Aberdeen Group
Sector Insight
Insight and Advice in Specific Market Segments

Manufacturing February 01, 2007

Early Lean Adopters Embrace Technology

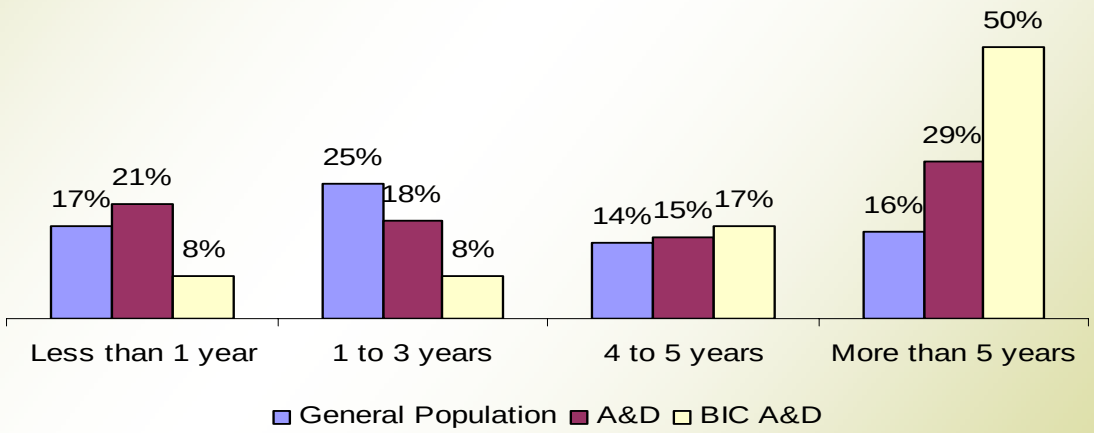
Market Segment

Results from Aberdeen Group report, *The Lean Supply Chain*, indicates that Aerospace and Defense (A&D) manufacturers are 40% more likely to be Best in Class performers – companies that are characterized by having an integrated Lean approach and solution with technology enablers - than their peers from other industries. One of the reasons for this performance difference is their early adoption rate for Lean. The maturity of this industry is directly reflected in its increased rate of technology and lean tools utilization on the shop floor.

Lean Adoption

Lean is a philosophy that espouses continuous improvement, the simplification and standardization of business process, and the elimination of all forms of waste. A&D Manufacturers have taken the lead compared to their peers when it comes to adopting Lean philosophies and processes in their organizations. These manufactures are 81% more likely to have adopted Lean processes for more than 5 years, as compared to the general population. (Figure 1).

Figure1: A&D Manufacturers: Taking the Lead in Lean Adoption



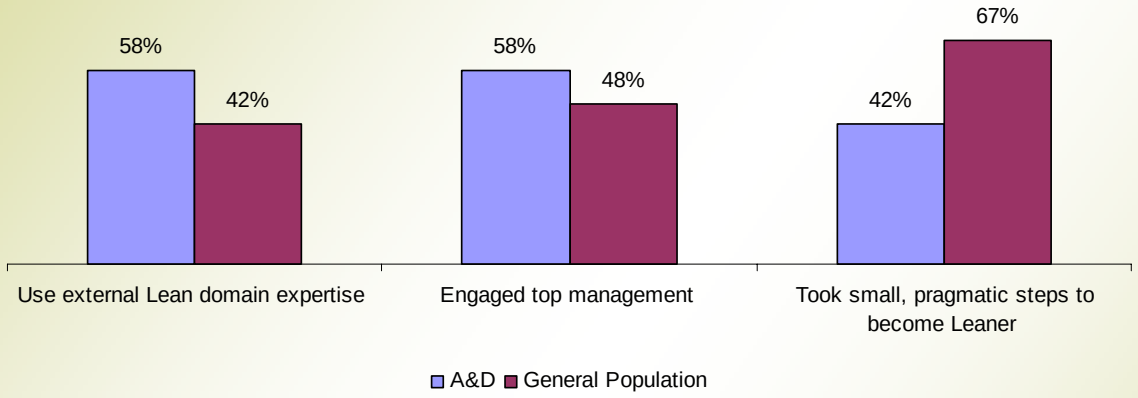
Source: AberdeenGroup, February 2007

Another interesting finding was the considerable difference in the adoption rates among the A&D manufacturers. Even in the same vertical, the Best in Class (BIC) companies are 72% more likely to have adopted Lean manufacturing processes for more than 5 years. This difference among the A&D manufacturers points towards the fact that there is still ample room for improvement among the A&D sector.

