

ABI RESEARCH COMPETITIVE RANKING

# QMS SOFTWARE

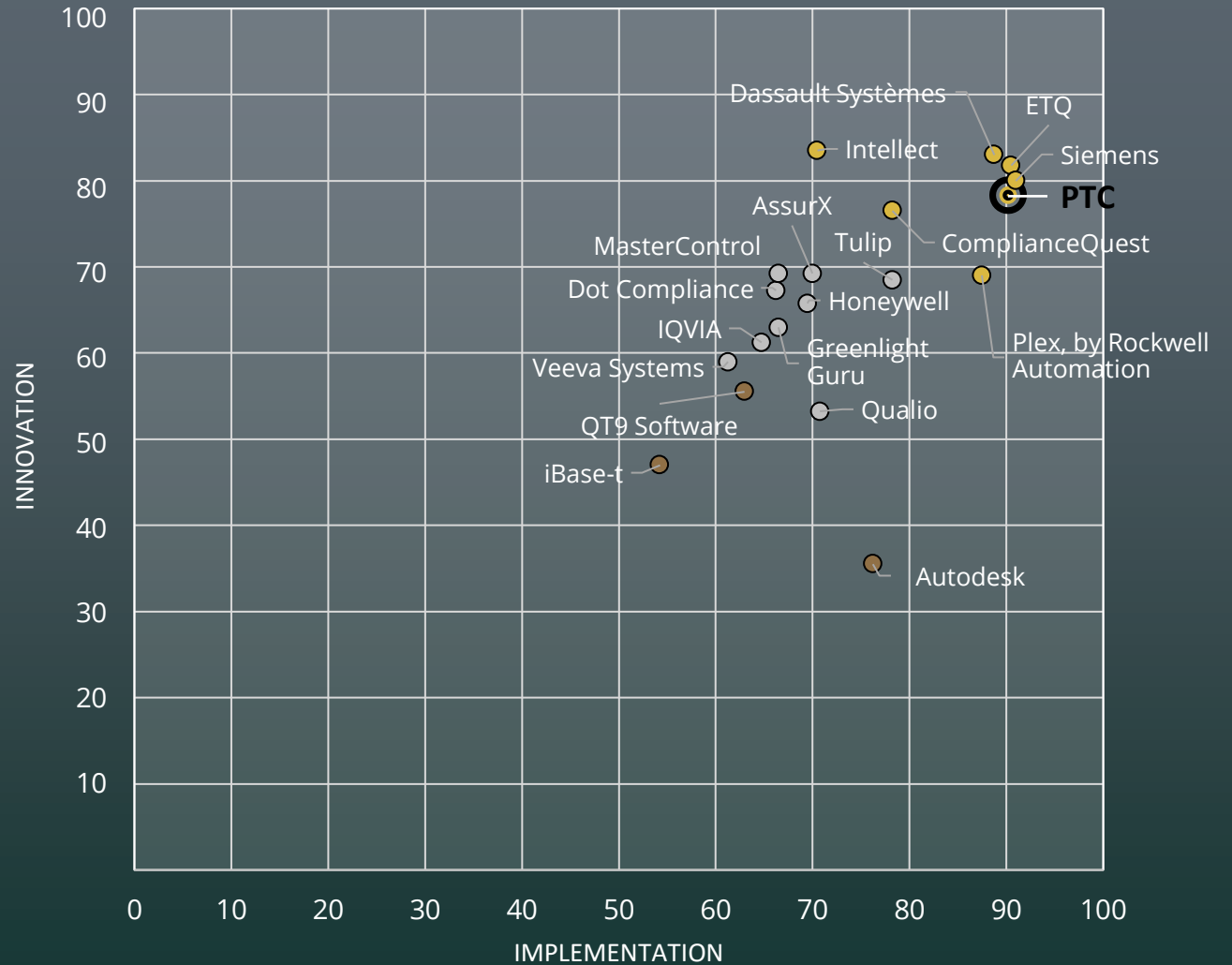


**OVERALL: 84.5 | INNOVATION: 78.3 | IMPLEMENTATION: 90.3 | RANK: 4**



OVERALL: 84.5 | INNOVATION: 78.3 | IMPLEMENTATION: 90.3 | RANK: 4

INNOVATION  
VERSUS  
IMPLEMENTATION  
MATRIX



## INNOVATION



**INNOVATION  
SCORE: 78.3**



PTC is a global provider of industrial software, offering a range of CAD, PLM, Industrial IoT (IIoT), and Augmented Reality (AR) solutions. The vendor's QMS solution, Arena QMS by PTC, is a cloud-native, multi-tenant SaaS platform that is built on the product record foundation via its PLM solution, Arena. The Arena QMS software supports a wide range of manufacturing industries with a primary focus on electronic high-tech markets such as medical devices, consumer electronics, and Aerospace & Defense (A&D).

