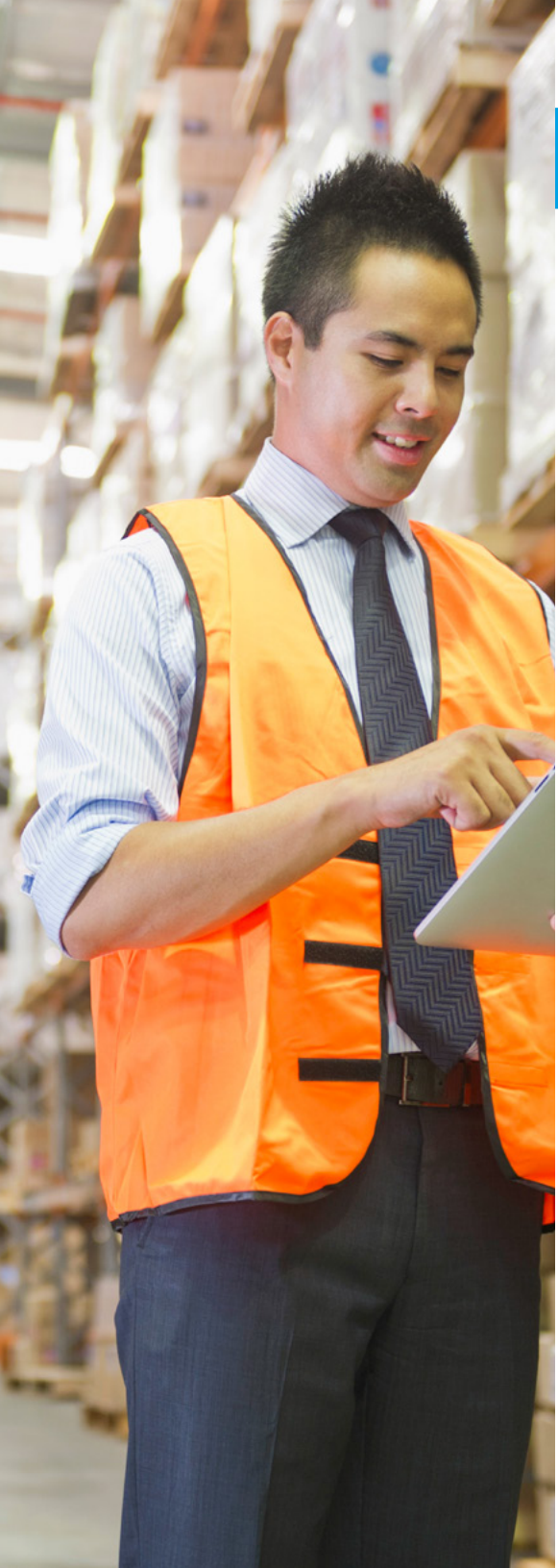# SAP S/4 HANA

Transform Asset Management with SAP S/4HANA®

White Paper Background and Key Definitions

The information outlined below is helpful to understand the contents of this value proposition white paper. It gives clear details on the objective and scope of the paper. Key definitions are also provided for select sections of the paper to provide further clarification.

DELIVERABLE OBJECTIVE

Provides information on the value in moving from an ERP on a traditional database to SAP S/4HANA® and cloud and line-of-business (LoB) solutions

KEY DEFINITIONS

Within the **process and sub-process deep-dives**, there is detailed content in table format articulating the following:

Pain points
Represents major customer business and IT challenges

Current state with ERP on traditional database
Represents the ERP capabilities that are available on a traditional database

SAP S/4HANA capabilities
Represents the capabilities shipped with the latest release of SAP S/4HANA

Cloud/LoB + SAP S/4HANA capabilities
Represents all other solutions that can be integrated with SAP S/4HANA and provide business value. For example, SAP S/4HANA + the SAP Integrated Business Planning solution, or SAP S/4HANA + the SAP Manufacturing Integration and Intelligence (SAP MII) application, etc. These solutions are not embedded in SAP S/4HANA, but integration scenarios exist for these

Planned innovations and future direction
Represents new functionalities planned for future releases of SAP S/4HANA, or new integration possibilities planned for SAP S/4HANA

With the **value proposition section**, all quantified benefits are conservative estimated improvement ranges tied to the top value drivers. They are based on early adopters or new developments/enhancements of SAP S/4HANA + LoB and cloud enhancements that can drive value. Keep in mind that these should be used as a guide. We recommend working together to assess your current maturity and the value of moving to SAP S/4HANA in order to develop a personalized business case.

