

# Extending the Enterprise through Lean Thinking and Value Chain Engineering

*By John M. Waraniak*

Rules for competing and surviving in the automotive industry are changing faster than most auto companies can react to them – as evidenced most recently by the Daimler-Chrysler and Ford-Volvo mergers, modular mania, and the ongoing consolidation and rationalization of automotive suppliers and retailers. One thing these changes, mergers, and acquisitions, make perfectly clear, is that automakers, suppliers, or retailers alone will not dominate the new race for global leadership. Winners will be extended enterprises with the capability to integrate, optimize, and collaborate across their entire value chain faster, better, and more profitably than anyone else. Winning value chain systems and business processes are increasingly being engineered around lean thinking, best practices, and best-in-class information technology to maximize enterprise performance, return-on-investment, and customer value.

Success in the global automotive market is increasingly linked to an organization's ability to compete on enterprise-wide knowledge and performance by rapidly turning information into advantage, action, and results. Time and knowledge are the competitive advantages. In today's automotive business there is no practice. Every lap counts. Every day is race day. You have to know what products and services your customers will consider added value and synchronize your enterprise value chain with the real-time, consumer-driven market clock.

Competition has gone from functional, to process, to enterprise excellence. Lean and extended enterprise business practices and information technology are changing the way auto companies deal with customers, retailers, suppliers, and competitors, while concurrently forcing the industry to vertically disintegrate and horizontally extend. In many Industries, not just the auto industry, it's no longer one company competing against another, it's an entire enterprise value chain competing against another enterprise value chain. Winners in this environment will be the those extended enterprises with the lowest costs, shortest product development and distribution cycles, and smartest investments in value chain business and technology practices.

Today's automotive industry is in a period of creative destruction, somewhere between the Industrial Age and the Information Age. Best business and information technology practices central to the systems that manufacture and deliver vehicles to consumers continue to evolve, bringing new challenges and opportunities. The 21st century automotive enterprise

value chain is rapidly restructuring around vehicle system integration and modularity on the supply side, while new competitors and distribution channels are emerging on the demand side, such as preowned superstores and publicly owned mega-dealerships like AutoNation and CarMax.

The extended enterprise value chain is both the supply and demand chain – it extends from the earliest industry supplier producing and delivering raw materials to the OEM vehicle assembler to the retail distribution channels and ultimate customer's purchase and realized value. The demand chain is the network for identifying stimulating, and meeting customer demand. With 20 to 30% of a new vehicle's retail occurring after it leaves the assembly plant, many OEMs and retailers are developing lean demand chain strategies and new channels such as the Internet to help increase the affordability and profitability of new vehicles.

The supply chain is the network for planning, producing, and delivering products and services to fulfill customer requirements. In order to more quickly sense and respond to marketplace demands, automakers are transferring their non-core competencies and responsibilities to module and system suppliers to gain advantages in time, cost, and agility. Tier-1 system integrator suppliers are experiencing significant industry consolidation pressure as fewer, larger suppliers are increasingly providing a higher percentage of the vehicle's systems and the number of Tier-2 suppliers may be slashed by as much as 50% within a few years. As a result, leading vehicle systems integrator and module suppliers are developing extended value chain strategies to help increase economies of scale, as well as economies of scope and knowledge.

Visteon, for example, is working towards 20% Non-Ford business within the next five years with over 33% of their new business in 1998 coming from Non-Ford customers. Magna's Symatec group was formed to coordinate systems and technologies across their ever-increasing global automotive value chain. Dana is prototyping several innovative value chain initiatives, such as their complete rolling chassis for the Brazilian version of the Dodge Dakota pickup. And General Motors believes that collaborative design, engineering, and manufacturing with system and module suppliers will play a key role in future programs like their Yellowstone project.

Extended enterprise value chain systems strategies have evolved just as manufacturing and management practices have evolved. (See Insert). Vehicle manufacturing for example has progressed from craft and mass production, to lean and agile manufacturing, and moving toward holonic or networked enterprise production for mass customization. Value chain best practices have concurrently progressed from an integrated stage, toward more optimized and collaborative stages. Many automakers, suppliers, and retailers are at an integrated stage while leading automotive enterprises are moving toward optimized and collaborative value chain thinking and

extended enterprise practices.

The integration stage is characterized by transaction processing of shared data among individual departments, customers, and suppliers. The optimization stage involves real-time information flow and decision support within individual areas of a company's supply and demand chains. And the collaborative stage is focused on customer-oriented value chain management systems that create competitive advantages by using all the information available to your company and leveraging the common objectives of all enterprise trading partners – from your supplier's supplier to your customer's customer. Collaborative value chain practices are not point-based, they are set-based, allowing enterprises to process the right information faster by actually delaying critical decisions and moving them closer to the appropriate point of action. Enterprise partners don't go off and develop independent forecasts, but rather they work together to develop a common, shared forecast that enables each stakeholder to work within established set-based boundaries, similar to what is known in product development as Toyota's Second Paradox.

Extended value chain management isn't just about one-time data or information sharing. It's about connecting companies, departments, and people through seamless sharing of business processes, knowledge, and production decisions – and that involves risk. Companies like Wal-Mart and Proctor and Gamble have shown us that enterprise partners must learn to share risk – lean thinking and extended value chains cannot succeed without mutual dependency. The rewards, however, are significant. The quest for the five-day car, order-to-manufacturing-to-delivery, for example, is not a simply a manufacturing issue, but an extended value chain challenge. If manufacturing is the functional moment of truth for supply chain management, i.e., when the entire supply chain must come together, then delivery is the functional moment of truth for the automotive demand chain. Lean thinking and collaborative value chain engineering will have a big impact on enabling the extended automotive enterprise and making the 5-Day car a profitable reality.

The implication of all this is that as extended enterprise roles and relationships evolve, and responsibilities are transferred, new dimensions of growth are created. Extended value chains and lean thinking are redefining business relationships to help enable top-line-growth and bottom-line improvement. Perhaps Ralph Szygenda, CIO of General Motors, put it best when he said value chains will lead the automobile industry into new territory.

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