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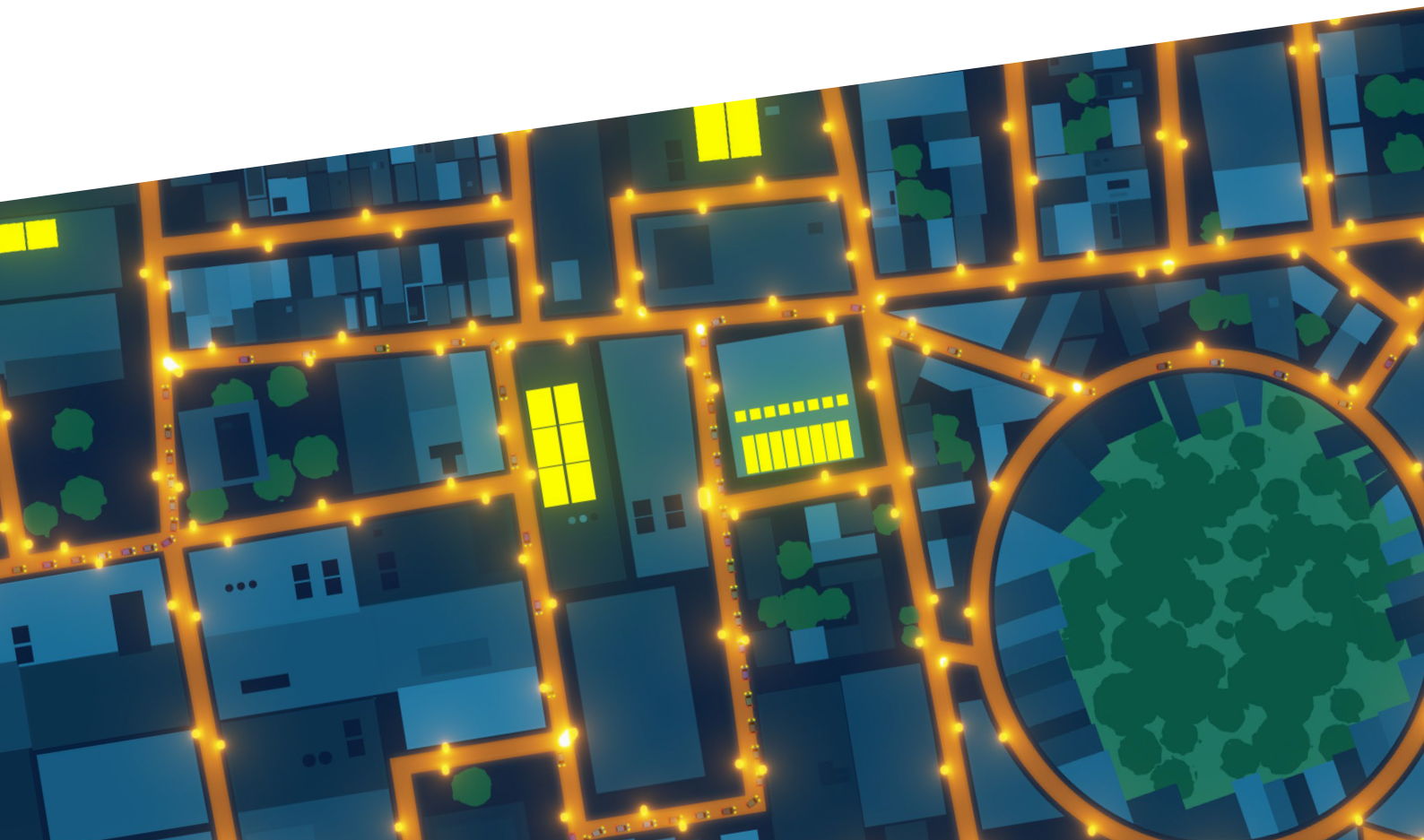
SAP

SAP Business AI

Make AI a game changer in the Modern Digital Supply Chain



The importance of an efficient, agile, and resilient supply chain has made it to the top of CIOs' and CTOs' digital transformation agendas. According to McKinsey[1], addressing opportunities and constraints of all the involved business functions requires an integrated, end-to-end architectural approach, and AI has surfaced as a potential game changer. With its ability to analyze huge volumes of data, understand relationships, provide visibility into operations, and support better decision-making, AI becomes instrumental in enabling the modern digital supply chain.

