

# MES and ERP in manufacturing: Key distinctions and strategic impact



In today's fast-paced manufacturing world, the pursuit of greater efficiency and comprehensive insights into production processes is at an all-time high. As businesses strive to make informed decisions and remain agile, integrating enterprise resource planning (ERP) and manufacturing execution systems (MES) is critical to remain competitive. While each system serves distinct purposes, together, they offer a powerful, complementary solution to boost operational effectiveness and thrive in this dynamic landscape.

## MES versus ERP: A symbiotic relationship

MES and ERP are not competing systems; they form a complementary relationship, each addressing specific needs within the manufacturing ecosystem. MES focuses on the real-time execution and optimization of production processes on the shop floor, while ERP provides a broader lens for managing enterprise-wide resources and business processes.

### Overview of MES



MES is a specialized software solution that connects directly to the heart of manufacturing operations, capturing and analyzing real-time data from the shop floor. It is designed to manage and monitor plant activities, providing real-time control over machines and operators across key functions such as production, inventory, and maintenance. MES enables granular visibility and control, allowing manufacturers to optimize efficiency, reduce waste, and improve product quality. As a core enabler of [Smart Factories](#) and digital manufacturing, MES is highly sought after by leading manufacturers.



### Key functionalities of MES

- **Real-time production monitoring:** Tracks production progress, machine performance, and downtime
- **Quality control:** Ensures compliance by enforcing quality checks and managing deviations
- **Traceability:** Provides full visibility and accountability by tracking materials and products throughout production
- **Machine integration and automation:** Connects machines and equipment for data collection, control, and automation
- **Process optimization:** Identifies bottlenecks, inefficiencies, and opportunities for continuous improvement



### Key functionalities of ERP

- **Financials:** Oversees accounting, financial planning, and reporting
- **Supply chain management:** Optimizes procurement, inventory management, and logistics
- **Sales and marketing:** Manages sales orders, customer relationships, and marketing campaigns
- **Human resources:** Handles payroll, benefits, and employee management
- **Production planning:** Creates production schedules, manages bills of materials (BOMs), and forecasts demand



## How MES and ERP differ

	MES	ERP
<b>Focus</b>	Real-time monitoring and control of shop floor operations	Business-wide planning, resource allocation, and management
<b>Functional scope</b>	Production, quality, inventory, maintenance*	Finance, sales, procurement, inventory, production, human resources (HR)
<b>Primary users</b>	Production Operators, Production Supervisors, Plant Managers, Quality Managers, Maintenance Operators, Maintenance Managers	Business Executives, Production Planners, Warehouse Operators, Procurement teams, IT teams
<b>Data granularity</b>	Seconds, minutes	Hours, days, months
<b>Real-time control</b>	Direct interaction with machines and operators	Focuses on planning and coordination rather than real-time control
<b>Integration</b>	Machines, sensors, Industrial Internet of Things (IIoT), and Programmable Logic Controller (PLC) devices	Multiple business functions beyond production, databases
<b>Decision-making</b>	Supports real-time operation decisions on the shop floor	Helps in strategic and financial decision-making
<b>What it delivers</b>	Single source of truth for all data on the shop floor	Single source of truth for company-wide transactions (e.g. sales orders, purchase orders, work orders)
<b>Impact</b>	Operational efficiency, quality control, and production optimization	Resource optimization, financial management, and strategic planning

\*Not all competitive solutions offer maintenance as part of MES



### ERP limitations

Conventional ERP systems excel at managing core business functions such as planning, scheduling, and basic work order management. However, they often rely on manual data collection from the shop floor, limiting real-time visibility and control. Their user interfaces are typically not optimized for operational users and tend to focus on higher-level business processes—leaving a potential gap in the granular control needed for real-time production management.

## The benefits of MES and ERP integration

Integrating MES and ERP systems unlocks significant benefits for manufacturers, creating a unified platform for data-driven decision-making, process optimization, and enhanced collaboration.



