TRANSPORTATION
& MOBILITY

PLAN TO WIN:
ASSUME CONTROL AND THRIVE

Discover proactive strategies and tools to optimize your automotive supply chain for better resilience.

The growing complexity of vehicles and the rapidly evolving automotive supply chain landscape have led to an expansive, interconnected supply chain network with an inherent fragility. With supply networks extended across global locations, a single disruption at any stage can trigger a chain reaction. For example, delays at an inbound center or a supplier capacity gap can impact production schedules and delivery deadlines.

Without a comprehensive understanding of the supply chain network or a clear strategy to manage disruptions, there's a higher risk of exposure, ultimately impacting profit margin. Proactively taking control of your supply chain will enable you to anticipate risks, accelerate response time and mitigate supply chain disruptions with minimal impact on operations and customer service levels.

Find out why supply chain resilience is the answer.

Defining Resilience

Learn more

Enabling Resilience

Learn more

Benefits of Resilience

Learn more

1 DEFINING RESILIENCE

87%

of supply chain professionals plan to invest in supply chain resilience and 89% intend to improve agility in supply chain management.

A Gartner research shows that manufacturers who achieved higher long-term growth over their industry peers during supply chain disruptions were better at preserving business continuity and avoided reactive responses to macroeconomic conditions. Instead, these industry leaders took advantage of uncertainties to break away from competitors.

Achieving supply chain resilience is a strategic and proactive imperative that requires the optimization of all planning levels and horizons – from strategic network planning to production scheduling. End-to-end resilience will deliver tangible results through:

- Early detection of risks to mitigate disruptions
- Optimized decision-making for rapid response
- Continuous improvement of planning and execution

Supply chain disruption is now a constant rather than an exception in business operations. More CEOs increasingly view the supply chain as a critical point of competitive differentiation and there's a shift toward resilience rather than the standard focus on cost and service. As such, supply chain management strategies must adapt and evolve to remain relevant.

Henri Beringer
Transportation & Mobility Solution Director, Dassault Systèmes

Take the Reins With Digitalization

McKinsey reports that 43% of enterprises will continue to digitalize and integrate innovative technologies into enterprise-wide systems.

As the focus shifts to improving end-to-end resilience, supply chain digitization efforts are entering a new phase. Digital transformation is central to a supply chain that can thrive and progress amid internal and external disruptions by providing:

END-TO-END VISIBILITY

With trade barriers and tariff concerns, automotive supply chain decision-makers face increasing challenges. Due to changes in demand patterns and product mix, automotive parts are sourced from global suppliers that form the supply chain network. Adding to the complexity, each stage of the supply chain comprises multiple processes with stakeholders in different roles. And yet, over 50% of manufacturers lack end-to-end supply chain visibility. Without visibility, there is a higher risk of silos, often resulting in stakeholders having different objectives and non-aligned KPI targets.

Having complete visibility from a single source of truth supports the tracking of demand and inventory levels across the entire supply chain. This information helps in optimizing inventory by reducing stockouts and avoiding overstock. Additionally, supplier performance monitoring enables supply chain decision-makers to review supplier performance, identify bottlenecks, and assess supplier reliability.

Optimization and decision support

Supply chain management can only thrive if it's powered by an intelligent system that will help decision-makers:

- Understand exposure and vulnerabilities
- Calculate the impact of disruptions
- Flag problems that need resolution
- Generate solutions and alternative plans
- Highlight the impact of decisions on KPIs
- Manage constraints and restrictions on every level

Using optimization technology for decision support ensures that plans can be quickly adjusted and quality can be maintained. Dassault Systèmes' supply chain optimization solution leverages advanced configuration capabilities to fit the specificity of your supply chain perfectly. The solution is powered by:

- Advanced algorithms
- Mathematical programming
- Constraint programming
- Graph and path optimization

Digital continuity and traceability

A supply chain's critical information – from requirements and deliverables to schedules and resources – is often managed in siloed legacy systems. Manually updating and consolidating this information is time-consuming and inefficient.

