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What Will Drive the SDV Evolution?

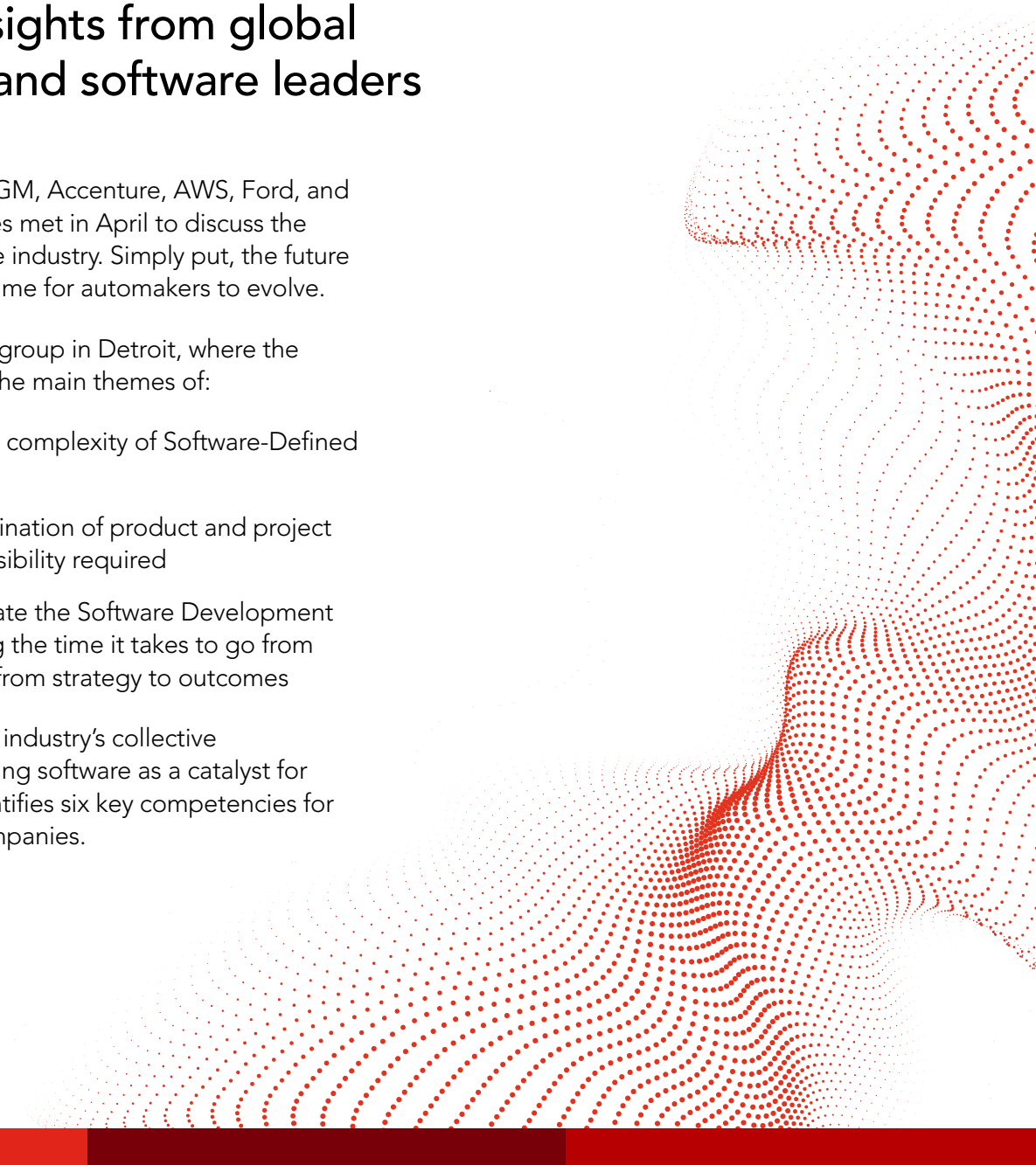
Executive insights from global automakers and software leaders

Stellantis, Volkswagen, GM, Accenture, AWS, Ford, and other leading companies met in April to discuss the future of the automotive industry. Simply put, the future is software—now's the time for automakers to evolve.

