry of new operators, but will only be possible if there exists an adequate regulatory body that protects all stakeholders. The need to establish an independent regulator in order to advance the industry further cannot be stressed enough.

As the many strategic reports correctly identify, IR continues to suffer from confusion between commercial objectives and social roles, and politicized decision-making that hampers commercial focus. Beyond the measures that have since been taken, the truth remains that government policy functions should be separated from commercial operations, non-core activities should be spun off, and commercial management on lines of business and market segments should be refocused. IR continues to house many activities outside what would be considered core functions, and should critically evaluate their impact on operating a financially stable and customer-focused railway business.

IR has set forth a series of clear and ambitious targets at its most recent Visioning Workshop. It will need to focus its efforts on implementing the shifts it promoted. Otherwise, IR risks exacerbating the critical issues that currently threaten its sustainability: lack of investment in addressing capacity constraints that are limiting growth; shrinking market shares compared to a booming road sector; and uncompetitive freight tariffs stemming from cross-subsidization of passenger services and overall inefficiencies.

Since the 1989 Railway Act, India's economy has been modernized and transformed by more open international trading relationships, greater reliance on market forces, a stronger role for the private sector, and greater competition in trade and services. Now nearly thirty years on, and based on performance as well as governance principles, it is appropriate for India to consider whether its railway sector's traditional institutions remain in the best interests of India's new economy.