SCALING RELIABILITY ACROSS GLOBAL STEEL OPERATIONS WITH PRESCRIPTIVE AI

CASE STUDY

CLIENT

JSW Steel

INDUSTRY

STEEL MANUFACTURING/MINING

SCOPE

MULTI-SITE, GLOBAL OPERATIONS

MOVUS SOLUTION

PLANTOS

Across large-scale steel operations, reliability isn't just about detecting faults. It's about knowing what to do next and acting with confidence.

This case study explores how JSW Steel moved beyond reactive maintenance and fragmented insights, using prescriptive intelligence to guide teams, improve execution, and deliver measurable outcomes across global operations.

DISCLAIMER: This case study includes work undertaken by Infinite Uptime prior to its integration with MOVUS. The technologies and methodologies described are now incorporated into the MOVUS platform.

MOVUS

Managing Complexity Across Global Operations

JSW Steel operates a large, complex network of production facilities, spanning multiple plants, processes, and thousands of critical assets.

Initial deployments began in India, with a focus on validating whether predictive insights could consistently translate into real-world maintenance outcomes.

As confidence grew, the approach expanded across additional plants and regions, including operations in the Americas, with the goal of improving reliability at scale without increasing operational burden.

The Gap Between Insight and Action

At scale, the challenge wasn't a lack of data, but rather the consistency in how decisions were made.

Across sites and teams:

- Data was available, but interpretation carried
- Maintenance actions were not always clearly prioritised
- Insights didn't always translate into confident, timely decisions on the ground.

This created a familiar gap between detection and action, where teams could see issues emerging, but not always with enough clarity to act early and effectively.

Introducing the Prescriptive Intelligence Layer

JSW Steel implemented PlantOS as a prescriptive intelligence layer, designed to sit across operations and support clearer decision-making.

Rather than stopping at identifying issues, the focus shifted to translating asset behaviour into clear, prioritised recommendations that teams could act on with confidence. These recommendations were embedded directly into workflows through digital work orders and guided actions, helping standardise how maintenance was planned and executed across sites.

At the same time, a closed-loop system was established, where outcomes were validated and used to continuously improve future recommendations. This created a more consistent pathway from signal to action, reducing reliance on manual interpretation and individual judgement, and enabling teams to respond earlier with greater confidence.

PlantOS™ Manufacturing Intelligence

Managing Complexity Across Global Operations

JSW Steel operates a large, complex network of production facilities, spanning multiple plants, processes, and thousands of critical assets.

Initial deployments began in India, with a focus on validating whether predictive insights could consistently translate into real-world maintenance outcomes.

As confidence grew, the approach expanded across additional plants and regions, including operations in the Americas, with the goal of improving reliability at scale without increasing operational burden.

The Gap Between Insight and Action

At scale, the challenge wasn't a lack of data, but rather the consistency in how decisions were made.

Across sites and teams:

- Data was available, but interpretation carried
- Maintenance actions were not always clearly prioritised
- Insights didn't always translate into confident, timely decisions on the ground.

This created a familiar gap between detection and action, where teams could see issues emerging, but not always with enough clarity to act early and effectively.

Introducing the Prescriptive Intelligence Layer

JSW Steel implemented PlantOS as a prescriptive intelligence layer, designed to sit across operations and support clearer decision-making.

Rather than stopping at identifying issues, the focus shifted to translating asset behaviour into clear, prioritised recommendations that teams could act on with confidence. These recommendations were embedded directly into workflows through digital work orders and guided actions, helping standardise how maintenance was planned and executed across sites.

At the same time, a closed-loop system was established, where outcomes were validated and used to continuously improve future recommendations. This created a more consistent pathway from signal to action, reducing reliance on manual interpretation and individual judgement, and enabling teams to respond earlier with greater confidence.