Detailed road map available on SAP.com ▶
(Customer Login Required)

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Agenda

SAP S/4HANA Asset Management Overview

TRANSFORM ASSET MANAGEMENT ON SAP S/4HANA

With today's dynamic marketplace and challenging economic conditions, organizations are looking at ways to achieve greater operational excellence. They need access to accurate, real-time information about their enterprise. They are also looking at acquiring capabilities to predict potential operational problems before they occur, and want to empower their workforce with all the information required to run their operational processes without issues. In short, they want to be immediate, intelligent, and integrated.

With SAP S/4HANA, organizations can build a foundation for operational excellence with asset management and environment, health, and safety (EH&S) capabilities. Since the release of the SAP S/4HANA Enterprise Management solution in November 2015, the wave of digital business-enabling innovation in our next generation business suite has grown materially throughout the enterprise, across finance, manufacturing, procurement, supply chain, and asset management.

The SAP S/4HANA Asset Management solution allows organizations to manage their asset-related cost, risk, and performance holistically. It enables them to focus on the most efficient ways to balance operating expenditures (OPEX) and capital expenditures (CAPEX) and focus on asset lifecycle costs.

Organizations can implement proactive maintenance strategies that are enriched with the analysis of real-time data, as well as predictive and other forecasting methods, to increase the return on assets and reduce unplanned downtimes. The solution helps in bridging the operational silos by integrating processes from top floor to shop floor, as well as managing the complete asset lifecycle.

With SAP S/4HANA, organizations can systematically reduce risk and improve worker safety with one common view of process risks related to workers, assets, or environment. In addition, improved analytics and predictive models enable organizations to analyze large data sets in order to improve EH&S performance.

SAP S/4HANA is a digital core that fully integrates with solutions that are built on the SAP HANA® Cloud Platform, e.g., SAP Asset Intelligence Network or the SAP Predictive Maintenance and Service solution, cloud edition. They also enable an organization to access standardized, up-to-date master data and performance information about equipment. With the ability to share this information and insight within the ecosystem and enable efficient collaboration among business partners, the solution can help asset operators minimize capital investments and achieve higher asset availability, while at the same time enabling asset manufacturers to centrally manage all information and build installed base knowledge.

SAP ASSET MANAGEMENT CAPABILITIES

Outlined below are the primary capabilities for asset management where value can be achieved through SAP S/4HANA + SAP cloud and LoB solutions.
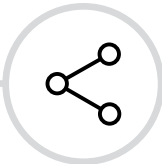
Asset Operations and Maintenance

- Asset strategy and performance
- Maintenance planning and scheduling
- Maintenance execution
- Mobile asset management*

Environment, Health, and Safety

- Incident management
- Health and safety management
- Environment management (planned)
- Management of change*
- Maintenance safety and permit to work (planned)

Asset Network

- Asset information collaboration*
- Asset information governance
- Predictive maintenance and service*

* Additional products integrating with SAP S/4HANA

SAP S/4HANA ASSET MANAGEMENT VALUE PROPOSITION SUMMARY

SAP S/4HANA Asset Management enables organizations to efficiently manage the entire asset lifecycle with real-time visibility into asset performance using powerful analytics. The solution makes it easier to optimize asset usage, shrink costs, lower risks, better manage capital expenditures, and ultimately maximize return on assets.

- Provides real-time insights into asset performance data for timely, relevant decisions
- Enables use of prediction, simulation, and analysis to evaluate asset behavior, plan budgets, and forecast maintenance cost
- Provides a common view of information technology (IT) and operational technology (OT) data for a holistic asset management system approach as outlined in ISO 55001
- Supports and promotes proactively managing asset-related risks to minimize disruption

- Enables access to one common view on process risks related to workers, assets, or the environment
- Facilitates the use of analysis, prediction, and simulation, to achieve greater insight, e.g., converting incident reporting and risk assessments into actionable knowledge
- Fully integrates with the capabilities of S/4HANA Enterprise in the areas of finance, human resources, manufacturing, materials management, etc.

