

GORE® Automotive Vents

Importance of an innovative supply chain approach



READY TO #TAKECHARGE OF YOUR ELECTRIC VEHICLE'S RELIABILITY? SUPPLY CHAIN WEIGHS IN



FIRESIDE CHAT
FEATURING

WENDY ZHANG
PATRICK
SWATSWORTH
STEVEN TON

For electric vehicle manufacturers and component makers, the expectation of being 'better, faster, and cheaper' has become standard. But what is driving this shift?

At its core lies a rise in discerning buyers and a reduction in government subsidies for electric vehicle purchases. Coupled with the challenge of managing escalating costs to ensure reliability and safety in vehicle components, the electric vehicle industry is navigating a challenging path.

It is not surprising that electric vehicle manufacturers and component makers are exploring innovative, cost-effective venting solutions to protect their assets. But how can they ensure readiness to succeed in a rapidly evolving market?

Join us for an enlightening fireside chat with our esteemed supply chain leaders at Gore. Wendy, Patrick, and Steven, experts in their fields, will share strategies, insights, and aspirations on how to achieve a competitive edge and sustained success in the industry. Together, they will address pressing questions on customer needs, quality consistency, and Gore's innovative supply chain approach aimed at empowering electric vehicle visionaries to create a sustainable future.

Qn 1: As electric vehicle manufacturers and component makers navigate a transformational journey, what key recurring concerns do they face, and how do supply chain leaders like you address these issues?

Wendy: Allow me to begin. Automotive leaders are grappling with numerous challenges during this transition. From enhancing skills and retaining talent to improving manufacturing facilities and establishing new supply chains, the impact is massive across organizations. One often-overlooked aspect is the low cost of venting compared to the components they protect. When considering the benefits of increased confidence and reduced warranty claims, investing in high-quality protective vents becomes a logical choice.

“ Industry leaders must look beyond the unit price of a protective vent and consider the material engineering capabilities, flexibility, and agility a supplier can provide to ensure reliable and high-performing venting solutions that meet their business objectives.”

Together, improving life



It not only reduces warranty claims but also prevents passenger inconvenience in the worst-case scenario. Industry leaders must look beyond the unit price of a protective vent and consider the material engineering capabilities, flexibility, and agility a supplier can provide to ensure reliable and high-performing venting solutions that meet their business objectives.

Patrick: Often, customers request our help in identifying the optimal venting product for each stage of their electric vehicle transformation cycle.

A leading automotive manufacturer once approached us with two unique requirements: an early-stage electric vehicle product line needing an exceptionally reliable venting solution to gain a competitive edge and achieving cost parity with incremental venting performance in a current product portfolio. Leveraging Gore's supply chain principles enabled us to develop exceptionally reliable protective vents for their new product line and achieve material cost optimization with marginal increments in the current product portfolio.



Product performance and cost optimization are two of the five dimensions that Gore's supply chain team uses to ensure customers always receive high-performance, reliable, and consistent quality solutions to meet their venting requirements.

Qn 2: As venting products become more critical for electric vehicle durability and reliability, what qualities and capabilities must suppliers offer to meet evolving industry standards?

Steven: While high-performance venting products are essential, electric vehicle manufacturers and component makers expect suppliers' supply chain

teams to take on a more holistic supply chain view, rather than just focusing on manufacturing and delivery. This highlights the importance of other dimensions of Gore's supply chain, such as responsiveness, agility, and cost to manufacture throughout the product life cycle. Given the current growth potential in the electric vehicle industry, our role as supply chain is to understand and translate the evolving customer, market, and regulatory compliance needs to ensure reliable supply for our customers. This entails collaborating cross-functionally to engineer new and better materials, solving new challenges with our venting solutions, and scaling them up efficiently to ensure they are economical for our customers.



Especially in the Asia-Pacific region, with the growth in electric vehicles adoption and regional trade tensions, having sales and business development offices alone is insufficient. Electric vehicle manufacturers and component makers expect suppliers to have a domestic manufacturing footprint to shorten production lead times and be flexible in meeting regional market demands. At Gore, we acknowledge and embrace this trend. Currently, we are leveraging our global Research & Development (R&D) resources and manufacturing plant in Shenzhen to support growth in the region.

“We are focused on becoming more responsive, agile, and cost competitive to meet the volatile demands of Asia's electric vehicle market.”

This reflects our commitment as strategic partners who understand the intricacies of our customers' operations. We are focused on becoming more responsive, agile, and cost competitive to meet the volatile demands of Asia's electric vehicle market.



Wendy: On top of what Steven mentioned, suppliers' supply chain teams must have strong data analytical capabilities to assist internal sales and product teams in identifying areas for solution and cost optimization. Most of our supply chain experts at Gore have both technical and business backgrounds.