The software focuses on directly connecting product design to quality records to create a closed-loop quality management process. Arena's standout feature is that it allows manufacturers to structure their quality management around the full product record, including the BOM, ensuring maximum traceability throughout the product lifecycle with a single source of truth. Customers can see critical quality data for all components, assemblies, and associated documents. This not only helps maintain quality, but it speeds the introduction and adaptation of products throughout design and production. PTC's comprehensive ecosystem of software supports its QMS solution and can be augmented with in-house CAD and Product Data Management (PDM) software (OnShape), enabling PTC to effectively link the E2E product design and production management process.

This single source of truth extends to the supply chain as well, with Arena providing role-based access policies to support formal review collaboration between design partners, contract manufacturers, component suppliers, and internal teams, facilitating strong quality assurance by making sure everyone is collaborating with the same and latest product information. This is further supported by Arena's 3D CAD Viewer that gives users a simple way to visualize designs, enhancing cross-functional input across the product lifecycle.

The software is highly configurable with its no-code application development capabilities, which includes the creation of quality process templates that self-populate the details of the new process, allowing manufacturers, for example, to rapidly generate Corrective and Preventive Actions (CAPA) reports.

Arena QMS enables integration with any third-party AI functionality that manufacturers may want to leverage, with a range of partners and solutions available on Arena's marketplace. PTC's AI strategy includes leveraging best-in-class partners and approaches to drive better decision-making across the customer's ecosystem. Currently, PTC does not offer any embedded AI functionality specifically for Arena QMS, but is in the process of building out these AI capabilities and engaging with customers to identify the most practical and impactful use cases.

## IMPLEMENTATION



**IMPLEMENTATION  
SCORE: 90.3**



Manufacturers can use Arena QMS to ensure and simplify compliance to all key compliance bodies (e.g., FDA, International Organization for Standardization (ISO), and the European Medicines Agency (EMA)). Manufacturers of any size can leverage Arena QMS with a wide range of pricing and packaging options. Furthermore, PTC offers customers competitive deployment times compared to other vendors, supported by the company's comprehensive customer success organization, 24/7 global support, training programs, and robust partnership network. Alongside this, the cloud-native, multi-tenant SaaS design enables manufacturers to focus their resources on building out and improving applications, rather than on consistent software maintenance. The solution also comes with a wide range of pre-configured dashboards and templates to support rapid value creation for customers, and can effectively scale with manufacturers' growth, with the easy addition of lines and sites.

The software has strong integration capabilities with a wide range of third-party enterprise software applications such as CAD/PDM, ERP, CRM, Customer Relationship Professional (CRP) training, IoT, and MES. Leveraging Arena's integration architecture, companies can access Arena's RESTful API and Import/Export/Event Engines. This enables Arena to embed itself even more firmly into manufacturers' existing ecosystems and simplify integrations, using a no-code graphical interface to create triggers that define when data are needed by other software applications, allowing data to be effortlessly pulled from Arena. Arena can easily import and export large datasets to work alongside a customer's existing BI and AI solutions.

## CONCLUDING REMARKS



PTC holistically provides an incredibly strong and comprehensive QMS solution, with the software design leaning heavily on the company's market-leading PLM solution, Arena. This allows customers to easily close the loop on the quality management process, effectively tying together a manufacturer's BOM all the way from design to market with complete transparency. Arena QMS was ranked in the top three in the implementation criteria, with its key strengths being the solution's rapid time to value and easy scalability, alongside its comprehensive support for the SME manufacturing market. The primary factor holding PTC back from first or second place in the implementation ranking was its marginally weaker partnership ecosystem and booking and customer base criteria scoring. While Arena QMS scored as a leader in innovation, with excellent data visualization capabilities and strong integration with the company's wider solution ecosystem, particularly OnShape, the solution was somewhat held back by its lack of AI functionality and standout new innovative capabilities.