PlantOS™ Manufacturing Intelligence

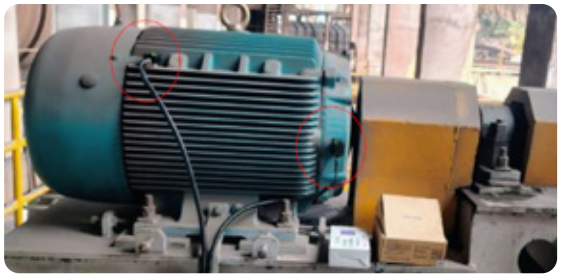
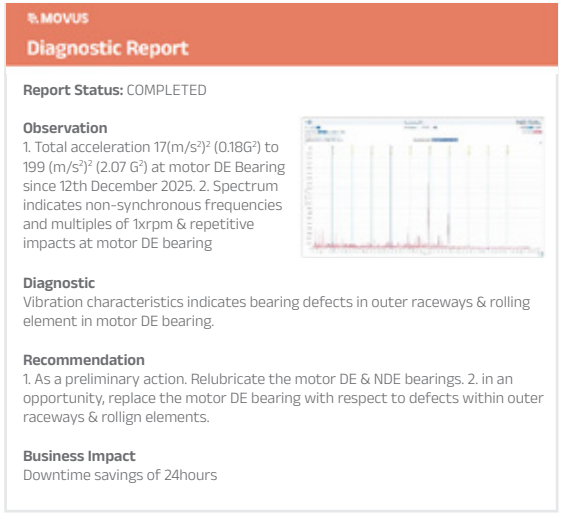


Figure 1: MOVUS Sensors on hot combustion blower

Figure 2: MOVUS Sensors on coke oven pump


MOVUS

Diagnostic Report

Report Status: COMPLETED

Observation
1. Total acceleration 17(m/s²)² (0.18G²) to 199 (m/s²)² (2.07 G²) at motor DE Bearing since 12th December 2025. 2. Spectrum indicates non-synchronous frequencies and multiples of 1xrpm & repetitive impacts at motor DE bearing

Diagnostic
Vibration characteristics indicates bearing defects in outer raceways & rolling element in motor DE bearing.

Recommendation
1. As a preliminary action. Relubricate the motor DE & NDE bearings. 2. in an opportunity, replace the motor DE bearing with respect to defects within outer raceways & rollign elements.

Business Impact
Downtime savings of 24hours

Figure 3: PlantOS diagnostic report snapshot

From Reactive Work to Repeatable Outcomes

As adoption increased, the shift became operational, not just technical. Teams moved away from reacting to faults and interpreting data in isolation, towards acting on clear, prescriptive recommendations.

Decisions that once relied on individual judgement became more consistent, guided by validated actions that could be applied across sites.

This move was supported by digital workflows and automated prescriptions, improving execution discipline and reducing variability in how maintenance was planned and delivered. With continuous monitoring in place, teams were able to intervene earlier, with greater confidence in both the issue and the recommended response.

Prescriptive insights were applied across a wide range of critical equipment and processes, from pellet plant systems such as ball mills and conveyors, through to blast furnace components, rolling mills, and rotating equipment across production lines.

Despite the diversity of assets, the approach remained consistent: early signals were identified, clear actions were guided, and outcomes were validated. Over time, this created a more repeatable model for improving reliability, not just within individual plants, but across global operations.

Beyond monitoring

For JSW Steel, the impact wasn't just improved visibility. It was a change in how decisions were made. Instead of asking 'what's happening with this asset?', teams could now answer 'what should we do next, and how urgent is it?'

This shift from insight to action enabled more consistent performance across complex operations.

At enterprise scale, reliability is not limited by how much data is available. It's limited by how clearly teams can act on it. By embedding prescriptive intelligence into daily operations, JSW Steel established a more consistent, scalable approach to reliability, where decisions are guided, actions are prioritised, and continuously improved.

> "We needed a partner willing to co-innovate on our most difficult problems. With MOVUS we're not monitoring equipment anymore; we're enabling AI-assisted decision-making from work order creation through execution."
>
> Mr. Alec Glenn, Vice President of Reliability, JSW Steel

The Result

The impact was measurable across reliability and operational performance.

Operational outcomes:

- **36,108 hours** unplanned downtime avoided.
- **6,917 hours MTBF** achieved across critical assets.
- **2.5% increased** utilisation in mill operations.

Execution outcomes:

- **6,000+** prescriptive actions executed.
- **High implementation** rates across plant teams.
- **Consistent translation** from insight to action to outcome.

Turn insights into action

MOVUS helps businesses reduce downtime, optimise maintenance strategies, and achieve operational excellence. Scan the QR code to discover how MOVUS can transform your operations.

movus.com.au
sales@movus.com.au

MOVUS Australia Pty Ltd
107 Milton Road,
Milton QLD 4064

MOVUS