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THE FACTORY BEAT

Keeping Your Finger on the Digital Pulse
of Manufacturing

Change is the only constant across today's complex manufacturing landscape.
The surge of digital transformation, spearheaded by Industry 4.0, has redefined how factories operate, build, and evolve.

While the outcomes of data-driven manufacturing are compelling—greater efficiency, more streamlined processes, engaged teams, and enhanced decision-making—it also presents a unique set of challenges for manufacturers striving to keep pace. To stay competitive, **companies must understand how to harness the power of emerging technologies while simultaneously navigating workforce dynamics and operational complexities.**

Manufacturers striving to navigate the intricacies of today's digital transformation initiatives must embrace advanced tools like the Manufacturing Execution Systems (MES)/MOM (Manufacturing Operations Management). In this whitepaper, we will explore the strategies and technologies that are shaping the future of smart factories, provide you with an intuitive framework to assess your organization's digital maturity, and offer useful insights to help you select the right MES/MOM to drive your operations forward. **In a world where the digital beat is rapidly accelerating, it has never been more essential for manufacturers to continue evolving with the rhythm.**

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Overcoming Manufacturing Challenges: Personnel and Processes

Today's manufacturers are facing a wide range of personnel and process-related challenges as they navigate an evolving industrial landscape marked by rapid technological advancements, changing workforce dynamics, and persistent supply chain disruptions.

One of manufacturing's key issues is the growing skills gap, driven by an aging workforce and the demand for advanced digital and technical expertise. **Attracting, retaining, and upskilling talent has become even more critical as manufacturers embrace technologies like artificial intelligence (AI), machine learning (ML), augmented reality (AR), automation, and robotics, all of which require specialized knowledge.** Additionally, workplace safety has become a central focus due to its important role in fostering a healthy and resilient workforce.

Manufacturers are also grappling with the complexities of digital transformation, supply chain slowdowns, and the demand for more sustainable practices. The integration of smart technologies like IIoT and data analytics can help address these complexities, but they are often difficult to implement seamlessly and in a cost-efficient manner. Lean manufacturing objectives must be balanced with the need to adhere to compliance and mitigate cybersecurity risks. **These challenges require a holistic approach that blends innovation with adaptability to bolster both workforce management and operational efficiency.**
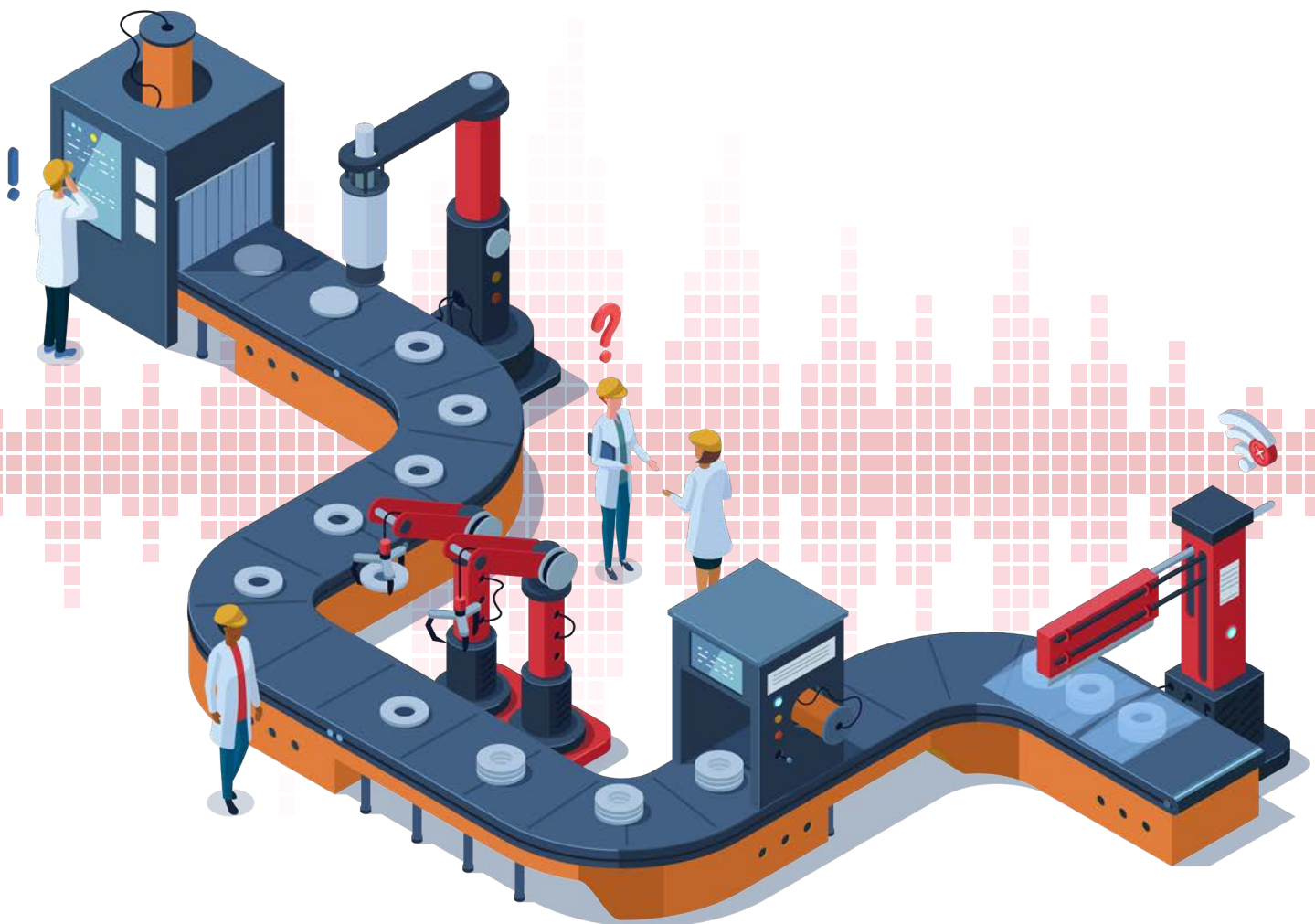
ABI Research recently surveyed many leading manufacturers to surface their most pressing concerns regarding their teams and processes. **Let's explore the biggest takeaways.**

