Gartner Research

Peer Lessons Learned for Manufacturing Execution Systems Implementation

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An MES supports end-to-end execution of real-time physical processes involved in transforming raw materials into intermediate and/or finished goods. Supply chain technology leaders can learn from the implementation experience of their peers shared on Gartner Peer Insights.

Overview

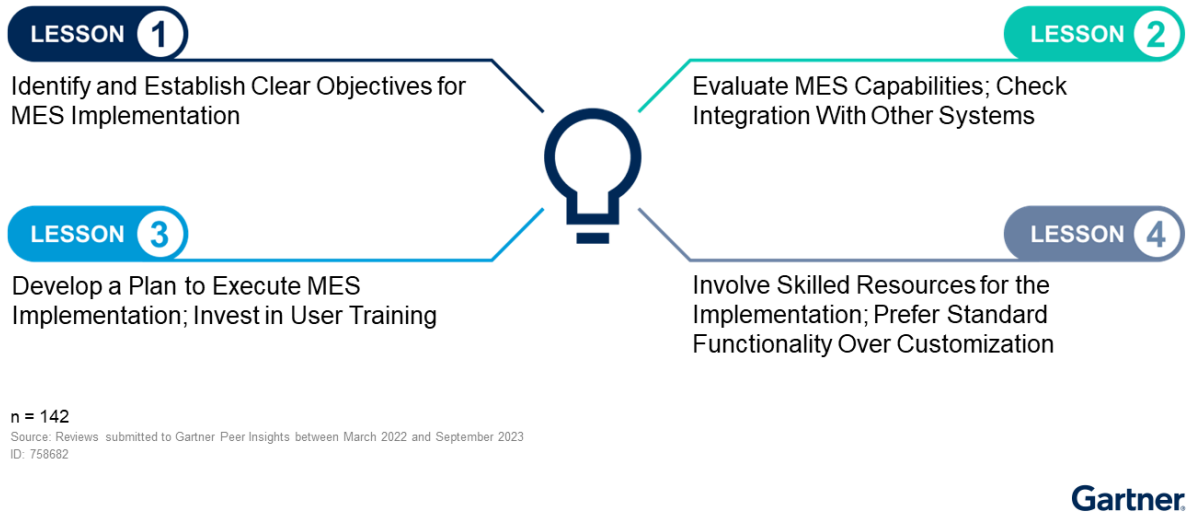
Gartner Peer Insights is a free peer review and ratings platform designed for enterprise software and services decision makers. Reviews go through a strict validation and moderation process to ensure they are authentic.

We analyzed 142 Peer Insights reviews to identify lessons learned for implementing manufacturing execution systems (MES). This report focuses on the responses to the questions: **"If you could start over, what would your organization do differently?"** and **"What one piece of advice would you give other prospective customers?"** To browse all reviews, see the full list of Manufacturing Execution Systems reviews on Peer Insights.

Peer Lessons Learned

This edition of "Lessons Learned" summarizes clients' firsthand experiences with implementing an MES. The peer advice results from both successful implementation projects and learnings based on what went wrong. This peer perspective, along with the individual detailed reviews, is complementary to expert research and provides a holistic view to the implementation process. The top themes in this peer advice are summarized below (see Figure 1).

Figure 1. Peer Lessons Learned for Manufacturing Execution Systems Implementation



Below are some key lessons learned and most cited recommendations by Peer Insights reviewers to help supply chain technology leaders in the implementation of their MES.

Lesson 1: Identify and Establish Clear Objectives for MES Implementation

Many peers state that it is important to conduct a thorough analysis of the organization-specific needs and processes to build a robust project roadmap that guarantees a definite course of action and aids in directing the decision-making process.

Peer recommendations include:

- Analyze your manufacturing processes, identify pain points and define your desired outcomes from an MES. Determine the essential characteristics, functions and solutions you are looking for in an MES.
- Drive the project based on user needs rather than technical showcases. When defining your functional requirements, think beyond what is needed and assess what is possible.
- Involve all the stakeholders in defining requirements. Ensure you have top-down organizational support and be aware of how transformative MES is to your business.

