OCTAVE

EBOOK

Unlocking operational excellence through digitalization for manufacturing

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01 Introduction

Data alone is just data. It takes the right context and connections to unleash its power.

Smarter decisions. Accelerated production. Amplified value. When the right data flows to the right people at the right time, possibility multiplies and information becomes an advantage.

For many manufacturing organizations, this level of digital transformation is the dream. Leaders know what's on the table: clear visibility across assets, actionable insights in real-time and the ability to look ahead and optimize performance. But getting there? That can prove challenging.

According to Hexagon's Advanced Manufacturing Report, 98% of manufacturers are battling data challenges, including disconnection and siloed solutions that get in the way of digital transformation. More than new tools, breaking through requires that leaders build a connected data ecosystem—one with the power to turn fragmented data into shared intelligence across the business.

In this e-book, we'll break down how manufacturers can use digitalization to build a culture of continuous improvement and drive operational excellence at scale.

02 The drive toward digital

Digitalization is top of mind for manufacturers under pressure to perform in a rapidly evolving sector. From the plant floor to the C-suite, leaders are investing in digital solutions to optimize performance and protect margins.

But too often these efforts focus narrowly on cost reduction, which results in short-term gains without lasting impact. True transformation requires a coordinated, enterprise-wide strategy that leverages a broader view.

McKinsey & Company reports that 40% of transformation value stems from growth initiatives. In McKinsey's research, actual cost cutting only comprised around 9% of gross transformation targets. The true value in transformation came from increased productivity, process improvement and other value drivers that increase profitability.

The operational excellence promise

The right digital ecosystem can streamline operations and create a more sustainable, safe and efficient manufacturing facility. This level of business-wide excellence is achieved through:

Improving the process flow

Automating data gathering, reporting and refining

Standardizing procedures

Improving situational awareness to drive better quality

Consolidating data in a central location

Providing data to teams to continually improve operational procedures

By leveraging an integrated digitalization strategy, manufacturers can provide workers with tools and data that supercharge their day-to-day tasks, ultimately fostering a culture of continuous improvement.

Breaking down data silos across departments and functions provides opportunities for manufacturers to fine tune operations by identifying areas for improvement and proactive optimization. Over time, these ongoing improvements clear the path to operational excellence by enabling manufacturing facilities to become safer, leaner and smarter.

03 Cultivating a digital-first culture

Culture is key to digital transformation. Without it, even the smartest tools fall flat.

To unleash real operational excellence, manufacturers need to cultivate a team that's all in on lean-thinking and empowered to pursue the best results.

What it requires:

- Digital-first mindset: Employees must be open to learning and adopting new technology, understanding the value that it will bring to the organization and how it fits with the facility improvement strategy.
- Digital literacy: It's not enough to give employees the tools. They need to be equipped with the skills to use them to maximize efficiency. That requires implementing intentional change management strategies that go beyond vendor training, such as identifying superusers and empowering change champions across the organization.

When this shift takes hold, employees do more than just follow processes. They take ownership, make connections and actively contribute to a culture of continuous improvement every day.

Case study

The WEPA Group

Project

Required a digital solution to drive better maintenance planning and more flexible business operations.

The WEPA Group is market leader in sustainable hygiene paper product manufacturing. From its headquarters in Germany, the company coordinates operations across 13 locations in Europe.

Like many others, WEPA found itself facing daunting market challenges. Rising competition. Inflating material costs. An increasing push to do more with less. In this complex environment, scaling up efficiency and operational excellence was critical.

Enter Octave Attune EAM (formerly HxGN EAM), a digital solution offering a comprehensive set of enterprise management capabilities to capture a host of equipment and facilities data.

WEPA harnessed Attune EAM deployed in the cloud, to standardize its maintenance processes, streamline workflows, automate business rules and track assets in detail. WEPA opted for a web-architected solution with an integrated suite of modules.

The result? Faster decisions and stronger planning. Smarter, more flexible business strategies. More efficient, standardized operations. With the right digital ecosystem in place, WEPA moved beyond simply managing operations to actively improving them—turning connected data into a continuous source of performance gains.

05 Digitalization: The key to operational excellence

Digitalization streamlines communications to drive operational efficiency, unlocking a competitive edge for manufacturers by:

- Building lean, end-to-end value streams that power efficient workflows
- Harnessing real-time visibility that accelerates decisions and enhances performance
- Standardizing processes and procedures that teams can adopt and leverage with ease
- Connecting the right people to the right processes, data and tools—seamlessly and quickly
- Identifying risks and inefficiencies early—from security threats to safety gaps to performance bottlenecks
- Aligning data in a shared context to drive clarity, consistency and improved outcomes

Scaling up productivity and cost-efficiency

Today's most powerful digital tools increase the visibility of workflows and processes, unleashing new possibilities for manufacturers.

Take digital twin technology: By leveraging artificial intelligence, predictive and prescriptive analytics, this tech establishes a comprehensive digital ecosystem. This enables manufacturing leaders and operators to clearly visualize data and transform it into smart actions that optimize outcomes.

The result is continuous process improvement that ultimately powers smarter, stronger, more cost-efficient operations.

05

Empowering teams with smarter processes

Operational excellence helps manufacturing teams do more with less, delivering enhanced productivity with better quality and less risk. The right digitization tools make it possible by:

- Reducing nuisance alarms and streamlining alarm management
- Improving shift handovers
- Enhancing situational awareness
- Consolidating data sources
- Automating data gathering and reporting
- Digitizing safety-critical operational work processes

Leaner. Safer. More profitable. By consolidating data, automating workflows and standardizing processes to increase efficiency, the right digital ecosystems unleash a myriad of benefits that connect and empower workers.