Personnel–Related Challenges

According to ABI Research, the most pressing challenge manufacturers face with their workforce is a lack of expertise and skills needed to fully understand and effectively apply new technologies.[1] Filling this pervasive skills gap is a critical success factor for manufacturers, particularly as new technologies like AI, data analytics, IIoT, and more make their way onto the factory floor.

Other top challenges cited by most survey respondents included insufficient time to conduct the necessary planning to scale innovations, and resistance from employees to change their work habits. **This illustrates a widespread need for manufacturers to invest time in training, upskilling, change management, and ongoing education.**

Manufacturing personnel appreciate the value of new technologies, and eagerly embrace their numerous benefits. At the same time, they also recognize that many emerging technologies are tools to enhance to human labor, not necessarily a replacement for it.

Top Personnel–Related Challenges

Which challenges do manufacturers view as urgent priorities?

Don't have time to conduct necessary planning to scale innovations

62%

Lack the expertise to fully grasp the potential of new technologies

69%

Staff does not have the skills to utilize the new technologies

43%

" Team members must **possess a tech–savvy skillset to be able to use new technologies like AI, data analytics, and IoT.**

Process–Related Challenges

In addition to personnel-related challenges, manufacturers also reported significant challenges with organizational processes. The most pressing process-related challenge is the inability to clearly articulate both problems and solutions. **According to an ABI Research survey, respondents find it difficult to express the challenges that are holding them back, as well as the ROI of digital transformation initiatives.**[2] Without a clear articulation of their needs and how technologies can address them, manufacturers struggle to identify the right solutions and build the consensus needed to bring them to implement and life in the factory environment.

Given these challenges, it's not surprising that manufacturers also face other significant process-related obstacles. Commonly cited issues include difficulties aligning technology with commercial objectives, increased exposure to cyberthreats, lack of knowledge about technologies and vendors, and the struggle to secure budgets for digital transformation projects.

Solving these challenges requires organizations to tightly align their strategic objectives with digital initiatives, building a clear connection between business needs and key success indicators.

Top Process–Related Challenges

Which challenges do manufacturers view as urgent priorities?

