TATA STEEL DIGITAL STORY

TATA STEEL'S DIGITAL TWIN IN FULL VIEW

Visiting the Integrated Remote Operation Centre - IROC was like holding the mammoth multi-million-ton Tata Steel plant on one's palm. Crystal clear displays, live Drone images, hundreds of camera feeds, besides numerous signals rushing in and out of command centres gave a view of operations in real time. Automated commands optimized over time, fine tuning actions with occasional manual overrides through touchpads and joy sticks provide an assurance of control over planned production of steel. GenAI powered predictions and simulations make processes efficient while making workplaces safer. It was an immersive experience that demonstrated how Automation and Digital can simplify by conquering distances and digesting complexities.

The participants visited three different integrated control rooms to experience the Digital Twin

Integrated Mining	Sinter Plant operation centre	Maintenance Centre
• 3D Maps and simulations to ensure compliance to Regulations & norms. • Sustainability practices for self-sufficiency in water and land restoration • Extensive GPS and topography data used to manage traffic. • Demonstrating 'What is in it for me' as an approach to lead people to Digital. • Extensive video analytics, Poka-Yoke and feed forward messaging deployed for safety.	• Continuous integration of Sintering plants has enabled internal customers and supplier sit next to each other, though their sites are distributed. • Extensive learning from the past is used to replicate swiftly. This greatly supports the inorganic growth agenda. • Safety Correction Action-Preventive Action (CAPA) extensively amongst employees assisted by video and image analytics.	• Assessment led journey towards a state of Prescriptive Maintenance. • Segmentation based approach to address needs of Moving equipment. • Benchmarks & learning from Autonomous Automobiles used extensively. • Asset Diagnostics & Analytics in place. • Focus on Sustainability & safety, besides Reliability. • Ability to predict failure is on the rise.

DIGITAL TRANSFORMATION

The Digital journey of Tata Steel this far makes a fascination story. It began with Automation of machines, production lines and units, which made production processes increasingly efficient. The deployment of SAP underpinned Production to Businesses more tightly. With Data explosion and Geo expansion of the enterprise, in came Cloud technologies, making Data available where needed, real time. Analytics and AI are now helping in customizing and refining its approaches towards its stakeholders.

AUTOMATION, SAP
SEAMLESS EFFICIENCY
~2000 onwards

DATA & APPS ON CLOUD
DATA DEMOCRATISATION
~2010 onwards

ANALYTICS & AI
HYPER PERSONALISATION
~2020 onwards

There is not a single line of code written for Digital in Tata Steel, other than those needed to enhance Business or enable People.

Mr. Jayanta Banerjee,
CIO, Tata Steel

Highlights this far:
- Establishing a single source of Truth across the enterprise and with stakeholders.
- Integrating all IT disciplines into one entity and enabling Phygital phenomenon.
- 260+ AI models deployed that conduct more than 1500 Descriptor analytics.
- 21billion GenAI Tokens consumed.
- 2B USD value addition goal for Digital, out of which about 70% has already been accrued, reflecting a 7X ROI.
- Warding off 600 cyber-attacks a month thru' state of the art Cybersecurity.
- Deploying a 'Zero Trust Environment' to ensure evidence basis for areas such as Safety and compliance.
- Pursuing maturity in Data Excellence relentlessly, using TCS's DATOM Digital evaluation architecture.