

# SHIFTING MES PLATFORMS TO THE CLOUD

Cloud-based MES platforms are digitally transforming manufacturing operations, providing critical data in real time to help organizations prevent production errors, increase efficiency and enable supply chain flexibility.

## The Growing Complexity of Manufacturing Operations

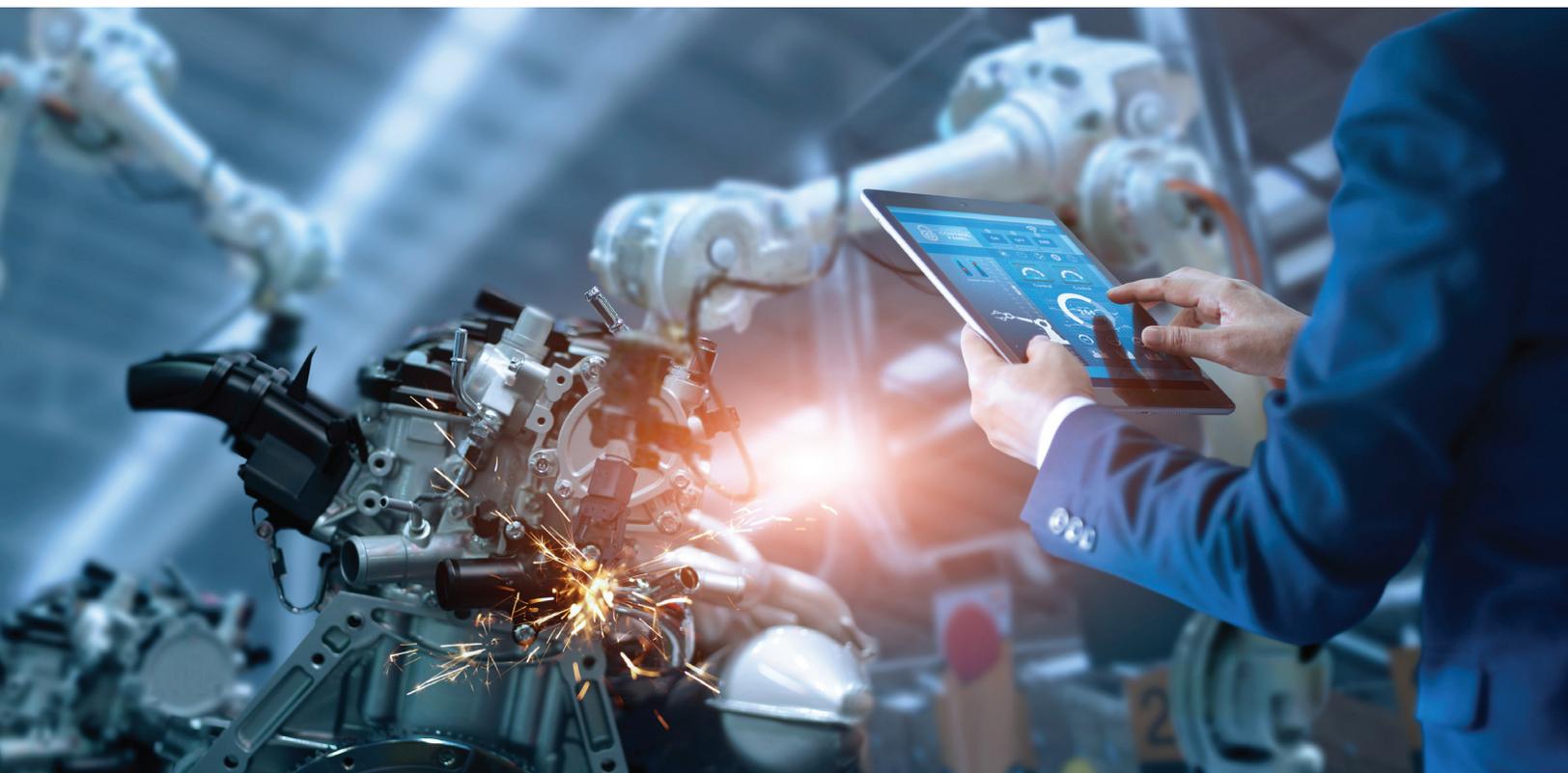
In today's global economy, manufacturing organizations are under constant pressure to design flexible supply chains that can adapt to changing tariffs, regulatory requirements and supply chain disruptions. Adding further complexity, manufacturing operations have become more intricate as products become increasingly sophisticated.

On-premise manufacturing execution system (MES) software was developed over the past decade to manage some of this complexity, but widespread use has remained limited. Intricate and costly on-premise software and hardware implementations can take a year or more to deploy in a single factory, draining budgets

and taxing some of the most valuable resources. For global manufacturers with multiple sites, data from these operations remains siloed at each physical location. Because of these barriers, many manufacturers still rely on a combination of manual processes, paper documentation, disparate electronic systems and tribal knowledge to run their factories.

## Leapfrogging to the Cloud for Data-Driven Operations

Six years ago, the 42Q cloud-based MES platform was designed to capture and share critical data in real time, helping manufacturers make better decisions based on data insights and proven results. The 42Q platform operates securely from the cloud, integrating data between an enterprise resource planning (ERP)



system and manufacturing equipment in a factory. For the 70 factories around the world that are currently using 42Q, the platform has helped them reduce or prevent production line failures and achieve new levels of efficiency, quality and supply chain flexibility.

#### Benefits of the 42Q platform include:

- **Subscription-based model for lower total cost of ownership (TOC).** 42Q is purely subscription-based, with no initial capital expenses or hardware and software licenses.
- **Faster, less complex deployments.** Organizations can configure their production environment and gain access to factory floor data, analytics and reporting in as little as 6-8 weeks.
- **Scalable, pay-as-you-go platform.** Manufacturers can begin using 42Q at 10 workstations or 100 workstations, paying only for what they use.
- **Global factory and supply chain visibility.** 42Q was designed for global organizations with multiple factories. Manufacturers can aggregate information from multiple factories and display benchmark reports in real time. Data generated throughout the production process is converted into visual signals so that users know exactly what's happening at the product, workstation, production floor, plant, regional and global levels.
- **Mobile access.** A mobile application renders a digital version of the factory floor at any facility, enabling traveling executives to stay updated on the status of key metrics. The system can also be pre-programmed to send real-time alerts when production activity operates outside of preset limits.

- **Error-free production and improved compliance.** As regulatory bodies increase scrutiny in areas such as medical device and automotive manufacturing, businesses can configure production rules in the 42Q platform, preventing common manufacturing errors while ensuring quality and compliance. For audits requested by regulatory organizations, a historical record of all operator actions, test data, in-process data and component data is stored and conveniently accessible via the cloud.
- **Comprehensive data security.** As global cybersecurity incidents escalate, 42Q's multitenant cloud-based MES platform enhances security, leveraging built-in security protocols associated with leading cloud service providers. Customers experience greater than 99.9 percent availability and much greater security than on-premise servers and software.

#### Future Features: Advanced AI and Machine Learning.

42Q is currently working on advanced platform features that leverage new advances in AI to predict and prevent machine failures. Preventing failures can help organizations save millions of dollars, as well as reduce the negative ripple effect of lost productivity across the entire supply chain.

Leveraging both machine learning and artificial intelligence together in the 42Q platform will further ease the strain on manufacturing organizations that run lean operations and rely upon contract manufacturers to produce and deliver on time. As the technologies collect more event data over time, the accuracy of these predictions will continue to improve.



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