Planview convened the group in Detroit, where the conversation explored the main themes of:

- the opportunity and complexity of Software-Defined Vehicles (SDV)
- the necessary combination of product and project initiatives and the visibility required
- the need to accelerate the Software Development Lifecycle, shortening the time it takes to go from idea to vehicle and from strategy to outcomes

This paper explores the industry's collective commitment to leveraging software as a catalyst for transformation and identifies six key competencies for thriving automotive companies.



SOFTWARE IS RESHAPING THE AUTOMOTIVE ECOSYSTEM

Traditionally perceived as a conservative sector, auto manufacturers have swiftly adapted to harness the power of software to deliver unparalleled customer experiences. This shift is propelling the industry toward the concept of SDVs, where software plays a central role in defining vehicle functionalities and capabilities.

During the discussion, one automotive executive highlighted their company's commitment to leveraging software to drive innovation. Along with other OEMs and industry leaders, this participant is spearheading initiatives to break down internal silos and foster collaboration among competitors. A collaborative approach is crucial in addressing challenges associated with transformation.

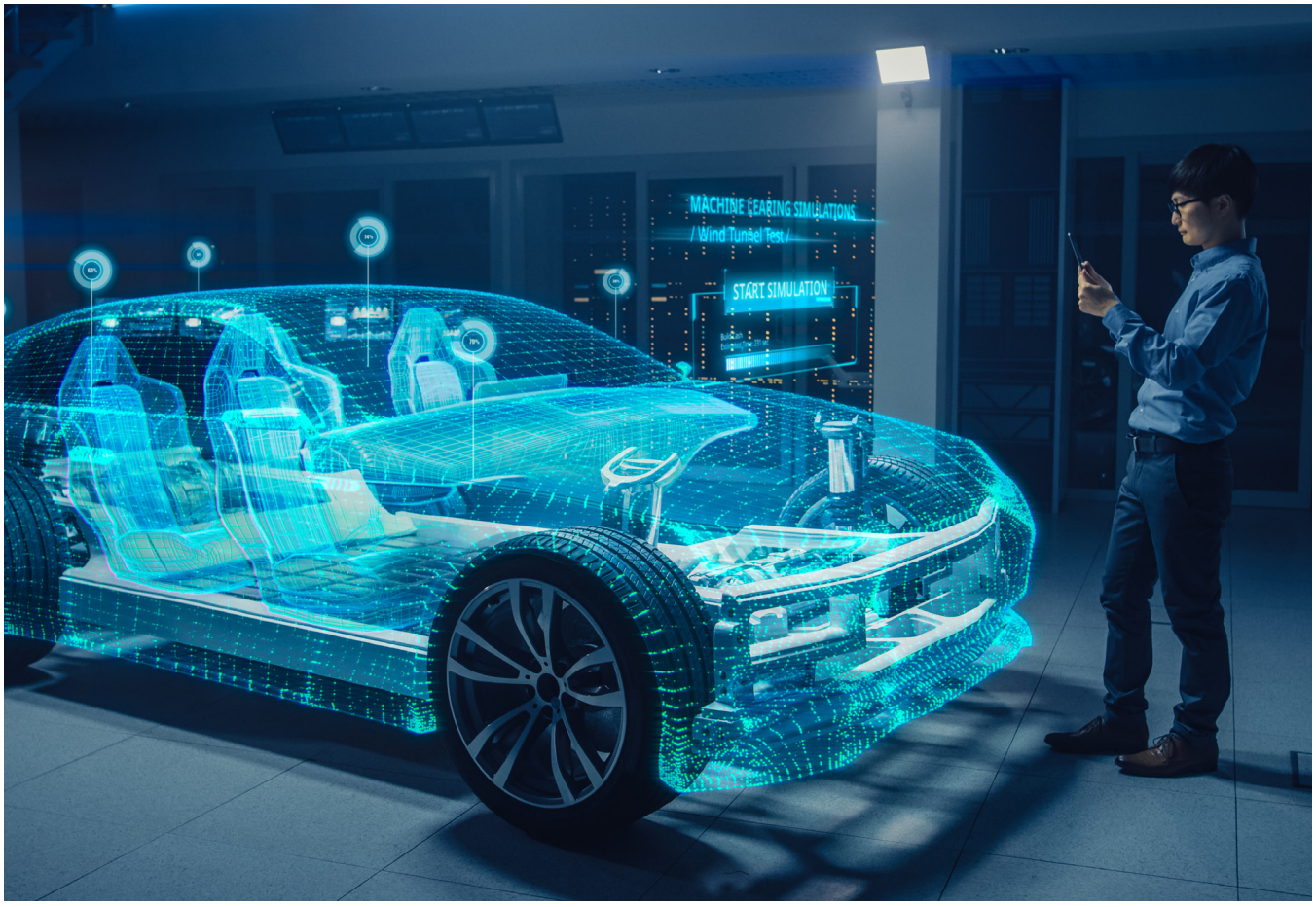
Auto manufacturers are some of the fastest innovators in using software to revolutionize customer experiences.

