DRIVING THE FUTURE: HOW AUTOMOTIVE SUPPLIERS CAN THRIVE IN A CHALLENGING LANDSCAPE

From rising costs and sustainability to localization strategies and AI:

What will shape automotive production in 2040 and beyond and what challenges will this pose for manufacturer and their supply chain in Europe?

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1. EDITORIAL

The automotive industry is at a turning point: rising costs, stricter sustainability requirements, geopolitical uncertainties and rapid advancements in digital technologies are reshaping the sector. At the same time, these developments offer opportunities for repositioning and improving competitiveness.

Looking beyond the current horizon is essential. Production strategies for upcoming vehicle generations and their successors are largely set, and with product lifecycles of 6–8 years, today's decisions will impact the next two decades. In 2040+ the automotive landscape will be shaped by sustainability, cost effectiveness and flexibility.

By embracing transparency, investing in artificial intelligence (AI) and big data, and integrating circular economy principles, suppliers can establish themselves as key players in the evolving value chain. The decisions made today will not only determine how automotive suppliers weather current challenges but also define their role in the next era of automotive innovation. The goal of this report is to outline practical strategies for automotive suppliers to prepare for future demands.

2. EXECUTIVE SUMMARY

Supply chain transparency, energy-efficient production, and digital process optimization will be the decisive factors for shaping a competitive manufacturing landscape of the future. Automotive suppliers must adapt early to remain competitive and position themselves as strategic partners to car manufacturer.

The report serves as a roadmap for automotive suppliers to adapt to industry changes driven by cost pressures, sustainability requirements, and digital transformation. It contains seven strategic recommendations:

UTILIZING DATA ECOSYSTEMS	Implementing Catena-X and Manufacturing-X ensures regulatory compliance and enhances supply chain transparency.
INTEGRATING CIRCULAR ECONOMY PRACTICES	Modular design, extended product lifecycles, and as-a-service models strengthen sustainability.
LEVERAGING DIGITAL TWINS	Virtual commissioning, prescriptive maintenance and AI-driven optimization significantly reduce operational costs.
EXPANDING DATA SECURITY AND INFRASTRUCTURE	A robust cybersecurity strategy is essential to protect sensitive information.

ESTABLISHING PLUG-AND-PRODUCE CONCEPTS	Modular production systems increase flexibility and efficiency.
PRIORITIZING ENERGY EFFICIENCY	Electrification and digital control systems reduce costs and emissions.
STRENGTHENING REGIONAL PRESENCE	Localization strategies minimize risks and improve market access.

These measures help suppliers position themselves as strategic partners for car manufacturers and unlock new market opportunities.

3. CURRENT CHALLENGES IN AUTOMOTIVE PRODUCTION

The European automotive industry faces several challenges:

Trade conflicts and new customs regulations are putting increasing pressure on the European automotive industry. They are hindering important export flows and particularly affecting those manufacturers that rely on a globally networked production system.

High energy costs are increasing production expenses[1], while supply chain disruptions demand greater flexibility and resilience. Subsidized Chinese manufacturers are intensifying competition with lower-cost products[2], forcing European companies to innovate to maintain market share.

Stricter EU sustainability regulations now require comprehensive CO_2 footprint documentation across the value chain. Compliance increases transparency but adds bureaucratic complexity and costs, particularly for smaller companies struggling with additional reporting burdens. The electrification of powertrains is reshaping the supplier landscape, with companies focusing on combustion vehicle components needing to adapt or specialize in niche solutions to avoid obsolescence. Meanwhile, demand for electrical and electronic systems is growing, requiring seamless integration of new technologies.

Low battery-electric vehicle (BEV) sales are creating cost pressures,

underscoring the need to improve efficiency in conventional drivetrain production to bridge the transition to BEV manufacturing. Geopolitical uncertainties, including trade conflicts, economic instability, and regulatory changes, complicate long-term planning. Automotive suppliers face fluctuating tariffs, trade restrictions, and political shifts that impact supply chains and profitability[3].

To stay competitive, European automotive suppliers must drive efficiency, reduce total cost of ownership (TCO), minimize resource consumption, and increase transparency. Early adaptation to these challenges is key for long-term resilience. Despite the current challenges, these developments also offer opportunities for transformation. Companies that anticipate cost increases, regulatory changes, and technological innovations can sustainably strengthen their competitive position. The following sections highlight key developments in regulation, markets, product innovation, and production processes — each with its opportunities and risks for the future of automotive production.

1) Reuters, 'enormous pressure' on auto industry, 03.2025
2) Forbes, Europe's Automakers Face Pummeling In 2025, 01.2025
3) The Times, US threatens to extend the levies to 'cars from everywhere' 03.2025

4. FUTURE PRODUCTION TRENDS

Automotive production up to 2040 will be shaped by developments in the following four key trends: regulation, socioeconomics and geopolitics, product innovations and production processes.

4.1 REGULATION

European regulations promote sustainable technologies through carbon pricing and due diligence obligations, enhancing transparency in environmental impact assessments. Standardized calculations like the Product Carbon Footprint (PCF) and Product Environmental Footprint (PEF) require transparent supply chain data. Future regulatory extensions will likely cover more product categories and further encourage environmental responsibility.

The circular economy focuses on extending product lifespans through durability, reuse, remanufacturing, and recycling, aiming for a closed-loop system that minimizes waste and environmental impact.

The supply chain act ensures human rights and environmental protection by requiring vigilance plans to address potential risks, promoting sustainability and ethical practices.

Deforestation regulations prevent forest loss by ensuring compliance and transparency in sourcing raw materials.

The Carbon Border Adjustment Mechanism (CBAM) applies CO_2 pricing on imports to reduce emissions in global supply chains, creating a level playing field between EU and non-EU manufacturers and encouraging lower CO_2 footprints.

