



EXECUTIVE BRIEF

# Unlock the potential of Industry 4.0 for equipment and asset management

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Equipment and assets are crucial to the delivery of your product. If you can't use your machines, you can't deliver for your customers. Leveraging opportunities for asset productivity will increase equipment uptime, extend asset lifecycles, support sustainability initiatives, minimise non-compliance issues, and reduce safety issues.

Breakthroughs in technology are reshaping the asset management landscape and the software that supports it. With the cloud, organisations can securely forego expenditures on hardware and IT in favor of investment in their core lines of business. Analytics have become more sophisticated in order to provide the optimal data needed for critical daily decisions. Artificial intelligence (AI), the internet of things (IoT), and machine learning (ML) use advanced sensors and sensor fusion along with edge devices to provide more advanced monitoring and diagnostic capabilities.

Sensors incorporated in machinery and equipment today collect volumes of temperature, material wear, moisture level, usage time, and other data. Analytics can transform this data into extremely intelligent, predictable, efficient, and profitable information.

## Increase uptime of equipment and extend asset lifecycles

In our current volatile and competitive landscape, it's no longer enough to simply track and fix equipment assets. A more aggressive asset strategy is needed—one that ensures equipment efficiency and effectiveness to maximise the return on investment (ROI) of physical assets. Today's maintenance strategies need to go deeper. A company must collect and analyse asset data not only to better understand what the maturity of its assets signifies, but also to comprehensively assess equipment condition and predict why and when assets will fail.

Recent innovations offer support for these kinds of optimised maintenance strategies. For example, affordable sensors can be used to monitor equipment for early warning signs of downtime. Leveraging the IoT, data connectivity between these sensors and an enterprise asset management system can activate early detection of deterioration symptoms. This may enable timely intervention before an issue causes major repercussions. However, these sensors produce massive amounts of data, that with the context of time and place, must be sorted in order for it to become meaningful for personnel. Without the right analytics, gathering this data would be useless. Predictive analytics use embedded functionality such as AI and ML to recognize patterns, apply data-science algorithms, and project future incidents.

In the maturity model for asset maintenance, a prescriptive approach is considered optimal. This will become even more important in the post-digital era. In this approach, advanced enterprise asset management (EAM) solutions suggest preventive tactics, prescribe how to act, and predict the outcome. Prescriptive maintenance uses predictive science and algorithms to provide a glimpse into the future and anticipate how the asset's performance can be optimised.

For example, plant maintenance teams, asset managers, utilities, and facility managers are keenly aware of the substantial costs associated with energy and the critical role it plays in the smooth operation of industrial plants and commercial facilities. In fact, as energy costs continue to escalate, energy consumption is increasingly becoming a key focus of the cost-conscious asset maintenance teams. The energy usage data collected can point to opportunities for savings as well as indicators of asset health. Technology can help monitor energy usage, giving managers a valuable tool for handling this major expense.



### Mohawk Fine Papers

Mohawk Fine Papers is the largest manufacturer of premium writing, printing, and digital paper in North America. The energy needed to run its six paper machines represents 60% of the company's operating and maintenance expenditures. Of this expense, motor and pump assets consume 75% of this energy.

The company deployed Infor® Enterprise Asset Management across its five plants. The company has integrated the asset sustainability system with thousands of sensors on the factory floor to collect real-time energy data.

So far Mohawk has been able to reduce energy consumption by 15% and with the additional sensor data, it expects a further reduction of 15-20%.

## Support sustainability initiatives with improved energy usage

According to [IEA](#), "India's industrial sector accounted for 42% of TFC in 2017. Industrial energy demand is growing rapidly and consumption has increased by 128% since 2000." Manufacturers that put the processes and systems in place to better track their energy usage position themselves to make a substantial impact to their financial bottom line and corporate sustainability initiatives.

Manufacturers can combine the energy usage data from sensors attached to assets across their operations with enterprise asset software to collect and analyse it for effective decision-making. In addition, the software can also augment the maintenance team capabilities to alert employees when machinery may not be using energy optimally so they can check on the issue. The software can also help manufacturers identify where they may have "energy leaks" so they can be eliminated, resulting in even more savings.

In addition to monitoring and repair, sustainability initiatives also involve documentation and reporting to governmental and regulatory bodies. These documentation requirements alone keep many manufacturers from undertaking sustainability initiatives, as they appear quite overwhelming and resource-intensive if one looks at manual monitoring and spreadsheet data collection techniques.

However, sensors and asset management software automate the onerous data collection and organisation, making it simpler for employees to generate reports on the key criteria required by the regulatory agencies.

## Use asset data to minimise non-compliance penalties and safety issues

A modern maintenance organisation is built on asset data—a large amount of data that needs to be maintained, analysed and made readily available. This information includes equipment details, spare parts and component data, technical information, modification history, documents, manuals and drawings, permit or lock-out details together with extensive service and work order data.

By collecting and analysing asset data not only can you gain a deeper understanding of what the maturity of your assets means—but you can predict why an asset will fail or when. With this information, you can plan preventive maintenance schedules as well as a maintenance program that will align with your company's strategic goals.

Assets can also be subject to a variety of federal, local and industry mandates, covering everything from emissions to safe handling of waste. Inspections, checklists, performance standards, lab tests, and reporting may be part of complex compliance protocols. Managing such critical processes for multiple assets—each with different needs—can become chaotic. Technology simplifies and streamlines the processes, from managing documents to scheduling preventive maintenance service calls and documenting findings.

## The smartest starting point for Industry 4.0

The benefits of Industry 4.0 become quite clear within manufacturers' asset productivity strategies. The comprehensive use of sensors to collect data, software to collect and aggregate the data, and analytics combined with artificial intelligence to analyse and develop actionable predictions—this is the power of Industry 4.0.

The controlled environment of a company's own manufacturing operations makes asset and equipment management a manageable starting point for Industry 4.0 experimentation. Manufacturers that choose asset productivity as the entry point for their Industry 4.0 strategy can learn how the technologies work, revise business processes, and document the best practices that they can use to improve productivity and efficiencies within other parts of their operations.

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