The absence of real-time information about the supply chain will severely decelerate decision-making and jeopardize inventory levels and factory capacity usage. On the other hand, digital continuity and traceability will ensure compliance with industry regulations and standards. Maintaining a detailed record of any change in materials, suppliers and processes is essential for audits and maintaining product quality regardless of disruptions.

2 ENABLING RESILIENCE

61%

of respondents in a Gartner survey are investing in technology for a competitive advantage.

Emerging and maturing supply chain technologies are critical in building a resilient supply chain, particularly technologies that improve decision-making. The following technologies in a digital ecosystem will support greater efficiency and better outcomes.

Modeling and simulation

Advanced analytics

Product lifecycle management (PLM)

Modeling and simulation

Integrating the entire supply chain into one virtual model provides you with a consistent and consolidated view to manage operations. Running simulations on the virtual twin model provides you with better insights into the supply chain and the landscape in which it operates so that you can forecast a feasible strategy and plan ahead.

As a replica of the physical supply chain ecosystem, the virtual twin allows you to run a what-if analysis to explore different configurations and produce an optimal plan to futureproof the supply chain. Validated supply chain plans can then be automatically shared with all teams responsible for execution in a responsive and agile environment.

Advanced analytics

Gartner reports that over 75% of supply chain management solutions will utilize advanced analytics, artificial intelligence (AI) and data science by 2026 to assimilate large volumes of forecasting data and generate executable insights for a futureproof strategy.

Leveraging AI algorithms in inventory management and applying AI-driven forecasting will help improve the following KPIs:

- **Up to 65% reduction in lost sales and product unavailability**
- **5% -10% reduction in warehousing costs**
- **25% - 40% reduction in administration costs**

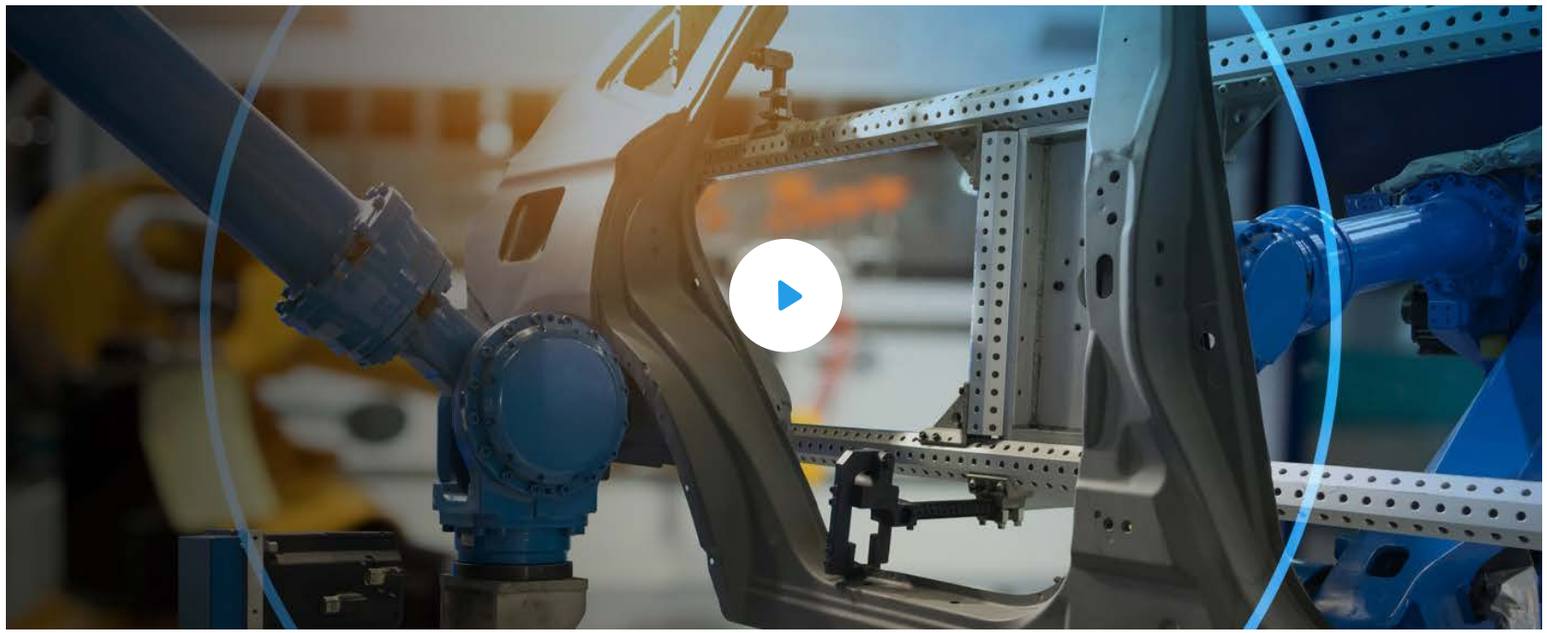
Product lifecycle management (PLM)

