

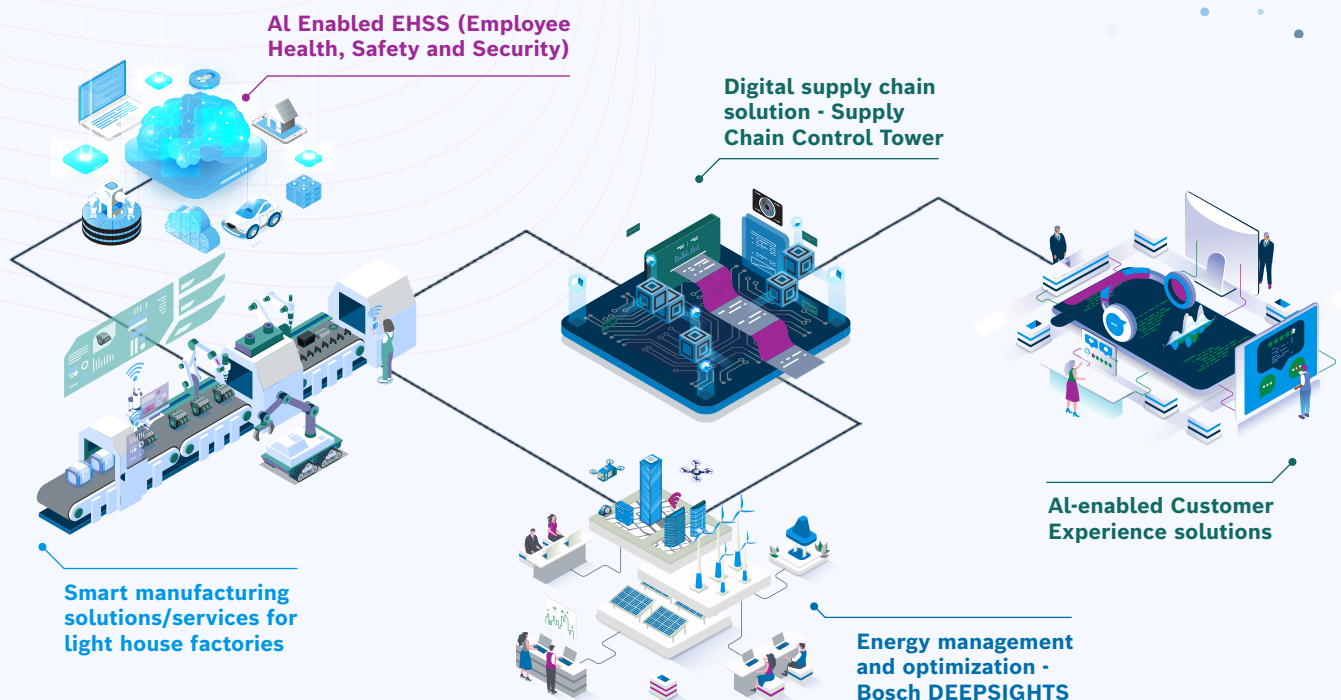
# **DIGITIZE YOUR MANUFACTURING WITH BOSCH SDS SMARTER, AI-POWERED SOLUTIONS**

From sourcing to supply-chain,  
and floor automation to safety:  
we enable your smarter digital  
transformation



Bosch Software and Digital Solutions (SDS), a global business unit of BGSW and a fully owned subsidiary of Robert Bosch GmbH, leads the way in AI integration for manufacturing, transforming smart setups, energy management, supply chain control, customer experiences, and worker safety with seamless AI-enabled solutions.

## **Our expertise includes**



**Let's explore each of our areas of expertise in detail**





## Smart Manufacturing

Bosch has long been a trailblazer in the Smart Manufacturing arena, setting the standard by fully digitalizing and automating its factory floors around the world, including setting up and operating light house factories.



### Our Solutions/Services



#### AI-enabled Asset Management & Monitoring



**Digital Simulation/Virtual Prototyping:** Virtual models to optimize factory workflows and layouts before physical installations.



**Digital Twin (3D Process/Asset Twin):** Unity WebGL and Bosch Digital Twin solutions to create 3D models for process visualization and equipment management, enabling real-time failure predictions.



**Predictive Asset Maintenance:** AI analyzes asset performance to anticipate issues, reducing downtime and optimizing maintenance schedules.



**Gen AI Virtual Assistant in Manufacturing:** A virtual assistant to enhance shop floor operations, boosting efficiency and communication.



#### AI-enabled Manufacturing Operations



**Scrap Reduction in Manufacturing Cycle:** AI-driven analysis to minimize waste by optimizing production data, enhancing efficiency and reducing costs.



## AI-enabled Quality Control



**Quality Management (EOL Inspection):** Computer Vision and XR-based inspection technologies to ensure precise quality checks at the production line's end.



**Condition Monitoring:** Real-time quality monitoring to ensure optimal production performance.



## AI-controlled Customer Service



**Gen AI enabled Customer Service:** Enhancing Field Service Management and Operations for improved efficiency and customer satisfaction.