Another representative echoed the value of cooperation in driving industry-wide innovation. They underscored the significance of creating common software capabilities that transcend organizational boundaries, enabling seamless integration and interoperability across the automotive value chain.

Many executives emphasized the need to align digital development efforts with evolving customer preferences, ensuring that software innovations resonate with end users. A customer-centric approach enables companies to deliver personalized, intuitive, and seamless experiences that differentiate their brands in a crowded market.

The automotive industry's transition toward SDVs represents a monumental shift in how vehicles are designed, manufactured, and experienced. By embracing cloud technology and software innovations, auto manufacturers are not only revolutionizing customer experiences but also laying the foundation for a more connected, intelligent, and sustainable future.

Responding to the new ecosystem requires the six key competencies we define next.



ALIGNING PHYSICAL AND DIGITAL DEVELOPMENT

One of the most significant obstacles facing Original Equipment Manufacturers (OEMs) is the struggle to align their traditional manufacturing processes with digital innovations. At the same time, digital companies that venture into manufacturing seek to bridge the gap between software expertise and physical production capabilities.

Crossing the digital divide for OEMs and the physical divide for digital companies presents similar challenges and solutions.

Despite advancements in technology, many companies operate in silos, with disjointed processes and disparate systems hindering collaboration and efficiency. The lack of alignment often results in delays, waste or cost overruns, and compromised product quality, ultimately impeding their ability to innovate and deliver value to customers.

OEMs and digital companies can address their challenges by borrowing from each other's success. For OEMs, it means adapting to agile development methodologies, integrating digital tools and platforms, and cultivating a culture of innovation. For digital companies, it means leveraging their software development expertise to enhance manufacturing capabilities by integrating digital tools, optimizing workflows, and fostering a culture of innovation.

Both types of companies can bridge their respective divides with a dual focus on collaboration and innovation that aligns physical and digital development.

How Planview Can Help

Planview's comprehensive platform offers unified visibility and management of physical and digital development efforts. The platform supports orchestrating workflows, integrating with existing systems, and ensuring seamless synchronization across teams and projects. With Planview, Automotive companies can break down silos, streamline processes, and ensure alignment between their traditional engineering and manufacturing processes.

ACHIEVING VISIBILITY IN AUTOMOTIVE DIGITAL INVESTMENTS

The convergence of project and product initiatives is essential for driving digital transformation. However, with many project and product initiatives spanning various functions and departments, it can take time for executives to gain a holistic view of their digital portfolio. Siloed data, disparate systems, and fragmented processes exacerbate this challenge, making it difficult to track progress, measure outcomes, and allocate resources effectively.