A platformized PLM solution that links the physical flow of products with the flow of information will provide complete documentation of all supply chain and production stages to ensure data consistency and accuracy. Establishing a centralized data repository to store all product-related information provides all stakeholders with access to crucial information for:

- **Improved transparency**
- **Better quality management and compliance**
- **Increased productivity**
- **Reduced time-to-market**

Webinar

Robust and Resilient: Production Planning Optimization To Mitigate Disruptions



Watch this webinar replay and learn how to:

- Analyze multiple supply chain scenarios with automated production planning
- Optimize service levels while reducing inventory
- Prioritize the allocation of available material and resources
- Adapt to customer order cancellations or delays

3 BENEFITS OF RESILIENCE

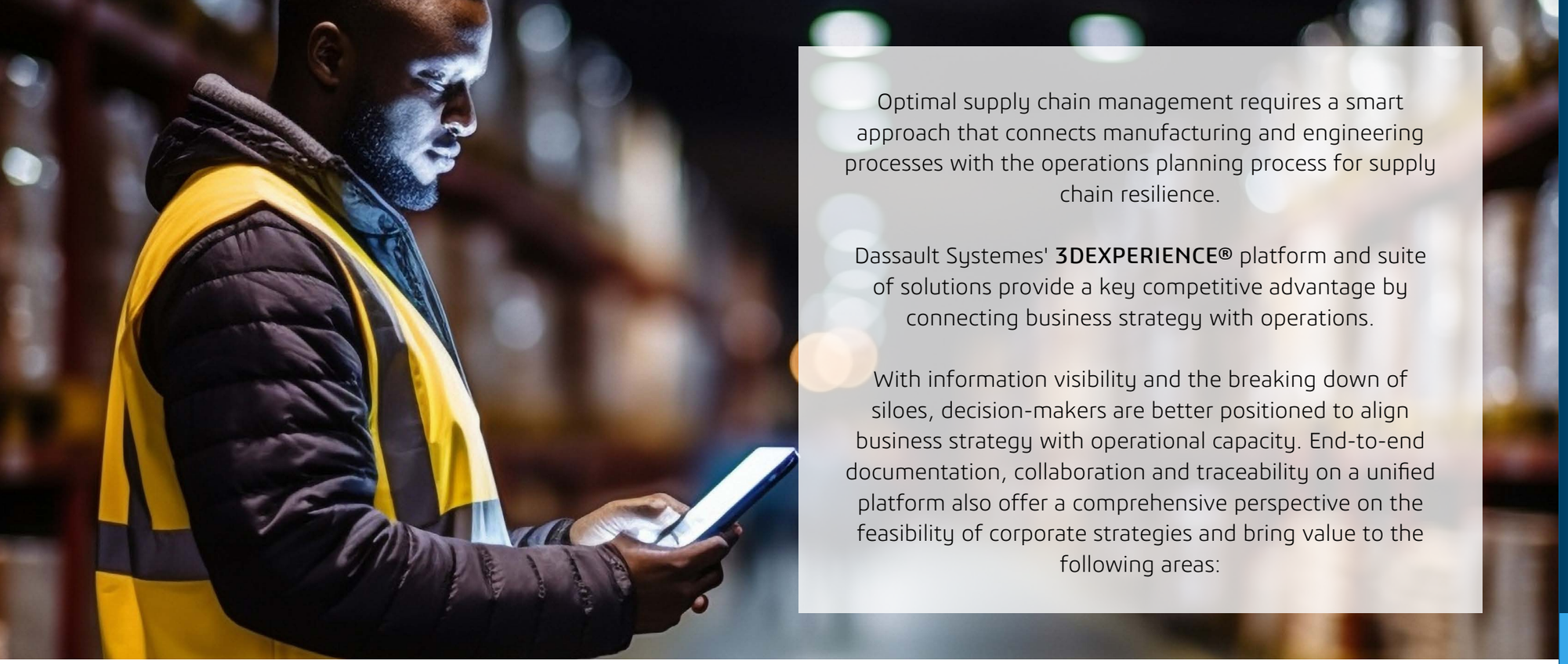
Gartner predicts that:

50%

of global manufacturers will have invested in real-time visibility platforms by end of 2023

50%

of supply chain organizations are forecasted to invest in applications that support AI and advanced analytics capabilities by 2024



Optimal supply chain management requires a smart approach that connects manufacturing and engineering processes with the operations planning process for supply chain resilience.

Dassault Systemes' **3DEXPERIENCE®** platform and suite of solutions provide a key competitive advantage by connecting business strategy with operations.

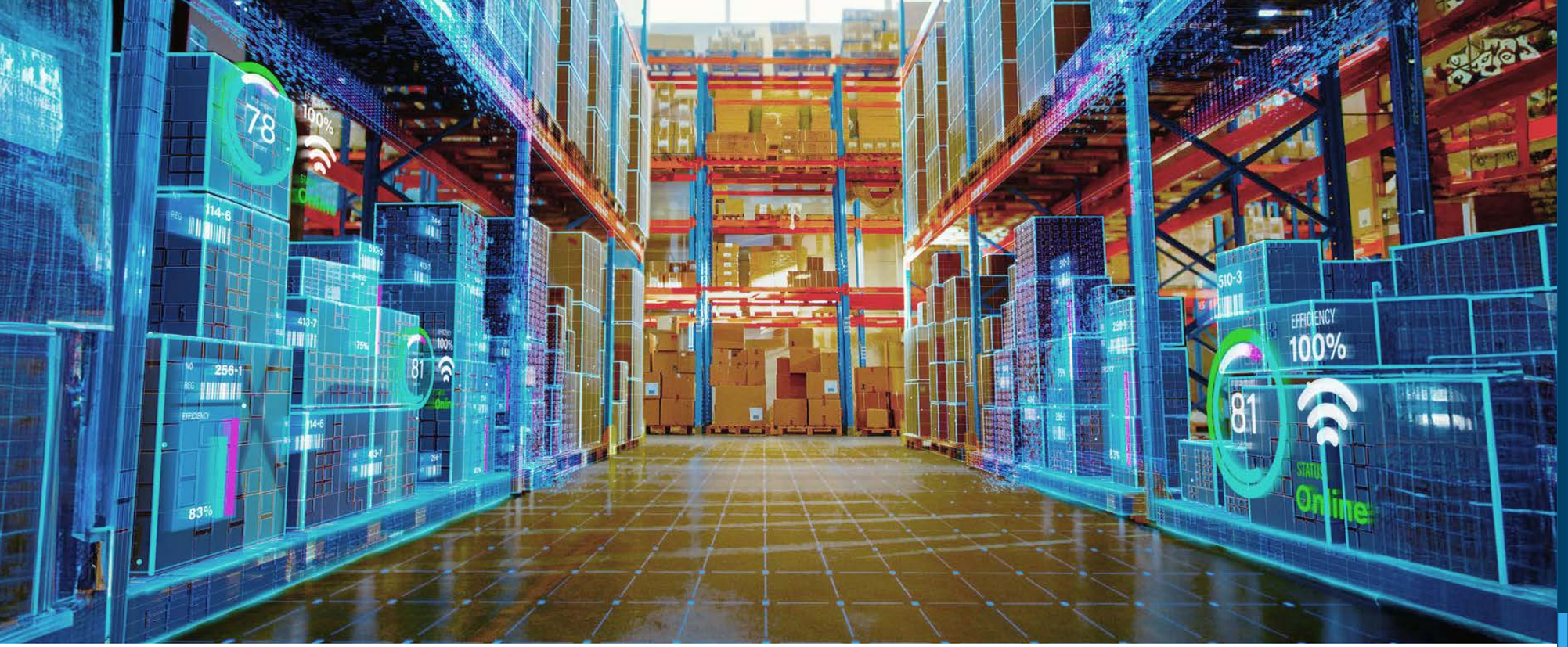
With information visibility and the breaking down of siloes, decision-makers are better positioned to align business strategy with operational capacity. End-to-end documentation, collaboration and traceability on a unified platform also offer a comprehensive perspective on the feasibility of corporate strategies and bring value to the following areas:

ADVANCED PLANNING AND SCHEDULING (APS)

To scale up resilience, decision-makers can opt for Dassault Systèmes' APS solution, which is powered by advanced algorithms and an optimization engine. With these capabilities, manufacturers can optimize production and supply chain operations. The solution improves manufacturing efficiency through real-time visibility, scenario simulation, capacity planning, optimization algorithms and inventory management.

INTEGRATED BUSINESS PLANNING (IBP)

Integrating data from supply chain projections, financial reports and strategic plans will help align the supply chain with manufacturing production, operations planning and other sales and operations functions. Dassault Systèmes' IBP solution also connects global stakeholders from product design to manufacturing, enabling the entire value chain to proactively plan ahead and collaborate to improve business innovation and build resilience against disruptions.



DEMAND PLANNING

Accurate demand planning is crucial to meet customer expectations, minimize inventory costs and drive operational efficiency. Dassault Systèmes' demand planning solution enables demand sensing and scenario analysis. With these capabilities, decision-makers can simulate various what-if scenarios, evaluate potential impact and make informed decisions to optimize inventory, production lines and supply chain operations.

SUPPLY PLANNING

Dassault Systèmes' supply planning solution supports the optimization of the entire supply planning process – covering distribution, manufacturing and procurement operations. The solution supports proactive measures to mitigate disruptions by seamlessly integrating supply planning with operational plans and aligning these plans with sourcing, distribution, production and inventory management.

MASTER PRODUCTION SCHEDULING (MPS)

Working on an integrated platform enables decision-makers to commit to an accurate and realistic MPS on an operational planning level. With Dassault Systèmes' MPS solution, decision-makers can factor in business goals measured by key performance indicators like increased resource efficiency, reduced lead times, improved service delivery and lower inventories.

DETAILED PRODUCTION SCHEDULING

Optimal detailed production scheduling can increase productivity and delivery performance while reducing inventory, materials and labor waste. Short-term optimization capabilities on the platform will enable supply chain decision-makers to quickly create high-performance schedules and follow through with production steps to improve business KPIs.

