

## EquipWise

Making equipment wiser  
for safe, sustained, and  
optimal plant



# Abstract

In today's fast-evolving industrial landscape, staying ahead demands smarter, safer, and more adaptive operations. EquipWise, part of Tech Mahindra's Manufacturing vertical, embodies our broader Adaptive Manufacturing vision—helping plants sense change, respond intelligently, and continuously optimize. By enhancing equipment performance across productivity, safety, sustainability, and cost-efficiency, EquipWise transforms contextualized data from ET, IT, and OT sources into actionable insights—powered by a unified data schema. Our intelligent solutions help industries streamline operations, reduce risks, and maximize output while embracing agility as a competitive advantage.

## Introduction

In every manufacturing setup, equipment plays a crucial role—powering operations, moving materials, and transforming raw inputs into finished products. To achieve the best plant outcomes in terms of quality, throughput, and cost-efficiency, these machines must operate safely and adaptively. This aligns with our Adaptive Manufacturing philosophy—enabling organizations to thrive amid market volatility, shifting demand, and rising sustainability expectations.

Ensuring such performance demands a deep understanding of data, actionable insights, domain knowledge, and sound decision-making. These decisions must be made across three levels to maintain consistent, optimized operations:

### 1. Operations Level - Plant Floor

Engineers and operators use edge computing and industrial AI to make fast, informed decisions for safe and optimal equipment operation.

### 2. Tactical Level - Planning & Scheduling

Schedule production based on real-time plant conditions

Set ideal operating parameters considering demand, raw material, and weather

Plan maintenance using equipment health, production needs, and workforce availability

### 3. Strategic Level - Enterprise

Guide capex decisions using cost, capacity, and safety insights

Update SOPs and process recipes

Plan equipment redesigns or upgrades





# Our Solution

EquipWise delivers a powerful, intuitive platform designed to elevate industrial performance. By harmonizing ET, IT, and OT data, it unlocks real-time insights that drive safer, more adaptive, and cost-effective operations. As a core pillar of Tech Mahindra's Adaptive Manufacturing framework, EquipWise empowers organizations to sense disruptions, optimize decisions, and achieve resilient growth.

With AI-driven analytics and a unified data framework, EquipWise enables Data-Driven Decisions (DDD) across the value chain—helping manufacturers not only react but anticipate and evolve.

## Data Sources

Data is integrated from multiple origins through tailored interfaces that align with each customer's unique IT/OT infrastructure. The collected data is categorized into three main types:

**ET Data** - Includes equipment specifications and material characteristics

**IT Data** - Covers production work orders, maintenance records, and material quality metrics

**OT Data** - Encompasses process telemetry and unstructured inputs like vibration signals, thermal imagery, and acoustic patterns



