

Artificial Intelligence Executive Conference

explore the power of AI to transform semiconductor design & manufacturing

**SAP and PDF AI Enterprise Solutions
for Semiconductor Manufacturing**

SAP



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Key Challenges for AI in Manufacturing Organizations

Enterprise Implementation & Value Realization



Financial and manufacturing data availability

Combine financial and operational data for complete visibility, efficiency and performance



AI technology foundation and eco-system

AI eco-system partners and investments that keep pace with new technologies



AI solutions that solve real problems

Accelerate processes and optimize decisions with AI-powered data-driven insights



Security and data privacy

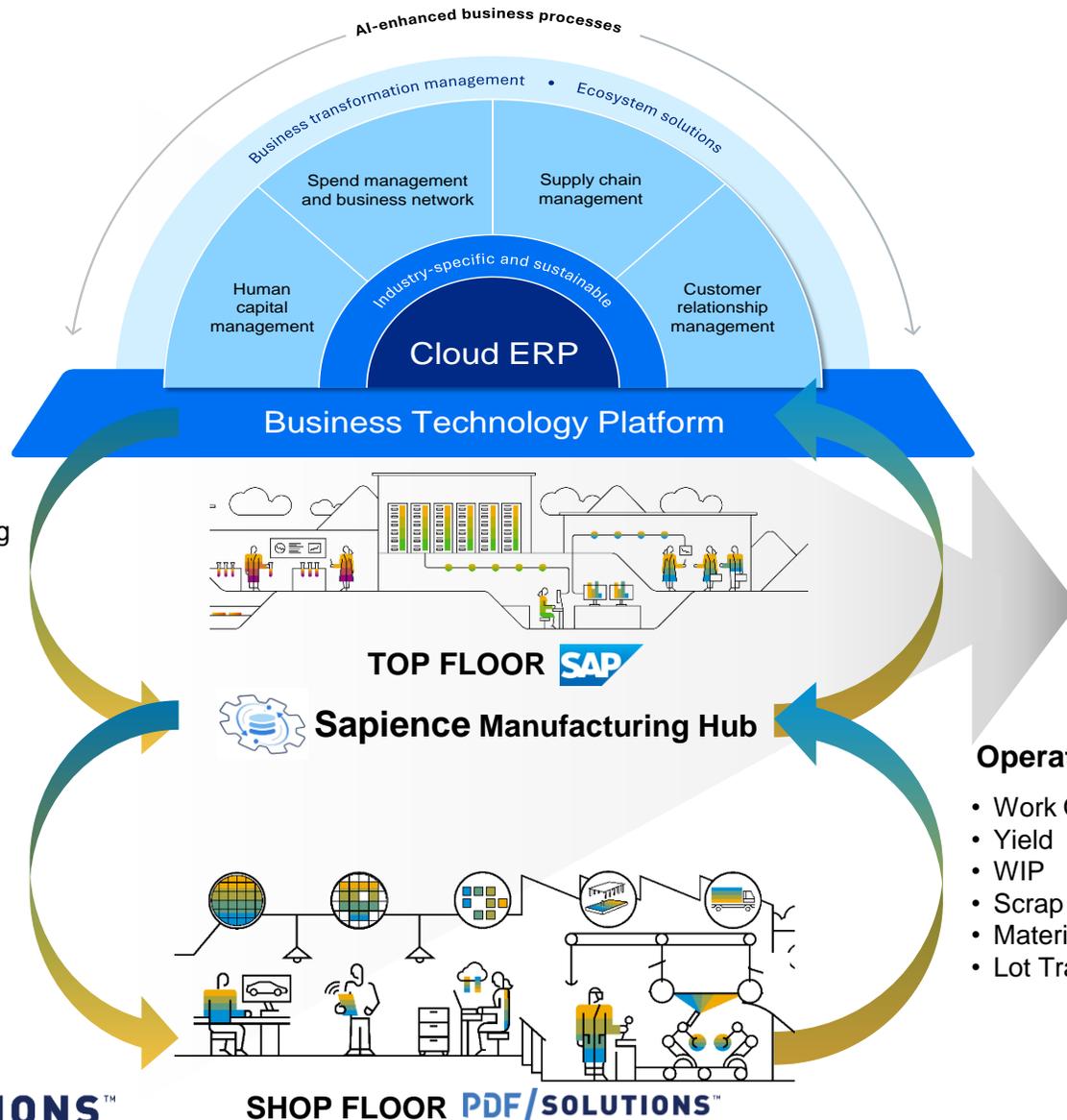
Security and data privacy at the core of every system and process

