



Proactive Quality for Automotive Suppliers: Addressing the Impact of Product Recalls

There has been no shortage of high profile automotive recalls over the past several years. While major OEMs have made the headlines for these recalls, the impact to automotive suppliers has been far less publicized but almost equally as dramatic. In light of recent events, in the coming years



suppliers will no doubt be required to demonstrate more robust quality management systems, provide better real-time visibility into manufacturing data, and may even be held accountable for additional charge-backs and warranty claims.

Whether these requirements are driven by new regulations, industry standards, or a combination of both, they will result in more selectivity at the OEM level and increased competition among suppliers. Comparable situations have happened in A&D, and legislation as well as new standards have introduced complex variables into the landscape. Simply, those automotive suppliers that can deliver on those requirements while maintaining product and process quality will succeed. Leading suppliers are already taking note of these impending changes, and are evaluating and deploying next-generation quality management software capabilities.

In this Research Spotlight, LNS Research will share benchmark data from over 750 survey respondents demonstrating key approaches to closed-loop quality management to ensure automotive suppliers can meet the ever-increasing demands of customers and continue to differentiate in a highly competitive environment. Specifically, it will cover the following:

- Understanding the source of quality management challenges
- Taking a next-generation approach to quality management
- How automotive suppliers are overcoming financial limitations with cloud-based quality software
- The benefits of a holistic quality management software framework
- Actionable recommendations

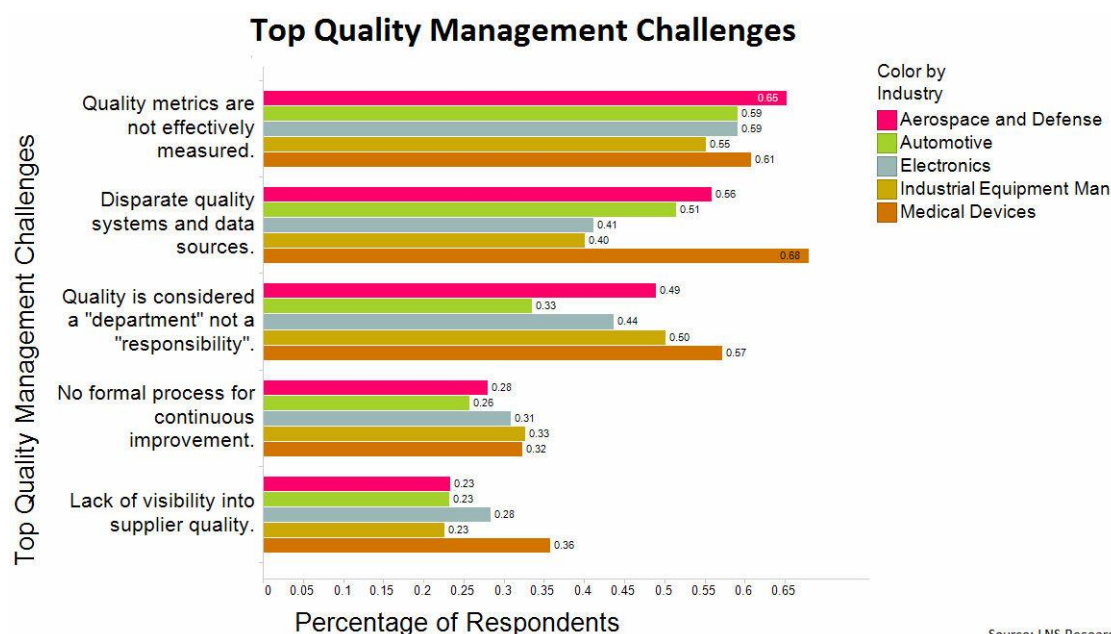
Recent automotive recalls have had catastrophic impacts to OEM reputations and business performance, but the impact to automotive suppliers should not be discounted. Major changes can be expected in the near future.



Understanding the Source of Quality Management Challenges

With increasing demands from customers, the widespread use of social media and its ability to magnify the impact of a product quality issue, greater reliance on the global supplier network, and a variety of other business pressures, the need to produce high quality products has never been greater. This is putting even more pressure on quality management capabilities in automotive manufacturing, as well as in other manufacturing industries. Data from LNS Research’s recent quality management survey of over 750 industry executives helps to visualize these challenges. More than half of the respondents were from discrete manufacturing industries, with the remainder split among life sciences (18%), F&B/CPG (11%), and process manufacturing (17%). Just under half, 44%, were from medium-sized companies (\$250 million to \$1 billion in revenue), 36% from small companies, and 21% from large companies.