Asset Operations and Maintenance

Typical Pain Points	Current State with ERP on Traditional Database	SAP S/4HANA Enhancements	Cloud/LoB Extension Enhancements	Planned Innovations and Future Directions	Business Benefits
Lack of real-time view into ongoing maintenance activities, and asset performance indicators, hinders timely decision-making	Multi-tiered landscape consisting of SAP ERP, additional ERP component extensions, and business intelligence solution makes it challenging to obtain real-time view of maintenance activities	Real-time view for planners into ongoing maintenance activities with the ability to reschedule multiple times a day in order to better plan and schedule maintenance activities and achieve higher efficiency		Real-time insight into asset performance with key performance indicators (KPIs) instantly refreshed	• Increased return on assets • Decreased unplanned asset downtime or outages
Limited ability to analyze data by machines and sensors leads to high asset downtime and increased time to determine the root cause of failures	• Analysis is based on past performance and lagging indicators, which increases the time to identify potential activities that can improve asset performance • Sophisticated analytics are disconnected from real-time operational data , thereby losing the transparency of strategy changes	Improved performance of many transactions, such as scheduling of maintenance plans and material requirements (MRP) runs		More analytical apps for managers, empowering them to make better decisions	• Improvements in operational efficiency • Reduced service and maintenance cost

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Typical Pain Points	Current State with ERP on Traditional Database	SAP S/4HANA Enhancements	Cloud/LoB Extension Enhancements	Planned Innovations and Future Directions	Business Benefits
• Limited ability to proactively plan maintenance activities leads to high service and maintenance costs • Difficulty in simulating operational scenarios and their impact on maintenance planning leads to less than optimal use of assets	• Challenging to include operational technology (OT) data into maintenance planning, which makes it difficult to identify proactive maintenance strategies • Limited simulation and forecasting features to create long-term maintenance plans			• Enhanced solutions for optimizing planning, scheduling, dispatching, and staffing operations • Simplified and SAP HANA-optimized scheduling solution • Additional functionality to simulate maintenance requirements based on different conditions and identification of cost-effective strategies to operate and maintain assets	• Decreased unplanned asset downtime or outages • Reduced service and maintenance cost
Limited ability to provide maintenance technicians sufficient information to efficiently install, inspect, maintain, and repair assets in the field leads to lower productivity and higher maintenance costs			SAP mobile apps for improving employee productivity by allowing remote workers to access, transfer, complete, and manage their work and inventory: SAP Work Manager mobile app, SAP Inventory Manager mobile app	• Option to run SAP Work Manager and SAP Inventory Manager from SAP HANA Cloud Platform • Geospatially enabled asset management business processes by leveraging the SAP Geographical Enablement Framework • Next-generation, native iOS mobile asset management app designed for SAP HANA Cloud Platform	• Improved asset management FTE productivity • Reduced training costs

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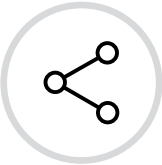| Typical Pain Points	Current State with ERP on Traditional Database	SAP S/4HANA Enhancements	Cloud/LoB Extension Enhancements	Planned Innovations and Future Directions	Business Benefits
Complex and non-intuitive user interface of asset management applications leads to lower employee productivity	User experience enabled via traditional SAP GUI interface and Web-based transactions	• Improved user experience enabled by triggering web-based transaction through SAP Fiori® Launchpad • SAP Fiori app for employees to create and track requests for maintenance in a simplified manner		• Additional SAP Fiori apps for maintenance technicians and planners • Seamless user experience between Web Dynpro and SAP Fiori	• Improved asset management FTE productivity • Reduced training costs
• Inability to identify operational risks for each asset makes it difficult to reduce the probability of asset failures • Limited ability to create transparent and auditable investment strategies for different types of assets makes it difficult to improve planning and utilization of funds for assets				• Risk-based asset lifecycle costing to provide a framework for evaluating various investment and operational options • Evaluation of asset risk at system, subsystem, equipment, and maintainable item level • Improved functionality to allow users to create lifecycle financials models for various investment items and simulate total cost of ownership for assets	Increased return on assets

Environment, Health, and Safety (EH&S)

