IDC MarketScape

IDC MarketScape: Worldwide Manufacturing Execution Systems 2024–2025 Vendor Assessment
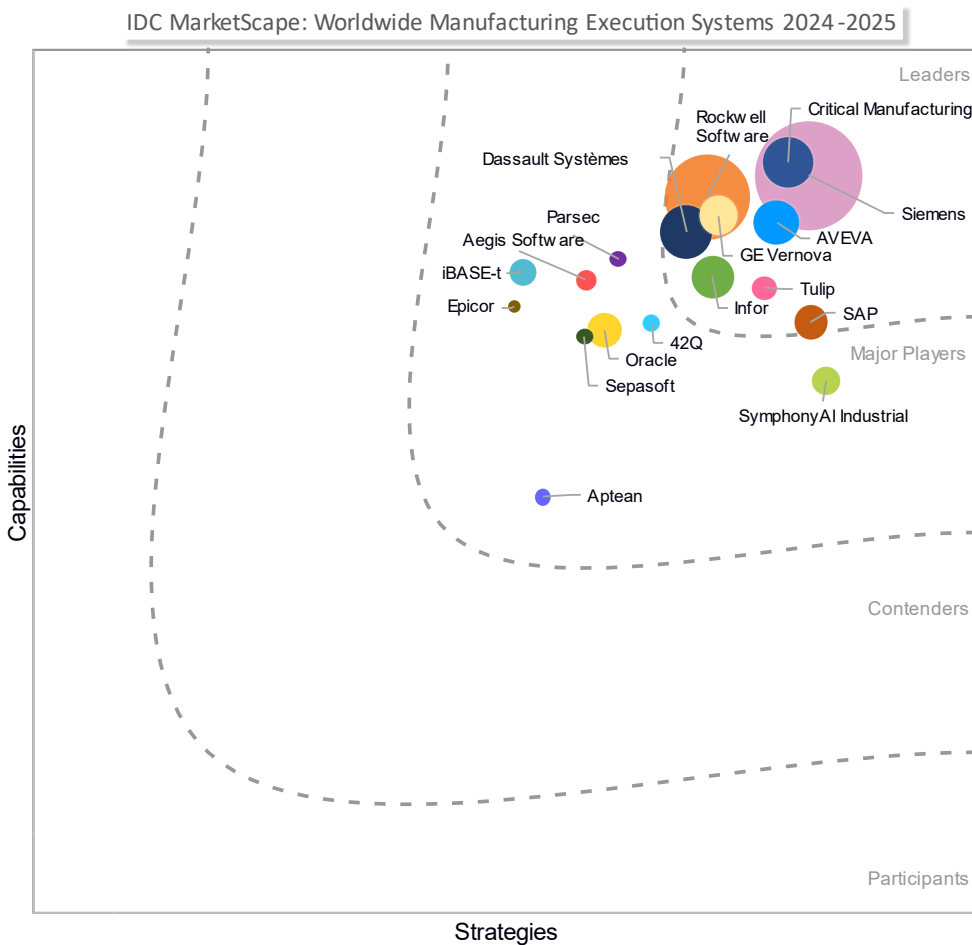
Lorenzo Veronesi

THIS IDC MARKETSCAPE EXCERPT FEATURES AVEVA AS A LEADER

IDC MARKETSCAPE FIGURE

FIGURE 1

IDC MarketScape: Worldwide Manufacturing Execution Systems 2024–2025

Source: IDC, 2024

Please see the Appendix for detailed methodology, market definition, and scoring criteria.

ABOUT THIS EXCERPT

The content for this excerpt was taken directly from IDC MarketScape: Worldwide Manufacturing Execution Systems 2024–2025 Vendor Assessment (Doc # US51813624).

IDC OPINION

The need for shop floor processes to coordinate with rapidly evolving value chains requires that manufacturing execution systems (MES) work seamlessly with other enterprise and manufacturing-focused applications to ensure visibility from the shop floor to the top floor. The rise of the 3rd Platform, along with innovation drivers such as cloud computing, edge analytics, the Industrial Internet of Things (IIoT), and artificial intelligence (AI), is significantly influencing the development of MES. Recently, there has been a notable increase in the adoption of cloud solutions to enhance or overcome the limitations of traditional on-premises MES, providing organizations with improved flexibility and scalability. Additionally, there is a growing emphasis on extensibility and user experience, with low code/no code and plug-and-play features becoming integral to vendor offerings. As companies increasingly prioritize sustainability, MES implementations are also being utilized to facilitate energy management and broader sustainability initiatives.

The MES landscape is rapidly transforming, and while it is crucial to invest in solutions that meet immediate business needs, it is equally important to select systems that can adapt to evolving requirements. As innovative concepts continue to surface, choosing a vendor committed to long-term innovation while fulfilling business demands is vital. With a wide array of solutions available, it is essential to select an MES that caters to the specific characteristics of production processes and industries, can be deployed swiftly for immediate benefits, and is designed to remain relevant in the future.

IDC MARKETSCAPE VENDOR INCLUSION CRITERIA

This vendor assessment includes software providers in the MES market serving the manufacturing industry.