An inability to articulate needs holds the organization back

72%

Often cannot articulate the ROI for a digital transformation project
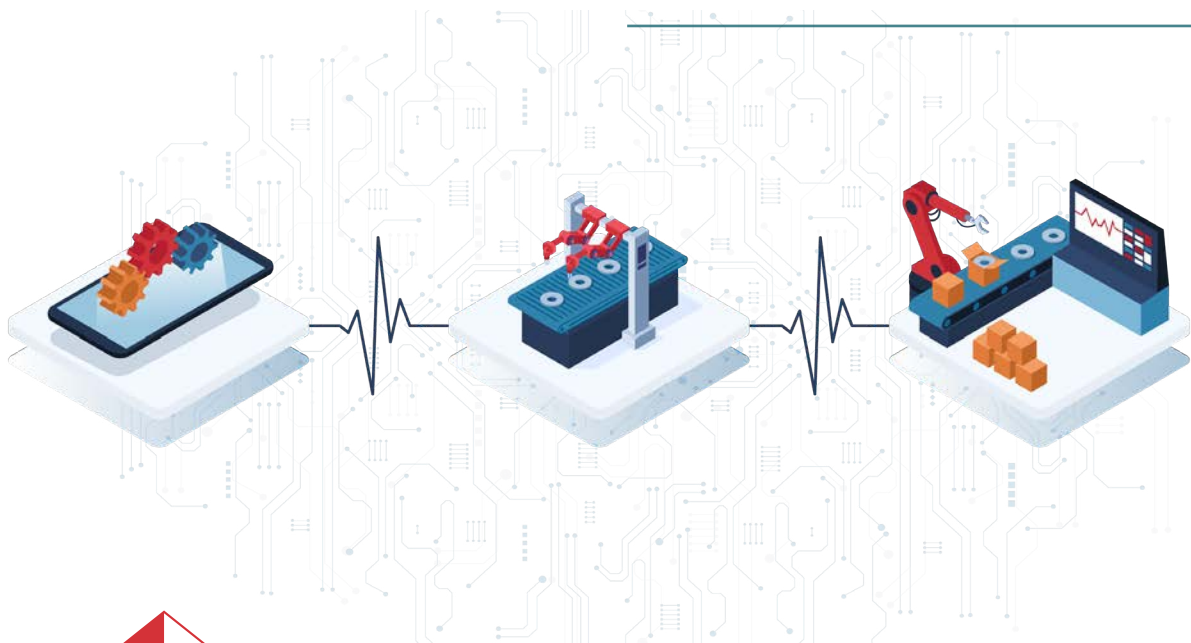
57%

Struggle to align technology investments with commercial objectives

59%

" Manufacturers are contending with the **complexities of digital transformation, supply chain disruptions, and the demand for more sustainable practices.**

The Digital Maturity Model: Where Are Most Manufacturers in the Journey?

The vast majority of manufacturers are acutely aware of the need to digitally transform. But many are unsure how to chart their progress. According to ABI Research, organizations can leverage a `digital maturity model' to clearly benchmark where they are on their journey. Think of it as a triage for your Industry 4.0 transformation initiatives.

Far more manufacturers are not at the beginning or the end of their digital transformation journey, but instead, somewhere in the middle. While some are just starting to explore digital tools and processes, many are actively focusing on integrating advanced technologies like IIoT, AI, and analytics into their operations. These organizations are implementing smart manufacturing systems and leveraging the digital thread to connect and streamline their processes.

While it is natural for a manufacturer to feel behind on their journey to leveraging advanced technologies, the reality is that few manufacturers have fully transformed to the point where all aspects of the business are digitized and integrated. The digital maturity journey is complex, and companies typically face challenges related to legacy systems, workforce skills gaps, and the need to build a culture of data-driven decision-making. Most are progressing in stages, prioritizing investments that yield immediate operational efficiencies while gradually building toward a more comprehensive digital infrastructure.

> "The digital maturity journey is complex, and companies **face challenges related to legacy systems, workforce skills gaps, and data-driven decision-making.**

Aegis Whitepaper:
The Digital Maturity Model: Where are Most Manufacturers in the Journey?

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While many manufacturers are well on their way, there is still significant work ahead to fully unlock the potential of Industry 4.0 technologies. **Do you know where your organization lies in the digital maturity model?** There are five levels— from the ground floor of labor-intensive, manual processes, to the highest level, which is marked by transformative drivers like automation, efficiency, and flexibility.
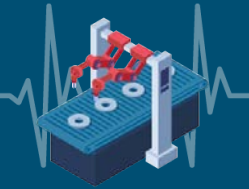
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Level 5: Lights Out

This is the highest level of automation and digital transformation. Many of these factories will work dynamically with mobile workstations instead of a fixed production line for increased flexibility. A high degree of automation permeates the factory, and workers focus on essential and strategic tasks.

Level 4: Digitally Transformed

Cutting-edge manufacturers have reached this level. They have scaled multiple transformative technologies and have a team, or multiple teams, dedicated to identifying and embracing even more advanced technologies.

Level 3: IT/OT Integrated

Organizations at this level have a real strategy for innovation and transformation and have even started to implement it. They can ramp up or decrease plant productivity easily but cannot reconfigure lines without significant costs.

Level 2: "Modern Factory"

Although they are still not close to the cutting edge, firms at this level have developed an awareness of transformative technologies, but a lack of organizational direction prevents them from harnessing these technologies at scale.

Level 1: Early Automation

These organizations have at least started thinking about automation and technology on the factory floor, but have not yet implemented more than the most basic automation technologies.

Level 0: Human Controlled

These manufacturers have yet to implement any of today's transformative technologies. Humans manually control all machinery and operations, and individual human productivity limits the scale and efficiency of operations.

Most Factories Today

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The Manufacturing Execution System: The Heartbeat of Manufacturing

The heartbeat of the factory is the Manufacturing Execution System/Manufacturing Operations System. The MES/MOM manages production processes on the factory floor in real time, connecting operations from material tracking to finished product assembly and beyond, ensuring efficient production, quality control, and regulatory compliance.