SHOP FLOOR EXECUTION

Integration is key to improving collaboration and building a resilient supply chain that will reduce downtime and improve first-time yield, labor efficiency and overall equipment effectiveness. Real-time data insights from the factory floor will help optimize factory planning systems. Decision-makers gain improved visibility to respond faster and resolve disruptions, which can adversely impact plant productivity and cause a ripple effect throughout the supply chain. For example, machine downtime, missing personnel and material quality issues.

Collaboration on the integrated **3D**EXPERIENCE platform equals more resilient and agile supply chain operations. Let's see what some of Dassault Systèmes' automotive customers have achieved:

A 360° bird's eye view of projects in 18 global manufacturing plants

Novares, a leading automotive supplier specializing in plastic injection, needed to produce realistic and executable delivery schedules for its clients.

Dassault Systèmes' DELMIA production planning and scheduling solution helped Novares achieve:

- 98.5% of group-wide customer service level
- Over 90% of supplier service level
- 30% - 40% less inventory
- Elimination of exceptional shipments
- Reduced obsolescence with average inventory levels of eight days
- Better accountability, control and anticipation across its entire supply chain

Read more

An integrated material requirements planning (MRP) system

Ortakçı Cam, an automotive glass and mirror manufacturer, needed to consolidate multiple production lots for repeat orders to enhance efficiency.

Dassault Systèmes' DELMIA Ortems planning solution enabled Ortakçı Cam to:

- Plan and schedule with finite capacity across different timelines
- Monitor capacity occupancy and idle status in real time
- Optimize capacity planning, material planning and load-balancing
- Run what-if simulations to reschedule production lines
- Respond quicker to disruptions