Market leaders like Intel and Lockheed Martin are overcoming quality disconnect with next-generation quality solutions like supplier quality portals to extend traceability, safety, and quality requirements beyond the manufacturing facility. It is critical that suppliers have the capability to deliver on these requirements.



As shown—and aligned with other industries such as A&D, electronics, and industrial equipment—the top quality challenge for automotive manufacturers regarded the effective measurement of quality metrics. Not far behind was the challenge of having too many disparate systems and data sources for managing quality. These two top challenges go hand in hand, and the latter is undoubtedly the source of the challenges with quality performance visibility.

Plainly, automotive organizations across the supply chain from tiers 3, 2, and 1 manufacturers up through OEMs are dealing with a disconnected, siloed quality management environment. At a time where product quality and safety are tied



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more closely to overall business performance, continuing on this disconnected path is a truly unsustainable business model. Organizations need to start considering next-generation approaches to improve internal quality, but also to drive traceability, safety, and visibility into the supplier base.

Taking a Next-Generation Approach to Quality Management

In the automotive industry, many organizations are overcoming quality disconnect with investments in next-generation Enterprise Quality Management Software (EQMS) solutions. EQMS centralizes and streamlines traditionally manual and disparate quality processes and functionalities. It enables organizations to deploy standardized instances of functionalities such as:

- Non-conformance/corrective and preventive action (NC/CAPA) management
- Audit management
- Supplier quality management
- Document management
- Change management
- Quality reporting
- Training management

In 2014, the enterprise-wide deployment of such functionality—rather than traditional ad-hoc deployment strategies resulting in different systems and data sources—is critical for achieving a holistic view of quality. EQMS solutions may be delivered modularly or as an entire suite of integrated functionality. For automotive suppliers, it may be optimal to choose the latter strategy, since many software vendors have architected solutions with automotive industry best practices and regulations in mind.

Quality has certainly moved beyond being a concern of just manufacturing professionals to having a broader impact and applicability across the value chain. Because of this, numerous enterprise software vendors now offer EQMS functionalities. Pure-play EQMS providers focus solely on delivering the capabilities listed above. However, other vendors in the Manufacturing Operations Management (MOM), Product Lifecycle Management (PLM), and ERP software categories have carved out a space in this market, many of which have been able to offer functionality competitive with pure-play EQMS vendors. The optimal strategy for the organization is generally dependent on the existing set of IT resources, as well as its available budget, system requirements, and long-term vision for how quality will fit into the organization.

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Cloud-Based EQMS for Automotive Suppliers

While many OEMs have large budgets for quality management-related activities and investments, a vast majority of suppliers are often on the other end of the spectrum. Financial limitations have historically precluded these organizations from making investments in robust technology like EQMS. However, today, advancements to EQMS business models have made such next-generation quality management IT infrastructure investments much more a reality for automotive suppliers.

The Software as a Service (SaaS) business model has had a disruptive impact to nearly all enterprise software categories. EQMS has not been excluded from this disruption, and many smaller automotive suppliers are directly benefiting from the change in software delivery and pricing models.

- **Delivery models:** As opposed to traditional on-premise software implementations, SaaS solutions are virtualized and then hosted and maintained over the cloud, requiring significantly less up-front resources for deployment and use. Time to solution value is consequently much shorter. Additionally, these solutions are often more agile than traditional on-premise solutions, with EQMS vendors aiming to replicate the proven multi-tenant models in other enterprise software categories.
- **Pricing models:** Cloud-based EQMS has a different pricing structure than traditional on-premise solutions. Users typically pay a smaller monthly or annual subscription fee with service and support built in, which scales with user needs rather than a large up-front fee. Within the subscription fee, organizations may pay different fees for different types of users. For instance, a casual user who is simply viewing quality reports may have a different fee than a quality professional using the solution's stronger continuous improvement tools.