Different Responses for the Same Challenges:

Deploying Lean techniques and technologies in the manufacturing process can help companies to significantly improve their operational performance, customer responsiveness and hence the bottom line financials. But as the famous adage goes "it is easier said than done"; companies are facing challenges in implementing Lean concepts. Even with the early adoption rates, the A&D manufacturers are facing challenges similar to those faced by the general population. The challenge of 'C*ultural Change'* is a top issue that manufacturers in every industry vertical are currently facing. But interestingly, A&D manufacturers are responding to the challenge with a slightly different perspective.

Figure2: Responding to the Lean Implementation Challenges



Source: Aberdeen*Group*, February 2007

Companies that are relatively new in their Lean journey, start with taking s*mall, pragmatic steps to become lean*. This is the approach followed by the majority of the manufacturers. Once they realize the early benefits of using Lean techniques they get aggressive with their strategy. A&D manufacturers have already passed that stage and hence are following different tactics to respond to the challenges.

Recommendations for Action

- √ Engage top management to facilitate the adoption of lean philosophies and technology.
- √ For A&D manufactures trying to reach Best in Class performance levels- employ external consultants with greater domain expertise in Lean adoption.
- √ Utilize ERP as a foundation for Lean initiatives and ensure ERP has specific functionality in Lean tools such as Kanban, Level Loading, and Supermarket Sizing.

A&D manufacturers are more likely to *leverage external domain expertise* with the use of consultants and trainers to speed up their Lean initiatives. This is an important step by A&D manufacturers, taking in consideration the performance gap that exists in the vertical. A&D manufacturers that are early in their Lean journey can use some outside help to get in pace with the top performers in their field. Getting *top management engaged* with the Lean process is another important strategy followed by A&D manufacturers. In order to get and sustain buy in from top management, it is important to make them realize the short term as well as long term strategic benefits of adopting Lean tools. It becomes a lot easier for any company to address important issues

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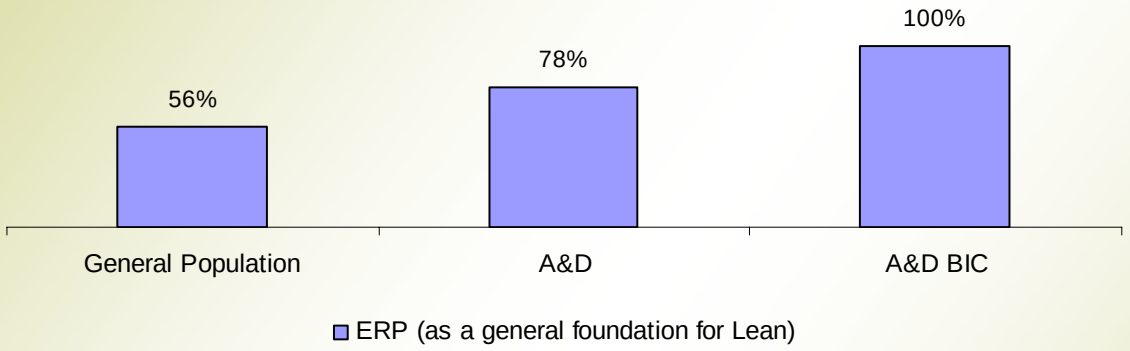
when a decision comes from the top rather than from the grass root level. Commitment from top officials also helps to increase the technology adoption rate for the manufacturing processes.

Technology Adoption

Technology plays a crucial role when it comes to applying Lean concepts in manufacturing. Technology is used to increase collaboration across different levels of the organization. With companies expanding their supply chain globally, manufacturers are in need of Lean tools and a robust technology platform. This will help companies to address the challenge of growing complexity in the supply chain and also to adopt Lean on the shop floor and across the organization.

