Transform Your Automotive Organization into an Intelligent Enterprise

Achieve Value with Intelligent ERP
The Power of Intelligent ERP

Support next practices with Intelligent ERP

The automotive industry is set to change more in the next 5 years than in the past 50. Disruptions in propulsion technology and infrastructure, the advent of new mobility business models, innovative manufacturing techniques, and connected ecosystems are fundamentally reshaping the needs and demands of customers. To successfully turn these seismic changes into competitive advantages, organizations – both established and startup – need to become intelligent enterprises. More important, companies need to unlock new revenue opportunities using the power of data-driven insights.

Personalized Mobility
The combination of autonomous driving, connected vehicles, ride sharing, and electrification is reshaping the mobility experience. Many automotive manufacturers realize that they need to find new and different ways to generate revenue using the connected nature of the autonomous vehicle. Intelligent technologies such as machine learning and the Internet of Things (IoT) are essential in interpreting the vast quantities of data consumers produce to optimize interactions and ensure the delivery of personalized mobility experiences.

Customer Centricity
An intelligent enterprise places the needs of its customers at the heart of all strategic decisions. Transformation – not only of the automotive buying experience but also of the customer experience throughout the entire lifecycle of the relationship – strengthens brand loyalty, promotes customer retention, and provides key insights into the market’s next move.

Hungry New Entrants
The scope of disruption in the automotive sector is unprecedented. New entrants, looking to leapfrog incumbents, are aggressively competing for market share around the world. At the same time, established players are investing heavily to stay competitive. Both kinds of organizations need to harness the power of data, the IoT, and machine learning to gain complete visibility and optimize their processes to compete effectively in this marketplace.

Intelligent Manufacturing
Intelligent technologies transform the ways mobility hardware supply chains and manufacturing happen. Automotive companies must be enabled to respond to new market expectations with real-time supply chain planning features that help them meet demand profitably. For example, using service parts software that uses the power of Industry 4.0 technologies, companies can share demand signals more easily and transparently across the entire supply network.

Enhance and Extend Next-Generation Processes with Intelligent ERP
Embedding intelligent technologies into SAP S/4HANA® is a key value contributor to enable the intelligent automotive enterprise. The principle of an intelligent enterprise is to automate, extend business processes, or even transform the entire business model. Intelligent technologies such as collaborative artificial intelligence, robotic process automation, and machine learning are the foundation to an insight-to-action-driven enterprise. Leading automotive companies have already begun the journey toward becoming an intelligent enterprise.
“Breakthrough business value in business processes must be applied across the entire value chain versus just embedding intelligence in siloed line-of-business applications. This is the basis for innovation and speed.”

Dr. Marco Spohn, Daimler AG
Magna International

“We are in the stage that we can, together with SAP, really influence the future of automotive. . . . It was a perfect match.”

Christoph Burgmayr-Posseth, Magna International

1 platform
For a single version of the truth

25%
Lower overhead costs

SAP S/4HANA
As the trusted real-time provider of vital business data that reflects business realities
Strategic Priorities in a Digital Age

This digital age is disruptive. Automotive companies need strategic priorities that drive transformation. SAP supports a reimagined set of end-to-end (E2E) business scenarios to support the strategic priorities of the digital economy.

\section*{Strategic Priorities in a Digital Age}

- **Be customer centric**
  As the market is constantly shifting, putting your customers (and their customers) at the center of your business is an imperative. Transformation not only of the buying experience but also of the customer’s experience throughout the entire lifecycle of the relationship strengthens brand loyalty, promotes customer retention, and gives you key insights into the market’s next move.
  \textit{E2E scenario: Lead to cash} – Contextualize the customer’s individual needs and provide a smooth, frictionless experience.

- **Deliver mobility services**
  Due to market trends, an increasing amount of automotive-related revenue will be derived from shared mobility, transportation as a service, and other digital services related to automotive. Therefore, OEMs, suppliers, dealers, and retailers are exploiting new, connected technologies to open up new business models and explore new possibilities for monetizing and offering innovative services.
  \textit{E2E scenario: Subscription model} – Redefine traditional vehicle ownership models to meet changing customer expectations.

