



GATI SHAKTI NATIONAL MASTER PLAN – AIMING FOR A SEA CHANGE IN INDIAN RAILWAYS

IN TIME, THE INDIAN RAILWAY WILL UNDERTAKE ITS RIGHTFUL POSITION AS A GLOBAL LEADER IN RAILWAYS BY ADVANCING AS A CREATOR AND INNOVATOR OF TECHNOLOGIES AND SYSTEMS.

BY VIVEK LOHIA, MANAGING DIRECTOR, JUPITER WAGONS LTD

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— Vivek Lohia, Managing Director, Jupiter Wagons Ltd

INFRASTRUCTURE IS CONSIDERED THE CORNERSTONE of the economy because of the role it plays in influencing growth through a variety of supply and demand side channels. The Government's strategic initiatives and investment in the infrastructure sector are obvious sources of encouragement for the synergic growth of the Indian economy.

According to IMF projections, India has surpassed the United Kingdom as the world's fifth-largest economy, trailing only the United States, China, Japan, and Germany. And what is more, the Indian Railways, one of the largest transportation networks in the world, is fast becoming the largest potential market for introducing cutting-edge, modern technology and solutions. As a result, there is a need for a

comprehensive infrastructure development strategy to increase industrial productivity and job prospects.

In lieu of this, the Indian government is implementing several projects in order to modernize its existing railway infrastructure and improve service quality. One of them is the PM Gati Shakti National Master Plan unveiled by the Prime Minister on October 13, 2021, which is a transformative approach for economic growth and sustainable development and is driven by seven engines – roads, railways, airports, ports, mass transport, waterways, and logistics infrastructure. The Government has set a goal to invest US\$1.4 trillion in infrastructure by 2030, and a whopping US\$750 billion earmarked for rail infrastructure. With the help of this strategy, all government stakeholders,

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notably various ministries, would be able to plan and synchronize efficiently for multi-modal connectivity and leverage these investment plans to make India the global business capital.

Gati Shakti will incorporate infrastructure schemes of various Union Ministries and state governments – Bharatmala Pariyojana, Sagarmala, UDAN, inland waterways, dry/land ports, etc. The plan will also ensure the quick completion of work with cost efficiency. The idea is to get all relevant stakeholders aligned and create the right size infrastructure at a suitable location expeditiously.

The National Infrastructure Master Plan also envisions a centralized digital portal that will bring together the infrastructure-related initiatives that up to 16 different ministries and departments have planned and started. This will allow them to access each other's projects and increase capital investment in infrastructure development to support economic growth.

NATIONAL LOGISTICS PLAN

In order to increase India's ability to compete on the global map, generate more jobs, and boost its positioning in international rankings the Commerce and Industry Ministry developed The National Logistics Policy. Its goal of reducing logistics costs from their present level of 14% of Indian GDP to 8% by 2030 is currently recognized as a game-changing innovation. While the logistics policies of 13 states are still in the draft stage, states like Andhra Pradesh, Assam, Chhattisgarh, Gujarat, Haryana, Himachal Pradesh, Kerala, Madhya Pradesh, Maharashtra, Manipur, Mizoram, Rajasthan, Telangana, and Uttar Pradesh have already framed their logistics policy to

create logistics and warehousing infrastructure and to address transport-related issues.

DIGITIZATION AND THE INDIAN RAILWAYS

Digitization has been transforming the world with the efficiency of machines and the creative skills of humans leading to innovation and making the world a better place. It has a proven impact by developing and transforming many sectors.

For example, the Indian Railways has embraced digitization in its operations, including passenger data systems, preventive maintenance, train signaling, ground control systems, procurement, and unreserved ticketing system (UTS). Its deployment has improved the rolling stock, signaling, systems, and infrastructure of the railways while increasing the operating effectiveness of the assets.

Digital technology has also aided in demand control and delivering real-time information for authorities and passengers. Overall, since digitization encourages stakeholder collaboration, the railways are reimagined, developed, delivered, and operated, leading to the entire transformation of the face of the system.

THE KEY ROLE OF DIGITIZATION IN THIS SCHEME

With a vision to transform India into a digitally empowered country and knowledge economy, the Government of India has introduced the Digital India programme. This will be for preparing India for the knowledge-based transformation and delivering good governance to citizens through synchronized and coordinated engagement with both Central Government and State Government.

The Digital India vision provides the intensified



2: The Gati Shakti Cargo Terminals (GCTs) are being developed by private players, and can be developed on non-Railway land or fully/partially on Railway land.

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impetus for further momentum and progress for e-Governance and would promote inclusive growth that covers electronic services, products, devices, manufacturing, and job opportunities.

Digital infrastructure will focus on providing high-speed secure Internet. Governance and services on demand will stress on integrating services across departments and jurisdictions and making services available in real-time for both online and mobile platforms.

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The RTIS-enabled trains are outfitted with application software that detects train movement events such as arrival, departure, and run-through stations, among others, using predetermined logic applied to geographical coordinates. In addition, the train speed is continually obtained from GSAT satellites equipped with GPS Aided Geo-Augmented Navigation System (GAGAN) receivers.

Every 30 seconds, information on the train's speed is continuously transmitted. In addition, the positions of the RTIS-enabled trains are automatically indicated on the control charts. Rapid emergency message transmission between the loco driver and control office is made possible by the RTIS. The control office can monitor the train's location and speed without needing to make manual adjustments.

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With ULIP Data and AI-driven route optimization tools, it is now possible to accurately identify the shortest, most cost-effective routes. The data comprises over 900 levels of central ministries and divisions, while the states and union territories have included over 650 layers of important information in the plan. This gives business players secure access to data on the resources and logistics provided by several ministries. Currently, 30 systems from seven ministries are linked through more than 100 Application Programming Interfaces (APIs) encompassing over 1,600 data fields.

The Gati Shakti NMP, which appeared to be an ambitious initiative when it was first launched in 2021 to help India attain the USD 20-trillion economy ambition by 2040, has now been lauded as an infrastructural game-changer as it has undoubtedly proven to be such in its first year of operation.

ENHANCING INDIA'S GLOBAL POSITIONING

The PM Gati Shakti plan, which was introduced to break down departmental silos and implement more holistic and integrated project planning and execution to address the issues of multi-modal and last-mile connectivity, has demonstrated a sanguine roadmap to the development of modern infrastructure through planning, implementation, and monitoring, as well as to reduce project time and cost overruns.

In time, the Indian Railway will undertake its rightful position as a global leader in railways by advancing as a creator and innovator of technologies and systems. Standing true to its reputation as an innovator in rail technology creation and dissemination through this plan offers a fresh perspective and a creative culture ingrained through policies and system enablement. ■