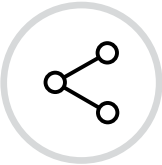| Typical Pain Points	Current State with ERP on Traditional Database	SAP S/4HANA Enhancements	Planned Innovations and Future Directions	Business Benefits
Difficulty in developing one common view of process risks related to workers, assets, or the environment results in high cost for environment, health, and safety compliance	Multi-tiered landscape consisting of SAP ERP, ERP component extension, and business intelligence makes it challenging to access single source of the truth for all EH&S-related information	Native integration of incident management as well as health and safety management are available as part of SAP S/4HANA digital core, which helps in considerably reducing the complexity of the landscape and improves performance	• Environment management application based on SAP S/4HANA • SAP Management of Change application based on SAP S/4HANA • EH&S as part of SAP S/4HANA Cloud suite • Additional business process for environment management – wastewater management	• Reduced EH&S management cost • Improvements in operational efficiency
• Limited ability to effectively analyze EH&S data to reduce workplace risk **• Inability to develop proactive safety measures leads to low EH&S maturity**	• Analysis is based on past performance, which limits the scope of proactively driving EH&S risk reduction • Data is processed in batches, which increases the time required to analyze EH&S-related information	Embedded analytics based on live data that help EH&S practitioners act in the moment	Additional in-memory analytics and predictions for health and safety management	Reduced EH&S management cost
Limited ability to report and manage incidents in an effective manner leads to high frequency rate of incidents, injuries, and illness		Role-based access to the application to manage context-specific work and gain visibility into results	Incident reporting in SAP Fiori app with offline capabilities	• Reduced accident and incident rate • Reduced compliance penalties and fines

Asset Network

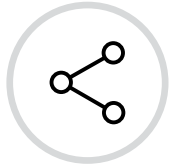| Typical Pain Points	Current State with ERP on Traditional Database	SAP S/4HANA Enhancements	Cloud/LoB Extension Enhancements	Planned Innovations and Future Directions	Business Benefits
Limited ability to share and learn vital best practices on installation, usage, and performance of equipment between different stakeholders hampers the process of improving asset performance	Information sharing is only possible via direct interfaces between individual systems, which makes it difficult to achieve effective collaboration among different stakeholders	SAP S/4HANA integrated with SAP Asset Intelligence Network	SAP Asset Intelligence Network enables access to standardized, up-to-date, shared information about equipment by bringing together the manufacturers, service providers, and operators of the world's assets to collaborate around shared equipment information; helps lower asset lifecycle cost	• Enhanced functionality in SAP Asset Intelligence Network for content applications such as equipment attributes, locations, failure modes, and codes • Tighter integration of SAP Asset Intelligence Network with SAP S/4HANA, the SAP Product Lifecycle Management (SAP PLM) application, the SAP Predictive Management and Service solution, and SAP Master Data Governance	• Reduced service and maintenance cost • Decreased unplanned asset downtime or outages • Reduced asset data management cost • Reduced EH&S management cost

