SIEMENS

OVERALL: 82.9 | INNOVATION: 82.0 | IMPLEMENTATION: 83.8 | RANK: 2

SIEMENS INNOVATION VERSUS IMPLEMENTATION FOCUS
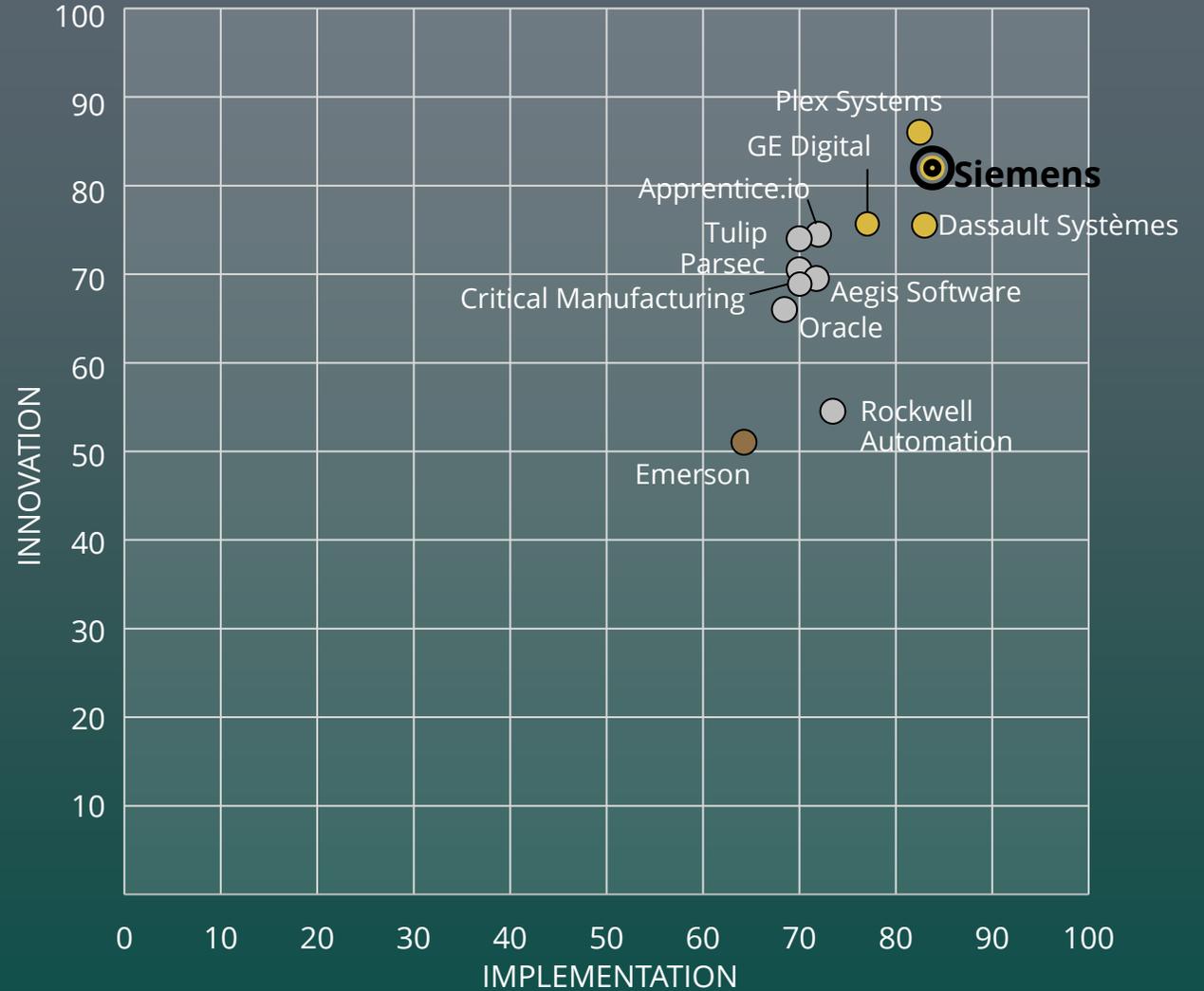
INTRODUCTION

SIEMENS

LEADER

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Siemens' MES product, Opcenter, is a core element of Siemens' recently announced Xcelerator portfolio. The company supports the software's wide range of functionality through a number of key strategic acquisitions, such as Camstar in 2014, and Mendix in 2018, with a low-code development platform integrated into Opcenter. Given its large number of long-time customers, Siemens sees itself as a supporter of the migration of large manufacturers from their on-premises solutions to the cloud, while still maintaining flexible deployment options (e.g., a hybrid architecture). The company positions itself as a one-stop shop for manufacturers looking to digitize their operations.