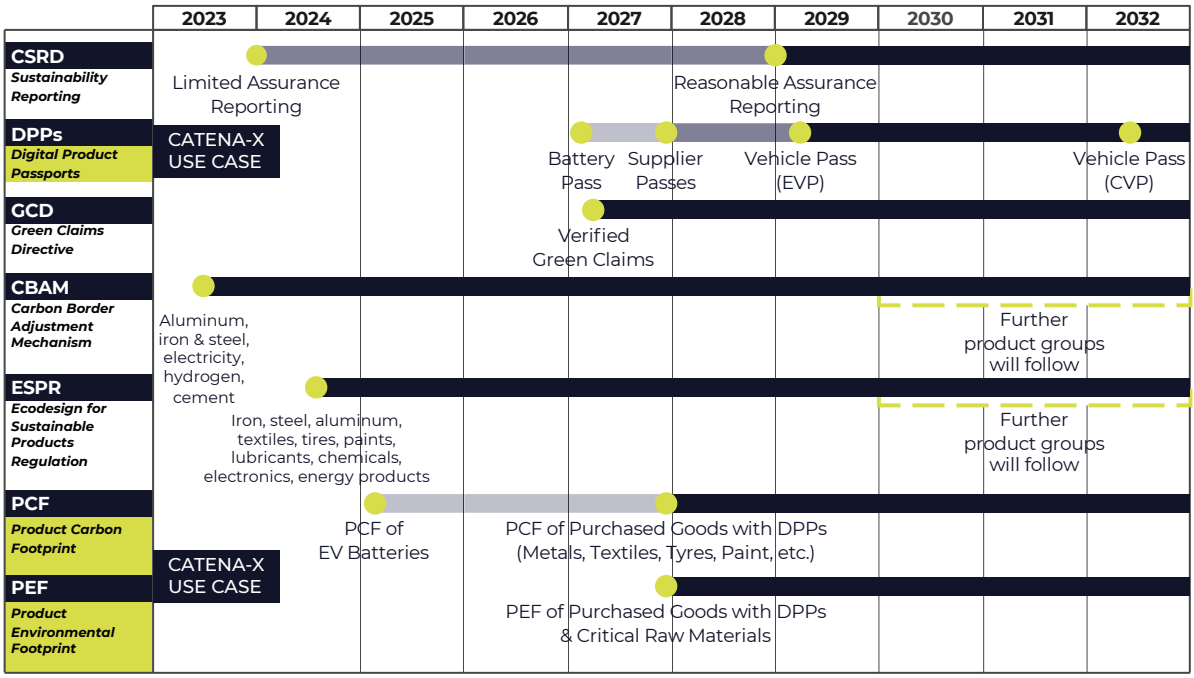

Figure 2: Upcoming EU directives requiring transparent data in the supply chain

Main Impact

Compliance with environmental and human rights regulations requires adjustments in supply chains and in terms of creating transparency in the supply chain. This requires the use of industry-specific databases and an adjustment of the organization of suppliers to ensure compliance with automotive industry regulations, which is likely to lead to higher operating costs, but is necessary when complying with the provisions of procurement contracts

Source: EUR-LEX [2014/95/EU + CSRD-extension(2022) // 2021/1119 (CBAM) // 2023/1115 (EUDR) // ISO 14067 (PCF)]
P3 Automotive

4.2 SOCIOECONOMICS & GEOPOLITICS

Labor markets, trade policies, and consumer behavior are key factors shaping the automotive industry's future, requiring manufacturers to remain adaptable to global changes.

Demographic change involves aging populations in developed regions and growth in emerging markets, leading to a shortage of skilled workers in developed countries and increased labor supply and consumer demand in emerging markets.

Populism refers to the rise of protectionist policies and trade wars, with movements advocating for stronger national protection and economic policies prioritizing domestic industries, potentially causing trade tensions and disrupting global supply chains.

Mass individualization reflects the growing demand for personalized products, as consumers seek products tailored to their preferences, prompting manufacturers to offer customized solutions at scale.

The shift in consumer perception of cars involves viewing vehicles as sustainable, tech-enabled mobility solutions instead of status symbols, with consumers prioritizing sustainability and technological advancements in their purchasing decisions.

Main Impact

Labor shortages in developed countries will require investments in automation and robotics to maintain production levels. Trade tensions and protectionist measures can disrupt global supply chains, requiring companies to diversify their supply chains[4] and reduce their dependence on specific regions. This will particularly affect companies with global supply chains and production networks, as the threat of increased trade barriers is unpredictable. The demand for personalized products will increase operational complexity as manufacturers must develop flexible production systems to meet consumers' individual requirements.

4) Cornell University, Vulnerabilities and capabilities in the EU Automotive industry, 01.2025

4.3 PRODUCT INNOVATION

Technological advancements, evolving consumer preferences, and regulatory pressures are driving the automotive industry's evolution, leading to new vehicle designs and features.

Portfolio streamlining involves reducing the number of vehicle variants and increasing modularity to simplify production processes and reduce costs by focusing on a core lineup of vehicles with shared components.

Autonomous driving technologies are advancing, enhancing safety and convenience by allowing vehicles to operate without human intervention.

New electric components reflect the shift towards electrification, with components like batteries and electric motors becoming central to vehicle design, driven by emissions regulations and consumer demand for eco-friendly vehicles.

Increased chassis safety involves the development of enhanced safety features and materials to improve vehicle safety, including advanced materials and construction techniques.

Sustainable design focuses on recyclability and reducing environmental impact by designing vehicles with materials and processes that minimize waste and promote sustainability throughout the lifecycle.

Main Impact

The introduction of new technologies will require changes in production processes and will require investment in new equipment and training for workers. The competitive landscape will restructure as new players, particularly from Asia, enter the market with innovative products and establish themselves. Higher safety standards will drive innovation in sustainable materials and design, leading to safer and more eco-friendly vehicles.