For this IDC MarketScape, vendors should be active in at least two of the global regions of the Americas, Asia/Pacific, and Europe, the Middle East, and Africa (EMEA). Their MES applications should have a broad coverage of the entire range of plant floor–specific processes. Vendors active in this market should have a strategy in place to adopt a range of modern IT technologies — such as cloud and edge — and

game-changing plant floor technologies such as the Internet of Things (IoT), and AI as it applies to manufacturing execution systems.

ADVICE FOR TECHNOLOGY BUYERS

MES applications hold significant potential for generating valuable production data, enhancing workflow visibility, and contributing to informed decision-making.

- To fully harness this potential, organizations need to evaluate and optimize their internal production processes while selecting a vendor that aligns with their specific requirements. Although an MES is designed to tackle various aspects of performance, quality, and availability, companies must first pinpoint the key principles they wish to prioritize in order to identify the most suitable solution. Therefore, a comprehensive internal understanding of the process needs is essential.
- This understanding is crucial for gaining support within the organization and ensuring buy-in from all relevant stakeholders. Commitment from top management is vital to drive this initiative, but organizations should also recognize the importance of implementing training programs and knowledge-sharing platforms to assist technicians in effectively utilizing the solution on the shop floor.
- It is crucial for organizations to prepare their infrastructure adequately for the type of MES investment they need. It is important to invest in integrating their assets and production equipment, enabling data collection from all points in the factory to gain a holistic picture of the entire shop floor.

VENDOR SUMMARY PROFILES

This section briefly explains IDC's key observations resulting in a vendor's position in the IDC MarketScape. While every vendor is evaluated against each of the criteria outlined in the Appendix, the description here provides a summary of each vendor's strengths and opportunities.

AVEVA

AVEVA is positioned in the Leaders category in this 2024–2025 IDC MarketScape for worldwide manufacturing execution systems.

AVEVA Group is owned by the industrial company Schneider Electric. AVEVA's manufacturing execution system has a compelling history. The AVEVA MES product evolved from the industry standard Wonderware, which became part of Schneider Electric's software portfolio in 2014 with the acquisition of Invensys. In 2018, AVEVA agreed to merge with Schneider Electric's industrial software business in a multi-step reverse takeover. Additionally, in 2020, AVEVA acquired OSIsoft, a historian and

factory data management solution. By January 2023, Schneider completed the takeover of AVEVA.

AVEVA MES offers a wide range of functions for manufacturing operations, including integrated inventory, production, and quality management and plant performance monitoring. It is a model-driven solution that supports the modeling of operational workflows, production processes, and equipment. This configurable business process management approach standardizes operational processes across multiple sites and provides a centralized platform for data analysis with visualization.

Recently, to align with its broader strategy of delivering a unified, cloud-based experience for collecting, aggregating, storing, contextualizing, and visualizing industrial data, AVEVA modernized its MES technologies and architecture. The user interface (UI) elements of the MES content were refactored, adopting web widget technology to deliver a consistent user experience across various AVEVA visualization containers used on the production floor. The latest AVEVA release has improved support for multi-site MES deployments, enabling a single instance of MES to operate across multiple locations in different time zones.

In 2024, AVEVA released its first hybrid cloud MES offering, seamlessly integrating existing on-premises capabilities with a suite of cloud-based services hosted in CONNECT (AVEVA's industrial cloud platform). In summer 2024, the company introduced modular solution delivery, establishing a unified and regulated solution engineering approach that allows customers and partners to rapidly compose frontline operator user interfaces using one or more out-of-the-box functional components.

Today, AVEVA offers flexible consumption-based subscription pricing for on-premises deployment based on the number of sites and users. The company has a global network of implementation partners, including Accenture, Actemium, and Capgemini, among others.

Strengths

AVEVA's model-driven and process-based approach has long been a key strength, differentiating the company and perfectly aligning with the needs of the core industries it serves. Over time, AVEVA has developed a comprehensive domain knowledge in process manufacturing, both through manufacturing execution and plant design optimization. The MES product includes built-in business process management (BPM) functionality, with pre-configured workflow templates that enable the reusable execution of business logic in standard operator workflows. AVEVA's composable and model-driven MES combines the power of a business process management workflow engine with the standard functionality provided by an MES. This facilitates multi-site standardization, global key performance indicators (KPIs), industrial best practices, and continuous improvement.

Additionally, AVEVA and its partners offer a broad range of solutions to complement MES functionalities, including asset performance management and value chain optimization (integrated production planning, scheduling, and execution capabilities). Native integration with AVEVA's operations control platform and PI System leverages agnostic connectivity to automation and IIoT devices, providing production control and operational execution tracking for fast-moving processes that rely on high levels of automation. Together with its advanced MES capabilities and industrial data platform CONNECT, AVEVA is well positioned in the market.