- **Design connected cars**
  Throughout the value chain, companies are designing and developing new innovations that combine physical products with embedded sensors and software. By so doing, they can introduce capabilities and value beyond traditional components, vehicle systems, and all types of vehicles – and develop the capabilities to support the lifecycle of the products while in service.
  \textit{E2E scenario: Individualized product offerings} – Provide individualized products to end consumers to increase customer satisfaction.

- **Implement the digital supply chain and smart manufacturing**
  Digital technology on the shop floor and in the supply chain is not new. What is new is the way the entire value chain is intelligently connected to the rest of the business and can leverage predictive analytics to provide a more precise forecast of customer demand. With near-real-time insight into demand signals, managers can effectively adapt to short-term changes. Furthermore, they can position the company and supply chains to fulfill future customer needs.
  \textit{E2E scenario: Increase production with interactive demand and capacity management} – Improve productivity and reduce inventory.

- **Engage with a changing workforce**
  Two trends are dramatically reshaping the automotive workforce. First, the demographic shift from boomers to millennials requires new approaches to attract, retain, and develop the skills of a younger workforce. Checking the pulse of your workforce in real time ensures that your company can align experience with expectation. Workers have different experience and skill levels and new expectations for technology in the workplace. Second, the shift in focus from physical to smart products requires a new type of automotive worker. Software developers, data scientists, and artificial intelligence (AI) experts are needed, forcing companies to compete for talent with the likes of Google, Apple, and Facebook.
  \textit{E2E scenario: Attract, acquire, and develop the right talent} – Improve the effectiveness of talent acquisition, compensation, and retention processes.
Be Customer Centric

**Lead to Cash**

Understanding and putting the end customer’s point of view at the center of every decision is a key prerequisite for success in the digital age. This does not stop in the sales department but also applies to which products are built and what services are offered. Enabling real-time, 360-degree insight into customers and vehicles – and the ability to adapt and automate the lead-to-cash process with a real-time integrated and automated multichannel system – is essential.

### Traditional scenario

- **Leads have low visibility**, combined with slow routing and categorization, which results in spending time on the wrong opportunities.
- **Discovery and evaluation** offer incomplete insight into customers and vehicles, which makes responding to customers difficult.
- **Quote and order** is a complex and time-consuming manual process.
- **Uncertain availability checks** introduce doubts as to whether enough stock is available or can be produced or purchased on time.
- **Billing and revenue systems** are inflexible, making compliance and monetization difficult.

### A new world with SAP

**Immediate visibility** of leads along with a 360-degree view of customers and vehicles to accelerate the time to hand off leads and close.

**Consistent, accessible, and reliable** insight, making it easier to respond quickly to customers.

**Simpler quote and order system** with bundled offers.

**Seamless delivery**

**Consolidated invoicing** for a complete view of consumption.

### Top value drivers

**Improve**

- Customer satisfaction

**Reduce**

- Sales and service cost

**Increase**

- Revenue growth

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Deliver Mobility Services

Subscription Model

Emerging business models focus on providing complementary and alternative solutions to vehicle purchasing and leasing. The new business models are intended to attract new customers who value flexible and convenient choices for buying and leasing automobiles. Offerings need to be configured and priced based on new service business models and monetized based on value delivered to the customer. As automotive companies move from product-centric to customer- and service-centric offerings, they must implement these new business models. SAP® Customer Experience solutions and SAP S/4HANA provide capabilities that help companies pursue subscription or pay-per-use business models.

Traditional scenario
- Siloed approach results in several independent processes and no support for an end-to-end process for subscription-based models.
- Companies struggle to implement and run new business models efficiently and profitably.

A new world with SAP
- One integrated solution
- Support for the complete end-to-end process for subscription-based models

Top value drivers*
- Improve Customer centricity of sales engagements
- Increase Customer satisfaction and retention
- Increase Service revenue from new business models

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Design Connected Cars

**Individualized Product Offerings**

Differentiation and flexibility for vehicle options are more important than ever. As design complexity and collaboration between different groups become more important, the ability of engineering, procurement, and manufacturing to collaborate becomes more important. Automotive companies need the ability to provide their customers with individualized products faster and at a lower cost.