### Improved visibility

Real-time production data from MES enhances ERP planning and scheduling, enabling more accurate forecasts and better resource allocation



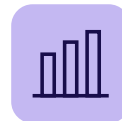
### Enhanced traceability

Integration ensures end-to-end product traceability, from raw materials to finished goods, supporting compliance and quality control



### Reduced errors

Automated data exchange between MES and ERP minimizes manual entry, reducing the risk of errors



### Optimized inventory

Accurate production data from MES improves inventory management, lowering carrying costs and reducing stockouts



### Increased agility

Real-time insights from MES help manufacturers quickly adapt to demand shifts, production disruptions, and quality concerns

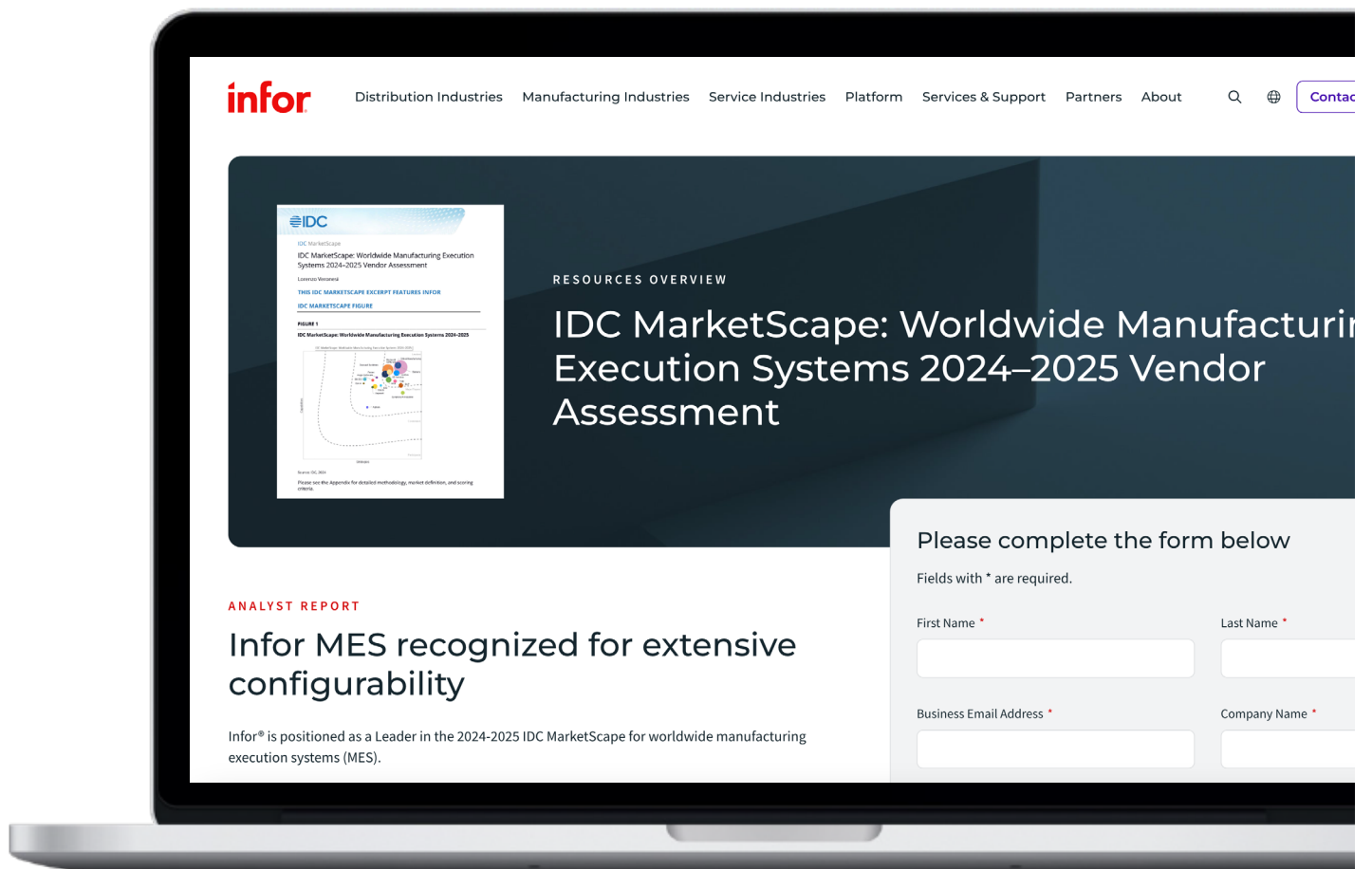
Industry research highlights the value of integrating MES and ERP systems. A study by Aberdeen Group found that manufacturers with integrated systems saw a 20% improvement in on-time delivery and a 15% reduction in manufacturing costs.<sup>1</sup>

<sup>1</sup> Aberdeen Group, [The Manufacturing Operations Edge: The MES Performance Kick](#), October 2017.