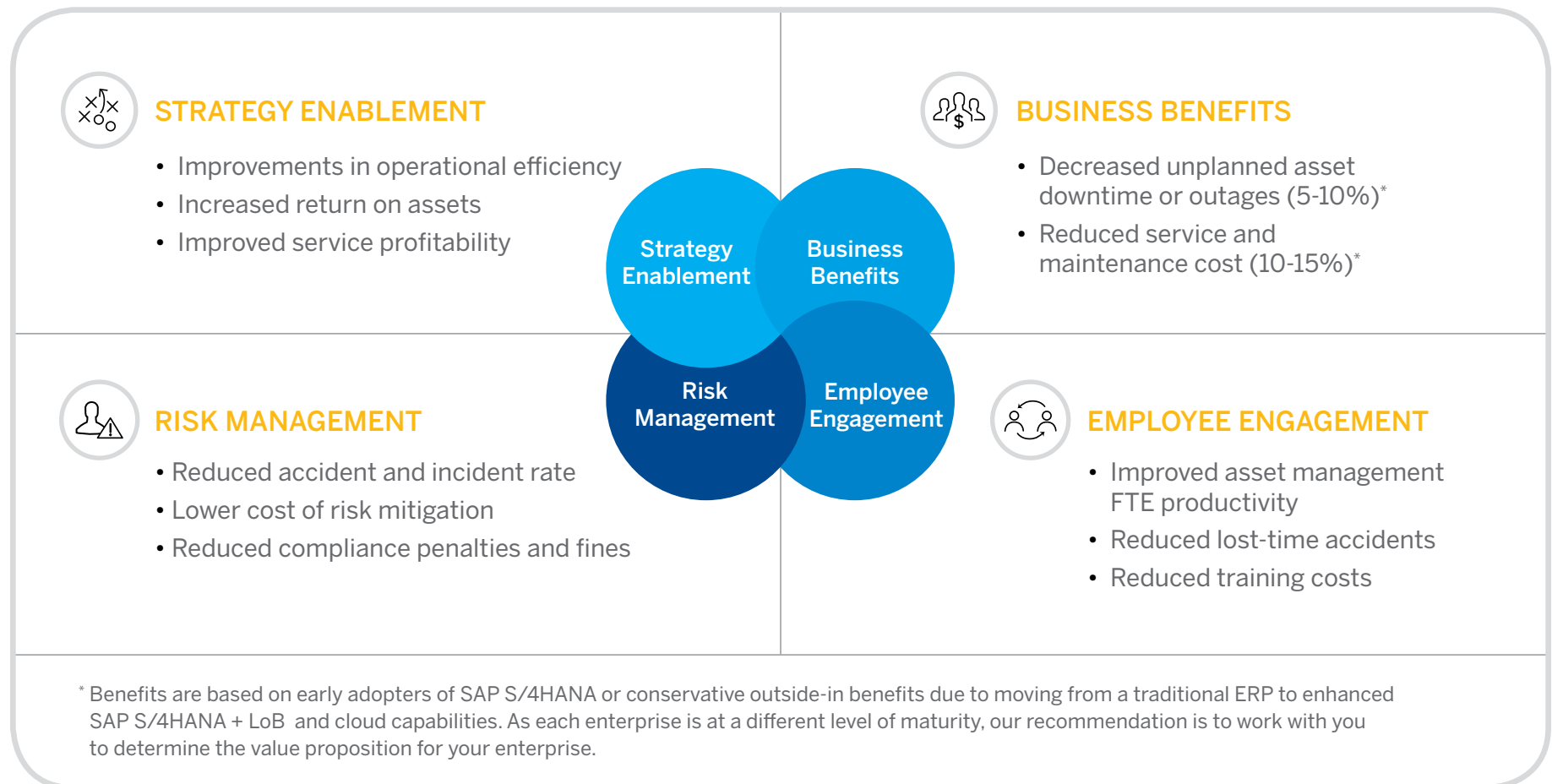| Typical Pain Points	Current State with ERP on Traditional Database	SAP S/4HANA Enhancements	Cloud/LoB Extension Enhancements	Planned Innovations and Future Directions	Business Benefits
Inability to effectively integrate disparate asset information leads to inaccurate and incomplete asset master data	Structured and un-structured master data is managed using separate tools, which increases the probability of maintaining non-coherent master data	The SAP Master Data Governance application for consistent, up-to-date, and accurate master data across enterprise operations		• Out-of-the-box applications for central master data management and governance for functional location, equipment master, maintenance, repair, and overhaul bills of material • A master data workbench to manage the end-to-end process for structured and unstructured data, from engineering to asset operations and maintenance	Reduced asset data management cost

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Typical Pain Points	Current State with ERP on Traditional Database	SAP S/4HANA Enhancements	Cloud/LoB Extension Enhancements	Planned Innovations and Future Directions	Business Benefits
• Limited ability to predict potential asset failure leads to high unplanned downtime • Difficulty in predicting spare parts requirements results in high maintenance costs	Condition-based maintenance connecting the SAP Manufacturing Integration and Intelligence (SAP MII) application and SAP Plant Connectivity software	SAP S/4HANA integrated with the SAP Predictive Maintenance and Service solution	• SAP Predictive Maintenance and Service enables understanding of real-time health status of a machine based on critical values and trends and helps predict problems. It also allows for the most efficient asset management strategies and better balancing of cost, risk, and performance • Provides capability to identify relevant spare parts through machine-learning algorithms • Provides KPI dashboards, cross-machine analytics, visualization of alerts on geo-maps, vibration analysis, and asset health predictions based on predefined machine-learning algorithms	Delivery of additional out-of-the-box predictive models and further enhancements around integration with business systems	• Increased return on assets • Reduced service and maintenance cost • Decreased unplanned asset downtime or outages • Increased first-time fix rate • Reduced warranty costs

SAP S/4HANA Asset Management Value Proposition

SAP S/4HANA Asset Management helps organizations digitally transform their operational processes by enabling proactive maintenance strategies, optimal prioritization of maintenance activities, and one common view of process risks across the organization.