Quellen: P3 automotive

4.4 PRODUCTION & PROCESS

Production processes are adapting to new technologies, regulations, and market demands, focusing on improving efficiency, sustainability, and flexibility.

Software-defined factory involves the integration of software to control and optimize production processes, enabling real-time adjustments and improvements in production efficiency using digital twins, AI, and prescriptive maintenance[5].

Advanced robotics includes the use of collaborative robots and humanoids to work alongside human workers or independently, enhancing production efficiency and safety by automating repetitive and dangerous tasks.

Repair, reuse, recycle practices focus on sustainability and the circular economy by designing production systems that extend product life, conserve resources, and minimize waste through recycling and reuse.

Flexibility maximization focuses on designing flexible and modular production systems that quickly adapt to changing market demands and individual customer demands.

Complexity reduction aims to streamline production processes to improve efficiency and reduce costs by minimizing product and process complexity.

5) Autodesk, Driving the future, 09.2024

Main Impact

The integration of software and robots will increase production efficiency and allow manufacturers to optimize their operations and reduce costs. The focus on sustainability through repair, reuse and recycling practices will reduce the environmental impact of production. Flexible and modular production systems will allow manufacturers to quickly adapt to market changes, increasing their competitiveness.

5. STRATEGIC RECOMMENDATIONS

By examining trends in future manufacturing, seven strategic recommendations can be derived that provide suppliers with a clear roadmap to meet upcoming challenges and maintain their competitiveness in an evolving market.

5.1 TAKE A LEADING ROLE IN THE APPLICATION OF DATA ECOSYSTEMS

Meet regulatory requirements and future specifications while benefiting from reduced coordination effort and greater cost efficiency in data provision.

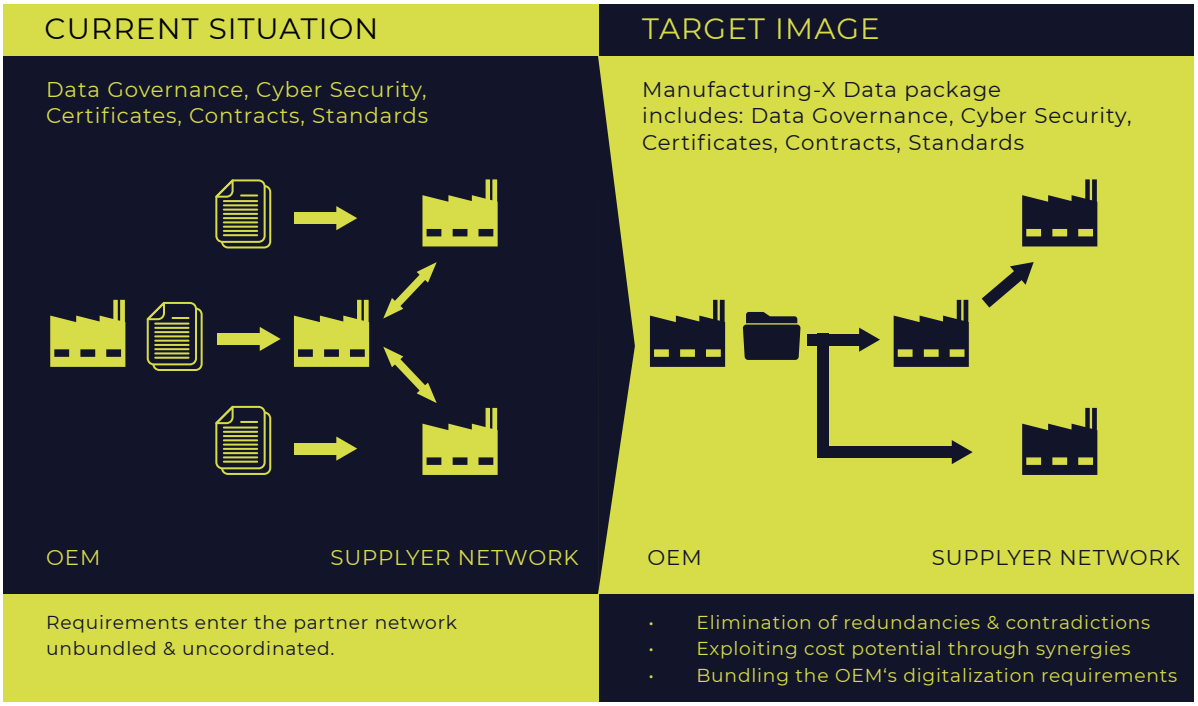

Figure 3: How Catena-X centralizes workflows

WHY

By 2040, Catena-X will become a mandatory standard for all car makers, applying to products and manufacturing facilities without exception. German premium car makers are already requiring the implementation of Catena-X as a prerequisite for future awarding's. Manufacturing-X is evolving into an essential tool to meet the growing regulatory demands for transparency across the value

Source: P3 automotive

chain. This development begins with car makers and will progressively expand to automotive suppliers. For European automotive suppliers, the introduction of Catena-X and Manufacturing-X offers significant efficiency gains. Standardized interfaces and reduced complexity in interface operations lower coordination efforts, while digitalization bundles requirements and reduces workload.

HOW

The successful implementation of the standard requires specific measures at the product, organizational, and business levels, as well as in partnerships. On the product level, standardized interfaces like the Eclipse Dataspace Connector (EDC) must be integrated early into the portfolio. Organizationally, it is essential to offer employee training and establish strategic partnerships with industry consortia such as Manufacturing-X and Catena-X. By developing concrete use cases in collaboration with a leading car maker, automotive suppliers can strengthen their position within the Catena-X network and benefit from standardized co-design processes. On a business level, taking a leading role in the development and communication of Manufacturing-X and Catena-X standards is recommended to promote transparency and position as an innovative market player.

