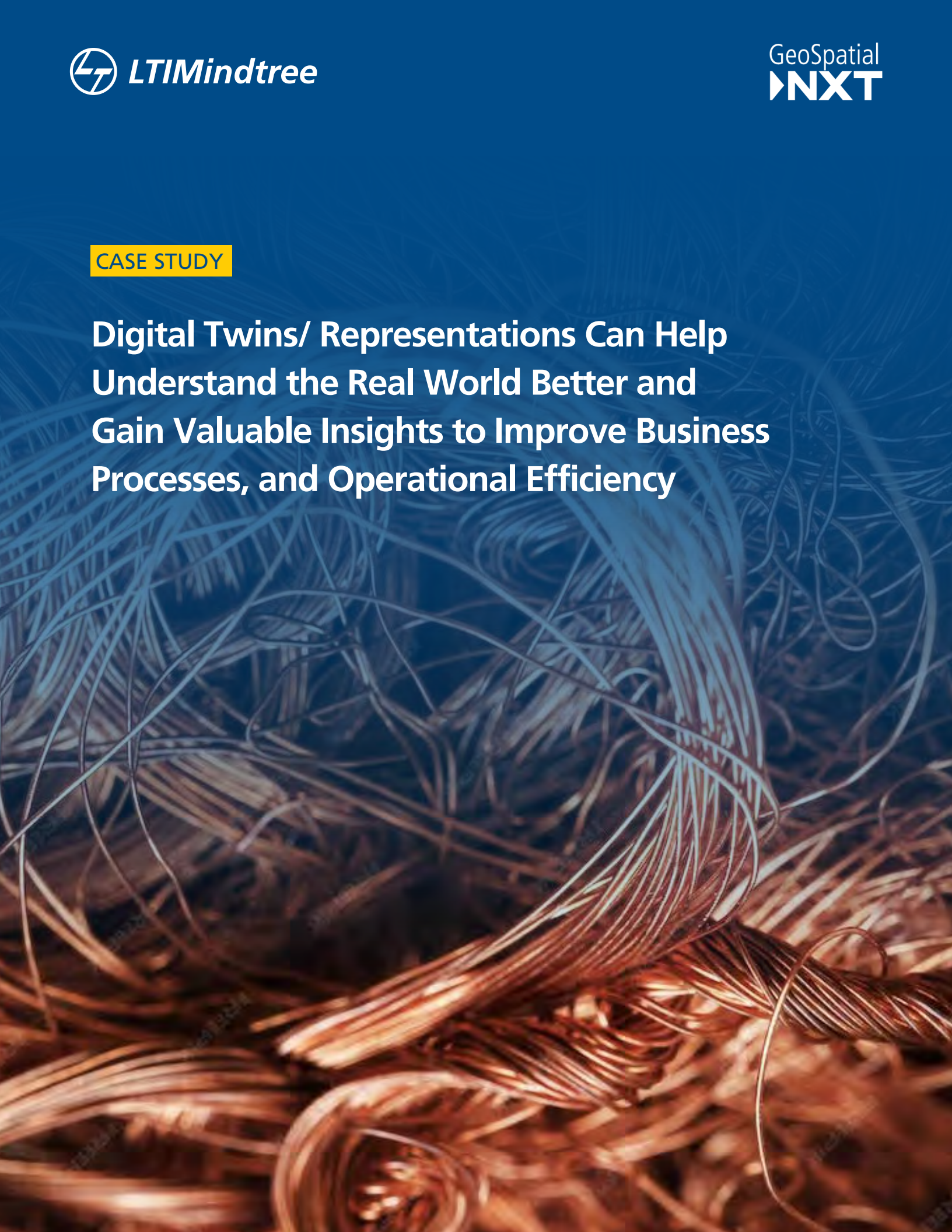# Digital Twins/ Representations Can Help Understand the Real World Better and Gain Valuable Insights to Improve Business Processes, and Operational Efficiency

Client

- Plant age : 100+ Years
- GFA : 13,00,000 m^2
- No Of Scans : 1,00,000+
- LOD : 500
- No of Assets modeled : 20 million +
- No of BIM resources used : 240
- Areas : Smelters, Refineries, Captive power plant, RMHS and Jetty facilities operating 24x7x365

The 40-year-old Copper plant is one of the largest copper smelters in the world. The plant contains a higher density of mechanical and structural components, fully functional with vibrations. Generally, Remedial Engineering or Revamp Projects are costly, and need exposure to existing structures. They have a huge limitation in achieving perfection in Bill of Quantities.

Existing structures of a plant post-construction are subjected to loading and adverse environmental conditions. In the course of time, the structures encounter various problems like – Corrosion, cracks, unwarranted modifications, seepage, and improper welds

Challenges

- To capture the condition of the existing facility as built, with no existing documentation.

- To create as-built structural drawings and provide Bill of Materials (BOM) and distress mapping reports.

- No existing information about the plant was available. The plant was partially retrofitted instead of full demolition.

LTIMindtree Solution

- Set up LiDAR Laser Scanning, LOD 500 + BIM Modelling, As-Built Drawings, BOM Extraction, Distress Mapping, GPR Reports, and Structural Auditing.

- Provided detailed information on the existing condition and highlighted distress in structures.

Business Benefits

90% reduction in costs, time, and effort.

Project timeline and cost reduced by **90%.**

90% reduction in the frequency of site visits avoided.

Established asset management and digital twin compatibility.

100% reduction in paper documentation.

80% improvement in collaboration, better project tracking, and decision-making.

60% reduction in timeline with quicker capture of as-built condition.

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