Staying ahead of critical incident impact

Incidents are inevitable. Downtime isn't.

In manufacturing, it's not a matter of if an incident will occur - it's when. And the stakes can be high. A strong digital foundation gives organizations the visibility to anticipate issues and respond to incidents with speed and precision. It's the first step in building resilient teams that are equipped to handle whatever comes their way.

A connected digital backbone can power faster decisions that can prevent shutdowns, limit operational impacts and reduce safety and environmental threats. While risk can never be completely eliminated, a comprehensive data ecosystem helps organizations visualize data to make predictions, evaluate areas of improvement and implement changes to processes. It's how high-performing teams stay in control, even under pressure.

Powering sustainable progress

Striving for operational excellence benefits more than just performance and productivity. The process also cuts waste, exposes inefficiencies and breaks through barriers that get in the way of resilient operations.

Research reinforces this link: a study conducted by European researchers and published in Sustainability reports that there is a positive correlation between operational excellence, lean management and sustainable outcomes.

Digital tools play a critical role in building sustainability. By streamlining maintenance requests and standardizing work instructions, manufacturers can eliminate manual, paper-based processes. Free from the burden of managing inefficient systems, teams are able to focus on continuously improving performance.

06 Three actions to elevate outcomes

To begin the journey towards operational excellence, manufacturing leaders must create a plan of action for continuous improvement.

This includes defining a strategy, identifying quick wins and looking for low-hanging fruit where digitalization will expedite return on investment. These three steps outline where to start.

1. Digitize wherever possible

When implemented properly, digital transformation helps organizations adopt technology that streamlines and strengthens operations. However, before that can happen, leadership must first perform a tech gap analysis to determine which processes and procedures could benefit from digitalization.

For example: by digitizing paper-based data collection and storage, employees can keep safety-critical assets in secure digital spaces that are accessible to those who need them. By using the right software, the right people can reference or utilize assets quicker, freeing them to devote more time and energy to improving operational efficiencies and performance.

2. Establish a cohesive data network

Once manufacturing leaders identify which business processes need to be digitalized, they can determine how to connect these digital assets to build a cohesive ecosystem.

Creating a connected ecosystem involves digitally linking all tools, processes and procedures across the organization. With coordinated operational data readily available, teams can rapidly visualize end-to-end processes and access essential information in one centralized location.

The result is a powerful workforce equipped with the real-time intelligence they need to improve efficiency, drive performance, decrease operational risk, ensure compliance and more.

3. Reinforce security

Undetected and unchecked cyber threats put manufacturing operations at risk—disrupting operations, slashing productivity and in some cases even forcing complete shutdowns.

To stay ahead, manufacturing leaders and IT managers must continuously assess their operations for cyber threats. That’s where digitalization comes in.

Establishing a continuous, real-time visual flow of operations makes it easier to detect cyber threats. This empowers operators to identify issues earlier, respond faster and take proactive steps to strengthen security and safeguard operations.

07 Measuring the impact

Adopting new technologies that integrate with manufacturing operations enables management teams to connect existing systems, scale up performance and ensure efficiency. However, there's no one-size-fits-all strategy for getting it done. Every facility requires a unique approach to achieving operational excellence—and measurement is key to tracking success.

Quantitative and qualitative tools can help manufacturers gather and analyze metrics to ensure they are driving toward operational excellence:

Operational key performance indicators (KPIs) are quantitative metrics for determining the impact of operational excellence strategies. KPIs measure against benchmarks to help organizations track performance. Organizations can evaluate progress against objectives and key results (OKRs) along with KPIs to identify areas that need attention, then implement continuous improvement strategies to accelerate operational excellence

Qualitative metrics provide conceptual insights into the quality of a facility's operations. Leadership teams use these insights to identify vulnerabilities and make enhancements to workflows, operations and processes. For example, a qualitative study by researchers at the University of Bergen investigated the use of digital twin technology by high-reliability organizations—those that are involved with "safety-critical situations". The study found that the implementation of digital twins led staff to compare and question workflows and visualize how new tools could fit into their existing methodology while ensuring enhanced safety and efficiency.

07

Employing digital twin technology to enhance manufacturing safety

Digital twin technology enables manufacturers to create a replica of their processes, equipment and assets that can be accessed securely anywhere, any time by approved personnel. This level of visualization unlocks powerful benefits—from boosted performance to safety optimization.

When a plant can reduce the need for people to travel to facilitate a safety evaluation, they mitigate the risk of safety and security issues.

Using digital twin technology when planning an inspection decreases the number of people who must go into the field to visit critical safety areas. Instead, users can input a specific tag to generate a digital representation of the area they need to analyze, as well as view all corresponding documents, information maps and other assets. The result is seamless, consolidated navigation that allows manufacturing facilities to optimize safety while reducing risk.

08 Making the most of your digital investment

By harnessing the power of digitalization, manufacturers can unleash operational excellence and build more efficient, sustainable and secure operations.

From simulating real-world scenarios to automating workflows, operational excellence involves integrating the physical world with the digital. The result is a cohesive digital ecosystem that management can depend on to inspire continuous improvements and achieve operational goals.

To make it happen, leadership must recognize and understand that operational excellence is a unique journey. Rather than relying on a one-size-fits-all blueprint, operators and managers must educate team members, establish a digital-first culture and integrate the right solutions for their business.

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About Octave

Octave is a leader in enterprise software, turning data into decisive action and intelligence into your edge. Our software solves for and simplifies complexity, from the design and build to operations and protection of people, property and assets – for any scope, at any scale. For decades, we've partnered with customers to sharpen performance, elevate efficiency and amplify results. From factory floors to entire cities, our solutions are tuned to scale up what's possible from day one onward.

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