**Traditional scenario**

- Inefficient development process
- Treatment of every variant as a new product in the enterprise system
- Limited number of variants offered in the variant product catalog
- Existence of every variant as an independent product
- Inconsistency and errors in variant management downstream
- Individualized product or production engineering process
- Time-consuming and costly process
- Loss of efficiencies
- No variant referencing procurement, manufacturing, and service
- Inefficient and error-prone variant fulfillment
- High lead time and cost

**A new world with SAP**

- Solutions from SAP, including SAP S/4HANA and the cloud-based SAP Intelligent Product Design solution, provide a bill of materials (BOM) for configurable materials.
- BOMs contain all the components, dependencies, and routings needed to design, source, sell, and manufacture personalized vehicles.
- Rules-based management, helping ensure accuracy for product and production engineering of all variants
- Greater flexibility with support for smart products and multidiscipline designs
- Tailored product specifications, with a variant configuration interface between point-of-sale and sales systems, enabling greater consistency and fewer errors
- Integration with SAP Ariba® solutions, enabling supplier collaboration for lead times and accelerating time to market
- Improved efficiency through automatic updates of BOM and routing after engineering changes
- Personalized vehicles delivered quickly at the same price as an off-the-lot vehicle
- High customer satisfaction

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**Top value drivers**

**Faster**

- Time to market

**Lower**

- R&D costs

**Increase**

- In revenue from new products

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Implement the Digital Supply Chain and Smart Manufacturing

**Increase Production with Interactive Demand and Capacity Management**

Automotive companies face highly variable demand. The companies that can forecast demand effectively and shift resources optimally will be the most profitable. With near-real-time insight into demand signals, automotive leaders can have complete confidence in their strategy as they can dynamically adapt their organization to manage demand, supply, and capacity.

**Traditional scenario**
- Finite capacity production planning
- Limited options for alternative scenarios
- No interactive capacity adjustment
- No interactive simulation of long-term planning (batch runs)

**A new world with SAP**
- Use predictive MRP to check feasibility of demand versions considering availability of capacity and supply
- Provide recommendations and interactive planning to support capacity adjustment, sourcing decisions, and demand leveling

**Top value drivers**

<table>
<thead>
<tr>
<th>Improvement</th>
<th>Lower</th>
<th>Reduction</th>
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<tbody>
<tr>
<td>In on-time delivery</td>
<td>Inventory levels due to appropriately sized buffer levels and capacities</td>
<td>In revenue loss due to stock-outs</td>
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**Top value drivers**

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Engage with a Changing Workforce

Attract, Acquire, and Develop the Right Talent

Candidates today can present themselves or are targeted through an unlimited number of sources and channels. Often some of the best candidates are not even actively looking for job opportunities. Whether a “ready to switch” job seeker or a targeted top prospect, today’s talent won’t tolerate a painful recruiting process. This reality demands focusing on the candidate and thinking about new ways to attract and acquire the best talent. Companies can achieve faster onboarding of new employees or contingent workers thanks to automated user and role provisioning, while simplified integration setup and minimized replication errors further smooth HR processes. Real-time pulse checks of your workforce help ensure that your people are motivated and engaged.

Traditional scenario
- Longer time to hire
- Lower quality of candidate
- Troubled onboarding
- Costly integration across multiple systems for project assignment
- Disconnected ongoing skills development
- Manual time sheets and payroll processes

Legacy Systems
- Advertising
- Sourcing
- Job boards
- Engagement

Screening
- Slow screening of clients
- Uncertain hiring profile

Onboarding
- Manual onboarding processes
- Lack of repeatability

Performance Management
- Uncertain integration into ERP
- Manual compensation process
- Unfocused skills development plan
- More attrition

A new world with SAP
- Total workforce management
- Payroll and time management
- Submission and approval of time sheets
- Ongoing skills development
- Enriched experience management

Multiple sources – e-mail, social, past applicants; nurturing tools to engage candidates for talent pools; machine learning checks for bias, descriptions, and competitive salaries

Sourcing

Screening
- Fast application and screening tools
- Prediction of candidate success based on talent profile

Onboarding
- Automated offer and onboarding process
- Survey of recruiting and new-hire experience

Performance Management

Top value drivers
- Reduce Time to hire
- Reduce Cost per hire
- Faster Time to contribution

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Intelligent ERP Is the Foundation of an Intelligent Enterprise

An intelligent enterprise can be continuously enhanced and extended with business services and applications built on a digital foundation to create transformative business value.