Challenges

Despite its innovative efforts, AVEVA may have entered the cloud enablement space for MES somewhat late in the day. However, this must be put in context with the risk aversion displayed by some of its core customers and the complexity of their implementations. Furthermore, a growing interest in model-driven MES architectures could potentially weaken AVEVA's competitive advantage in this area. There is also a possibility that AVEVA's products and models may not be suitable for smaller companies seeking to implement a modern MES in a phased and incremental manner.

Consider AVEVA When

AVEVA MES is targeted at companies with advanced functional needs in the continuous process, batch, and hybrid manufacturing sectors. It is particularly suited to organizations looking to deploy their MES solution across multiple facilities/locations and include an MES as part of their digital transformation initiatives.

APPENDIX

Reading an IDC MarketScape Graph

For the purposes of this analysis, IDC divided potential key measures for success into two primary categories: capabilities and strategies.

Positioning on the y-axis reflects the vendor's current capabilities and menu of services and how well aligned the vendor is to customer needs. The capabilities category focuses on the capabilities of the company and product today, here and now. Under this category, IDC analysts will look at how well a vendor is building/delivering capabilities that enable it to execute its chosen strategy in the market.

Positioning on the x-axis or strategies axis indicates how well the vendor's future strategy aligns with what customers will require in three to five years. The strategies category focuses on high-level decisions and underlying assumptions about

offerings, customer segments, and business and go-to-market plans for the next three to five years.

The size of the individual vendor markers in the IDC MarketScape represent the market share of each individual vendor within the specific market segment being assessed.

IDC MarketScape Methodology

IDC MarketScape criteria selection, weightings, and vendor scores represent well-researched IDC judgment about the market and specific vendors. IDC analysts tailor the range of standard characteristics by which vendors are measured through structured discussions, surveys, and interviews with market leaders, participants and end users. Market weightings are based on user interviews, buyer surveys and the input of IDC experts in each market. IDC analysts base individual vendor scores, and ultimately vendor positions on the IDC MarketScape, on detailed surveys and interviews with the vendors, publicly available information and end-user experiences in an effort to provide an accurate and consistent assessment of each vendor's characteristics, behavior and capability.

Market Definition

Manufacturing execution system is the software platform that covers all operational processes across a network of factories. Making a reference to the MESA Model (mesa.org/en/modelstrategicinitiatives/MESAModel.asp), the MES platform comprises the following MESA functions: product tracking and genealogy, resource allocation and status, performance analysis, process management, data collection acquisition, dispatching production units, quality management, labor management, warehouse management (logistics focus: transportation management system [TMS], warehouse management system [WMS]), maintenance management (asset reliability focus: enterprise asset management [EAM], computerized maintenance management system [CMMS], and operations and detailed scheduling. The MES platform is a common platform for multiple plants worldwide, and as such enables the standardization of operational processes and KPIs across the network of factories. The MES platform also includes enterprise manufacturing intelligence (EMI) functionalities to measure and analyze the performance of the network of factories. The MES platform must include standard integration procedures with plant floor controls (ISA-95 level 2 and below) and critical IT business applications, particularly ERP and PLM.

Related Research

- *IDC MarketScape: Worldwide High-Tech and Electronics Manufacturing Execution Systems 2023 Vendor Assessment* (IDC #US49435722, April 2023)
- *IDC MarketScape: Worldwide Engineering-Intensive Manufacturing Execution Systems 2023 Vendor Assessment* (IDC #US49435622, April 2023)
- *IDC MarketScape: Worldwide Discrete Manufacturing Execution Systems 2023 Vendor Assessment* (IDC #US49435422, April 2023)
- *IDC MarketScape: Worldwide Process Manufacturing Execution Systems 2023 Vendor Assessment* (IDC #EUR150526323, April 2023)

Synopsis

This vendor assessment includes software providers in the MES market serving the manufacturing industry.

The MES landscape is rapidly transforming, and while it is crucial to invest in solutions that meet immediate business needs, it is equally important to select systems that can adapt to evolving requirements. Choosing the right vendor can be a minefield, but the focus should be on selecting one that has a long-term commitment to driving innovation and addressing evolving business needs.

"As innovative concepts continue to surface, choosing a vendor committed to long-term innovation while fulfilling business demands is vital. With a wide array of solutions available, it is essential to select an MES that caters to the specific characteristics of production processes and industries, can be deployed swiftly for immediate benefits, and is designed to remain relevant in the future." — Lorenzo Veronesi, Associate Research Director, Manufacturing Insights, IDC

ABOUT IDC

International Data Corporation (IDC) is the premier global provider of market intelligence, advisory services, and events for the information technology, telecommunications, and consumer technology markets. With more than 1,300 analysts worldwide, IDC offers global, regional, and local expertise on technology, IT benchmarking and sourcing, and industry opportunities and trends in over 110 countries. IDC's analysis and insight helps IT professionals, business executives, and the investment community to make fact-based technology decisions and to achieve their key business objectives. Founded in 1964, IDC is a wholly owned subsidiary of International Data Group (IDG, Inc.).

IDC U.K.

IDC UK
5th Floor, Ealing Cross,
85 Uxbridge Road
London
W5 5TH, United Kingdom
44.208.987.7100
Twitter: @IDC
blogs.idc.com
www.idc.com