## Global impacts of our #smarterdigital solutions/services

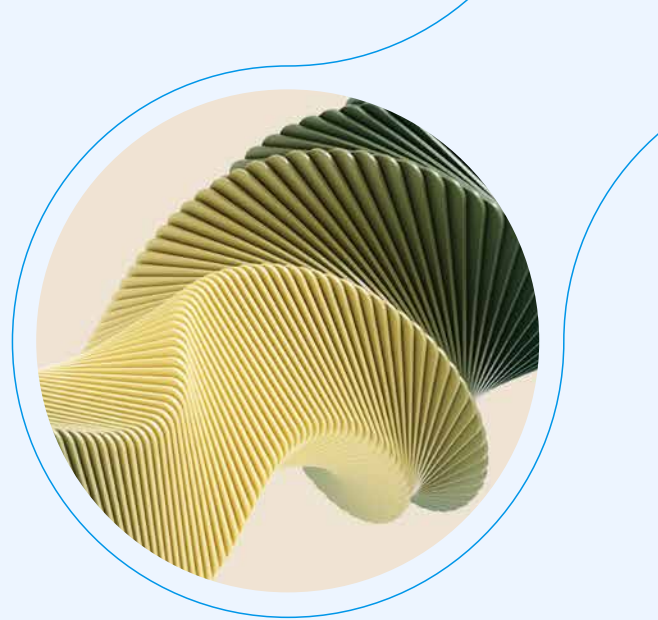
- Bosch SDS' AI scrap reduction solution decreased the scrap residue for a client by 60%.
- Improved visual quality inspection accuracy by 40% for the client, using our Computer Vision and XR-based End of line Inspection services.
- Reduced downtime for client's electric oil pumps by 26% through AI-enabled predictive maintenance.





## Digital Supply Chain

Bosch SDS extends its smarter digital expertise across the entire supply chain, driving automation in warehouses, logistics, and transportation.



### Supply Chain Control Tower

Bosch's digital supply chain solution is a connected, decision support system that enhances decision-making and agility by visualizing and tracking critical metrics and events across the supply chain. Leveraging data, AI/ML, and analytics, it drives smarter digital transformation of warehouse automation, logistics, and transportation management.

### Our Capabilities



**Planning:** AI-enabled demand forecasting tools to optimize demand planning to ensure inventory optimization and reduce cost of inventory, in alignment with market trends.



**Sourcing & Procurement:** AI-enabled and digital sourcing practices and collaboration with suppliers to ensure timely procurement of materials, enhance quality and reduce costs.



**Design and Development:** Smart manufacturing techniques to improve production efficiency, warehouse management, inventory management and reduced lead times and maintain high-quality standards.



**Delivery and Logistics:** Robust real-time tracking systems and traceability in logistics to enhance distribution efficiency, ensuring superior customer service through timely delivery.

### Global impacts of our #smarterdigital solutions/services

- Centralized tracking for 40 logistic service providers using our Supply Chain Control tower.
- More than 46,000 hours of human effort saved.



## Smart Energy Management and Optimization

Bosch SDS empowers energy management and optimization through intelligent data utilization.

### Bosch DEEPSIGHTS

Our cloud platform, DEEPSIGHTS, fosters sustainability with tailored energy management, offering real-time insights to monitor, analyze, and optimize equipment and processes for greater energy usage transparency and accountability.



### Our Capabilities



**Sustainability Framework:** A 5-step system for strategic energy and utility management.



**Condition-Based Monitoring:** Digital indicators for remote tracking and optimized asset performance.



**Advanced Analytics:** Multi-level engines for issue tracking and energy cost management.



**Custom KPIs:** Easily identify relevant KPIs for your sustainability goals.



**Asset Class Coverage:** Comprehensive monitoring and analytics across diverse asset classes.

### Global impacts of our #smarterdigital solutions/services

- Achieved €1.4M in annual savings on energy and coal costs through process and utilities optimization.
- Gained 20% productivity improvements from process and utilities digitization.
- Reduced aluminum strip breakage by 10% through AI root cause analysis.
- Saved over 3,300 MWh in energy and reduced CO2 emissions by 2,800+ tons through digitalization and energy analytics.



## Digital Customer Experience

Bosch SDS has revolutionized customer service by integrating AI, XR, and VR. This innovative approach reduces repair queues, simplifies manuals, streamlines complex designs, and predicts equipment failures before they occur.



### Our Solutions



**XR Assisted Maintenance and Remote Assistance:** XR solutions provide sequenced instructions for maintenance and remote support, reducing queues and manual hassle with HoloLens. It analyzes issues, finds solutions, and offers step-by-step guidance.



**XR Based Training/Up-skilling:** VR training enhances employee skills through engaging, realistic experiences and interactive guides.



**Contact Center Automation:** Bosch SDS improves contact center efficiency by routing customer issues, like equipment problems, to the right team using natural language processing.



**Gen AI-Based Incident Management:** Gen AI streamlines incident management by generating tickets based on historical data. It sends the ticket to the supplier with tailored solutions when a manager reports a pump issue.

### Global impacts of our #smarterdigital solutions/services

- Cut average clearing process handling time by 90%, reducing it from 3 minutes to just 20 seconds.
- Decreased customer response turnaround from 1 day to 20 seconds.





## AI Enabled EHSS

(Employee Health, Safety and Security)

Worker safety is non-negotiable for any organization. At Bosch SDS, we recognize this and have developed AI-embedded safety products for our factories and global partners alike.



### Our Capabilities



**Smart Workplace Solutions (on Shopfloor, Factory):** We provide Computer Vision based safety solutions for shop floor and factory technicians, including theft detection, workforce monitoring, PPE compliance, danger zone alerts, and surveillance.



**Smart Collision Detection (on Shopfloor, Factory) -** We implement intelligent collision detection to enhance mobility, providing AI-powered awareness that ensures safer navigation of workers in dynamic factory environments.



## Bosch Software and Digital Solutions

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