STRATEGY ENABLEMENT

- Improvements in operational efficiency
- Increased return on assets
- Improved service profitability

BUSINESS BENEFITS

- Decreased unplanned asset downtime or outages (5-10%)*
- Reduced service and maintenance cost (10-15%)*

RISK MANAGEMENT

- Reduced accident and incident rate
- Lower cost of risk mitigation
- Reduced compliance penalties and fines

EMPLOYEE ENGAGEMENT

- Improved asset management FTE productivity
- Reduced lost-time accidents
- Reduced training costs

Strategy Enablement · Business Benefits · Risk Management · Employee Engagement

* Benefits are based on early adopters of SAP S/4HANA or conservative outside-in benefits due to moving from a traditional ERP to enhanced SAP S/4HANA + LoB and cloud capabilities. As each enterprise is at a different level of maturity, our recommendation is to work with you to determine the value proposition for your enterprise.

Customers are Achieving Value from SAP

TRENITALIA

Trenitalia is Italy's leading rail transport operator, carrying two million passengers every day.

- The company is using SAP's Internet of Things (IoT) platform to analyze data from thousands of onboard sensors in real time – helping Trenitalia dramatically improve maintenance processes
- Trenitalia aims to reduce failures and disruptions that would have significant impact on industrial costs and customer satisfaction
- Given the fact that maintenance costs are among the largest expenditure in the profit and loss, the goal of introducing SAP® Predictive Analytics is to reduce maintenance spend by more than 8% while raising asset availability
- In the end, this will improve regularity of train journeys, will drive customer satisfaction, and support the competitive positioning of the company in the domestic market
- Using new predictive technologies is fully consistent with Trenitalia's overall vision, mission, and strategy

Click here for Trenitalia source reference.

Company
Trenitalia

Industry
Travel and logistics

SAP Solution
SAP Predictive Maintenance
and Service on SAP HANA

Customer Website
www.trenitalia.com

KAESER KOMPRESSOREN

Kaeser Kompressoren is leveraging machine-to-machine and IoT technology to monitor and simplify its compressed air stations.

- The company implemented a real-time business solution powered by SAP's in-memory computing platform
- The platform enables Kaeser to automatically monitor air compressors in use at customer sites
- The system analyzes data generated from the systems' sensors and meters, including energy consumption, operational status, and compressed air quality, to predict which equipment will need service and when
- Predictive analytics gives customers the luxury of planning downtime and avoiding unexpected outages, which can cause grievous injury to the bottom line

Click here for Kaeser Kompressoren source reference.

Company
Kaeser Kompressoren

Industry
Industrial machinery
and components

SAP Solution
SAP Predictive Maintenance
and Service on SAP HANA

Customer Website
www.kaeser.com

MORITZ J. WEIG GMBH & CO. KG

Moritz J. Weig GmbH & Co. KG chose EHS functionality on SAP S/4HANA to manage its business when it comes to health and safety. Key to this choice were criteria such as SAP's user experience and the desire to empower EHS practitioners with live data to act in the moment. The solution will help move the company beyond automation to predictive suggestions.

Company
Moritz J. Weig GmbH & Co. KG

Industry
Mill products

SAP Solution
SAP S/4HANA
(EHS Functionality)

Customer Website
www.weig-karton.de

> "The SAP S/4HANA EHS solution will allow us to manage health and safety embedded into our core corporate processes. In that context, simplification and operationalization are key to ensure the engagement of our entire workforce and will help us to strive towards zero accidents."
>
> —Ralf Schnackerz, CIO, Moritz J. Weig GmbH & Co. KG

As customers are at various stages of realizing the value of S/4HANA, additional stories will become available in subsequent updates to this white paper.