Today's Supply Chain Challenges

Traditionally supply chains have sought to achieve lean operations and minimize costs. Today they need to predict, prepare, and respond to rapidly evolving demand and a continually changing product and channel mix.

Supply chains are becoming more complex, impacting everything from design to sourcing, production, distribution, and maintenance. Unpredictability brought about by unexpected events, such as natural disasters, pandemics, and political instability adds to the challenge with far-reaching implications on the availability of labor, equipment, and materials. Plus, with a lack of transparency across the supply chain, companies become more vulnerable to phenomena such as demand distortion and risk having their costs spiraling out of control.

Despite substantial digitalization investments over the past several years, companies still struggle to deliver the capabilities different business functions need to manage the supply chain. The many functional teams involved in supply chain-centric processes continue acting in silos, with misaligned objectives and limited visibility outside their core responsibilities.

1 McKinsey: Succeeding in the AI supply-chain revolution, April 2021

AI is a game changer in Supply Chain Management

Despite supply chains becoming more complex and harder to manage, AI-enabled supply-chain management has allowed early adopters to improve logistics costs by 15 percent, inventory levels by 35 percent, and service levels by 65 percent, compared with slower-moving competitors[1].

> AI technology provides the **visibility and foresight** to take full advantage of increasingly complex supply chains with the ability to **anticipate risks and take immediate corrective actions**.

For example, it becomes possible to leverage real-time Internet of Things (IoT) feeds from moving goods across the globe to optimize inventory management or use prediction models and correlation analysis to understand causes and effects in supply chain interactions. The possibilities are countless.

But while AI can help harness the complexity of today's supply chain, many companies do not have sufficient experience to scale AI initiatives across their business functions – a requirement to reap the reward of supply chain modernization.

1 McKinsey: Succeeding in the AI supply-chain revolution, April 2021

Why Partner with SAP to AI-power your Digital Supply Chain

SAP is uniquely positioned to help companies strategically adopt AI across the entire design-to-operate business process. This integrated supply chain-centric business process enables companies to connect digitally and optimize their operations across product and asset lifecycles. SAP Business AI is embedded into the SAP applications that power the design-to-operate business process and leverages your business data and context responsibly to deliver relevant and reliable outcomes.

With a connected design-to-operate business process, different functional teams can easily communicate and balance supply chain trade-offs. For example, with visibility into planning, manufacturing, and logistics, it is possible to use advanced analytics to simulate whether it is best to pay for overtime production at a given plant or incur transportation costs from different plants.

> Multiple functional teams can also **collaborate on new business models, assess a situation**, and **negotiate the best overall outcome**.

Additionally, supply chain planning and manufacturing can work together to model and refine actionable production and transportation plans that align schedules across business functions and with trading partners. And all business functions can gain greater visibility and foresight through an AI-powered supply chain control tower that detects and analyzes activities across the extended supply chain and takes preventive actions to mitigate bottlenecks.

The result is an efficient and collaborative effort across the enterprise that grows agility and resilience across the supply chain.

Transforming the Design to Operate Process with SAP AI

Supply chain efficiency, agility, and resiliency profoundly impact companies' profitability and competitive advantage. And supply chain considerations must be factored in at each phase of the design to operate process, starting with the idea to market and through the plan to optimize fulfillment, make to inspect, order to fulfillment, and acquire to decommission phases.

With AI embedded in SAP Digital Supply Chain solutions, companies can transform their design to operate process by optimizing all activities related to identifying, acquiring, designing, prototyping, and decommissioning products or services. The business impact is far-reaching, allowing SAP customers to streamline manufacturing and strengthen the entire product lifecycle management (PLM.)

Idea to Market Phase

In the idea-to-market phase, AI enables product development teams with insights from past projects and business data to accelerate the time-to-market and increase the profitability of their products.

For example, expediting costing processes is important in early design when product details are still fluid and development teams are exploring multiple options. AI-powered search capabilities in SAP Product Lifecycle Costing allow costing engineers to identify and price needed materials quickly. AI algorithms analyze large volumes of historical project data to identify and rank components that fit the profile. As a result, multiple bills of materials can be created in minutes, improving the cost-processing efficiency and accuracy.

Predicting product performance is essential to manage risk and deliver successful products. AI in SAP Enterprise Portfolio and Project Management simplifies this task by analyzing cost and revenue patterns from past projects to forecast a new product performance. With these insights, product development teams can build portfolios that are more likely to meet profitability objectives.