INNOVATION

SIEMENS

INNOVATION SCORE: 82.0

TOP INNOVATOR
ABiresearch

Siemens Opcenter MES covers the ISA-95 standards for level 3, with the extended Xcelerator portfolio also supporting levels 2 and 4. Xcelerator allows a manufacturer to build a digital enterprise by creating a comprehensive digital twin, of which Opcenter MES is an integral element. The Xcelerator portfolio makes it easier to deploy the MES both upstream to product development (PLM) and downstream to the supply chain (Supply Chain Management (SCM)). Customers have the option to purchase the MES as a hosted solution (as SaaS) that will remain up to date with the latest functionality and be available to smaller customers who may not have the upfront capital to invest in the software otherwise.

Opcenter can perform advanced analytics using AI and ML techniques to increase design-to-manufacturing efficiency, further exemplifying Siemens' capacity to produce an end-to-end digital thread. Furthermore, MES data can be collected across all the sites where it is deployed, then aggregated into a data warehouse that can be used to present cross-site KPIs for top-floor visibility.

This visibility extends to a customer's entire operations with dashboards for real-time monitoring and performance analysis that provide key OEE insights across the organization. The MES software can be quickly assembled and personalized to the individual user, supported by the solutions cloud architecture and low/no-code capabilities. Mendix software forms the presentation layer for Opcenter, allowing customers to create UIs that best fit their own personal practices.

Deployment and realization of value for Siemens' MES is heavily influenced by the complexity of the customers operations. For small to medium manufacturers, customers can realize business gains in less than 2 to 6 months. With larger and complex customers, it can take 9 to 12 months to start realizing value. Deployment style is flexible, with Siemens offering its MES software through both the private and public cloud, as well as on-premises or a hybrid combination. It also offers managed service cloud implementation on Amazon Web Services (AWS) infrastructure. Data collected by the MES are stored on a central database, and when a new model is developed from one plant, this can easily be deployed to another location. This allows manufacturers to make use of best practices from across their operations. Furthermore, due to Siemens' large scale and extensive client base, the MES that it offers is informed by best practices industry wide, not just leveraging best practices based on the plants a given company has.

IMPLEMENTATION

SIEMENS

IMPLEMENTATION SCORE: 83.8

TOP IMPLEMENTER
ABi research.

Siemens Opcenter can be globally deployed across all manufacturing verticals. Key markets that the company focuses on include Aerospace & Defense (A&D), automotive, food & beverage, high tech & electronics, medical devices, pharmaceutical, and semiconductor manufacturing. Siemens provides industry templates that build on top of its base MES structure, reducing the need for customization by manufacturers. These industry templates often stretch beyond the base MES, allowing manufacturers to identify how best to utilize their new MES within current operational infrastructure.

The MES can be used with full OOTB functionality, so it has a market-competitive deployment time. For large manufacturers, deployment usually takes between 6 to 12 months, and only taking around 2 to 3 months for SMB operations. Personalization and application extensions via Mendix can even occur in hours or days, depending on the given complexity. While Siemens offers its own end-to-end enterprise software solution, which inherently has strong integration capacity, it can also integrate well with other pre-existing infrastructure utilizing REST APIs.

Opcenter supports its customer base in meeting critical regulatory and compliance requirements across all manufacturing verticals. Examples include FDA regulatory compliance with 21 Code of Regulations (CFR) Part 11, compliance with industry standards, such as ISO 9001 and ISO 13485, and A&D compliance, such as NIST 800-171.

Siemens works alongside a wide variety of system integrators to deliver its MES, using local integrators and partners to leverage local and vertical expertise. Overall, the company works with around 140 system integrators and solution partners, including Accenture, Deloitte, ATS International, and TATA Consulting.