## Infor leads the way in industry-specific cloud ERP

Infor™ has been recognized as a Leader in the 2024 Gartner® Magic Quadrant™ for Cloud ERP for Product-Centric Enterprises—and for good reason. Gartner notes that Infor offers “advanced, industry-specific ERP capabilities through CloudSuite™ as separate cores. Serving diverse verticals like aerospace, automotive, and food and beverage, Infor provides deep functionality within each.”<sup>2</sup>

Positioned as a Leader in the [IDC MarketScape: Worldwide Manufacturing Execution Systems 2024–2025 Vendor Assessment](#), Infor has solidified its standing in the MES market. This recognition is backed by Infor’s strong MES offering, which originated from the strategic 2021 acquisition of independent MES provider Lighthouse Systems and the subsequent integration of Shopfloor-Online into the Infor ecosystem.<sup>3</sup>



<sup>2</sup> Gartner, [Gartner® Magic Quadrant™ for Cloud ERP for Product-Centric Enterprises](#), November 2024.

<sup>3</sup> International Data Corporation (IDC), [IDC MarketScape: Worldwide Manufacturing Execution Systems 2024–2025 Vendor Assessment](#), November 2024.

## What sets Infor MES apart?

As highlighted in the IDC report, Infor MES provides a broad suite of manufacturing operations management (MOM) functionalities, covering production, quality, inventory, logistics, maintenance, and more.



### Built-in integration for global standardization

Infor MES is designed to integrate effortlessly with your ERP systems. It works seamlessly with Infor LN™ for discrete manufacturing and Infor M3™ for process manufacturing and distribution. It also supports integration with various third-party ERP systems.



### Configurable, code-free setup

Infor MES enables system customization using out-of-the-box features—no coding required. Users can modify settings, layouts, and workflows through a visual, user-friendly interface with drag-and-drop functionality.



### Extensive MOM features

Beyond standard MES capabilities, Infor MES offers a comprehensive suite of tools to manage production, quality, inventory, maintenance, labor, performance, and workflow—delivering end-to-end manufacturing management.



### Operator-centric design

Infor MES is built with operators in mind, featuring a task-oriented interface with real-time data visibility and alerts. This allows operators to stay focused on critical tasks and respond quickly to changing conditions.



### Mobile-ready solution

Infor MES Mobile delivers an intuitive, modern experience across smartphones, tablets, and handheld scanners, enabling flexibility and mobility on the shop floor.



### Reliable data collection for automation

Infor MES ensures uninterrupted data capture at the edge, whether deployed in the cloud or on-premises. Operations continue even during cloud outages, providing a distinct data reliability and continuity advantage.



### Your entryway to a Smart Factory

Infor MES provides the critical data backbone and real-time connectivity needed to enable automation, artificial intelligence (AI)-driven insights, and seamless integration with core systems—laying the foundation for a truly smart factory environment.



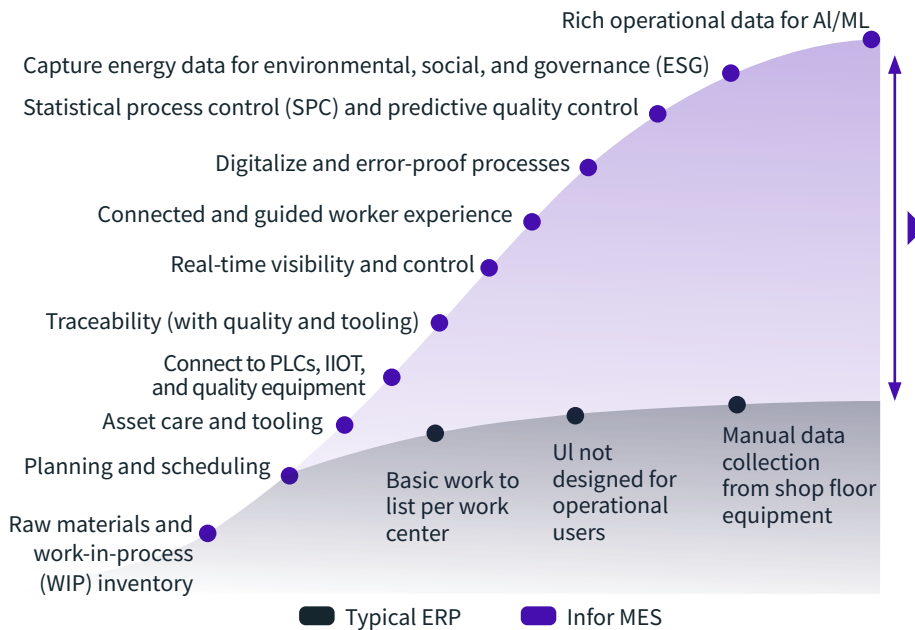
### Enhanced technical services with Infor OS