OPPORTUNITIES

Active participation in Catena-X and Manufacturing-X offers a clear competitive advantage for automotive suppliers. By adapting to future standards early, they can establish themselves as proactive and innovative partners, enhancing their external reputation. These standards will be critical to ensuring maximum

Source: P3 automotive

transparency, which is vital for suppliers' product portfolios and processes. Early implementation creates a strategic edge and helps secure a leading position in the industry over the long term.

RISKS

Despite the significant opportunities, the introduction of Manufacturing-X and Catena-X also entails risks. A competing standard for cross-company communication may gain traction, jeopardizing investments in Manufacturing-X. The complexity of data preparation, due to varying systems, could lead some suppliers to reject certification. Furthermore, there is a dependency on political support; delays or disagreements among EU member states could hinder or dilute implementation, creating uncertainties for suppliers. Intensive participation may also result in the disclosure of strategically relevant data or technological developments, posing an additional risk.

Source: P3 automotive

5.2 IMPLEMENT CIRCULAR ECONOMY PRACTICES (RE-X)

Aligning products and processes with evolving recycling and circular economy demands is essential to capitalize on sustainability opportunities and meet future regulatory requirements.

WHY

The Green Deal and circular economy initiatives focus on reducing resource use, lowering carbon emissions, and ensuring sustainability throughout a product's life cycle, impacting the entire automotive value chain. Regulatory requirements (see figure XY) like the ESPR demand CO2 reduction and energy efficiency, while standards such as NBR, CPR, and ELV drive closed-loop processes.

Car makers are increasingly adopting circular economy principles, with European companies leading the way, alongside innovations in battery recycling. Countries like China have also identified this sector as strategic. Growing recycling regulations and the need to separate valuable parts will boost the dismantling and recycling markets, especially for batteries. Future regulations may extend to the sustainability of production facilities and processes.

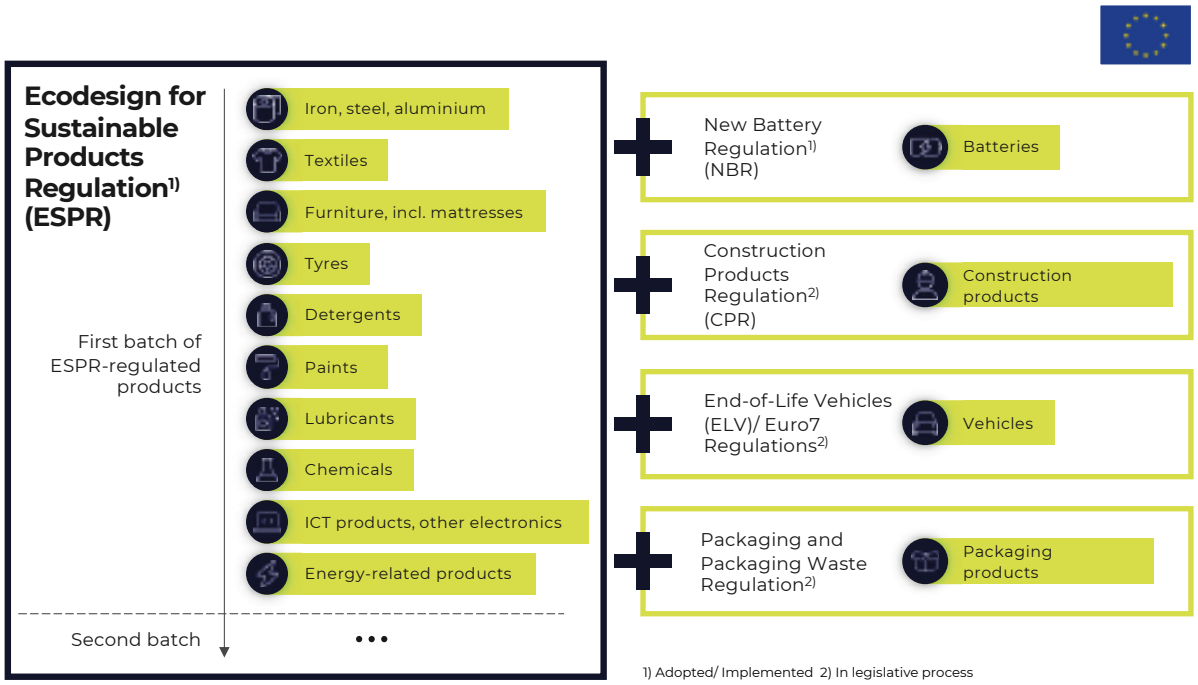

Figure 4: The most important regulatory requirements in relation to sustainability

HOW

Suppliers should focus on modular product designs and sustainable components that facilitate easy dismantling, supporting repair, reuse, and recycling in line with circular economy principles. Specialized solutions for dismantling and recycling vehicles, batteries, and parts should incorporate technologies like IoT, cloud platforms, and digital twins. Organizationally, suppliers must implement Re-X strategies by rethinking operations, logistics, and business models, along with employee training. Partnerships in the Re-X industry provide valuable expertise, while promoting transparency and sustainability efforts can enhance consumer trust and brand value.

From a business perspective, adopting as-a-service and subscription models can create new revenue streams and cater to changing consumer preferences for

Source: EU Commission – ESPR Proposal (COM/2022/142 final); EUR-Lex – Battery Regulation; EU Commission – CPR Reform Proposal

flexible ownership. Products designed for longevity will drive maintenance, refurbishment, and aftermarket opportunities, supporting both economic and environmental sustainability.

From a business perspective, expanding to as-a-service and subscription models can create new revenue streams and align with changing consumer preferences for more flexible ownership. Product designed for longevity will drive maintenance, refurbishment and aftermarket opportunities, supporting both economic and environmental sustainability.

