

ERP Plays a Vital Role in the Automotive Lean Supply Chain

Market Segment

As it becomes clearer that the long term vision of Lean includes extending initiatives throughout the supply chain, automotive manufacturers intent on improving costs, and operational performance are turning to technology solutions to successfully establish a united Lean effort. But bringing best practices from the plant floor to an enterprise scope and beyond is another journey in itself. Recent evidence from the [Lean Supply Chain Benchmark Report](#) uncovered that automotive manufacturers that are successfully backing their Lean efforts with their ERP systems, and a committed focus to actively extending Lean beyond the shop floor are achieving Best in Class status. This report takes a look at how Best in Class automotive manufacturers are fairing in regards to moving Lean initiatives to the supply chain at large, while also focusing on performance highlights from customers of leading ERP vendors SAP and Oracle.

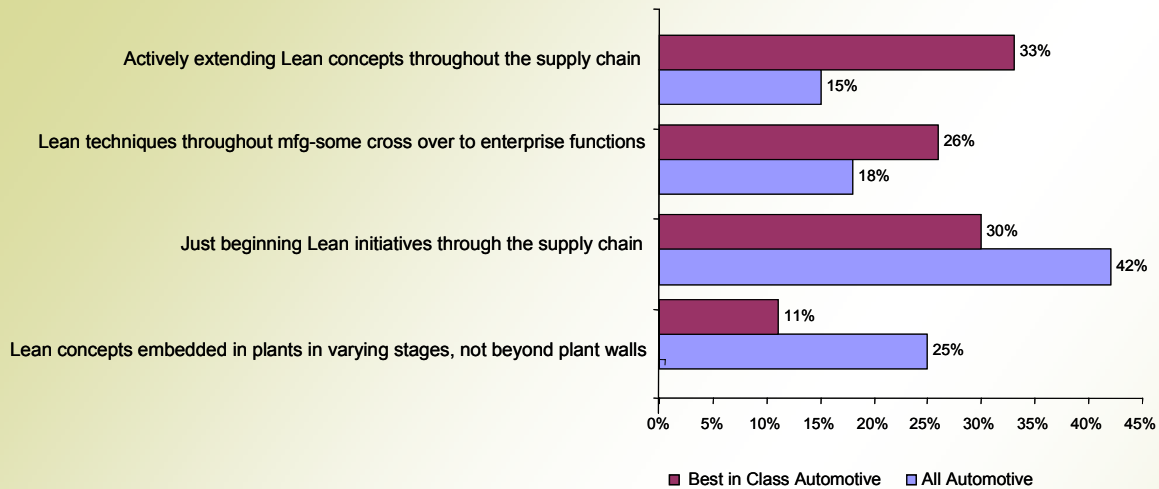
Key Findings

To achieve a high degree of flexibility and customer responsiveness, automotive manufacturers find that it takes a combination of Lean philosophy and new technology to quickly design new streamlined operations on the shop floor and beyond.

The results in this report are derived from data collected from 104 automotive respondents from the recent *Lean Supply Chain* study, a subset of the full complement of 319 participants. Because of the significant impact ERP can have on Lean manufacturing and corresponding Lean Supply Chain efforts, Aberdeen looked specifically at the 40 SAP automotive customers and 31 Oracle automotive customers* who responded to the Lean Supply Chain Survey, including follow up interviews with several survey participants. While Aberdeen understands this sample is not statistically valid across the entire automotive industry, we did find some facts we felt were interesting. This deep dive uncovered that automotive manufacturers that rely heavily on their ERP systems and have had Lean programs in place for 4 years or more have been most successful in bringing benefits to both the shop floor and across the enterprise.

*The SAP automotive sample was comprised of 72% North American participants, with 26% in Asia/Pacific and 3% from Central/South America.

The Oracle automotive sample was comprised of 94% North American participants, with 6% from Asia/Pacific

Figure 1: Scope of Lean-Best in Class* Automotive Versus All Automotive

Source: AberdeenGroup, August 2006

Best in Class automotive companies prove their maturity and comfort with Lean has prepared them for the next challenge: deploying Lean throughout the extended supply chain. While 49% of all automotive companies have Lean implementations that are 4 or more years old, over 75% of Best in Class automotive manufacturers (not shown) have achieved this level of maturity, further highlighting the fact that true and sustained results never happen overnight. In terms of looking at how customers of leading ERP vendors responded:

- SAP automotive customers are much more likely than Oracle customers to have migrated their Lean initiatives throughout the supply chain (25% versus 10%)
- Oracle users are still on a sharp incline to reduce non-value added manufacturing and supply chain costs with a full 62% ranking this as a top strategic action, compared to only 43% of SAP customers.