In today's manufacturing environment, the MES critically extends oversight and traceability across the entire production cycle to overcome some of the factory's fiercest challenges. **By integrating data from machines, operators, and systems, the MES/MOM enables smarter, faster decision-making, driving both operational efficiency and business agility.**

How the MES/MOM Solution Overcomes Operational & Business Challenges

By providing real-time visibility and control over production processes, the MES/MOM enables manufacturers to optimize workflows, reduce waste, and minimize downtime. ABI Research surveyed manufacturers on how their MES helps them solve key challenges.[3] Here is where they cited measurable improvements*:

201 Quality levels

189 Equipment and machine performance

176 Recruitment efforts for qualified staff

158 Supply chain reliability

119 Trade union membership

123 Workforce skills

123 Understanding of production issues

132 Staff retention

115 Production line layouts

115 Wage expectations

111 Mitigation of unplanned downtime

105 Workforce safety

*Number of responses

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Manufacturers' Investment Priorities in MES/MOM

According to ABI Research, **there is a notable correlation between the size of a company and its priority of the MES.**[4] Smaller manufacturers are putting greater priority on the MES/MOM solution. In fact, MOM was ranked #1 or #2 out of all other priorities in investment by the majority of companies with less than 5,000 employees. The MES solution was also ranked high by smaller companies.

In contrast, companies with 5,000 to 25,000 employees, as well as companies with more than 25,000 employees, ranked MES/MOM much lower on their list of priorities, with robotic process automation as their top priority. Many larger manufacturers already have MES/MOM systems in place.
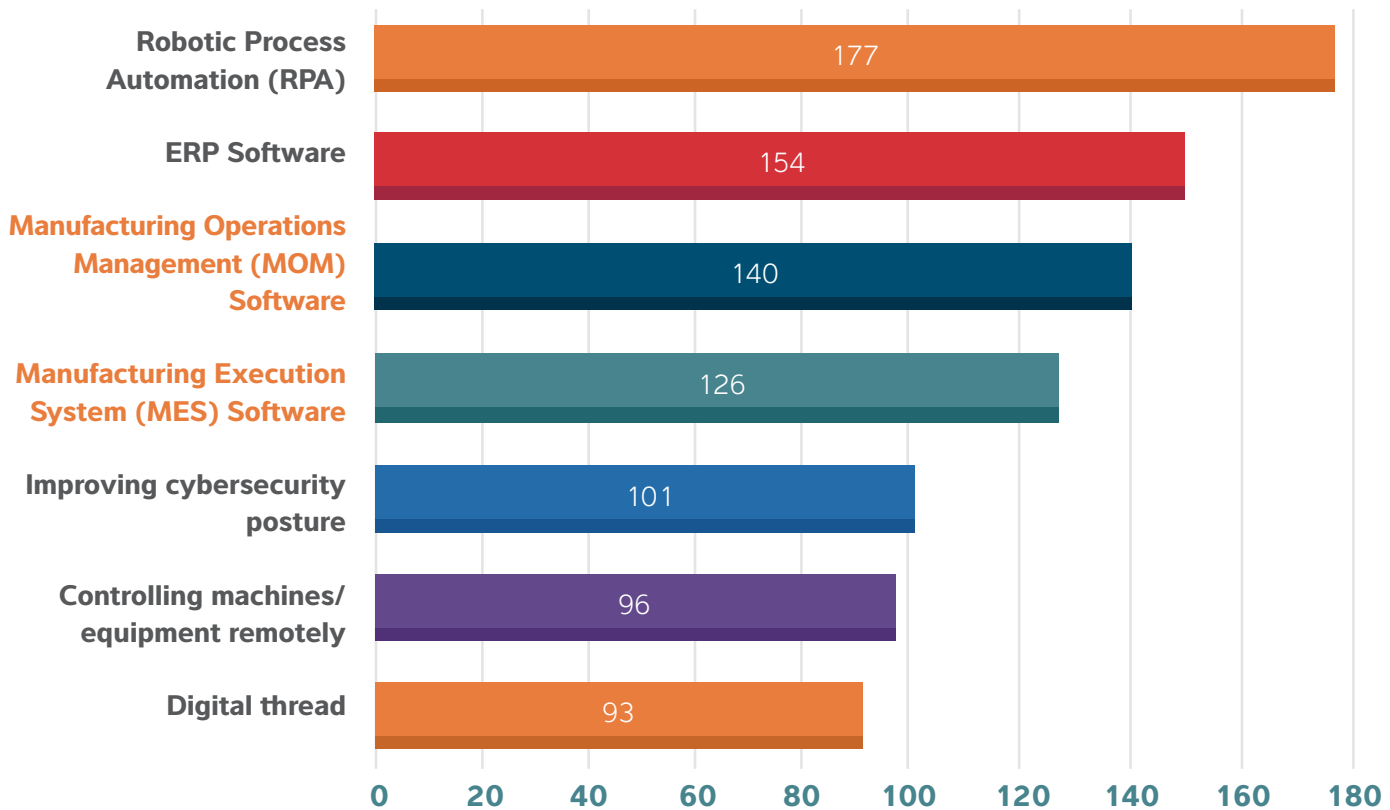
These results indicate a need for a strong MES/MOM system within smaller organizations that are looking to move up the digital maturity model.