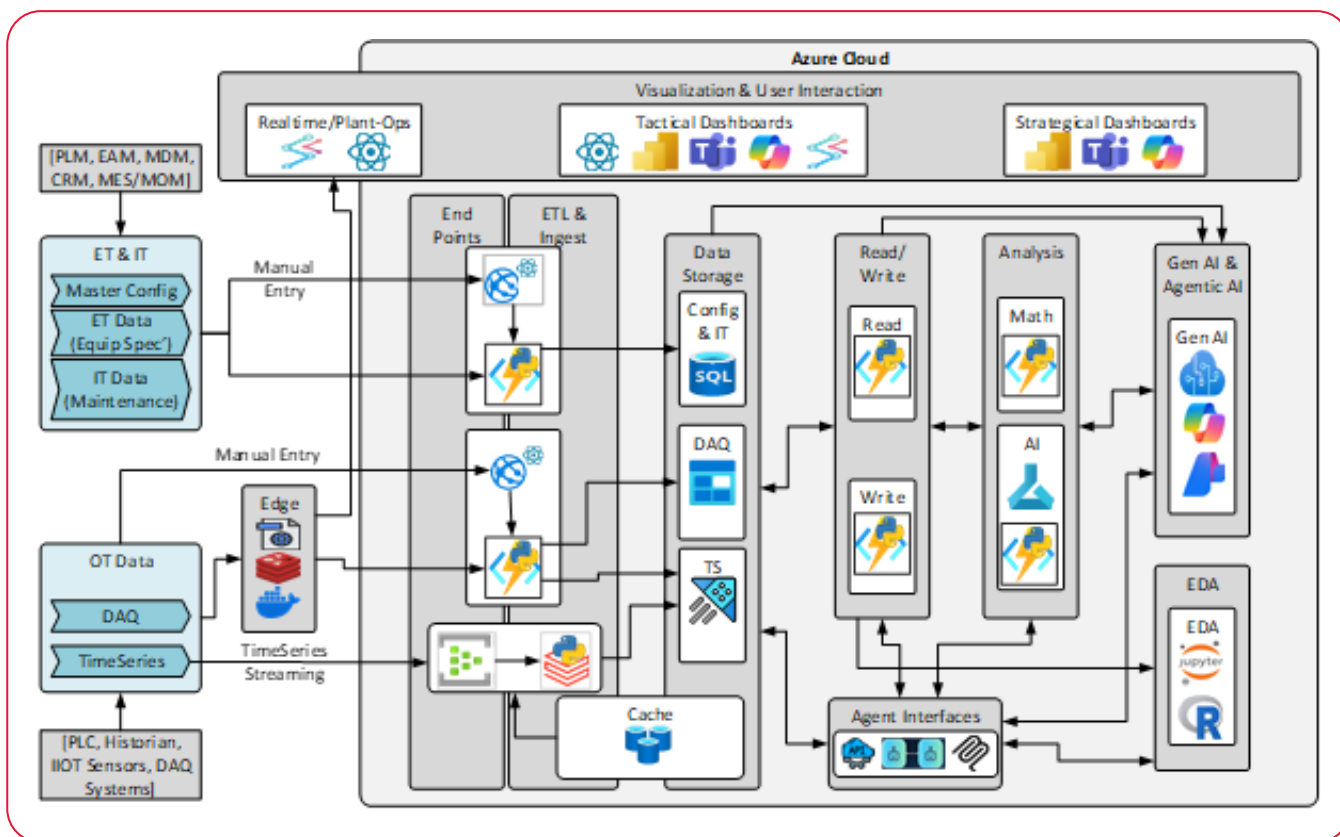
## Data Storage

Information is maintained within a highly efficient schema, built upon the well-established ISA-95 model and enhanced to meet Industry 4.0 standards. It accommodates configuration data, structured and unstructured formats, as well as time-series data—each stored in its designated database. Cross-referencing mechanisms are embedded to enable seamless and efficient data retrieval.



## Data Analysis and AI

The analytical framework is purpose-built for industrial data processing. It encompasses a range of techniques including mathematical computations, statistical methods, conventional AI, and cutting-edge Generative AI, Agentic Flows and Conversational UI. The most suitable approach is selected based on the specific analytical requirement, ensuring rapid, precise results delivered in a cost-effective and sustainable way.



# Business Benefits

## Beyond Optimization to Adaptiveness

EquipWise addresses key levers of Adaptive Manufacturing, ensuring plants can continuously align operations with business goals:

- **Realtime / Edge AI** - Instant insights on equipment health, safety breaches, and material quality empower adaptive responses on the plant floor.
- **Advanced KPI Insights** - AI-powered KPIs reveal correlations for dynamic decision-making (e.g., quality-to-health impact, weather-driven performance shifts).
- **Proactive Safety** - Continuous monitoring flags risks early—supporting zero-harm objectives central to Adaptive Manufacturing.
- **EcoSmart Compliance** - Precise emissions monitoring drives sustainability while adapting output to meet changing regulations.
- **Predictive Maintenance & Quality** - Combines multisource data to forecast equipment health, enabling just-in-time actions.
- **Cost Optimization** - Real-time tracking helps adapt cost strategies dynamically across energy, labor, and downtime.
- **Process Optimization** - Scenario simulations recommend the best output-cost-emission trade-offs to stay competitive.
- **Upgrade Intelligence** - Predicts optimal equipment upgrade timing, reducing disruptions and increasing adaptability.
- **Design Feedback Loop** - Provides OEMs and users with actionable performance data, fueling innovation and adaptive design improvements.



# Why EquipWise + Adaptive Manufacturing Matters

Manufacturers today face volatile demand, shorter product lifecycles, and rising ESG imperatives. EquipWise complements Tech Mahindra's Adaptive Manufacturing vision by making equipment operations intelligent, responsive, and future-ready. This convergence delivers:

- Resilient and scalable operations
- Safer, more sustainable plants
- Competitive agility with real-time responsiveness
- Data-driven innovation and continuous improvement



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