We review historical records, such as cost of goods sold (COGS), inventory levels, and lead times, to identify optimization opportunities. We can then leverage these opportunities to improve internal processes and eventually achieve cost savings for our customers.

Patrick: To our customers, what is most valuable is not only our commitment to delivering new products or solutions but also our flexibility in helping them navigate unexpected disruptions in the supply chain. With current electric vehicle development cycles shortened from 36 months to 9 months, suppliers must help their customers navigate the challenges

that come with this change. This involves evaluating the impact on their processes and product line, setting expectations, and utilizing this information to manage the transition effectively.

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Supply chain experts need to have transdisciplinary knowledge to assist manufacturers and component makers in adapting to this change. They must ensure disruption-free manufacturing operations with peak productivity while also minimizing the total cost of ownership (TCO) and residual value of a customer's current product line.

Qn 3: With automation and artificial intelligence (AI) aiding electric vehicle manufacturers and component makers in managing complexity in modern supply chains, how can supply chain leaders at Gore make a difference in ensuring the success of their customers' electric vehicle ventures?

Patrick: While AI and automation can identify potential logistics and manufacturing issues or provide best practices for implementing criteria, they require inputs from human experience to improve predictive capabilities. Our approach leverages AI alongside the expertise of our supply chain professionals to reach a level of predictive knowledge that optimizes all aspects of the Gore Production System. This ensures that we deeply understand our customers' processes and can tailor solutions to their unique needs and goals, integrating the power of AI within a broader context of expertise and engagement.

Steven: While AI offers significant potential to enhance our operations, it's crucial to remember that it's a tool, not a complete solution. At Gore, we're not simply embracing AI; we're embarking on a journey of discovery, navigating the complexities of data and predictive models to drive continuous improvement and innovation. Our focus includes refining supply chain design using AI business intelligence, enhancing production quality through AI analytics, and optimizing the manufacturing process with AI learning.



This journey isn't just about efficiency; it's about shaping a future where e-mobility is sustainable and accessible for all.

Wendy: Pairing AI automation with human expertise is not just valuable for day-to-day operational assistance, but also a critical move for electric vehicle manufacturers and component makers aiming for a global presence. This is particularly evident when dealing with logistics challenges related to import/export regulations, including varying modes of transportation and logistics for freight, as well as differing regional standards on quality control and compliance. At Gore, we believe in leveraging AI to navigate these complexities, enabling our team to focus on product innovations and ways to directly add value, helping electric vehicle manufacturers and component makers succeed. We believe that they are the ones driving a sustainable future for the automotive industry. Ultimately, Gore's belief lies in driving effective strategies with exceptional individuals, embodying our motto of 'Together, Improving Life'.



Wendy Zhang has over 15 years of expertise in materials engineering. Her journey at Gore began with various technical roles in process and platform engineering, culminating in her leadership of the supply chain team in China and as a Global Supply Chain leader. With her background in mechanical engineering and a master's in business administration (MBA), Wendy is strategic and detail-oriented, striving to enhance supply chain efficiency through her passion for data analytics.



Patrick Swatsworth's 16-year tenure at Gore began as a Continuous Improvement specialist in the Core Technology division. Over the years, he has gained valuable experience supporting processes central to Gore's product differentiation. Patrick has held multiple Manufacturing Leadership roles, ensuring reliable, cost-effective supply across Gore's businesses. Currently, he leads the Americas supply chain segment for the Venting Products Business Group, where he oversees the regional implementation of the global supply chain strategy.



Steven Ton, who joined Gore in 2007, currently leads the Venting Business Group Supply Chain team in Performance Solutions Division, where he is responsible for the strategic end-to-end supply chain direction and results. Steven's diverse supply chain experience includes leading MES implementation projects at multiple sites, roles in operational excellence / continuous improvement, and an expat assignment in China. Prior to Gore, he spent 10 years at Kimberly Clark Corp in various operations roles. Steven holds a B.S. in Mechanical Engineering with a Business minor from Drexel University.

Gore's Sustainability Commitment

We use our materials science expertise to create products that improve the quality of life and address sustainability challenges for generations to come. We believe that one of the greatest contributions we can make to sustainability is through innovations that have a positive impact on human health as well as the planet.

For more information, please visit gore.com/about/responsible-enterprise

About Gore

W. L. Gore & Associates is a global materials science company dedicated to transforming industries and improving lives. Since 1958, Gore has solved complex technical challenges in demanding environments — from outer space to the world's highest peaks to the inner workings of the human body. With more than 13,000 Associates and a strong, team-oriented culture, Gore generates annual revenues of \$4.8 billion.

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