Representative quotes from peer reviews:

A peer says:

> **Define your requirements and expectations clearly through a user requirement specifications (URS)/scope document. This will help the vendor hit clear targets and outcomes.**
>
> — *Business Professional, Manufacturing Sector*

Another peer adds:

> **Recognize your unique demand and objectives upfront. Determine the essential characteristics, functions and solutions you are looking for.**
>
> — *Infrastructure and Operations Professional, Manufacturing Sector*

Recommended reading:

Focus on Capabilities Instead of Technology When Defining Smart Manufacturing Use Cases

Lesson 2: Evaluate MES Capabilities; Check Integration With Other Systems

Majority of the peers agree that it is critical to thoroughly analyze the capabilities of the MES to ensure that it meets the organization's requirements. They advise supply chain technology leaders to factor in scalability, compatibility and analytics of the MES while making their decision.

Peer recommendations include:

- Check if insights and analysis can be done easily, which can further be helpful in optimizing shop floor production processes.
- Discuss the integration and compatibility of the MES with different ERP software and other systems, including warehouse management, quality and customer service.

- Solicit an application of customer references from the MES vendor to review the configured system in a live environment, which is similar to your organization. This will help you make an informed decision.

Representative quotes from peer reviews:

A peer highlights the importance of evaluating all the use cases:

> **Analyze all the possible use cases involving data, processes, customization (if required) and so on to estimate implementation duration and cost.**
>
> — *Infrastructure and Operations Professional, Manufacturing Sector*

Another peer recommends soliciting feedback from existing customers:

> **Look for trusted reviews and feedback from the organizations that have used the MES. This can give you useful information and aid in your decision making.**
>
> — *Infrastructure and Operations Professional, Manufacturing Sector*

Recommended reading:

Ignition Guide to Selecting a Manufacturing Operations Software Vendor

Lesson 3: Develop a Plan to Execute MES Implementation; Invest in User Training

A cross section of peers suggests creating and documenting the end-to-end deployment process with exact timelines to ensure smooth implementation, and avoid any delays and changes of scope at a later stage. They further advise supply chain technology leaders to foster user training ahead of the implementation.

Peer recommendations include:

- Conduct a complete overview of your processes and identify any potential process improvements. Start creating process mapping earlier and plan the interrelationships between the different departments.
- Evaluate the business processes that have the most value and plan their automation first.
- Define the integration approach for each system properly and invest more time in training your staff prior to the implementation. This will help end users to understand the system well and get the most out of its capabilities.

Representative quotes from peer reviews:

A peer recommends:

> **Try to adapt your processes to best practices and new features brought with your new system. Staying with existing processes may sometimes make the system less flexible and involve more effort.**
>
> *— Infrastructure and Operations Professional, Manufacturing Sector*

Another peer shares:

> **We would have involved a large team of users and managers in the configuration and rollout of the software. We would have also trained key personnel before configuring the system so we could fully understand the implications of the choices the consultants were asking of us while the system was being installed.**
>
> *— Enterprise Architecture and Technology Innovation Professional, Manufacturing Sector*

Recommended reading:

Ignition Guide to Creating a Digital Roadmap for Manufacturing Operations

Lesson 4: Involve Skilled Resources for the Implementation; Prefer Standard Functionality Over Customization

Several peers opine that supply chain technology leaders must have a balanced implementation team of skilled internal and external resources. They advise involving resources from different functional teams, including manufacturing and process engineers, to support the design and implementation of the system. They strongly recommend opting for standard functionality and limiting customizations.

Peer recommendations include:

- Embrace standard model and UI for future upgrades. In case customizations are required, keep them to the minimum as it could complicate support, performances and upgrade in general.
- Implement the core modules first and ensure integration with ERP from the start of the project. Prefer a phased implementation approach. For example, implement manual operations and then automatize them with machine connection later. Focus on continuous improvement of your system, with bug fixing, implementing new features and adding more connectivity.

- Establish an MES development center of excellence (COE) early in the process to drive design consistency and high reuse to lower deployment and support cost. This is especially for companies intending to deploy the solution across their network of plants.