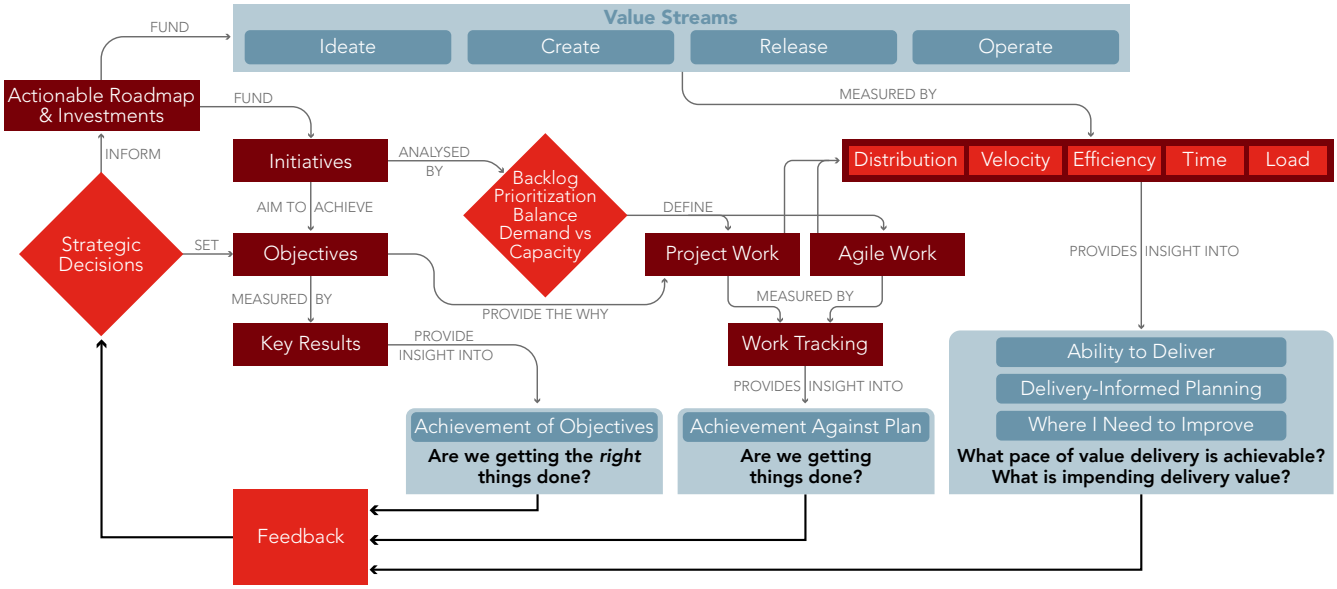
To address this challenge, automotive executives need a unified platform that provides end-to-end visibility into their digital investments (Figure 1). The platform should offer real-time insights into key metrics such as project status, resource utilization, budgetary allocation, and ROI. By centralizing data and breaking down silos, executives can gain a comprehensive understanding of the overall efficacy and impact of their digital initiatives.

Achieving visibility into automotive digital investments is paramount for driving success in today's rapidly evolving landscape. By leveraging a unified platform that integrates project and product initiatives, automotive leaders can make informed decisions, optimize resource allocation, and deliver value to customers and stakeholders.

How Planview Can Help

Planview's portfolio management solutions bridge the visibility gap in automotive digital investments. Integrating project and product initiatives, our solutions empower executives to align investments, optimize resource allocation, and drive organizational value. With robust analytics, leaders track performance, make data-driven decisions, and foster a culture of innovation across teams. Additionally, our solutions enable scenario planning and predictive analytics, empowering executives to anticipate trends, mitigate risks, and adapt strategies in real time to stay competitive.

Figure 1 — The Flow of Connected Decision-Making with the Planview Platform



DISMANTLING SILOS IN DIGITALIZATION

Siloed operating models have long been woven into the fabric of traditional auto companies. Divisions, regions, platforms, programs, and fiefdoms often operate in isolation, hindering collaboration. A silo mentality not only stifles innovation but also slows down decision-making processes and hampers responsiveness to market dynamics.

Silos often extend beyond internal boundaries and permeate across the supply chain. Collaboration between OEMs, suppliers, and other stakeholders is typically limited, resulting in disjointed processes and delayed innovation.

One executive illuminated another manifestation of silos within traditional auto companies: the fragmented nature of the digital software development lifecycle. Too often, different steps – from ideation and development to testing and deployment – are treated as distinct phases, with limited communication and integration between them.

Silos in the software development lifecycle elongate time-to-market and increase the risk of errors and rework.