Powered by Infor OS, the platform incorporates AI, machine learning (ML), and data fabric capabilities to automate workflows and deliver actionable insights—solving key operational challenges with cutting-edge technology.



## Infor MES: Value-added benefits

How MES enhance and complements ERP



### Where is the value?

- Increased productivity and efficiency
- Increased plant output and capacity
- Reduced WIP with full traceability
- Improved quality, reduced scrap/rework
- Faster issue resolution
- Improved visibility and control
- Increased on-time in-full (OTIF) delivery

As shown above, Infor MES significantly enhances the value of an existing ERP system by delivering real-time, granular data and control required for modern, efficient, and data-driven manufacturing operations. The image illustrates how MES bridges the gaps left by traditional ERP systems, resulting in substantial improvements across various areas of the manufacturing process.



## Our customers have reported significant cost savings after implementing Infor MES



### Increased Overall Equipment Effectiveness (OEE)

A 26% increase reflects significant gains in productivity and reduced waste, directly translating into cost savings



### Reduced scraps

A 7% reduction means less material waste and lower production costs



### Reduced rework

A 13% decrease indicates fewer defective products requiring correction, saving both time and resources



### Reduced downtime

A 35% reduction in downtime leads to more productive time and less lost output, improving cost efficiency



### Reduced work-in-process (WIP) stocks

A 5% reduction frees up capital tied to inventory and lowers storage costs



### Increased line output

A 49% increase means more products are produced with the same resources, boosting revenue and lowering per-unit costs



### 100% quality check compliance

Ensures consistent quality, reducing potential costs related to defects and product returns



### Over 90% automatic data capture

Minimizes manual data entry errors, saves time, and provides accurate, real-time data for better decision-making—leading to cost optimization

## Choosing the right systems

When selecting MES and ERP solutions, consider these essential factors:

**1. Integration capabilities: Ensure seamless data exchange between systems**

Infor offers robust integration, enabling smooth communication between MES and ERP systems. Solutions like Infor LN and Infor M3 are designed to work seamlessly with Infor MES for efficient operations.

**2. Real-time data tracking: Prioritize real-time insights for better decision-making**

Infor MES provides real-time data tracking, helping you quickly identify issues, optimize processes, and improve productivity. With real-time visibility into production operations, you can make informed decisions faster.

**3. Scalability: Choose systems that grow with your business**

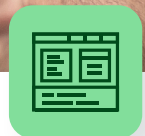
Infor's scalable solutions adapt as your operations expand, eliminating the need for major system overhauls. They support increasing complexity and evolving business needs, ensuring long-term growth.

**4. Compliance: Meet industry regulations and standards**

Infor's MES and ERP systems come with built-in compliance features, helping you maintain quality control, traceability, and regulatory adherence in your manufacturing processes.

**5. Vendor expertise: Partner with a knowledgeable and experienced provider**

With Infor, you gain access to deep industry expertise, guiding you through implementation, integration, and ongoing support to maximize your investment.



## The path forward: Smarter manufacturing through integration

MES and ERP are essential for modern manufacturers, each serving a distinct role in optimizing operations and driving business success. Integrating these systems unlocks key benefits such as greater visibility, fewer errors, increased agility, enhanced traceability, and optimized inventory management. As manufacturing continues to evolve, adopting digital transformation through MES and ERP integration will be crucial for sustainable growth, enhanced competitiveness, and long-term success in the industry.



### About Infor

Infor is a global leader in business cloud software products for companies in industry-specific markets. Infor builds complete industry suites in the cloud and efficiently deploys technology that puts the user experience first, leverages data science, and integrates easily into existing systems. Over 67,000 organizations worldwide rely on Infor to help overcome market disruptions and achieve business-wide digital transformation.

[infor.com](https://www.infor.com)

Enable smarter  
manufacturing through  
Infor MES integration

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