Benefits

Aberdeen findings show the barriers to extending Lean across the supply chain are lifting for SAP automotive users, with performance metrics including reductions in manufacturing cycle time and schedule compliance approaching Best in Class status. Taking a closer look at Table 1:

- SAP automotive customers are nearly meeting Best in Class performance for schedule compliance (72% vs 79%)
- Oracle users beat the Best in Class average manufacturing cycle time across all industries (16 vs 27 days) but still have further to go to achieve Best in Class status in the automotive sector.

*For a full description of the qualifiers for Best in Class, please refer to the full benchmark report, [The Lean Supply Chain Benchmark Report](#)

Table 1: Current Performance

	Best in Class Automotive	SAP Automotive	Oracle Automotive	Best in Class All Industries
Manufacturing Cycle time (Days)	4	8	16	27
Schedule Compliance	79%	72%	58%	78%

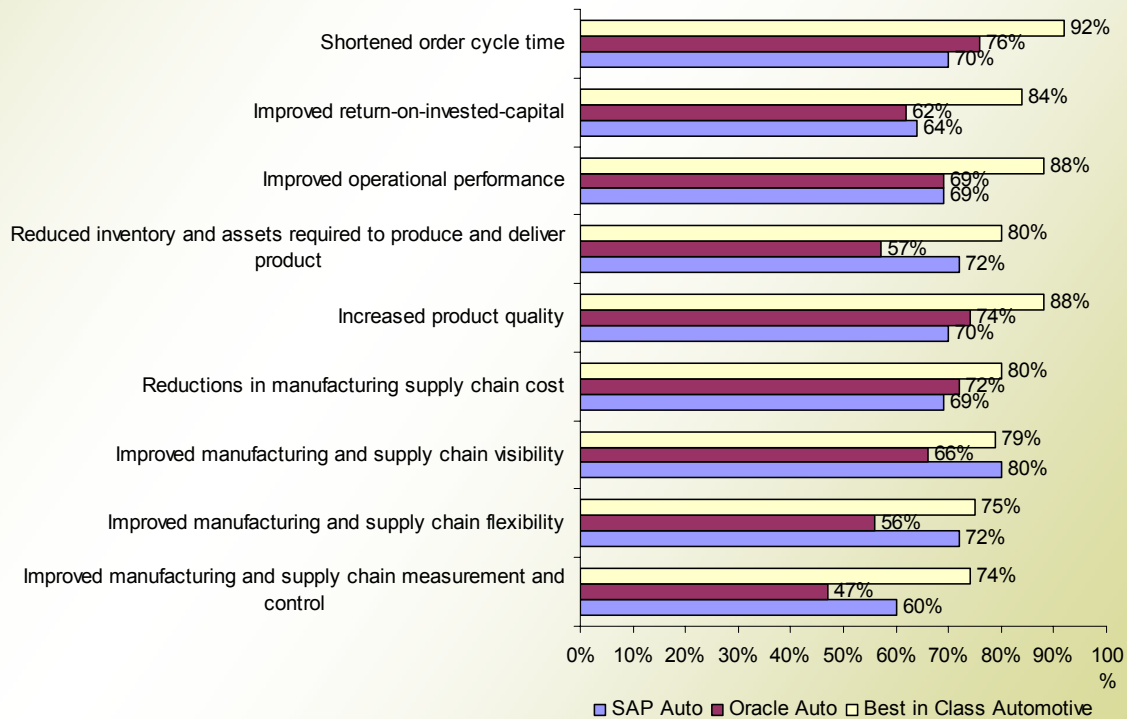
Source: AberdeenGroup, August 2006

Real value can be gained from a variety of modules and extensions to ERP deployed in automating the Lean process.

The strongest performing companies have not only embedded Lean techniques into core business processes, but have also

- institutionalized these processes with technology solutions
- integrated Kaizen programs (for continuous improvement)
- developed leaders with strong mentoring capabilities
- continue to drive operational excellence by remaining focused on key measurements

Figure 2: Lean Strategy: Meeting or Exceeding Expectations



Source: AberdeenGroup, August 2006

Companies that have mastered Lean basics are meeting or exceeding shareholder expectations. SAP automotive customers in particular have consistently exceeded their initial expectations for Lean in key areas such as the reduction of inventory and assets, manufacturing and supply chain cost reductions, improved manufacturing and supply chain flexibility, visibility, and measurement and control (Figure 2).