Ensuring that spare parts can easily be identified and purchased during the product lifecycle significantly lowers maintenance costs and improves customer satisfaction. AI embedded into SAP Enterprise Product Development enables design teams to speed up the creation of interactive spare parts catalogs. It automatically generates hotspots from a 2D image of an asset and then maps them to corresponding items in SAP S/4HANA or SAP Commerce Cloud catalog. This intelligent automation improves product serviceability and saves field technicians precious time.

Plan to Optimize Fulfillment Phase

In the plan to optimize fulfillment phase, AI improves supply chain processes and manufacturing fulfillment strategies. With the power of AI, organizations can synchronize sales and operations planning (S&OP), forecasting and demand, response and supply, demand-driven replenishment, and inventory planning, making it easier to detect signals and ensure business continuity in times of supply chain disruption.

For example, having a complete picture of the daily demand is essential to optimize profitability, deliver high customer service levels, and enable accurate supply planning. AI-powered demand-sensing algorithms within SAP Integrated Business Planning for supply chain (IBP) can produce accurate short-term forecasts

daily by efficiently parsing high volumes of diverse data – impossible to achieve with traditional forecasting methods.

ZF Friedrichshafen, a global technology innovator in mobility for the automotive industry, utilizes demand planning capabilities in SAP IBP to quickly anticipate and adapt to shifting demand. By using AI embedded within SAP IBP, ZF Friedrichshafen decreased its forecast turnaround time by 92%, freeing planners from time-consuming, repetitive tasks. As a result, the company now enjoys flexible control over levels of the supply chain, including location, product, channel, and customer.

ZF Friedrichshafen **decreased its forecast turnaround time by 92%** with the help of AI in SAP IBP

ZF | AFTERMARKET

AI in SAP IBP can also automatically identify meaningful thresholds and raise anomaly detection alerts when needed. For example, with AI-powered master data anomaly detection and recommendations, analysts receive alerts when demand or supply jobs run too long.

Make to Inspect Phase

In the make to inspect phase, AI helps ensure manufacturing accuracy, reduce inventory-carrying costs, and meet delivery deadlines. AI embedded in SAP Digital Manufacturing Cloud improves the productivity of shop floor operators by simplifying visual inspection tasks. Algorithms built into the SAP solution process images of the manufactured parts, making it easier to identify defects and log them with the appropriate nonconformance code to ensure defective parts are appropriately handled.

AI-powered manufacturing analytics within SAP S/4HANA helps optimize resource orchestrations by automatically dispatching manufacturing operations to available resources. It reduces inventory-carrying costs with prompt detection of slow-moving materials and increases supply chain efficiency with accurate delivery date predictions.

Acquire to Decommission Phase

In the acquire to decommission phase, AI enhances the lifecycle management of assets. Leveraging AI, IoT, and rule-based frameworks, SAP customers can correlate sensor data, inspection results, and historical maintenance records to enable predictive and prescriptive maintenance strategies. For example, AI models in SAP Predictive Asset Insights trained on historical data can detect anomalies in live data from equipment sensors and generate a maintenance backlog to address the issue.

> With adequately trained AI models, it is also possible to **determine the probability of impending equipment failures** and deliver **advanced warnings to maintenance and operations**.

AI also enhances the productivity and efficiency of the technician. For instance, technicians can simply upload 2D images of an asset into SAP Enterprise Product Development to have AI algorithms automatically generate hotspots and map them to images of corresponding items in S/4HANA and the interactive 2D SAP Commerce Cloud catalog. This intelligent automation speeds up the process of creating interactive spare parts catalogs and the purchasing of spare parts immensely, leading to faster servicing.

Apart from servicing equipment in the field, a technician spends most of their time traveling from one place to the other. In order to optimize this and utilize a technician's expertise more, SAP Field Service Management now uses intelligent metrics to predict realistic driving times and distances. This is achieved by the inclusion of historic and live traffic data during optimization of schedules.

By partnering with SAP, companies can transform every aspect of their supply chain management with AI-powered insights, recommendations, and automation built into SAP applications and then scale and extend these capabilities across the entire design-to-operate business process.

More information about SAP Business AI can be found at www.sap.com/ai.

Contact multi-award-winning SAP partner Vision33 today:

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