Many automotive organizations, especially those focused on innovation or who prefer to be early adopters, have already begun this journey.
SAP Strategy – Deliver the Intelligent Enterprise

The Intelligent Enterprise connects experiences and operations using Experience Management solutions from SAP, our Business Technology Platform, and a suite of applications. The SAP Intelligent Enterprise Framework methodology incorporates these essential components to help customers achieve their business outcomes.

Experience – Experience data (X-data) from Experience Management solutions from SAP (Qualtrics) holistically measures and baselines stakeholder experiences across all touchpoints; prioritizes and predicts stakeholder needs and trends with key experience drivers; and acts and optimizes by tracking progress and experience improvement.

Intelligence – The Business Technology Platform provides unified data management to connect, discover, orchestrate, and manage both internal and external data; intelligent technologies and analytics to improve analytical and transactional workloads; and application services to simplify extension and integration across the intelligent suite.

Operations – The intelligent suite produces operational data (O-data) to automate day-to-day business processes, share insights across functions, and better interact with customers, suppliers, employees, and partners through applications embedded with intelligence.
# SAP S/4HANA Provides New Capabilities to Enable the Strategic Priorities of A&D Companies

## SAP S/4HANA Innovations

### Be Customer Centric and Offer Delivery Mobility Services
- Advanced variant configuration
- Solution quotation and billing
- Service request, order, and contract management
- Service quotation
- Quotation conversion probability
- 360-degree customer view
- Business solution portfolio
- Service ticket intelligence
- Subscription contracts, billing, and revenue management
- Service billing
- Advanced available to promise
- Production engineering and operations
- Extended service parts planning
- Subscription contracts
- Efficient field service management
- Real-time inventory
- Predictive stock in transit

### Design Connected Cars
- Project and portfolio management
- Product compliance
- Embedded software and compatibility management
- Production engineering

### Implement the Digital Supply Chain and Smart Manufacturing
- Alternative-based confirmations
- Supply assignment during back-order processing
- Production bill of materials management
- Routing management
- Analysis of delivery performance
- Predictive and live MRP
- Demand-driven replenishment
- Constraint-based planning
- Extended transportation management
- Extended production operations
- Production scheduling
- Prediction of slow-moving materials
- Extended warehouse management

### Engage a Changing Workforce
- Expense management
- Integration of SAP Concur® and SAP SuccessFactors® solutions
- Integrated, end-to-end HR processes
- Workforce planning and analytics
- Integration of SAP Fieldglass® solutions

## Economic Value Added

- Increased profitability (revenue and costs)
- Optimized usage of capital (working capital and equipment)

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SAP’s **Value Proposition** for Automotive Companies

SAP S/4HANA provides automotive companies with a proven framework to adopt industry next practices while attaining operational excellence across the full value chain.

**Strategy enablement**
- Accelerate creation of new business models
- Enter new markets and industries
- Accelerate synergy for mergers and acquisitions
- Run live (SAP Digital Boardroom)
- Reorganize on the fly
- Achieve greater speed and agility
- Run simply (master complexity)
- Manage risk and enable compliance

**Empowered employees**
- Higher productivity with a new, role-based way of working enabled by a responsive, intuitive SAP Fiori® user experience on all devices
- Role-driven, user-centric processes and self-service business intelligence for user empowerment
- Actionable insights on unified, real-time data and processes with built-in system suggestions for decision support