MES/MOM vs. Other Technologies

According to ABI Research's Manufacturing Markets Survey, **many organizations are prioritizing MES/MOM solutions because they recognize their ability to drive significant value.**[5] Many survey respondents cited MES and MOM solutions as a priority compared to other solutions. Both systems are foundational investments in the digital transformation journey, which lay the groundwork for each subsequent level of digital maturity.

While foundational, MES/MOM solutions are not the only technologies in the modern factory. Other digital investments that were widely ranked as important include robotic process automation and enterprise resource planning software, cybersecurity technology, and remote control technology.

Where does MES/MOM rank in priority against other solutions?*

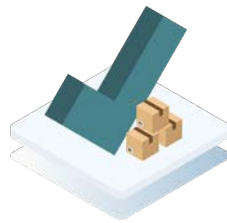| Category	Number of responses
Robotic Process Automation (RPA)	177
ERP Software	154
Manufacturing Operations Management (MOM) Software	140
Manufacturing Execution System (MES) Software	126
Improving cybersecurity posture	101
Controlling machines/equipment remotely	96
Digital thread	93

*Number of responses

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Why is MES/MOM Foundational to a Manufacturer's Digital Health?

Manufacturers must recognize that if they want to leverage advanced technologies, like artificial intelligence for example, they will first need a strong foundation, which is an MES/MOM solution with a data contextualization engine at the core. Because of its foundational role, an MES/MOM intersects multiple manufacturing challenges, simultaneously addressing heightened regulatory demands, intense quality requirements, and labor shortages.

The real power of the MES/MOM lies in its ability to go beyond mere data access, contextualizing the rich data found in the factory. The MES/MOM, supported by a foundation of contextualized manufacturing data, aids companies in facing strategic market challenges currently found in manufacturing:

Increasing **regulatory demands**	Market focus on **product quality**	Labor shortages and **high turnover**

Data lies at the heart of an MES/MOM solution. Access to data is critical, but it must be contextualized. Manufacturers should avoid the trap of acquiring data just for data's sake. When evaluating MES/MOM solutions one needs to consider three core pillars:

1 Does the system contextualize the data to the product being manufactured and the manufacturing process?

2 Does the system easily adapt to different manufacturing scenarios?

3 Does the system empower your workforce with easy-to-use tools that scale across your organization?.

The Digital Thread: Foundation for Modern Manufacturing

When discussing the digital thread, it's critical to first examine current trends and obstacles that may hinder manufacturers from establishing the robust framework required to achieve seamless integration and contextualization of data across the entire product lifecycle.

Historically, manufacturers sought customized MES solutions to address their unique requirements. While tailored functionality and user experiences were delivered, these bespoke systems were expensive, difficult to maintain, and incapable of scaling alongside business growth. In response, the industry shifted their focus on commercial "off-the-shelf" MES/MOM solutions, which were easier to maintain but the majority of the solutions lacked the flexibility and depth of capabilities that manufacturers valued. To bridge the gap, an "app/toolkit-based" approach emerged, promising customization with lower costs. However, this method reintroduced many of the same challenges as bespoke solutions, especially when scaled to meet complex manufacturing needs.

The app/toolkit approach often begins with an individual creating a custom application to improve efficiency in a specific factory area. These apps might monitor machine performance, track inventory, or automate routine tasks. Initially, this feels like a win. But as more employees develop similar apps, issues arise:

Fragmented Data and Business Logic:
Each app uses inconsistent data structures and lacks a unified business logic layer.

Operational Disconnection:
Tracking products across stations becomes difficult, reports are inconsistent, and integrating with enterprise systems is nearly impossible.

Strategic Blind Spots:
Leaders cannot make informed decisions due to the lack of a cohesive view of operations.

Scalability Roadblocks:
The approach becomes a barrier rather than an enabler as complexity increases.

To overcome these challenges, manufacturers need a **robust yet extremely configurable commercial solution that is built on a Digital Thread Foundation,** rather than relying on fragmented, app-based approaches.

What Is a Digital Thread Foundation?

A digital thread foundation serves as the backbone of a manufacturing system, enabling data and information to flow seamlessly across every stage of the product lifecycle. It addresses the critical shortcomings of legacy and app/toolkit-based MES systems by leveraging:

- **A Contextualized Data Model:**
  A unified framework ensures all data—from design to manufacturing to operations—is consistent, accurate, and interconnected.

- **A Business Logic Fabric:**
  Clear rules govern how data is processed and shared, ensuring efficiency, standardization, and scalability.