OPPORTUNITIES

Take a leading role in developing eco-design standards, becoming a preferred partner for sustainable products or equipment, and access new markets. Active participation in research projects and forming close partnerships with, for example, machine or car maker, and research institutes will help shape sustainable production standards and technologies. This will enable TCO reduction and create recurring revenue streams through as-a-service and subscription models.

RISKS

Risks include non-compliance with stricter regulations, leading to penalties and the potential loss of market share as manufacturers prioritize sustainability. High investment costs, potentially long return-on-invest (ROI) times, technical complexity, and slower customer adaptation could pose financial risks. Additionally, remanufacturing parts may be more costly than replacement or recycling.

Source: P3 automotive

5.3 UNLOCK COST SAVINGS & EFFICIENCY WITH DIGITAL TWINS

Reduce TCO by leveraging digital twins for process optimization and prescriptive maintenance.

WHY

The adoption of digital twins is becoming crucial for European automotive suppliers to remain competitive in a cost-driven market. Digital twins enable significant TCO reductions, with virtual commissioning cutting costs by 15–20% and predictive strategies reducing expenses by 20% while minimizing spare part inventory. AI-driven systems boost production efficiency by 15% and reduce energy consumption of manufacturing equipment by up to 10%. By 2035, 76% of car makers are expected to rely on digital twins, making physical prototypes largely obsolete and positioning digital twins as a central future technology.[1]

Beyond cost reduction, digital twins enhance quality, sustainability, and risk mitigation. Advanced simulations allow manufacturers to optimize processes before implementation, improving first-time-right production, reducing waste, and boosting equipment effectiveness. For sustainability, digital twins help track energy use, carbon footprints, and resource consumption in real time, supporting compliance with tightening environmental regulations.[2,3]

1 Altair Global Survey Digital Twins (2022)
2 Gartner Hype Cycle for advanced technologies for manufacturers (2024)
3 Fraunhofer IKS Digital Twins

Figure 5: Digital Twin use cases (P3 automotive)

HOW

Automotive suppliers must develop advanced digital twins, with level 3 for simulation and level 4 for autonomy, to improve predictive maintenance, process optimization, and energy efficiency. Compliance with asset administration shell (AAS) standards ensures seamless data exchange across ecosystems like Manufacturing-X and Catena-X.

Dedicated digital twin teams with expertise in AI, cybersecurity, and cloud technologies are crucial, and partnerships with tech leaders are necessary to address talent shortages and meet regulatory demands.

OPPORTUNITIES

Digital twins offer automotive suppliers significant opportunities to stand out in a competitive market. Early investments in this technology position suppliers as innovative partners, meeting future car maker requirements. Digital twins create new revenue streams, such as add-on offerings for commissioning, maintenance, and optimization, especially for cost-intensive processes. By leveraging these

digital solutions, suppliers can enhance their value proposition, boost customer loyalty, and gain a competitive edge.

RISKS

Despite their potential, the integration of digital twins poses several risks. Suppliers risk losing market share if they fail to meet growing regulatory and TCO-driven demands for digital twin adoption. Resistance from internal teams or a lack of skilled personnel can hinder implementation and reduce the return on investment. Moreover, the complexity of integrating digital twins across diverse systems while ensuring compatibility with existing client ecosystems can lead to delays and cost overruns. These challenges necessitate strategic planning and strong collaboration with technology partners to mitigate risks effectively.

5.4 BUILD ROBUST DATA INFRASTRUCTURE AND CYBERSECURITY

Strengthen AI-driven optimization and secure data infrastructure to enhance manufacturing efficiency.

WHY

As supply chains digitalize, AI-powered automation boosts decision-making speed by 60–70% and reduces production costs by 20–30%. This is crucial in cost-sensitive markets, where manufacturers must optimize operations to maintain profitability. Predictive and prescriptive maintenance systems improve equipment utilization by reducing downtime by 30–50% and extending machine lifecycles by 20–40%, cutting maintenance costs and improving production stability and supply chain resilience.[1,2] AI-driven quality control reduces defects and waste, ensuring compliance with automotive regulations and enhancing sustainability. However, increased reliance on digital solutions heightens cybersecurity risks. With 50% of car manufacturers reporting significant financial losses due to cyber incidents, securing AI-driven environments is essential. While digitization has laid the foundation, AI and large datasets now accelerate and expand digital transformation.[3]

1 Ballocate: AI in Manufacturing
2 Fraunhofer IEM: BOOST 4.0 – Big Data for Factories
3 vdi: KI-Sicherheit für Industrie 4.0

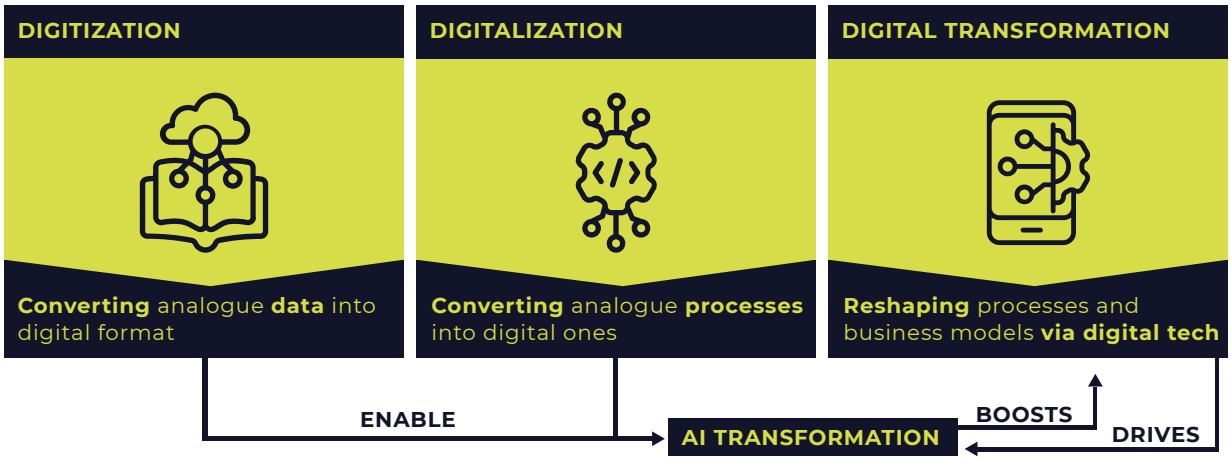

Figure 6: 3 Steps to AI transformation (P3 automotive)