CRITERIA AND METHODOLOGY
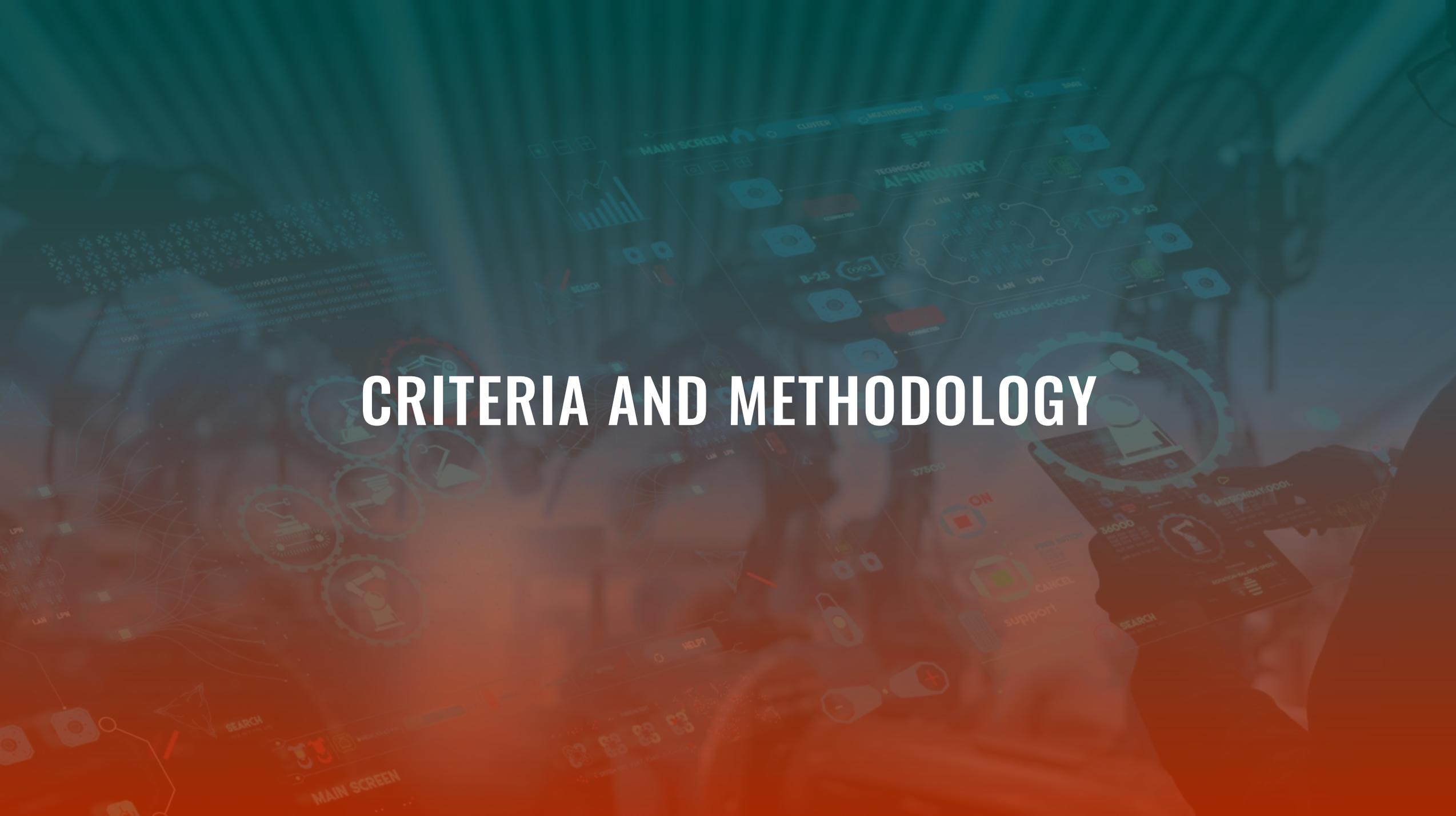
VENDOR MATRIX

Methodology: After individual scores are established for innovation and implementation, an overall company score is established using the Root Mean Square (RMS) method:

$$S_l\ Score\ =\sqrt{\frac{innovation^2 + implementation^2}{2}}$$

The resulting overall scores are then ranked and used for percentile comparisons.

The RMS method, in comparison with a straight summation or average of individual innovation and implementation values, rewards companies for standout performances.

For example, using this method, a company with an innovation score of nine and an implementation score of one would score considerably higher than a company with a score of five in both areas, despite the mean score being the same. ABI Research believes that this is appropriate as the goal of these matrices is to highlight those companies that stand out from the others.

RANKING CRITERIA

Leader: A company that receives a score of **75 or above** for their overall ranking

Mainstream: A company that receives scores **between 60 and 75** for their overall ranking

Follower: A company that receives a score of **60 or below** for their overall ranking

Innovation Leader: A company that receives a score of **75 or above** for their innovation ranking.

Implementation Leader: A company that receives a score of **75 or above** for their implementation ranking.

INNOVATION CRITERIA

Product Capabilities: What unique features does the MES offer? How does the software provide manufacturers with increases in Overall Equipment Effectiveness (OEE) and cost savings?

Accessibility: Is the MES available over the cloud or is it cloud native? Can the software be offered as a Software-as-a-Service (SaaS)? Is there collaboration across plants and a centralized data source? Can an MES be remotely leveraged across sites?

User Experience: Does the MES have low/no-code functionality? Does it provide visualization processes?

Contributes to Providing the Client with a Comprehensive Digital Thread: Does the solution provide the capabilities to share product information across the organization, i.e., best practices? Is there extensive ecosystem support? Are Product Lifecycle Management (PLM), Enterprise Resource Planning (ERP), etc. provided in-house or partnered with another company?

Guarantees: Does the company offer a value delivery pricing structure to guarantee value derived from investment?

IMPLEMENTATION CRITERIA

Bookings and Customer Base: Number of worldwide installations, number of discrete customers, and demonstration of a growing customer base.

Geographical Coverage: Is the software able to be deployed globally? Does the company's software see strong market permeation in large manufacturing regions?

Time to Implement: How much functionality and value can customers get out of the box? How long does the solution take to implement? How does the software support growing customer operations?

IT Integration: Does the MES have good interoperability with other enterprise software? Are Application Programming Interfaces (APIs) available so that IT teams can introduce the software at scale?

Regulation and Compliance: Does the solution effectively support customer regulation and compliance needs?

Vertical Market Expertise: What verticals does the MES serve? Is the MES designed to serve a particular vertical? How is the MES product adapted to serve a given manufacturing market?

Partnerships: Does the company work extensively with system integrators and market partners?

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