To overcome these challenges, traditional auto companies must adopt a holistic approach to digital transformation, breaking down silos both within the organization and across the supply chain. This requires a concerted effort to foster a culture of collaboration, openness, and agility, where boundaries between divisions, regions, and functions are replaced by integrated teams working towards common goals.

Embracing DevOps practices can help bridge the gap between different stages of the SDLC, enabling continuous integration, delivery, and feedback loops. By breaking down the barriers between development, operations, and other functions, companies can accelerate innovation, reduce time-to-market, and enhance the quality of digital products and services.

Another essential element is adopting Flow Metrics. Flow Metrics measure the end-to-end flow of work through a product value stream. By measuring velocity, time, efficiency, and load, they reveal if the value stream flow is sufficient to support targeted business outcomes.

By breaking down these barriers and fostering a culture of collaboration, agility, and integration, auto companies can unlock the full potential of digital speed and innovation.

How Planview Can Help

Planview enables automotive organizations to overcome entrenched silos hindering collaboration and innovation. Our comprehensive suite of solutions integrates Flow Metrics such as velocity and efficiency to optimize workflows and break down internal and supply chain barriers. Utilizing the Value Stream Management platform, automotive executives can foster a culture of collaboration, agility, and openness, aligning teams around common goals. By embracing Planview's best practices and measuring end-to-end flow with Flow Metrics, organizations can accelerate innovation, reduce time-to-market, and improve the quality of digital products and services.

ACCELERATING AGILE TRANSFORMATION

Agile transformation has emerged as crucial for staying competitive in the auto industry. However, while many OEMs have embarked on Agile journeys and adopted various methodologies, the transformation has yet to reach the scope and degree required to significantly impact the overall flow of value.

It's undeniable that Agile methodologies have brought about significant improvements within OEMs. By fostering collaboration, flexibility, and iterative development, Agile has enabled teams to deliver software products more quickly and adapt to changing market demands. Moreover, Agile has provided a common internal taxonomy, establishing a shared language and framework for project management and development processes.

Despite these advancements, many OEMs are still grappling with challenges in fully realizing the promise of Agile transformation. One key issue is the inability to scale Agile practices across the organization and integrate them into the broader value stream.

While Agile has improved team-level productivity and efficiency, it has not always translated into significant improvements in the overall flow of value from concept to customer.

Automotive organizations must embrace a comprehensive approach to overcome the challenges in accelerating Agile transformation. This involves extending Agile initiatives beyond individual teams to encompass the entire organization and value stream. Breaking down departmental silos and fostering a culture of collaboration and continuous improvement are crucial steps.

Additionally, integrating development, testing, deployment, and operations into streamlined workflows can enhance the impact of Agile transformation. By doing so, automotive companies can reduce time-to-market and improve product quality, unlocking the full potential of Agile methodologies across the organization.

How Planview Can Help

Planview can help OEMs accelerate Agile transformation by providing a comprehensive approach to overcome challenges. While Agile methodologies enhance collaboration and flexibility, scaling practices organization-wide remains a hurdle. Planview offers solutions to align Agile initiatives with strategic objectives, fostering collaboration and driving success. With Planview's support, OEMs can fully harness Agile's potential and thrive in today's fast-paced automotive market.

EMBRACING CO-OPETITION IN THE ERA OF SDVS

The emergence of SDVs has catalyzed new players and disruptors entering the automotive space. Tech giants, startups, and mobility service providers are vying for a slice of the market, bringing innovative technologies and business models.

OEMs face the dilemma of whether to insource or outsource critical digital components such as AI algorithms, sensor technology, and connectivity solutions. While insourcing offers greater control and customization, outsourcing can provide access to specialized expertise and accelerate time-to-market. Striking the right balance between insourcing and outsourcing is crucial, and collaboration with external partners can facilitate knowledge exchange and innovation. Amid these changes, the question of who maintains the customer relationship becomes paramount.

Co-opetition – the idea of cooperating with competitors and leveraging each other's mutual strengths – becomes essential in navigating this complex ecosystem.

With the rise of mobility-as-a-service (MaaS) and shared mobility platforms, the traditional notion of vehicle ownership is evolving toward a more service-oriented model. OEMs must redefine their role in the customer journey, focusing on delivering seamless experiences and building long-term relationships beyond the point of sale. Collaborating with technology partners and service providers can enable OEMs to leverage data and analytics to personalize offerings and anticipate customer needs.