**Business benefits**
- 5%–8% increase in service revenue from new business models
- 10%–20% increase in customer satisfaction
- 10%–15% reduction in order-fulfillment lead time
- Up to 15% reduction in revenue loss due to stock-outs
- 10%–15% reduction in inventory levels
- Up to 5% reduction in total manufacturing costs
- 10%–20% increase in after-sales service revenue due to predictive maintenance
- 10%–20% reduction in employee attrition

**IT benefits and total cost of ownership (TCO)**
- Reduced data footprint
- Merging of OLAP and OLTP
- Elimination of many desktop clients
- Lower testing costs
- Simplified landscapes
- Native integration

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Customers Are **Achieving Value** with SAP Solutions

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**Dr. Marco Spohn, Daimler AG**

Breakthrough business value in business processes must be applied across the entire value chain versus just embedding intelligence in siloed line-of-business applications. This is the **basis for innovation and speed**.

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Lead the market with the latest innovations while creating a sustainable, flexible, and agile IT environment. Look at how Daimler AG is deploying a next-generation global order and supply solution with SAP S/4HANA to remain competitive and deliver key capabilities successfully to its business and its valued customers.
Customers Are Achieving Value with SAP Solutions

Magna International

Industry
Automotive

SAP solution
SAP S/4HANA

Customer Web site
www.magna.com

Click here to watch the customer testimonial video.

Magna International is a leading global automotive supplier with 92 product development, engineering, and sales centers in 28 countries. With the help of SAP S/4HANA Cloud, Magna International has a centralized view of its business operations with accurate, real-time data and process simplification.

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For the first time in the history of Magna, we can be up to date every 90 days.

Christoph Burgmayr-Posseth, Magna International
Customers Are Achieving Value with SAP Solutions

OSRAM Continental

OSRAM Continental GmbH employs approximately 1,500 employees at 16 locations worldwide to develop innovative lighting solutions that take automotive lighting to a new level – enabling the more connected, safe, individualized, and sustainable mobility of the future. To facilitate this innovation, the company needed expert support to help it create new business systems quickly and hit the ground running.

“[SAP] helped us build strong roots using SAP S/4HANA and SAP Model Company services, along with tools and processes to speed implementation. This has allowed us to create a new company that will rethink the future of automotive lighting and play a decisive role in the market.”

Harald Renner, Chief Financial Officer, OSRAM Continental GmbH

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Harald Renner, Chief Financial Officer, OSRAM Continental GmbH

Click here to read the business transformation study.
Customers Are Achieving Value with SAP Solutions

Nanjing Iveco Automobile Co. Ltd. (NAVECO) produces and sells buses, trucks, and off-road vehicles. As manufacturing volume increased, its legacy ERP system began to struggle under the additional workload. With its partner Deloitte, NAVECO built a new back office that transformed production planning, sales and distribution, finance, and procurement operations to keep pace with its booming business.

SAP S/4HANA has helped us make our manufacturing operations significantly leaner and more productive so that we can improve customer service and sharpen our competitive edge.

Min Xie, Head of IT, Nanjing Iveco Automobile Co. Ltd.
Customers Are Achieving Value with SAP Solutions

The connected vehicle allows established companies such as ERGO Mobility Solutions GmbH to keep ahead of competitors by deploying new business models with the help of SAP S/4HANA. Enabled by SAP’s scalable and flexible platform, ERGO was able to introduce profitable on-demand and usage-based insurance products. The company saw efficiencies across the entire value chain, thereby providing the end user with a near-seamless, high-quality experience.

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Our core objective is to develop digital services that help secure risks arising from what we call ‘new mobility.’

Karsten Crede, Chairman, ERGO Mobility Solutions GmbH
Driven by automakers’ desire to make their vehicles safer, UNO MINDA, an automotive supplier, sought to integrate more sophisticated telematics and advanced driver assistance systems into its product portfolio. However, it needed to modernize its supply chain and improve its collaboration with suppliers to meet customer demand. After migrating to SAP S/4HANA, UNO MINDA dramatically sped up processing time and refined business processes.

We have been successful in improving transparency across the entire value chain of the business. Changes like material valuation in multiple currencies enable seamless transactions with suppliers.

Nirmal K. Minda, Chairman and Managing Director, Minda Industries Ltd.