This foundation enables manufacturers to eliminate silos, provide real-time insights, and close the loop between design, production, and operational feedback. Importantly, it makes AI-driven analytics, traceability, and continuous improvement possible by contextualizing all data within the manufacturing ecosystem.

FactoryLogix: Built on a Digital Thread Foundation

Unlike many solutions that only touch specific aspects of the digital thread, FactoryLogix is built entirely on a digital thread foundation. This enables a cohesive and scalable approach to managing manufacturing complexity:

Machine Data Layer:
FactoryLogix ensures seamless connectivity with protocols and standards, turning raw machine metrics into actionable insights. For instance, it contextualizes machine operations within broader production processes, ensuring manufacturers get a complete view of performance.

Design Data Integration:
By incorporating BOM, MCAD, ECAD, and 3DCAD data, FactoryLogix links design elements to the product's serial number, revision history, production route, and work orders.

Human Activities:
Data from operator actions is transformed into valuable insights, seamlessly integrated into the overall digital thread.

All data is contextualized in relation to the specific product design and the flow of the manufacturing process. It is this digital thread foundation that is the true enabler of supporting a drag & drop, no code approach that can also offer the scalability and standardization that so many manufacturers require.

Why Contextualization Matters

Without contextualization, even standardized data lacks actionable value. For example, a machine might record its own operations but lack awareness of its role in the overall process, upstream dependencies, or downstream bottlenecks. FactoryLogix bridges these gaps by integrating and contextualizing data from all sources, enabling manufacturers to:

• **Monitor and streamline** production flows in real time.

• **Seamlessly integrate** with systems like ERP, PLM, and QMS.

• **Prepare data** for advanced analytics, AI, and traceability initiatives.

Simplifying IIoT Integration

One of the biggest challenges manufacturers face is integrating and contextualizing diverse data sources, especially from IIoT-enabled devices like PLCs (Programmable Logic Controller). Standards like IPC-CFX and OPC UA provide a framework for data exchange, but they don't solve the problem of contextualization. For instance:

• **PLC Data Variability:** Different brands and models of PLCs define unique data entities ("tags"), creating challenges for multi-site operations.

• **Lack of Standardization:** While digital connections can be established, interpreting the data requires careful customization for each machine and use case.

FactoryLogix addresses this with its no-code PLC Gateway, which converts raw PLC data into a standardized semantic language that can be seamlessly integrated into the digital thread. This plug-and-play capability ensures new machines and systems can be incorporated effortlessly, minimizing disruption and maximizing productivity.

The Digital Thread's Role in Unlocking AI Potential

Finally, a true digital thread foundation is essential for realizing the potential of AI in manufacturing. Only when production, IoT, traceability, and activity data are contextualized within the design framework can AI provide actionable insights, such as identifying bottlenecks or recommending process improvements.

Agility Unleashed

Manufacturers are facing immense pressure to be more agile and responsive to market demands. **That's why it is imperative to leverage an agile MES/MOM solution that readily adapts to any manufacturing environment.** Ultimately, an adaptable MES/MOM is your strategic asset, ensuring you can navigate economic uncertainties, integrate new technologies, and future-proof your operations with ease.

Traditional MES/MOM systems can typically track a product on a preconfigured process, often with a few preconfigured logic routes based on conditions. What they are usually unable to handle, however, is the intense adaptation required in today's production, like emergency process switchovers, for example. Many legacy systems rely on hardcoded rules and require significant reprogramming to handle process switchovers or emergency changes.

In truly personalized manufacturing, flexibility takes on new meaning. Not only is each product configuration unique, but the processing of its parts is also unique to each customer. **Even in the face of intense personalization, manufacturers can adapt without layers of rigid customization—an issue that has historically plagued the industry.** Older systems are rigid and often built around pre-defined workflows, making it difficult to dynamically adjust processes for unique product configurations. The MES/MOM system must be capable of handling a mix of production scenarios without requiring coding.

MES/MOM software is a long-term investment that's not simply swapped out for a different offering when requirements or demand structures change. Instead, it should adapt in stride alongside the manufacturer.

Empowering and Scaling the Enterprise

Given the number of pressing worker issues and low engagement levels, the industry needs to recalibrate the connected worker concept. **An even more intense focus is required to reinvigorate the worker experience, address current shortages and improve the nature of work in ways that make employees eager to come to work every day.**

Let's start by exploring how FactoryLogix empowers a manufacturing engineer to create and deploy comprehensive work instructions.