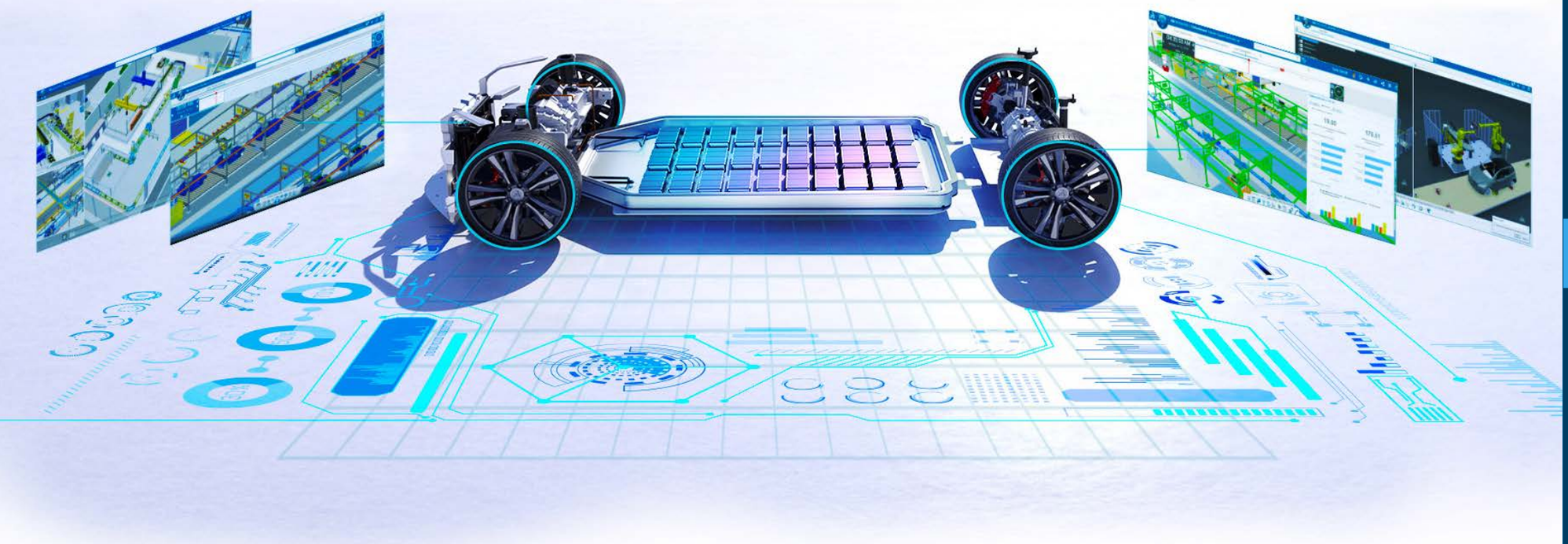
Watch the video

IT'S TIME TO TAKE CONTROL

The automotive supply chain will be constantly challenged to deal with global disruptions. It's no longer a question of whether you need to build resilience to withstand disruptions. Instead, proactively building better resilience empowers you with a competitive edge – to identify and capture opportunities, take preventive measures quickly and, ultimately, preserve business continuity and profit margin.

With a proven track record of successful partnerships with global automotive industry leaders, Dassault Systèmes is uniquely positioned to support a connected and collaborative supply chain ecosystem to become a future-forward growth driver.

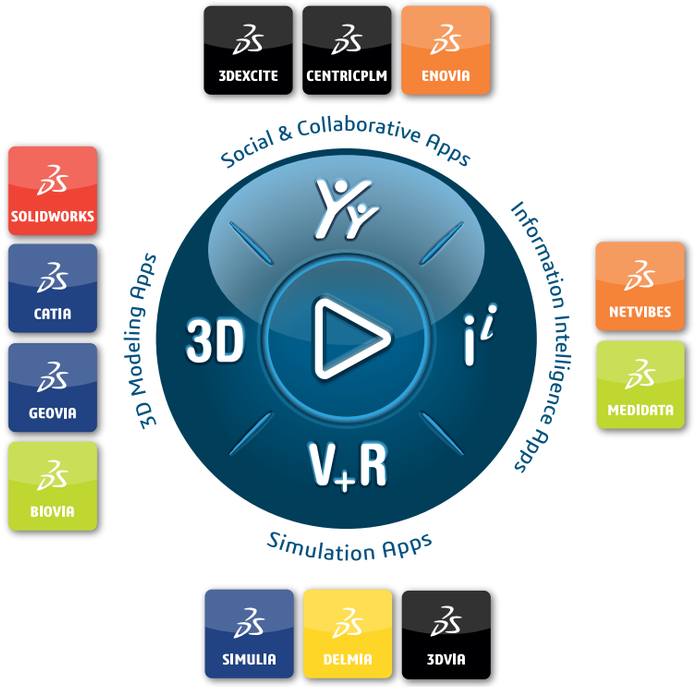
Explore more insights here.



Our **3D**EXPERIENCE® platform powers our brand applications, serving 12 industries, and provides a rich portfolio of industry solution experiences.

Dassault Systèmes, the **3D**EXPERIENCE Company, is a catalyst for human progress. We provide business and people with collaborative virtual environments to imagine sustainable innovations. By creating virtual twin experiences of the real world with our **3D**EXPERIENCE platform and applications, our customers can redefine the creation, production and life-cycle-management processes of their offer and thus have a meaningful impact to make the world more sustainable. The beauty of the Experience Economy is that it is a human-centered economy for the benefit of all –consumers, patients and citizens.

Dassault Systèmes brings value to more than 300,000 customers of all sizes, in all industries, in more than 150 countries. For more information, visit **www.3ds.com**.



DASSAULT SYSTEMES | The **3D**EXPERIENCE® Company

Europe/Middle East/Africa
Dassault Systèmes
10, rue Marcel Dassault
CS 40501
78946 Vélizy-Villacoublay Cedex
France

Asia-Pacific
Dassault Systèmes K.K.
ThinkPark Tower
2-1-1 Osaki, Shinagawa-ku,
Tokyo 141-6020
Japan

Americas
Dassault Systèmes
175 Wyman Street
Waltham, Massachusetts
02451-1223
USA