

Rapid innovation yields 30 percent market share gain

Siemens PLM Software technology helps a small company deliver custom refuse trucks within six to eight weeks of receiving an order, a feat its larger competitors can't match

AUTOCAR, LLC

Siemens PLM Software

www.siemens.com/plm

▶ Business initiatives

New product development
Knowledge and IP management
Production efficiency

▶ Business challenges

Capture market share from larger competitors
Remain small to react quickly to customers' needs
Use rapid innovation as competitive advantage

▶ Keys to success

Knowledge-based engineering process eliminates interferences
Order-driven design process rarely requires human input
Integrated CAD/PLM/ERP/MRP and order management
Paperless build documents

▶ Results

Market share increased approximately 30 percent in three years
Production jumped from several trucks/month to 200+/month
Custom trucks are delivered within 6 to 8 weeks of the sale
Quality improvement wins repeat business

Every day is trash day

At Autocar, every day is trash day, because the company's sole focus is building refuse trucks – the best Class 8 low cab forward (LCF) trucks in the business. This singularity of purpose is a claim none of its competitors can make. Autocar trucks feature industry-leading innovations such as improved ergonomic cabs, integrated controls and an unsurpassed body-chassis interface. The company has exclusive agreements to use Cummins engines and Allison transmissions, as well as a rapidly expanding nationwide service network that now includes Cummins distributorships.



Autocar is a small operation that competes against much larger companies. Management's goal is to remain lean and responsive while capturing market share from their bigger competitors. "What Autocar tries to do is maintain a small organization that can be dynamic and respond faster than our competition to the end users," says Bill Dolesh, vice president of engineering at Autocar. The company has been remarkably successful at this, having doubled the sales of its Xpeditor trucks in the past two years and increased its market share from about 12 percent when current management took over three years ago to more than 40 percent today. The company's ranking in the LCF truck market has gone from third to second in three years, and it's looking like Autocar will capture the number-one position soon.

Autocar credits product lifecycle management (PLM) technology from Siemens PLM Software, a global division of Siemens Automation and Drives (A&D), for much of this success. The company relies on the NX® design automation system and the Teamcenter® digital lifecycle management solution for the ability to develop innovative solutions to customers' needs in a time frame its competitors can't match.

"We came in against major players, companies that are much larger than we are," explains Stephen Rhodes, Autocar's manager of engineering services. "Technology from Siemens PLM

SIEMENS

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*Stephen Rhodes
Manager of Engineering Services
Autocar, LLC*



Software has provided us with the tools and the open architecture to integrate our business systems so that we can win market share from these larger manufacturers. Autocar is known in the industry for meeting customer requirements in extremely short lead times. I have to give most of the credit for this to the Siemens PLM Software technology that enables us to do this.”

Escaping the Bermuda Triangle

The Siemens PLM Software solution replaced a previous product information management process that was so ineffective that some referred to it as the Bermuda Triangle. It was a combination of three computer applications that didn't talk to each other or share data. Users had to jump from a program that managed sales orders to another that managed engineering data, to a third that handled the manufacturing aspect of the business. Autocar personnel weren't the only ones frustrated by this system. Suppliers were on occasion frustrated as well, because they may have gotten the wrong information and delivered the wrong parts. “Those systems and their inability to communicate were going to destroy our company before it even got started,” says Jim Johnston, Autocar's president.

Build documents were another problem. These were thick stacks of paper (200 to 300 pages/truck) that followed the trucks down the assembly line. Supervisors literally came in to work an hour early to print the build documents needed for the day. This process became too cumbersome when the company began selling more trucks. “As our volume increased, we realized that this approach wasn't going to work any longer,” recalls Bill Swartz, plant manager.

Autocar replaced the Bermuda Triangle with a tightly integrated system consisting of NX software, Teamcenter software, an ERP system and an order configuration program. “Unlike our previous process where the applications functioned separately, these systems talk to each other on an almost real-time basis,” explains Autocar IT manager, Pieter Smith. “For example, Teamcenter gets requests and orders from the order configuration system. It sends bills of materials back to the ERP system. Engineering changes are continuously monitored and sent to all the different functions.”

All design and engineering work, including conceptual design, takes place in NX. Autocar has taken advantage of many advanced features of NX, as well as its integration with Teamcenter, to create a highly automated design process. “One of the biggest concerns of our industry is the high degree of customization of each truck,” says Rhodes. “There are many possible combinations of features, and we must be able to ensure that the options we combine are going to work together. NX Knowledge Fusion has allowed us to build that information into our bill of materials, which ensures that we don't have collisions between components.

This takes a lot of the guesswork out of juggling the huge number of options for any given truck. It makes it almost simple. With NX, all that knowledge is built into the system. This also allows me to move different people in and out of design positions without having to worry about losing design expertise.”



Solutions/Services

NX

Teamcenter

Client's primary business

Autocar, LLC builds and supports Class 8 LCF refuse trucks.
www.autocartruck.com

Client location

Hagerstown, Indiana
United States

“With information being so immediately available, there is almost no down time.

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*Mike Goodpaster
Production Supervisor
Autocar, LLC*

“We must have tools that allow us to innovate quickly. Using Siemens PLM Software technology, we completely redesigned the entire truck in only three years.”

*Jim Johnston
President
Autocar, LLC*

Another example of the automation Autocar has achieved is how customer requirements are used to drive the design process. The order configuration system gathers the customer's requirements at the dealers. This sales information is sent to the Teamcenter database, which looks at how the combination of options has been handled in the past. “At least ninety percent of the time, this information flows the design straight through our engineering data management system to our NX CAD system and on into our ERP system with very little human intervention at all, leaving no room for error,” Rhodes says.

“When we do have a unique circumstance where the customer has requested a unique option, for example, the systems allow us to notify the right people about what's needed. This allows us to respond to that request in a timely manner. It's a seamless integration of customer requirements through to final delivery of the product.”

Paperless build documents

Autocar has achieved something other automakers have been dreaming about for years – paperless build documents. “On the shop floor, paper work is minimal, because we now have a system where operators can log in to Teamcenter and view, in real time, drawings and bills of material,” explains Mike Goodpaster, production supervisor at Autocar.

“If an employee doesn't know what a part looks like, they can click on a part number,” Goodpaster continues. “The system has instant access to our inventory, so we know where all the parts are. With information being so immediately available, there is almost no down time. Teamcenter is a big part of the reason we now build 10 trucks a day. It's not that we've just sped up the line. Quality has gone up too, because any questions the operators have are quickly answered.”

Autocar's plant manager, Bill Swartz, sees an additional reason for the quality improvement – the improved access to information that Teamcenter provides for management. “The big thing with this system is that our managers in materials and production can all instantly track a truck,” Swartz says. “They know what parts we don't have and need to order, for instance, and they know the status of the truck at all times. This system enables us to build a better quality vehicle.”

Johnston, Autocar's president, particularly values the way this new system supports innovation. “Being small, it is crucial to us that we innovate, and we must have tools that allow us to do that quickly,” he says. “Using Siemens PLM Software technology, we completely redesigned the entire truck in only three years. We went from two engine configurations to seven. We have new axles, new transmissions, new suspensions and a complete new back of the cab, along with a whole new process. The interior is new, as is the electrical system. Everything on the truck except the external sheet metal is new. This is the kind of innovation you can do quickly using technology from Siemens PLM Software.”

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