Instead of requiring custom application development, FactoryLogix offers a no-code, drag-and-drop approach that empowers manufacturing engineers to utilize pre-configured, composable "power applets." These applets integrate seamlessly, eliminating the need to design underlying data structures, contextualization engines, or business logic layers. **Engineers can simply assemble components, orchestrate workflows, and deploy them instantly to the factory floor.**
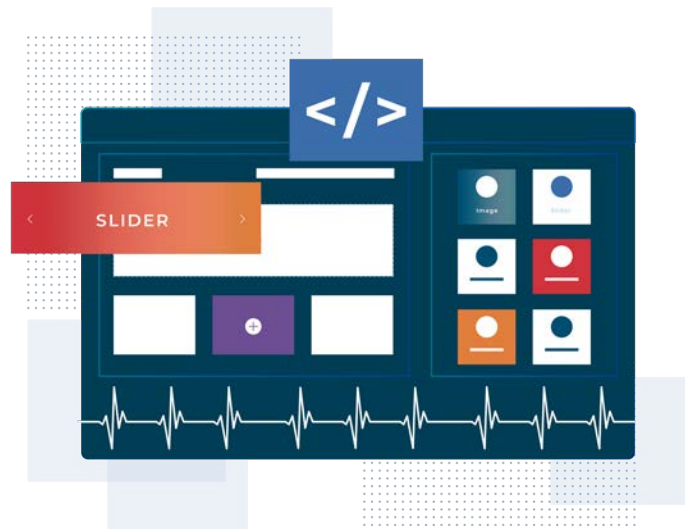
The key advantage of FactoryLogix is that, unlike other solutions that enable customers to choose and configure user interfaces, **FactoryLogix eliminates the need for any additional effort to make those interfaces function.** Its power applets are inherently "system and data aware." Once placed within a user interface, they automatically connect to the underlying business logic and data model. Adjusting their appearance, style, or position is all it takes for seamless functionality. This built-in intelligence ensures flawless operation across diverse processes and scenarios— without requiring any custom scripting or coding.

Why is This Important?

This approach ensures that all components work cohesively, eliminating the need for coding logic, manually passing information between systems, or creating custom integrations.

1 **Interactive Work Instructions:** Accurate, up-to-date documentation ensures compliance and improves productivity. These instructions adapt to different skill levels, enhance engagement, and provide operators with clear, actionable steps.

2 **Real-Time Monitoring & Alerts:** Immediate feedback enables on-the-spot adjustments, while automated validation prevents errors by ensuring data inputs meet predefined standards.

3 **Color-Coded Status and Prioritization:** Intuitive visuals provide clarity on task progress, workflow bottlenecks, and job priorities.

4 **Secure Access Control:** Rights-controlled workflows streamline processes while ensuring only authorized personnel can execute specific tasks.

This same intelligence **extends to material management and incoming inspection.** For example, FactoryLogix can dynamically optimize inspection sampling, automatically guiding inspectors to focus on a subset of items (e.g., 5 out of 20), saving time and ensuring quality without excessive effort. Step-by-step visual prompts, automated validations, and guided workflows enhance precision and minimize errors.

A Unified Digital Thread for Design and Execution

The integration of digital twin data enriches the FactoryLogix platform's contextualized data model.
By transforming BOMs and CAD designs (including mechanical, electronic, and 3D CAD data) into actionable manufacturing instructions, FactoryLogix eliminates redundancy and reduces errors.

Dynamic Updates:
Changes to design models or work instructions are reflected in real time, ensuring operators always work with the latest information.

Interactive 3D CAD Integration:
Workers can log activities, record defects, and interact with adaptive defect lists directly tied to design data. This removes reliance on paper, minimizes errors, and improves compliance.

Feedback Loops:
By documenting every modification, FactoryLogix supports continuous improvement and complete lifecycle

Real-Time Dashboards Without Complexity

Empowering users with actionable insights is another cornerstone of FactoryLogix. The platform's **no-code reporting engine** enables anyone—not just data scientists or SQL experts—to create real-time dashboards tailored to their needs.

With just a few clicks:

1 Users can select out-of-the-box metrics from a contextualized data model.

2 Intuitive tools enable "edit-in-place" capabilities for report customization.

3 Real-time IoT data streams from machines, sensors, and devices populate dashboards instantly.

This capability transforms raw data into meaningful insights, driving better decision-making across the enterprise.

Delivering a Positive Worker Experience

By uniting automation, connectivity, and contextualization, FactoryLogix transforms manufacturing operations:

• **Automation of Routine Tasks:**
Connected devices like barcode readers and cameras streamline data entry and increase precision.

• **Enhanced Engagement:**
Operators interact with intuitive systems that guide them through processes while capturing actionable feedback.

• **Adaptability at Scale:**
The system grows with your operation, maintaining consistency and efficiency even as complexities increase.

The result? A workforce that feels empowered, a factory floor that operates efficiently, and an enterprise capable of achieving its strategic goals through a unified digital thread.

Activating the Heartbeat of Your Operations

When evaluating solutions for your frontline workers, it's essential to consider a range of capabilities that ensure efficiency, adaptability, and ease of use on the factory floor. **Questions to ask yourself:**

☐ Is it easy to use and adapt across skill levels?