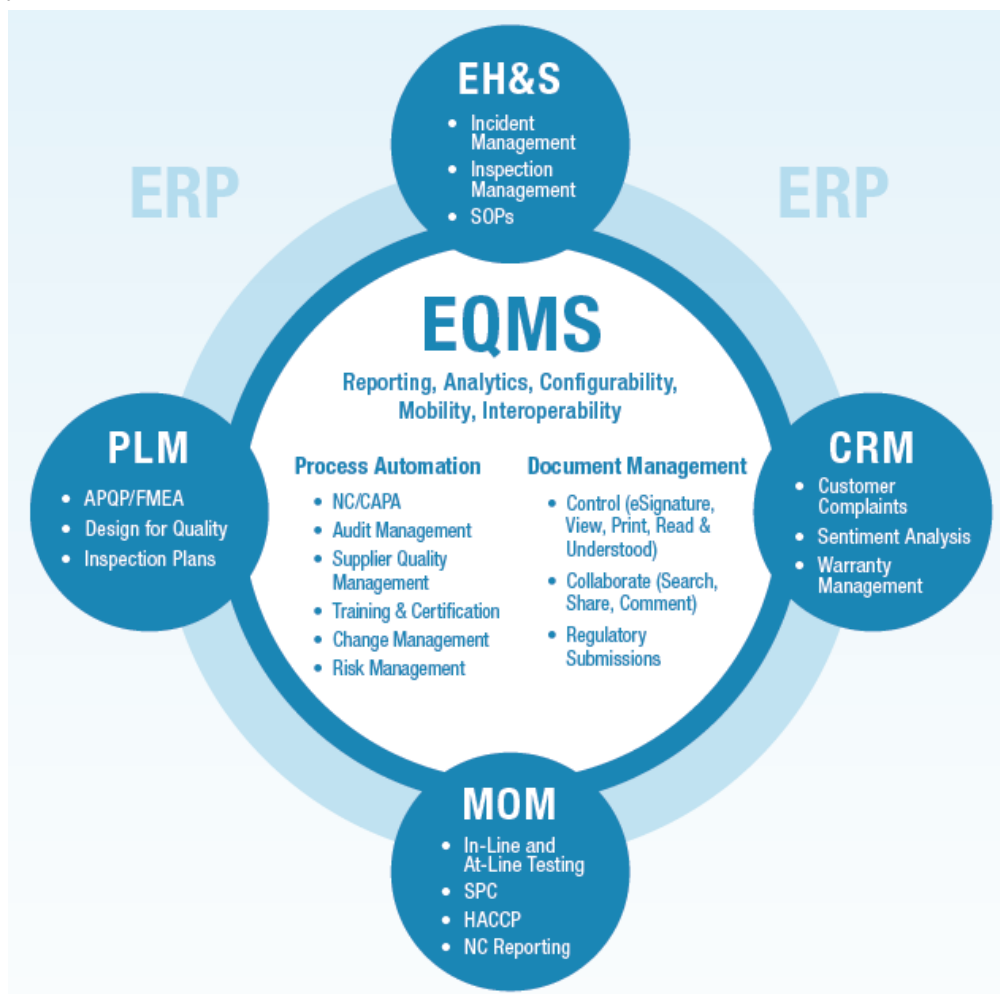
Combined, these alternative delivery and pricing models make cloud-based EQMS an attractive solution for automotive suppliers with less financial and IT resources. SaaS has proven critical for driving quick and widespread system adoption, which is will be crucial with OEM quality and information demands poised to only increase. As mentioned previously, many vendors are now offering cloud-based EQMS functionality, including pure-play vendors and also ERP vendors. With EQMS functionality delivered via cloud-based ERP, manufacturers can benefit from tight integration with existing ERP data sources and capabilities, while also extending out EQMS functionality.

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The Benefits of Holistic Quality Management Software

Because quality touches so many different areas of the value chain, today's EQMS solutions are generally architected to easily integrate with existing enterprise IT systems and data sources. This approach also delivers unprecedented levels of communication and collaboration for interacting with critical suppliers and partners on quality issues over the course of the product lifecycle. As shown below, these may include CRM, MOM, PLM, and ERP.



A manufacturer may create a feedback loop of information between manufacturing and design, where non-conformance data is shared with engineering professionals and is used to improve product quality.