Identifying and nurturing core competencies becomes imperative as the automotive industry undergoes **digital transformation**. OEMs must reassess their strengths and weaknesses. While traditional competencies such as manufacturing prowess and engineering excellence remain valuable, new capabilities such as software development, cybersecurity, and data analytics are increasingly becoming essential.

Collaboration with external partners – including competitors – can help fill competency gaps and foster innovation. By forging partnerships, embracing digital innovation, and redefining customer relationships, OEMs can position themselves for success in the SDV era.

How Planview Can Help

Planview empowers automotive organizations to thrive amidst the evolving landscape of SDVs by fostering collaboration and co-opetition with competitors. Our suite of solutions facilitates strategic partnerships, enabling OEMs to leverage mutual strengths and navigate the complex ecosystem of tech giants, startups, and mobility service providers. With Planview, automotive executives can strategically balance insourcing and outsourcing of critical digital components, accelerating innovation and time-to-market.

ENHANCING VISIBILITY AND TRACEABILITY IN THE EXTENDED DIGITAL SUPPLY CHAIN

From component suppliers to OEMs and beyond, automotive executives recognize the need for comprehensive solutions that provide transparency and insights throughout the supply chain ecosystem.

At every stage of the extended digital supply chain, automotive executives face the daunting task of managing a vast network of suppliers, partners, and stakeholders. The lack of visibility and traceability can lead to inefficiencies, delays, and quality issues, ultimately impacting the bottom line and customer satisfaction.

To address these challenges, automotive executives need a unified platform that provides end-to-end visibility and traceability across the entire supply chain ecosystem. This platform should enable real-time monitoring of critical metrics such as inventory levels, production schedules, and quality control processes, allowing executives to identify bottlenecks, mitigate risks, and make informed decisions to optimize performance and drive value.

By embracing transparency, collaboration, and data-driven decision-making, automotive companies can stay ahead of the curve and thrive in an increasingly interconnected and digital world.

The automotive industry is changing rapidly – requiring organizations to create new automotive ecosystems that can meet evolving mobility needs while incorporating digital technologies in a safe, scalable, and sustainable manner.

How Planview Can Help

Planview has proven success in helping automotive executives accelerate supply chain visibility and traceability. Our portfolio management solutions integrate data into a centralized platform, providing comprehensive insights. By fostering collaboration and breaking down silos, Planview improves coordination and efficiency across the supply chain. With advanced analytics, executives can anticipate trends, optimize resources, and mitigate risks. Planview empowers executives to navigate the complexities of the digital supply chain, driving value and success in today's ever-evolving automotive industry.

Become the auto leader of the next industrial revolution: Deliver a turbo-charged, customer-centric vehicle experience today. See how at www.planview.com/lp/automotive/

ABOUT PLANVIEW

Planview has one mission: to build the future of connected work, from ideas to impact. Planview helps organizations accelerate the achievement of what matters most, supporting our customers from need to speed, from passion to progress, and from overhead to optimization. Our connected platform of solutions underpins the business and digital transformations of more than 4,500 customers globally, including 59 of the Fortune 100. Planview empowers enterprises to improve time-to-market and predictability, increase efficiency to unlock capacity and ensure their most strategic initiatives deliver the desired business outcomes. Visit planview.com to learn more.

ABOUT THE AUTHOR

Cameron van Orman is the chief strategy and marketing officer and general manager of automotive solutions for Planview. Cameron has more than 20 years of enterprise leadership experience driving transformational change, business agility, and market growth. Prior to joining Planview in 2019, Cameron held senior marketing positions at CA Technologies (now Broadcom), where he was instrumental in the integration of Rally into the CA portfolio and he championed the internal Agile transformation of the CA marketing organization. Cameron also has served in strategic marketing, sales, and operations roles at BlueArc, Pillar Data Systems, Sun Microsystems, and StorageTek. He has a bachelor's degree in economics and math from Dartmouth College and an MBA from the Kellogg School of Management at Northwestern University, and is on the board of the Children's Diabetes Foundation.

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