Figure 3: Using ERP to Support Lean Strategy



Source: AberdeenGroup, February 2007

A&D manufacturers have embraced the use of technology in their approach towards going Lean. They are 40% more likely to use ERP solutions as a general foundation for Lean as compared to other manufacturers. This difference is amplified among BIC A&D manufacturers. In fact, every single BIC A&D manufacturer benchmarked by Aberdeen utilizes ERP technology to support Lean initiatives. ERP solutions have come a long way from being used to manage the back office business processes to being used as a solution to encompass customer and supplier functions.

As companies start realizing the real benefit of using Lean tools across departments, they gradually move from the manual approach (pencil/paper and spread sheets) to the use of more automated applications – SCM (Supply Change Management). A&D manufacturers being historically early adopters of Lean have led this approach. This can clearly be seen in Figure 4, where A&D manufacturers have overtaken the general population in adopting Lean tools, such as Kanban, Level Loading, Supermarket Sizing and Value Stream mapping across the enterprise. The Aberdeen Group attributes this increased adoption of Lean tools to the industry's early adoption of Lean philosophies and the utilization of ERP as a foundation of Lean, all of which precede Best in Class performance.

Lockheed Martin Electronic Systems

"In the late 1990's we improved our competitive standing by coordinating both our business processes along with our ERP implementation. This put us in the position to aggressively promote Lean and Six Sigma across our business unit. Utilizing ERP in conjunction with our Lean and Six Sigma programs we have seen significant improvements to both our product cost and cycle time performance"

Frederick Musco, Director of Information Technology

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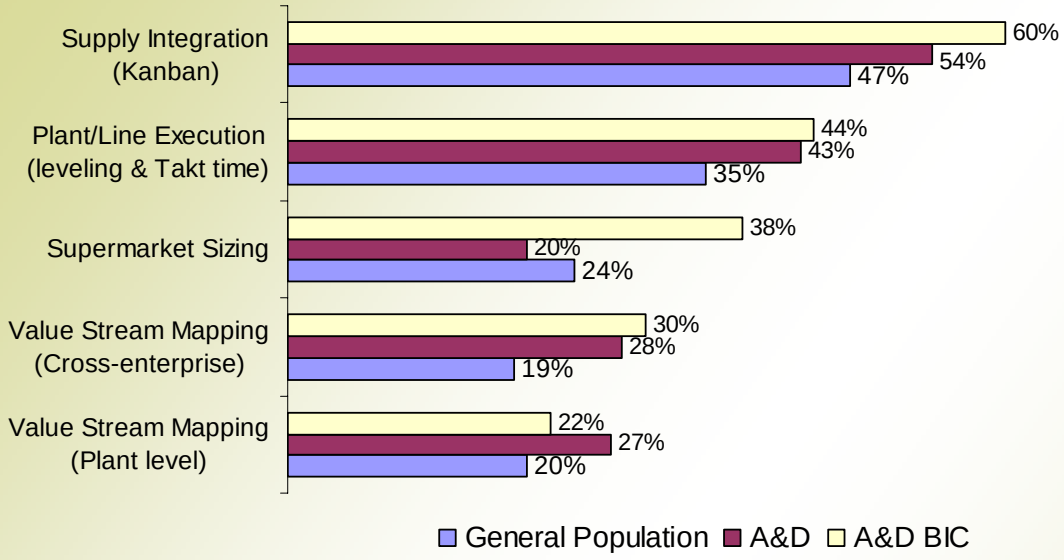
Figure 4: Utilization of ERP and SCM for Lean Tools



Source: Aberdeen*Group*, February 2007

Aberdeen Conclusion

Many Aerospace and Defense manufacturers are enjoying a competitive advantage because of an early adoption of Lean tools. However, there are still considerable differences in the performance among A&D manufacturers. The best way for A&D manufacturers to achieve best in class performance is by using external domain expertise, and utilizing ERP with Lean specific functionalities as a foundation for implementing the above Lean tools. For those Aerospace and Defense manufacturers that are performing at the Best in Class level; continue utilizing technology to institutionalize Lean philosophies and continue to extend Lean initiatives across the supply chain. By implementing these strategies the Aerospace and Defense industry will continue to lead the Lean adoption curve and continue to enjoy performance benefits that are superior to almost all other industries.

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Related Research	Upcoming Research
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The Lean Benchmark Report: Closing the Reality Gap, March 2006	Shop Floor Data Integration, March 2007

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