HOW

Automotive suppliers must integrate IoT sensors into tools and equipment for real-time data collection to enable AI optimization. Strengthening cybersecurity is vital, requiring encrypted data transfer, zero-trust architectures, AI-powered threat detection, and industry standard compliance. Developing in-house expertise in AI, cloud computing, and data security is key, but strategic partnerships with tech providers can offer cutting-edge solutions while managing costs. Suppliers should also adopt service models that leverage AI insights to optimize machine uptime and reduce operational costs for customers.

OPPORTUNITIES

Adopting advanced data and AI technologies positions automotive suppliers as innovation leaders, driving process optimization and prescriptive maintenance. By combining analytics with secure, scalable infrastructure, suppliers enhance efficiency, unlock new revenue streams, and strengthen their role as trusted partners. Proactive compliance and AI solutions attract car makers and open new revenue opportunities, future-proofing operations and meeting evolving customer expectations and industry standards.

RISKS

A significant proportion of AI projects fail due to poor data quality or inadequate infrastructure. The cost-intensive nature of these technologies may also leave suppliers vulnerable to competitors with better resources or partnerships. Cybersecurity breaches are a critical risk, potentially exposing sensitive data and damaging customer trust. Additionally, the "black box problem" of AI decision-making raises ethical concerns about interpretability and accountability. Strategic planning and investment are crucial to effectively mitigate these risks.

Source: P3 automotive

5.5 SCALE PLUG-AND-PRODUCE CAPABILITIES

Ensures a position as a preferred partner for the growing need for cost-efficient, customizable production environments.

WHY

The plug-and-produce vision (see figure XY) focuses on integrating diverse modules into a unified system to simplifying commissioning, enhancing flexibility and improve efficiency. Standardized communication frameworks allow different machines and software systems to connect seamlessly, making integration easier and reducing technical complexity.[1] This vision supports the accelerating automation trend, with modular production expected to grow by 7-8% compound annual growth rate and 50% of plants projected to be automated by 2030, driven by demands for flexibility and shorter product lifecycles.[2]

Modular production offers benefits like reduced maintenance, minimized downtime, and optimized resource use, supporting sustainability by extending asset lifecycles. While still in early stages, with vendor-specific connectors complicating system integration, the vision includes standardized connectors and plug-and-play integration for seamless commissioning. Technologies like digital twins, low-code architectures, and secure communication protocols will enhance interoperability and system efficiency, with ongoing pilot projects paving the way for broader integration and sustainability improvements in production plants.[3]

1 ZVEI: Interoperabilität mit stand. Schnittstellen

2 Verified Market Reports: Modulare Automatisierungsmarkterkentnisse

3 Fraunhofer IPA: InterOpera

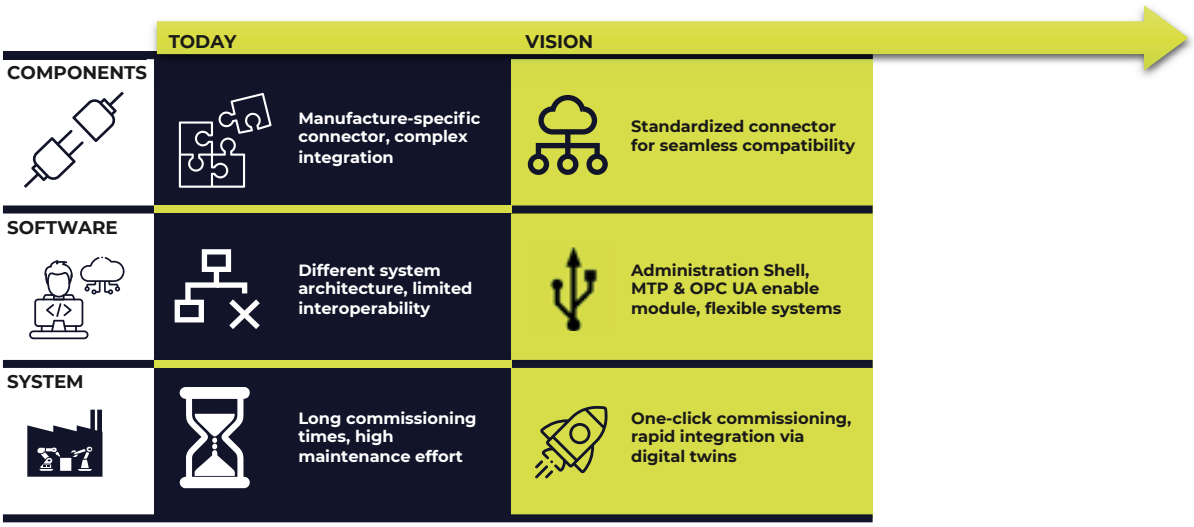

Figure 7: Plug-and-produce vision of the future compared to the current situation (P3 automotive)

HOW

Suppliers should simplify their product range, reduce excess inventory, and minimize custom orders for more efficient, eco-friendly production. Developing open interfaces and protocols for seamless plug-and-produce system integration is key to improving interoperability and reducing complexity. Suppliers should leverage software expertise, either in-house or through tech partnerships, to implement modular production solutions. Collaborating with equipment manufacturers on flexible, modular solutions will help suppliers adapt quickly to market changes and gain a competitive advantage.

