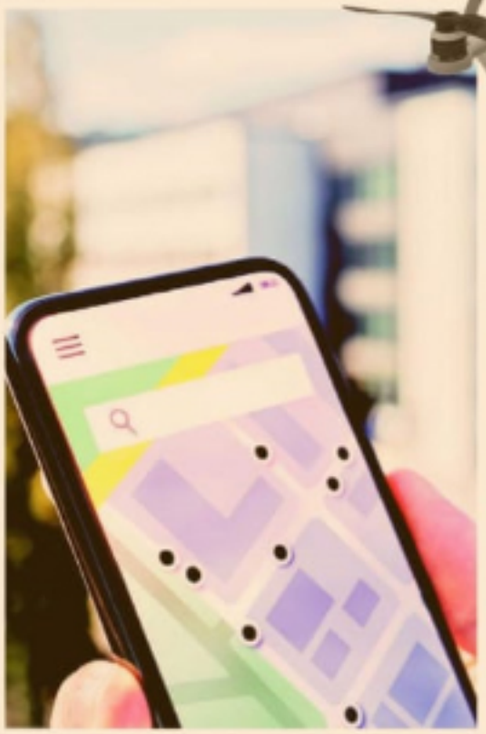

# The need for speed

## The Gati Shakti Yojana will provide the tech push for quicker delivery of infrastructure projects, report **Neha Alawadhi, Shivani Shinde** and **Shreya Nandi**

Ever seen a newly constructed road dug up by some other utility department of the government? Or, remember the furore over the Mumbai Metro project's plan to use a controversial land parcel for a car shed? The project was delayed and reports suggest its cost has ballooned by 40 per cent.

The Gati Shakti Master Plan for multi-modal connectivity launched on October 13 by Prime Minister Narendra Modi is expected to prevent such waste and delays in infrastructure projects. The programme — which will initially encompass 16 ministries — is not only set to be a game-changer for infra projects, but will also have a technology backbone that spans technologies from geospatial mapping to analytics.

Gati Shakti, a digital portal, will be used as a governance tool that aims to develop the best multi-modal transport system. The portal is currently in beta mode, but will eventually integrate planning and implementation of infrastructure projects. It will also bring down the cost of logistics, cargo movement and other aspects of infrastructure development and management.

"India badly needed an integrated plan for speeding up cargo movement. This has been one of the bottlenecks holding back the economy," says Jaijit Bhattacharya, president, Centre for Digital Economy Policy Research.

Gati Shakti can be that programme, and its speed will be key. "It will be essential to incorporate a few digital aspects into Gati Shakti, such as ensuring that fibre optics is laid out along all roads, railway lines and other linear assets such as gas pipelines. This would enable the digital Gati Shakti to take off along with the physical Gati Shakti," Bhattacharya says.

"Also, one would need to have digital solutions for the aggregation of demand and supply of logistics requirements. Perhaps the government could consider bringing in aspects of the Open Network and Open protocols initiative under the Open Network for Digital Commerce as part of the Gati Shakti initiative."

A core feature of Gati Shakti is a GIS (geographic information system) platform that will provide spatial planning tools with Indian Space Research Organisation imagery developed by BiSAG-N (Bhaskaracharya National Institute for Space Applications and Geo-informatics).

The BISAG-N integrated portal will provide visibility to various departments connected to the 16 ministries. Departmental data sets have been superimposed on an underlying geo-coded map, providing 200 layers of large-scale geospatial databases.

Amit Rishi, senior vice president, RMSI, a provider of geospatial and engineering services, believes the project has huge potential for cost savings, especially by bringing down project delays. "GIS, which for the last 10-15 years was considered to be a niche technology, is now becoming core in India. With the policy-level changes announced on geo-mapping and drones, their usage will further drive technology adoption in infra projects," he says.

The Master Plan will also involve analytic tools for visualisation, planning, regulatory approvals, prioritisation, monitoring, gap identification, project management and decision making. Moreover, it will have ministry-wise dynamic portals integrated together and API-based data integration, apart from the provision of integration with other dynamic datasets.

"Making the movement of goods easier between states by taking out the last few hurdles would be extremely helpful in unleashing the country's economic potential," says Bhattacharya. "Roads need to be made smart, with automatic monitoring of traffic, drone-based support, including drone-based monitoring of maintenance of assets, all of which need to be incorporated at the design stage."

Private players have already been deploying these technologies at individual project levels, and are seeing the impact.

Himanshu Chaturvedi, chief strategy officer, Tata Projects, believes that large infra projects need such a technology backbone, because "challenges faced by infrastructure projects, such as multiple and delayed clearances, right of way and project deviations, can be approved, monitored and monetised via drones and geospatial mapping."

Tata Projects has been using geospatial mapping, building information modelling, video monitoring, 3D modelling, and incorporating dimensions like time (4D) and cost (5D) into 3D models. "These technologies help to ensure timely project completion while avoiding cost overruns. We have used such solutions at the Dravyavati River Rejuvenation Project in Jaipur and some of our strategically important transmission lines and building projects," says Chaturvedi.

**THE USE OF GIS AND GEO-MAPPING CAN REDUCE PROJECT COSTS CONSIDERABLY, INCLUDING BY OBVIATING PROJECT RERUNS**

RMSI, which has built software for several international infrastructure projects, says that the use of GIS and geo-mapping can reduce the cost of projects substantially, including by obviating project reruns resulting from delays caused by interdepartmental processes and approvals.

"In the US, we built a software platform to monitor well pads and the system delivered cost savings of 30-40 per cent for a client. While it is difficult to quantify such use of technology, we have seen how ongoing urban infrastructure projects get stalled in India due to the inability of departments to talk to each other. I think Gati Shakti can be a game-changer," says Rishi.