



Automotive Tier 1 Supplier Case Study

Wireless Alarm & Event Dispatch Reduces Downtime and Asset Reliability

Customer Snapshot

Company: Tier 1 Automotive Supplier

Location: London, ON Canada

Products: Interior Carpets and Insulation

Plant Size: 200,000 sq. ft

Employees: 150 (25 salaried / 125 hourly)

Products: FirstPAGE, FirstPAGE Alarm Manager, FirstPAGE Alarm Manager Gateway for OPC + In-Plant Paging System and Alphanumeric Pagers

The Company

The parent company is an International manufacturer of textiles and automotive components with 14,000 employees and over 50 manufacturing facilities. The London, ON plant is 200,000 square feet and has six automated and three manual lines. The plant employs 150 people working across three, eight hour shifts, working 5 days per week. The plant receives 5 year production contracts to supply component parts for Chrysler, Ford Motor Company and General Motors vehicles.

The Challenge

With the automotive industry struggling and margins shrinking, plant management was forced to lay off a substantial portion of their work force. The current staff was forced to cover a much larger area with fewer resources. This immediately exposed a problem that plant management had been avoiding which was an inefficient plant floor communications system and process. For an operator to make a request for maintenance because a piece of equipment was in a faulting condition, the operator had to walk away from their station and use the overhead PA to call for a supervisor or skilled trade. Alternatively, the operator would walk the shop floor until they found the assistance they were looking for. This plant is a just-in-time facility, meaning that they have only 1 day of stock available at any given time. If they run short on production due to poor quality or unplanned downtime, they can incur substantial penalties in late fees and rush orders by using expedited services. In addition, high scrap rates were draining profitability. The challenge for the plant was to implement a more reliable and robust production and equipment monitoring solution that provided a common communication language that operators, maintenance and management could all understand.

The Process

Employees feed the polyethylene carpet blanks into the automated lines one at a time, where they are heated and stretched by robotic grippers before being pressed into molds. Acoustic insulators placed in the molds adhere to the back of the hot carpet before it cools. Workers remove the molded pieces and place them into another fixture where multi-head, robotic water jets cut openings and the final outline. Finally clips and air ducts are added as required. Each molding cycle takes approximately 85 seconds. Often times the machine jams or runs low on adhesive and the oven temperature falls outside of tolerance.





The Solution

After a successful 60 day pilot project, the plant elected to evolve from a manual process to an automated process and decided to roll the system out to the six (6) automated lines. The two (2) contributing factors that lead to that decision were:

- #1 - Nailing the pilot project "Measures of Success"
- #2 - The fact that every vehicle platform they were supplying component parts to had already standardized on SeQent's paging infrastructure and Wireless Alarm & Event Dispatch software solutions.

From a hardware perspective, the solution consisted of a small desktop paging unit that was serially connected to a PC + 35 alphanumeric pagers. The in-plant paging system provides the guaranteed message delivery to the pagers within 5 seconds of an Alarm being active. The speed and reliability of message delivery was a big determining factor.

From a software perspective, the FirstPAGE and FirstPAGE Alarm Manager family of products were implemented. The FirstPAGE product consists of a core messaging server that is capable of supporting thousands of messages per hour to hundreds of messaging carriers. *FirstPAGE* Server maintains a database of all destinations, the addressing information of the device and the associated service provider connection information. The FirstPAGE Alarm Manager product adds a sophisticated Alarm & Event management engine to FirstPAGE. The FirstPAGE Alarm Manager Gateway for OPC component was used and performed data collection interfacing with the RSLinx OPC Server and applied the pre-determined business rules to the collected data.

Upon finding a business rule exception, Alarm & Event messages were dispatched to the maintenance departments where all the skilled trades were carrying pagers. As part of the configuration, every Alarm or Event had an associated escalation schema that included repeat messages and sending messages to supervisors and plant management via Sprint/Nextel devices as the events aged. This new process immediately increased plant efficiencies as this was a natural extension of their Continuous Improvement efforts.

The Benefits/ROI

The business case to justify the investment was based upon key an increase in productivity, an increase in quality, and an increase in the bottom line/profitability.

#1 - Productivity Improvement

- A. 50 FTE's: 10 minutes per person/day/annual savings = \$50,000
- B. 25-50% Response improvement to PA system (Could not hear and the system did not repeat the message/request)

#2 - Increased Quality

- A. New process system yielded better quality scores
- B. Reduced scrap

#3 - Cost Savings

- A. The elimination of carrier based cell phones - 20 phones x \$60.00 p/m = \$14,400 per year
- B. The elimination of expedited services - \$92,000
- C. Reduced Scrap - Did not calculate this - but this was dramatically reduced