OPPORTUNITIES

By promoting universal standards for component and system compatibility, automotive suppliers can improve integration and scalability across the industry. Strategic collaboration will position established suppliers as preferred partners, offering innovative solutions that enhance efficiency, flexibility, and meet the

evolving demands of the automotive sector. Suppliers can lead in modularization, accessing new markets and positioning themselves as top partners for flexible and efficient production systems.

RISKS

There is a risk of losing market share as automakers and suppliers increasingly place emphasis on easier commissioning due to increasing needs for flexibility and cost pressures. Automotive suppliers that offer modular and scalable solutions that enable faster commissioning and greater production adaptability could gain a competitive advantage. Additionally, the lack of universally accepted standards could result in fragmented solutions, complicating integration, while gaps in software expertise may cause delays and increasing costs.

Source: P3 automotive

5.6 TRANSITION TO ENERGY-EFFICIENT MANUFACTURING

Driven by stricter regulations and rising costs, energy-efficient production will move even further into focus.

WHY

The shift towards energy-efficient manufacturing is driven by three key factors: stricter regulations, the need to reduce TCO, and sustainability goals from car manufacturers. EU regulations enforce CO_2 reduction targets, requiring suppliers and car makers to adopt energy-efficient solutions. Rising energy prices and cost pressure make lowering operational expenses essential, driving investments in efficient production equipment. Beyond compliance, many car manufacturers set higher sustainability goals to strengthen their brand image. By 2040, these drivers will intensify, making industrial electrification, digitalization, and circular economy principles crucial for long-term competitiveness.

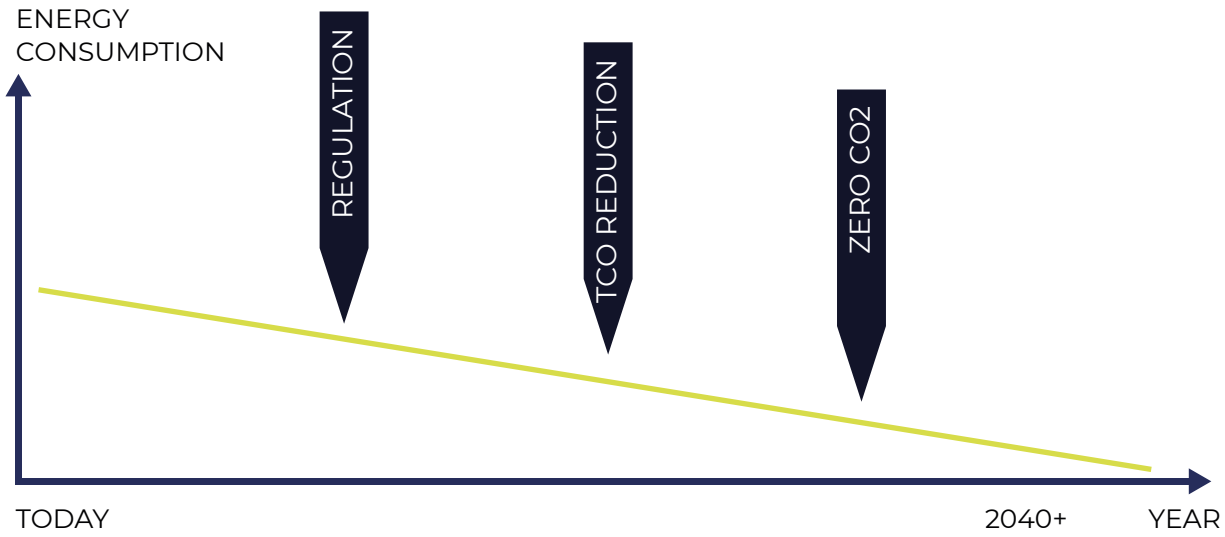

Figure 8: Major drivers for reduced energy consumption

HOW

To transition successfully, companies must define a clear vision for their product portfolio and operational strategies, setting specific goals for integrating energy-efficient technologies and ensuring effective communication both internally and externally. A structured transition plan should outline the gradual implementation of electrified and digitalized systems, while optimizing existing processes. This plan should be regularly assessed and refined. Employee training programs will be essential to prepare the workforce, and companies should support their customers by providing guidance, best practices, and case studies to ensure a smooth transition.

OPPORTUNITIES

A strong strategy allows automotive suppliers to lead in energy-efficient manufacturing by optimizing their operations and the solutions they provide to customers. Improving internal energy efficiency cuts costs, reduces CO_2 emissions, and ensures regulatory compliance. Suppliers also help car manufacturers achieve energy savings by developing efficient production equipment that lowers TCO and emissions. By offering smart, energy-optimized factory solutions, suppliers position themselves as strategic partners. Innovating in energy efficiency enables new revenue streams, builds customer trust, and secures a competitive edge in a sustainability-driven market.

RISKS

However, several risks must be managed. Without actively promoting energy-efficient solutions, companies may fail to generate visibility for their innovations. Businesses tied to traditional, less efficient methods could struggle to compete with more forward-thinking market players. Additionally, failing to balance market demand between legacy systems and new energy-efficient solutions could result in difficulties meeting customer expectations, weakening competitive positioning and hindering revenue growth.

Source: P3 automotive

5.7 STRENGTHENING REGIONAL PRESENCE

Ensure compliance with local regulations, enhance customer satisfaction, and mitigate risks of losing market shares.

WHY

Adapting to regional requirements is crucial for European automotive suppliers to ensure compliance, enhance customer satisfaction, and mitigate market share risks. Region-specific regulations, such as the general data protection regulation (GDPR) in Europe or China's Cybersecurity Law, must be followed to avoid legal penalties and reputational damage. Reducing reliance on global supply chains helps minimize disruptions from geopolitical tensions, tariffs, pandemics, or trade conflicts. By aligning with local requirements, suppliers position themselves as responsive, customer-centric partners, gaining a competitive edge over global counterparts.

