



# Connected Construction Solution Helps **Overcome Growing Industry Challenges**

The construction industry is facing unprecedented pressures and market forces like never before. Labor shortages, inflated material costs, and supply chain volatility have created a perfect storm that is bringing new urgency to the need for digital transformation. As one of the least technologically integrated industries, the field of construction can leverage readily available technologies to streamline management practices at every stage of the construction process and unlock growth opportunities.

Mindtree NxT's Connected Construction platform is the accelerator for digital transformation in the construction industry. It integrates machinery sensors, worker wearables, geospatial data, and other Internet of Things (IoT) and cloud-based sensors to provide an integrated system that enables informed business decisions to accelerate revenue growth and drastically increase productivity.

But don't just take our word for it. Construction organizations are already leveraging our platform and reporting outstanding results. Here is what these organizations experienced with the Connected Construction solution from Mindtree NxT.



## Connecting Assets through IoT and AI solutions

A large engineering, procurement and construction (EPC) player in India lacked visibility into its fleet over **11,000 total assets**.

The construction company leveraged Mindtree's Asset NxT solution that instruments assets through sensors and a ruggedized IoT gateway with edge analytics capabilities and AWS platform to measure fleet parameters. OEM onboarding, data collection, data transformation and data standardization were performed between different make-models and geographies. With the Asset NxT solution, the construction company experienced:



**15-20%**

reduction in  
equipment idle  
time



**10-15%**

improvement in  
asset productivity



**30-35%**

improvement in  
capacity utilization



**20-25%**

reduction in fuel  
consumption



## Engaging Employees with Digital Transformation

A construction company needed a solution for employees to collaborate more efficiently, improve worker safety, and attract and retain talent.

Mindtree's Worker NxT solution collected data from a variety of sources—including sensors embedded into clothing, headgear, goggles, gloves and exoskeletons—to monitor health conditions, identify safety issues, amplify worker abilities, prevent injuries, and more. With the Worker NxT solution, the construction company experienced:



**10-15%**

improvement in  
worker availability



**30-35%**

reduction in near  
misses and critical  
incidents



**20-25%**

improvement in  
training  
effectiveness



## Enlisting Aerial LIDAR Technology to Cut Survey Time

A construction firm in India was tasked with building the infrastructure needed for micro-irrigation of a farmland, which entailed a time-consuming topographic survey, highly undulated terrain, dense vegetation and wild animals and other challenges.

Mindtree's Geospatial NxT solution enabled data visualization, workflow productivity, and information exchange among engineers, project managers, business leaders and other stakeholders. It collects spatial data from multiple sources, and then converts it into actionable insights. With the Geospatial NxT solution, the construction company experienced:

- Implementation of a helicopter-based Aerial LiDAR Technology in just 3=three months compared to conventional technology (total station) that would take more than a year
- With the entire project viewable digitally, they avoided having revisit the site and conduct site verification
- Positional accuracy at the centimeter level

- Exact quantifications of material estimated for bulk procurement and cost savings
- Optimized pipeline alignment and design and excavation benefits
- Easier in-house map-based mobile application tree counting process, which facilitated timely approval for forest clearance
- Real-time alerts on map view for easy location of maintenance



## Connecting Insights to Track Progress of Projects

A large EPC player in India lacked a centralized system to report physical progress at the job site and had no single source of truth.

Mindtree's Projects NxT provided a mobile application with a simplified UI and ready input card for engineers to directly update progress without manual data collection and a flexible work breakdown structure format to accommodate any type of project. It also automated DPR mails, customized reports and essential dashboards, provided progress data synched with GIS maps and 3D BIM models and integrated with the ERP system to facilitate client and subcontractor billings. With Project NxT, the construction company experienced:



**10-15%**  
reduction in project  
delays



Increased visibility  
and transparency  
across projects



Dependable progress data  
resulting in forecasting  
possible delays



## Material Tracking on a Grand Scale

A large EPC organization involved in industrial and infrastructure projects needed visibility, utilization, right sizing and optimization of its inventory for three factories, 65 projects, 51 towers installer/day and more than 1,200 components.

Mindtree's Materials NxT solution provided passive RFID tags to identify all the components of the transmission tower, mobile apps for kitting, indents, receipt and issue, geotagged storage locations, integrated RF scanners for real-time inventory operation and integrated project monitoring, and production systems for end-to-end visibility. With Materials NxT, the construction company experienced:



**35%** improvement  
in turnaround time  
for kitting and  
dispatch operations



**2x** reduction  
in inventory  
holding time



**65%**  
reduction in  
shortages



**1.5X** increase  
in revenue  
conversion cycle



## Gaining insights on Industrial Infrastructure for Maintenance and Safety

One of the largest EPC companies in the world needed to identify structural damages that weren't accessible and visible to the human eye.

Mindtree's Insights NxT solution helped perform AI-based vision analytics on images and videos and run analytics on drone feeds from the construction site. The solution provides real-time visibility to a wide range of industrial equipment, machines, vehicles, and systems. It leverages IoT technology to build a network of connected assets, where high-value data is intelligently linked and processed in real-time. With Insights NxT, the construction company experienced:

- Automatic alerts during significant structural damages
- High accuracy rate of over 95%



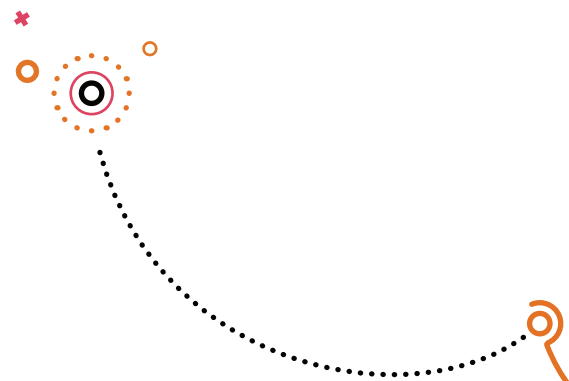
## Connected Construction Technologies Unlock Growth

To sustain a competitive advantage, construction organizations know they must invest in digital transformation. Today, it's possible to connect construction ecosystems with IoT devices, integrated sensors with sophisticated AI-powered analytics and geospatial insights to gain real-time visibility, resolve complexities and drive productivity across construction operations.

The Connected Construction solution from Mindtree NxT is purpose-built to create a complete industry 4.0 solution, providing a single platform that harnesses and synthesizes data intelligence across the entire ecosystem.



Contact us to learn how we can help your construction firm with digital transformation and unlock growth.



## About Mindtree

Mindtree [NSE: MINDTREE] is a global technology consulting and services company that enables enterprises across industries to drive superior competitive advantage, customer experiences and business outcomes by harnessing digital and cloud technologies. A digital transformation partner to approximately 275 of the world's most pioneering enterprises, Mindtree brings extensive domain, technology and consulting expertise to help reimagine business models, accelerate innovation and maximize growth. As a socially and environmentally responsible business, Mindtree is focused on growth as well as sustainability in building long-term stakeholder value. Powered by more than 37,400 talented and entrepreneurial professionals across 24 countries, Mindtree — a Larsen & Toubro Group company — is consistently recognized among the best places to work