☐ Can you tailor it to different roles?

☐ Does it offer role-based access and audit trails?

☐ Does all data map to a single contextualized data model?

☐ Will it provide you real-time data, guidance, and training?

☐ Is it easy to access the right information at the right time?

☐ Does it support easy authoring and multimedia?

☐ Does it offer CAD and BOM integration and contextualization?

☐ Are materials, tools, tasks, documents, and priorities context-aware?

☐ Will it offer real-time feedback and alerts to workers?

☐ Does it enable IoT and machine connectivity?

☐ Will you be able to manage documentation, revisions, and changes?

☐ Will it collect and validate data?

☐ Does it enable built-in collaboration and communication?

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Choosing the Right MES/MOM Solution for Your Organization

Choosing the right MES/MOM solution is among the most important decisions a manufacturer can make, because it serves as the backbone of their digital operations, enabling real-time monitoring, control, and fine-tuning of production processes. The right MES/MOM solution helps align business goals with operational efficiency, improves product quality, and supports seamless data flow across the entire manufacturing lifecycle.

A well-suited MES/MOM solution drives agility, scalability, and innovation by integrating with other systems and supporting the company's long-term digital transformation strategy. At the same time, the wrong solution can lead to inefficiencies, costly disruptions, and missed opportunities for growth. So what should manufacturers look for in their ideal MES/MOM solution? Let's review a few key characteristics of today's top solutions:

1 **Low/no code** functionality

2 **Breadth and depth of product functionality** that is highly configurable for discrete manufacturing industries

3 **Contextualized manufacturing data** around the product and the process

4 **Multiple deployment options** (On-Premises; SaaS; Hybrid Cloud)

5 **Support** for all volumes, complexity levels, manufacturing styles, and product personalization requirements

6 **Real-time analytics** and reporting

But just having an MES/MOM solution in place isn't enough. Manufacturers must ensure proper implementation and usage of the system to reap all of its benefits. Now, let's explore some strategies for the most effective MES/MOM deployment:

Effective Change Management
When implementing an MES, it is important to ensure strong stakeholder buy-in at the executive level, department management level, and operator/end user level. Frontline workers must understand the value of changing how they engage with the production processes and use new technologies. MES/MOM solutions should be designed for intuitive use by the worker, as the shorter the learning curve, the faster value can be realized.

Clear and Measurable Goals
To overcome challenges related to ROI measurement and goal setting, it is important to identify the long and short-term goals of your MES/MOM deployment. You should present clear ROI expectations, define indicators of implementation success, and identify measurable breakpoints every step of the way.

Strong Data Strategy
As you progress with your MES/MOM implementation, ask yourself what data is being stored and where, and how it is being utilized. You should ensure centralization of data from the MES/MOM and avoid the creation of data siloes. You should also develop close collaboration between OT and IT. The digital thread is built by both teams, and the MES/MOM solution can serve as a strong bridge between the two.

A Solid Partnership
Finally, don't underestimate the importance of a responsive and supportive partner. Find an MES/MOM provider who will walk the journey with you and provide a clear pathway to scale MES/MOM deployment. Thoroughly vet your options and select the best fit for your digital goals, today and tomorrow.

Conclusion: The Beat Continues

A bold digital pulse is leading the manufacturing industry to a bright and exciting future. Manufacturers who can navigate personnel and process challenges, embrace digital transformation, and implement the right technologies will be best positioned for success in this dynamic landscape. The journey toward full digital maturity may be complex, but foundational and flexible tools like the MES play a pivotal role in guiding manufacturers along the way, unlocking operational efficiencies, agility, and growth.

By leveraging the digital thread and empowering the workforce with real-time data and advanced insights, manufacturers can achieve greater resilience and responsiveness in an increasingly connected world. Whether you're just beginning your digital transformation or optimizing your existing technologies, the key is to keep moving forward as you continually assess and refine your approach. **The beat of innovation never stops, and those who stay in rhythm with the digital revolution will lead the way into the future of manufacturing.**

FactoryLogix®

Aegis' FactoryLogix serves as an innovative and IoT-ready MES solution for organizations at any point in their digital journey. It provides the tools needed to enhance decision-making, empower productivity, and unleash unprecedented levels of efficiency and success.
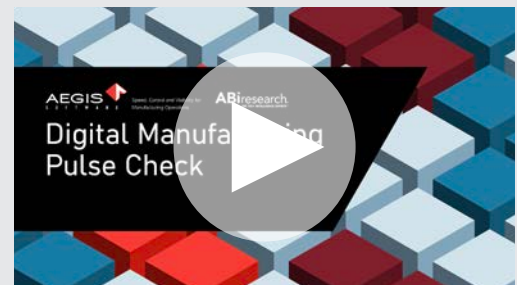
Watch the webinar to **discover manufacturing organizations' top digital concerns—and how they are effectively addressing them.**

Watch Now

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