



Executive Summary: Reduce Your Manufacturing Risk and Enhance Quality with PFMEA

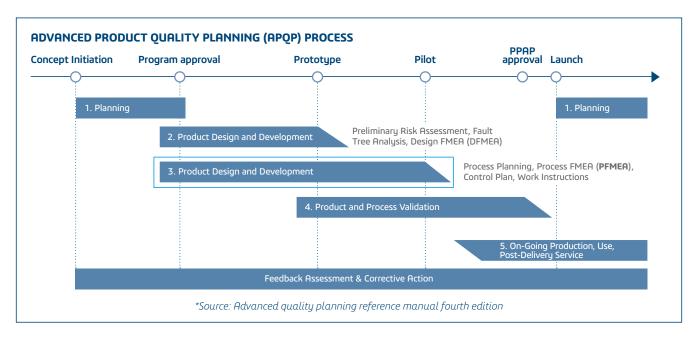
Ensuring quality and reliability is a constant challenge in high-tech manufacturing, where compressed timelines and frequent new product introductions drive the need for speed and precision. Process Failure Mode and Effects Analysis (PFMEA) has emerged as a proven method to identify potential weaknesses before they impact production.

In the recent "PFMEA: Reducing Manufacturing Risk and Enhancing Quality" webinar, our experts discussed how manufacturers can embed PFMEA into design and production cycles, moving beyond spreadsheets and siloed databases to a structured, digital approach.

66 PFMEA is most powerful when it becomes part of your company's DNA—not an afterthought.

HIGHLIGHTS

The session opened with a clear definition of PFMEA as part of the Advanced Product Quality Planning (APQP) framework. Rather than a one-off exercise, PFMEA is a living process continuously identifying and evaluating potential failure modes. By scoring severity, probability, and detection, teams can calculate a Risk Priority Number (RPN) and prioritize mitigation strategies that strengthen product quality and process reliability.



This approach is especially critical in high-tech manufacturing, where rapid product introductions and compressed timelines leave little room for error. PFMEA gives manufacturers the structure to analyze every process step, from solder paste application to reflow ovens, while encouraging input from cross-functional experts. Instead of siloed documents or spreadsheets, teams can work from a shared foundation that grows stronger with every project.

The discussion then turned to how technology can elevate PFMEA from theory into practice. Companies need solutions that embed PFMEA directly into process planning and shopfloor execution, linking risk assessment with day-to-day operations. 3DLean fosters collaboration by capturing expert knowledge in real time, DELMIA Operations Engineering creates and maintains PFMEAs and Control Plans, and DELMIA Apriso Manufacturing Operations Management (MOM) enforces control plans and data collection on the shop floor and provides real-time dashboards for continuous monitoring. A global standards library ensures that lessons learned and templates are reusable, saving engineering hours and improving consistency across products and plants. With the right solutions, engineering, quality, and production teams work from a **single** source of truth, eliminating silos and ensuring every update flows consistently across the enterprise.

For organizations that adopt this approach, the benefits are measurable. Customers have reported 30–60% time savings, significant error reduction, and faster propagation of changes from design to production. PFMEA, once seen as a compliance task, becomes an engine of continuous improvement—powered by people, strengthened by process, and accelerated by technology.



The first step in a robust PFMEA is consistency - defining severity, probability, and detection standards inside your organization. With DELMIA, companies can embed these practices directly into planning and execution, making PFMEA not just a compliance exercise but a foundation for operational excellence." –

Mike Bradford, Director of Strategic Business Development, Dassault Systèmes

O&A TAKEAWAYS

- What challenges do companies face when implementing PFMEA?
- A PFMEA needs to be embedded into company culture and establish internal standards for rating severity, probability, and detection.
- Q Can PFMEA be adapted for different industries and workflows?
- A DELMIA provides out-of-the-box templates, which can be tailored to meet sector-specific requirements or customer audit needs.
- **Q** How does PFMEA differ from DFMEA?
- A DFMEA focuses on product design, while PFMEA addresses the manufacturing process both are part of APQP.
- Q How can real-time data improve PFMEA?
- A Integration with IoT-enabled shop floor systems ensures data collection and analysis are current and accurate.
- Q How do we ensure teams are adequately trained?
- A Both tool training and methodology certification (APQP/ PFMEA) are needed, supported by ongoing practice and reuse of libraries.

embedding PFMEA into everyday operations turns quality into a competitive advantage.

CONCLUSION

PFMEA is a critical component of continuous improvement, helping manufacturers shift from reactive to proactive risk management. With DELMIA, organizations gain the structure, collaboration, and automation needed to make PFMEA a driver of quality, efficiency, and competitive advantage.

Discover how DELMIA can transform your PFMEA process. Visit 3ds.com/products/delmia to learn more.

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