This integration is vital for next-generation quality management strategies—particularly when it comes to closed-loop quality. Closed-loop quality is the concept of connecting different quality content and process data from across the value chain. For instance, a manufacturer may create a feedback loop of information between manufacturing and design, where non-conformance data is shared with engineering professionals and is used to improve product quality. The main goal of closed-loop quality is to continuously improve quality earlier in the value chain, pushing costs and risk down. For smaller automotive suppliers, a single solution



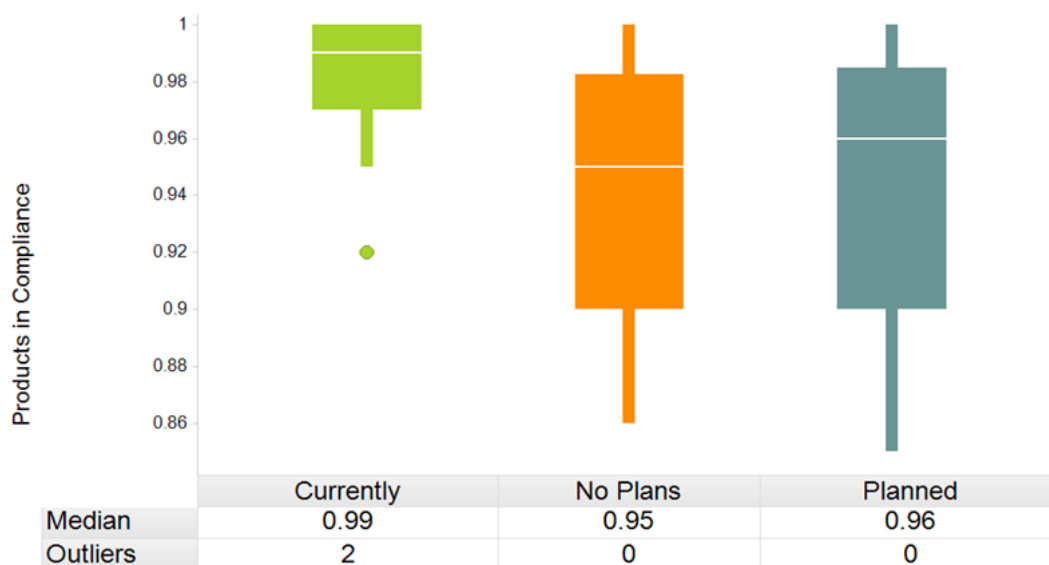
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that delivers strong capabilities across all of these areas is often quicker to implement and more cost-effective.

As shown in the boxplot below, manufacturers that have made the investments to develop and deploy closed-loop processes have experienced significantly higher rates of product compliance versus those without capability (where product compliance is the percentage of products produced on time and within specification). Specifically, manufacturers with closed-loop processes experienced a median product compliance rate of 99%, with the top three-quarters of those respondents ranging in performance from 97% to 100%.

The Impact of Closed-Loop Processes on Product Compliance



Closed-loop processes established to connect quality across design, manufacturing, and suppli...

Source: LNS Research

With EQMS enabling closed-loop quality processes, automotive suppliers may find a challenge with bypassing such an investment given the performance differences noted above. Realistically, OEMs contracting out to those organizations without closed-loop quality processes established—performing at a rate of product compliance ranging as low as 86%—are taking on significantly more risk. This data supports the requirements OEMs may have around quality management capabilities for suppliers in automotive and other industries with heavy reliance on the supplier network.

Actionable Recommendations

The past has shown that the recent safety issues impacting the automotive industry will undoubtedly ignite some form of change—whether regulatory or more tacit. Regulatory changes may follow legislation similar to the 2011 National

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Defense Authorization Act (NDAA) in A&D, where suppliers are held far more accountable and greater recordkeeping is required. Tacit impacts may include OEMs increasing internal quality risk management capabilities, taking a more proactive and risk-mitigating approach to preventing poor quality issues originating in suppliers' manufacturing processes. In this instance, suppliers with historically poor performance will be less likely to be contracted.

Considering the time and resources required for making an enterprise software investment, automotive suppliers should start evaluating next-generation quality management solutions now. When evaluating EQMS vendors, the following should be top-of-mind:

- **Consider EQMS vendors that can deliver entire suites of functionality:** By selecting an EQMS vendor with a strong suite solution, automotive suppliers can bypass modular implementations, accelerating time to solution value and the ability to show value to OEMs.
- **Consider EQMS vendors with cloud-based offerings:** Again, this can accelerate time to solution value as well as the ability to show value to OEMs, while also providing the flexibility in pricing needed for organizations with financial limitations. Automotive manufacturers should consider pure-play EQMS vendors delivering cloud-based solutions, as well as ERP and other enterprise software vendors delivering those solutions as an addition or extension of the existing IT footprint.
- **Make investment decisions with future quality vision in mind:** Any decision around quality IT should account for not just the immediate impacts to the solution, but also the organization's long-term vision for holistic, closed-loop quality management and future OEM requirements.

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