In terms of these key benefits, further analysis revealed which of their Lean strategies were exceeding expectations. Some highlights include:

- Improving supply chain flexibility was cited by 21% of Best in Class companies as a benefit that exceeded initial expectations, followed by automotive customers SAP at 19%. In turn, 40% of Oracle automotive customers remain disappointed in their supply chain flexibility progress.
- Oracle automotive customers are at parity with the Best in Class (15% vs 17%) for having reduced inventory and assets as a result of their Lean Supply Chain strategy.

But SAP automotive customers are more likely than both the Best in Class and Oracle automotive users to have found their Lean initiatives exceeding expectations for reductions in manufacturing supply chain cost in particular. One automotive customer received significant benefits through relying on its ERP's quality module for reductions in cost, "We implemented the SAP quality module, giving suppliers and logistics providers access to key metrics and data. The savings were enormous, with cost reductions around 36%."

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-Manfred Bundschuh, Quality Manger, ThyssenKrupp Automotive STC

Customers Look to ERP Vendors for More

Propagating Lean strategies throughout the supply chain requires a strong foundation predicated on a platform that can provide a common IT infrastructure to sustain collaborative efforts. The [ERP in Manufacturing Benchmark Report](#) revealed the following: of those manufacturers with Supply Chain Execution extensions implemented, a full 88% had purchased these add-on's from their ERP vendor. Fourteen percent of respondents intend to implement Supply Chain Planning extensions and 12% are exploring a Supply Chain Execution solution. Of those planning purchases, 85% and 83% (respectively) are either somewhat or very likely to buy these from their current ERP vendors over Best of Breed or pure play solutions. SAP automotive customers attribute success to their current ERP platform, with 39% and 45% of automotive manufacturers looking to their extended ERP solution to satisfy their Supply Chain Execution and Planning needs.

Extensions of Lean throughout the supply chain are the next logical step in order to ensure successful value stream execution and provide the business cycle analytics in support of the continuous improvement process that is so central to the Lean philosophy. The true test for automotive manufacturers will be to successfully employ technology solutions to implement Lean across the entire supply chain network of suppliers, customers, and partners in order to create real value for the extended enterprise.

Conclusion

As Lean extends throughout the supply chain, several objectives should be kept in mind. The transition to Lean should include major suppliers, customers, and partners, as Lean is deployed to maintain a standardized approach.

As Lean metrics are standardized, the next step is to evaluate each supply chain process as it relates to Lean, within and across the enterprise, with performance metrics relating to quality, cost, and delivery performance. Project planning and deployment strategies for Lean concepts must include impact and integration with networked partners and will prove to be more difficult by relying solely on manual processes. This is where interoperability and technology play a key role, connecting manufacturers to suppliers, customers and partners to synchronize data between all parties.

ERP can play a key role in providing a common enterprise platform and a solid underpinning of Lean. Extending Lean into the Supply Chain will require planning and execution enablement.

Whether you have Oracle, SAP or another ERP package, careful consideration should be placed on evaluating offerings from ERP and point solution vendors for these important extensions to ERP.

Recommendations for Action

- √ Include major suppliers, customers, and partners as part of the audience during the transition to 'Lean' concepts, both in production operations and as they are deployed across the supply chain
- √ Evaluate the impact on vendors' inventory in the short term
- √ Pick 1 to 3 vendors to work with as a pilot
- √ Build the correct supply network, including the supply side component, to prevent stock out, excess stock buffers, and replenish on demand
- √ Eliminate manual processes and integrate IT applications for synchronized business processes that connect customer demand to business execution, including supply and manufacturing processes.
- √ Performance Measurements that span the Supply Chain Network must be incorporated. Measure quality, cost and delivery performance.

Related Research

[*Roadmap to Lean Success: Measurement and Control Benchmark Report*](#); July 2006
[*The Lean Benchmark Report: Closing the Reality Gap*](#); March 2006

[*The ERP Benchmark Report*](#), August 2006
[*The Lean Supply Chain Benchmark Report*](#), August 2006

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