

Minimizing the Cost and Impact of a Recall



At a Glance:

This white paper identifies the ways in which an automotive supplier can minimize the risk of being involved in a recall, or in the event of a recall, be proactive in responding to it.

- Understand the difference between passive and active compliance.
- Learn which cloud ERP features, such as data management, full traceability and active compliance you might be missing in your current ERP system.
- See how the cost of responding to a recall can be dramatically reduced with easy access to a single database that contains all relevant information.

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While there isn't much an automotive supplier can do to prevent being involved in a recall, your ability to respond and assist in the investigation and mitigation of an emerging problem can be greatly improved by proactive responses you can and should take immediately.

It's all about being able to access, quickly and comprehensively, all records of inventory movement (with lot identification, source, test results, etc.), manufacturing processes, equipment and people involved, measurements and test results, and full traceability even on items and materials that are not lot controlled. Any ERP system will allow you to keep records of inventory receipts and issues but that will only take you so far. Complete records of all activity, movement, tests, and measurements are also necessary to fully understand the extent of any problem. And those records must be complete and logically tied together. That's where preparation and those proactive measures come into play.

Even when the OEM responsible for the design, material specification and source has examined and approved all processes and quality measurements, the supplier's cooperation is essential. The ability to clearly identify all provenance and relationships is a necessary part of the root cause analysis and mitigation process. Suppliers must be able to provide this information and it can be a laborious, time-consuming and difficult task. Even then, it might not be definitive and that can be a serious problem, expanding the scope of a recall and multiplying the costs for all parties.

Automotive suppliers must focus on recordkeeping discipline in conjunction with data management tools that create and manage the records and make them accessible for full traceability. Most ERP systems do not go nearly far enough in this regard in supporting the kind of analysis required to get through a recall investigation smoothly and efficiently.

Active compliance

The road to successful compliance involves two factors: the system and database must be properly designed to capture, store and enable access to the



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information, and the system should also provide the controls and validation to ensure completeness and correctness of the data as it is captured. Together, these two capabilities provide a proactive approach to traceability that Plex calls “active compliance.”

Most ERP systems offer passive compliance, meaning that they are capable of recording transactional information – capturing lot identification from the point of receiving, through production, and on to shipping, and maintaining a record that can be queried from the raw material lot forward or the customer order backward. For many companies this represents a huge improvement over their current state but it really isn’t adequate. This approach doesn’t help prevent problems—it only helps find them after they have occurred.

In active compliance, the system monitors and controls activities in real time. It won’t let an operator start a job if the wrong material or lot were delivered to the workstation. It makes sure that the employee is properly certified to run the equipment. It displays text or video work instructions to ensure that the right steps are followed. It enforces any required tests or inspections, monitors the calibration of the test equipment, and stops the job if the process goes outside the control limits. In most cases the information is captured directly from the equipment, so the data is accurate and there is no impact on operator productivity.

The Plex Manufacturing Cloud is uniquely designed to provide active compliance tools. Manufacturing Execution System (MES) functionality is built into the Plex Manufacturing Cloud right from the beginning (not added on or interfaced at a later time) so it is fully integrated with the ERP business modelling and procedural definitions. It’s hard to imagine how full active compliance could be accomplished if the MES and ERP were merely interfaced and not designed to be a part of a single system approach. Plex Manufacturing Cloud MES and ERP, working together with documentation, scheduling and quality subsystems, ties the pieces together to ensure that all steps are completed as required, all measurements are recorded and within expectations, and the entire process is fully documented in a way that makes the provenance and history accessible.

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Data Capture

When a part is identified as defective, the OEM will want to know, among other things, who produced the part and everything about its history including components and materials used, their source and history, and details of the production process and any measurements that were taken. Creating and maintaining that database are relatively straightforward tasks, as long as the system is fully integrated and capable of capturing the data and properly linking it together. Inventory movement is only the beginning – a necessary first step. Each inventory receipt and issue, source, date and time, lot identification, who completed the activity and where, and enough detail to link to certification, test results, and/or links to source and provenance detail that may be in another database must be captured and integrated.

Production records include clear identification of all parts and materials used (source, lot numbers, test and measurement results, who picked the materials, how where and when they were delivered), each process step completed with detail (equipment used, operator(s), day and time, specifications (version) used, work instructions followed, reporting parameters, test results, quality measurements and tests), and so forth.

The critical factors in collecting all of this information are: making sure it's all collected (system monitors, triggers reminders, prevents further activity until reporting is complete); validating entries (if out of expected range, validate with operator and/or assist in correction); and making sure data collection does not negatively impact operator performance (direct links to PLCs and sensors, links to quality and measurement systems, links to engineering and documentation, ergonomic screen and entry device design).

Traceability

Once the data is collected and stored, accessibility becomes the focus. The OEM will want the full history of the part and everything that went into it, and evidence that procedures were followed and all tests and measurements were completed with the results. This information may be available in your current system (or it may not), but how difficult is it to gather the needed documentation? And how auditable are these records? Can they be proven

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to be complete and accurate? Active compliance answers the latter questions positively, with assurance.

Let's say a particular part produced by a given supplier is found to be defective. The OEM will use its records to confirm that the part, materials and process were properly tested and certified and then will look to the supplier to confirm that the specifications were followed, materials used were in compliance with all specifications, and if a problem is detected, attempt to clearly isolate the specific parts affected.

This latter requirement may involve backward and forward traceability and is critical to limiting the extent of the recall. There are many examples of huge quantities of good products being recalled simply because the manufacturer could not determine, beyond a doubt, whether the defective part is in the product or not.

An additional benefit of this kind of traceability: a defective material or part that is found is one OEM's investigation might also have been used in another customer's products. The supplier can then pro-actively inform this other customer of the potential problem and perhaps help them avoid their own recall or at least limit the damage through this early warning.

Cost of Response

While every automotive supplier is expected to maintain and be able to produce adequate records to support a thorough investigation and recall, searching through computer transaction records, combining them with information kept in spreadsheets and filing cabinets, and cross-checking records in other computer systems (MES, quality, procurement, etc.) can be difficult and resource-intensive (expensive). With a pro-active approach, all required data and history is combined in a single database and retrieval and search tools are designed



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to trace relationships and provenance. This doesn't just happen – it must be thought-out and planned, then built and maintained with traceability in mind. The Plex Manufacturing Cloud, with its roots in the automotive business, is built around the most comprehensive integration in the business, database and tools designed for full traceability, and active compliance to ensure completeness and conformance. Automotive suppliers using the Plex Manufacturing Cloud can minimize the time, effort and cost of problem investigation and recall support.

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About Plex

The Plex Manufacturing Cloud is the first and only cloud ERP built to meet the tough requirements of today's manufacturers. Hundreds of innovative companies, across industries including aerospace and defense, food and beverage, and motor vehicles, rely on Plex to operate their manufacturing businesses and generate profit from every inch of the plant floor. With insight that starts on the production line, Plex helps manufacturing companies see and understand every aspect of their business, enabling them to lead in an ever-changing market.