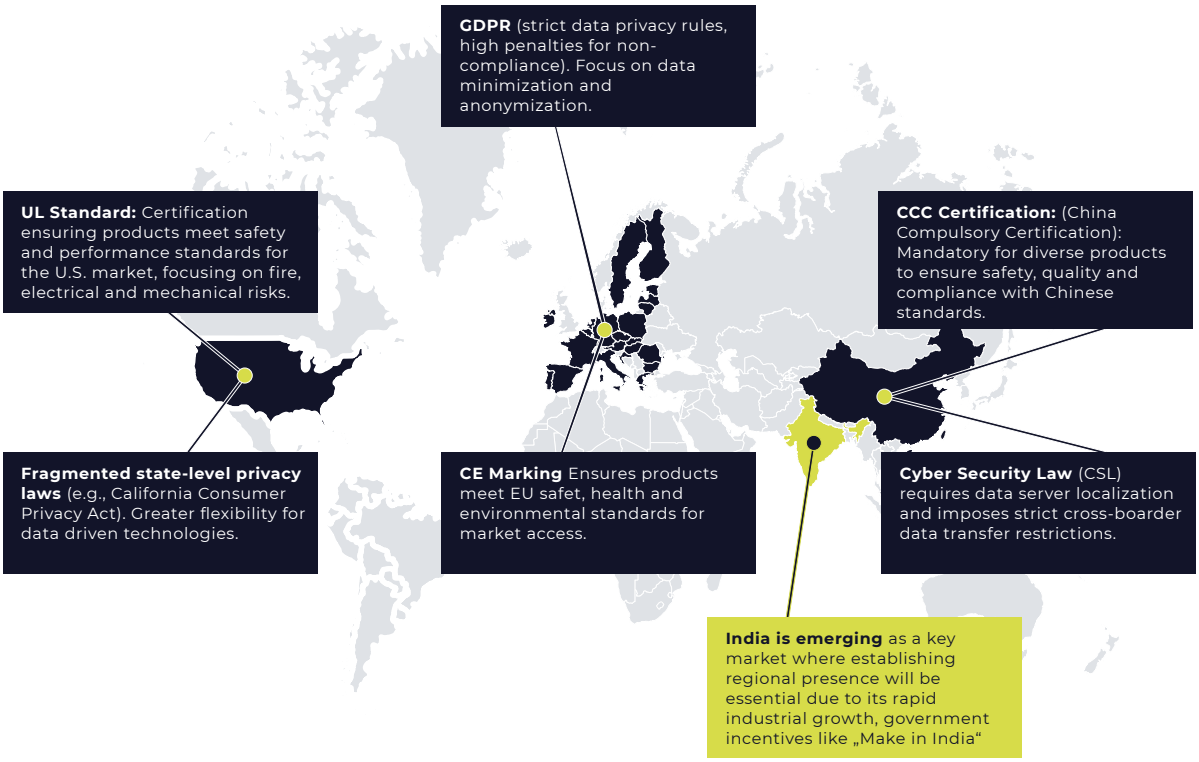

Figure 9: Regional requirements for cybersecurity

HOW

To achieve alignment, automotive suppliers must adapt their products to meet region-specific requirements, such as data privacy, health, safety, and environmental standards. This ensures tailored complexity differentiation for target markets. On an organizational level, establishing local R&D hubs fosters innovative solutions for regional challenges. Decentralized decision-making enables quick responses to customer demands and evolving requirements. From a business perspective, designing product variations and adding region-specific functionalities address local needs, while implementing localized service models, such as maintenance-as-a-service, strengthens customer relationships and market presence.

Source: California Consumer Privacy Act (CCPA); GDPR (General Data Protection Regulation); CCC Certification (China Compulsory Certificate); Cybersecurity Law (CSL)

OPPORTUNITIES

Adopting region-specific strategies offers numerous opportunities for automotive suppliers. Faster decision-making and streamlined product development reduce time-to-market, while local expertise helps create tailored solutions. Expanding the local footprint minimizes development and production costs, improving operational efficiency. Focusing on local requirements boosts sales by addressing cultural preferences, product standards, and customer demands. This alignment strengthens market competitiveness and positions suppliers as trusted partners.

RISKS

Decentralizing operations and focusing on regional needs introduces risks, such as inefficiencies, brand dilution, and non-compliance with regional standards. This can weaken global perceptions of reliability and lead to delays, impacting market share and customer trust. Suppliers must balance regional adaptation with maintaining global brand integrity and control.

Regional adaptation will be a key to navigating the increasingly fragmented global landscape. By balancing global integration with localized strategies, suppliers can enhance resilience, improve market access, and stay ahead of regulatory and trade shifts.

Looking ahead, those who take a proactive approach to innovation, efficiency, and sustainability will not only survive but thrive in the automotive industry of the future.

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ABOUT P3

P3 is an independent and international consulting company that offers consulting and engineering services, as well as software development for numerous customers. Since its founding in 1996 in Aachen, Germany, P3 always found new branches and has over 1900 employees in 26 locations in close vicinity of its customers.

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LIST OF ABBREVIATIONS

- CAGR: Compound Annual Growth Rate
- CBAM: Carbon Border Adjustment Mechanism
- CPR: Construction Products Regulation
- ELV: End-of-Life Vehicles
- ESPR: Ecodesign for Sustainable Products Regulation
- GDPR: General Data Protection Regulation
- IoT: Internet of Things
- MTP: Module Type Packages
- NBR: New battery regulations
- OPC UA: Open Platform Communications Unified Architecture
- PCF: Product Footprint
- PEF: Product Environment Footprint
- Re-X: Repair, Reuse, Recycle
- ROI: Return of investment
- TCO: Total cost of ownership