# MARKET TRENDS

The main trends in the QMS software market are:

- **Low/No-Code Functionality:** This has become a mainstay capability for much of the QMS market and is a key selling point for many technology vendors. It allows for the significant democratization of application configuration among operators and markedly reduces the time taken to deploy QMS functionality.
- **Out-of-the-Box (OOTB) Capabilities:** Immediate access to comprehensive functionality that requires no customizability, just configuration, has become an almost mandatory selling point of QMS solutions.
- **Building Ecosystems:** Strong connections to associated enterprise software is key for many manufacturers to support their goals of building comprehensive digital threads throughout production processes. Many providers of QMS software even go as far as to wrap up their QMS solution with associated software, most commonly a Manufacturing Execution System (MES), with examples being Siemens, Rockwell Automation, and Tulip.
- **Cloud-Native, Software-as-a-Service (SaaS) Designs:** These deployment architectures allow manufacturers to access data from across the enterprise, breaking down information silos and supporting strategic production planning. Since the start of the decade, manufacturers have increasingly released the fragility of global supply chains and manufacturing operations, recognizing a need for greater control and visualization, and this will continue to drive popularization of connected solution deployments, as opposed to on-premises solutions.
- **Artificial Intelligence (AI):** Generative AI was the industry zeitgeist of 2023, and it looks to be continuing that way in 2024. AI-supported QMS functionality is slowly starting to make its way into the market, primarily in the form of supporting analytics and frontline worker chatbots.

# INNOVATION CRITERIA

**Product Capabilities:** What unique features does the MES solution offer? Does it include AI functionality? Does the solution effectively set itself apart from competitors?

**Data Visibility, Accessibility, and Security:** Is the software available over the cloud? Is it cloud native? Can data be remotely leveraged and be viewed across plants to support enterprise-wide collaboration? Are the data contextualized to meet different users' needs within the organization? Can manufacturers leverage AI to analyze the data? Does the solution meet and exceed required security standards such as ISO 27001 and IEC-62443?

**User Experience and Worker Augmentation:** Does the software have low/no-code functionality? Can customers generate comprehensive reports? Can screens be customized to be operator-specific, showing only relevant information to the user? Does the MES have an embedded AI chatbot to support workers?

**Building a Digital Thread:** Is there an extensive enterprise software ecosystem or portfolio to support the MES software? Does the QMS include supplier management functionality? Does this functionality have any unique features?

## 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:

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

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 its overall ranking

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

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

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

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



# IMPLEMENTATION CRITERIA

**Bookings and Customer Base:** How many global installations does the vendor support? How many different customers does the vendor have? Does the vendor demonstrate a growing customer base?

**Time to Value:** How much of the solution can be accessed OOTB? Does the software allow for easy and rapid scalability? Can the solution be deployed as SaaS? Does it have comprehensive integration capabilities?

**Partnerships:** Does the software vendor work extensively with System Integrators (SIs) and market partners? Does it have any notable AI-focused partnerships?

**Support for SMEs:** How well does the company's solution effectively support smaller-scale manufacturers?

**Regulatory and Standards Compliance:** Does the solution help manufacturers effectively meet their given markets' regulatory and compliance requirements? Does the software provide coverage to meet standards across different countries?

# LEADERS, MAINSTREAM, AND FOLLOWERS

**Leaders:** ETQ, Dassault Systèmes, Siemens, PTC, ComplianceQuest, Intellect, Rockwell Automation

The leaders group consists of companies that deliver highly innovative QMS offerings, while demonstrating robust deployment strategies and strong market experience.

**Mainstream:** Tulip, AssurX, MasterControl, Honeywell (Sparta Systems), Dot Compliance, Greenlight Guru, IQVIA, Qualio, Veeva Systems.

The mainstream group mainly consists of large vendors with a historic presence in the QMS software market that have been slower to innovate, or smaller innovative challenge vendors that have yet to scale their operations.

**Followers:** Autodesk, QT9 Software, iBase-t.

The follower's group is composed of companies that do not significantly excel in either innovation or implementation criteria, often with niche or legacy deployment architecture or lacking in standout innovative functionality.



Published May 2024

©2024 ABI Research  
New York, NY 11771 USA  
Tel: +1 516-624-2500  
[www.abiresearch.com](http://www.abiresearch.com)

ABI Research is uniquely positioned at the intersection of end-market companies and technology solution providers, serving as the bridge that seamlessly connects these two segments by driving successful technology implementations and delivering strategies that are proven to attract and retain customers. For further information about subscribing to ABI's Research Services as well as Industrial and Custom Solutions, contact us at +1.516.624.2500 in the Americas, +44.203.326.0140 in Europe, +65.6592.0290 in Asia-Pacific or visit [www.abiresearch.com](http://www.abiresearch.com).

**ALL RIGHTS RESERVED.** No part of this document may be reproduced, recorded, photocopied, entered into a spreadsheet or information storage and/or retrieval system of any kind by any means, electronic, mechanical, or otherwise without the expressed written permission of the publisher.

Exceptions: Government data and other data obtained from public sources found in this report are not protected by copyright or intellectual property claims. The owners of this data may or may not be so noted where this data appears.

Electronic intellectual property licenses are available for site use. Please call ABI Research to find out about a site license.