Representative quotes from peer reviews:

A peer suggests:

> **Stick to standard functionality and limit customizations. Ensure your team has strong representation from architecture, technical delivery, process engineers, quality and test/validation teams.**
>
> — *Infrastructure and Operations Professional, Manufacturing Sector*

Another peer states:

> **Do not underestimate resourcing and cost of the project team for design and implementation. It requires sufficient highly skilled engineers and infrastructure specialists, else project timelines are extended with high risk of delays.**
>
> — *Program and Portfolio Management Professional, Healthcare Sector*

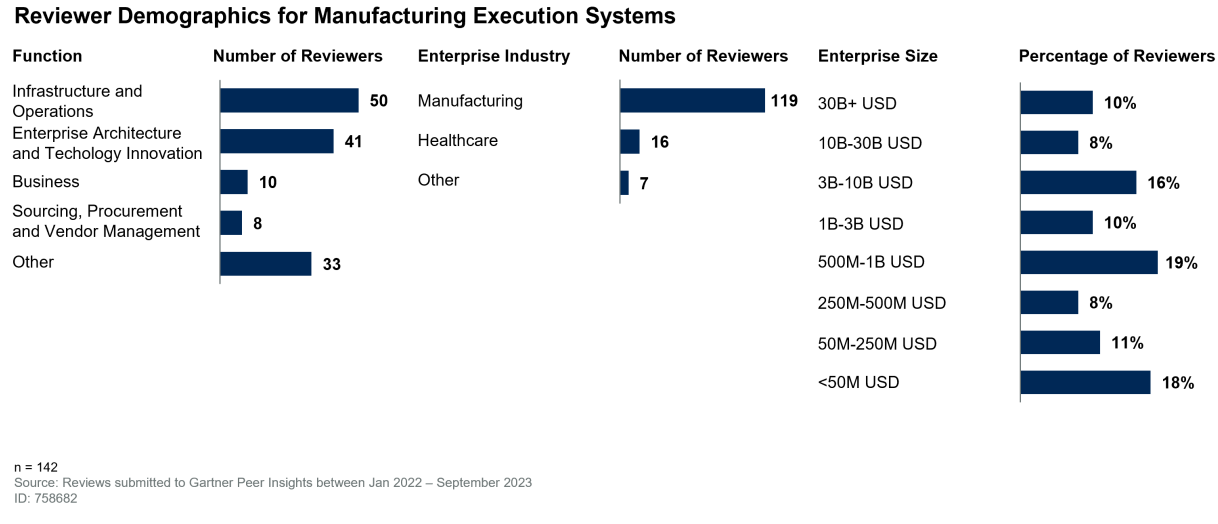
Recommended reading:

Build Organizational Strength to Optimize Joint Value of External Manufacturing Partnerships

Reviewer Demographics

Reviewers who submitted their lessons learned represent a cross-section of small- to midsize and large organizations. See Figure 2 for demographic details.

Figure 2. Reviewer Demographics



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Methodology

Of the Peer Insights survey data considered for this market, only those responses meeting the following criteria were included in this synthesis:

- Reviews less than 18 months old.
- Responses that pertain to the project experience and are not tied to the capabilities of a vendor.
- Reviews were clustered into the top-four most-referenced categories (lessons learned) and then listed in order of relevant phases in the project life cycle.

The results of this synthesis are representative of the respondent base and not necessarily the market as a whole.

"The data used in this report is drawn from reviews on Peer Insights, a crowdsourced enterprise review platform that relies on dynamic data. Key to maintaining the integrity of the site is our ongoing moderation and validation of those reviews. Reviews are examined before publishing to the site and periodically, post-publishing. Due to the dynamic nature of the data, the external Peer Insights site will always have the most updated view of the data in this report."

Document Revision History

Gartner Peer Insights 'Lessons Learned': Implementing Manufacturing Execution Systems - 7 September 2021

Peer Lessons Learned: Implementing Manufacturing Execution Systems - 20 February 2020

Recommended by the Author

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