AI accelerates achieving business goals



Enable AI by Connecting the Shop Floor to the Top Floor

Overview of the Scope, Capabilities and Business Benefits



Business Benefits

Combine financial and operational data for complete visibility, efficiency and performance

IMPROVE

- Customer satisfaction** with order visibility and on-time delivery
- Profitability** with accurate operational cost insight and analysis
- Product order management** and efficiency
- Quality** with batch traceability/lot genealogy & supply chain management efficiency
- Yield loss** and excursion event recovery efficiency to minimize impact on revenue & business plan

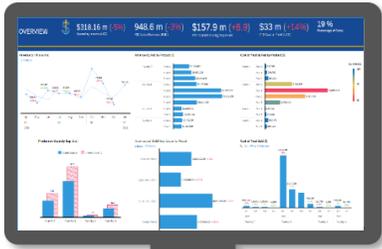
ENABLE

- Accuracy and performance** of data transformation, aggregation, and harmonization of top floor and shop floor
- AI and Analytics** based solutions that leverage factory data to provide real time insights into business and manufacturing ops

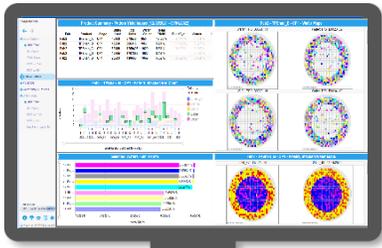
PDF & SAP Industry Cloud Solutions

Cost of Yield Analytics

- Improve yield ramp to reduce cost of non-quality
- Increase revenue from new products



Finance
(SAP ERP)



Operations
(PDF Solutions)

WIP Management

- Real-time production control with integration to MES at shopfloor
- Identify bottle-neck operations and improve on-time order fulfillment



Operation / Step Time



Operation / Equipment / Step Time

Op Product Costing

- Monitor actual cost at process and equipment level
- Reduce cost of non quality



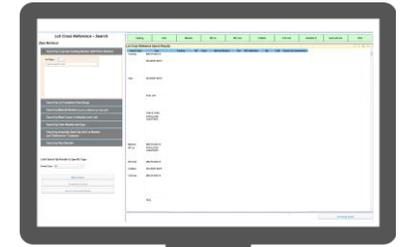
Product Costing Dashboard
(SAP ERP)



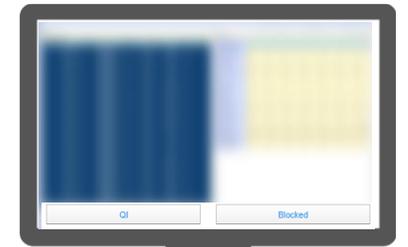
Consumable Variance
(PDF Solutions)

RMA Quality Shield

- Reduce defect root cause identification time
- Contain risky material and Improve customer satisfaction



Lot Genealogy / xRef
(PDF Solutions)



Lot Containment
(PDF & SAP ERP)

A Key Challenge for Organizations Worldwide

Becoming more agile and innovative

Transformation drivers

 Customer experience

Meet rising customer expectations by delivering more exceptional and personalized experiences

 Technology advancements

Keep pace with new technologies

 Operational efficiency

Refine processes, increase efficiency, reduce costs, and improve productivity

 Competitive pressure

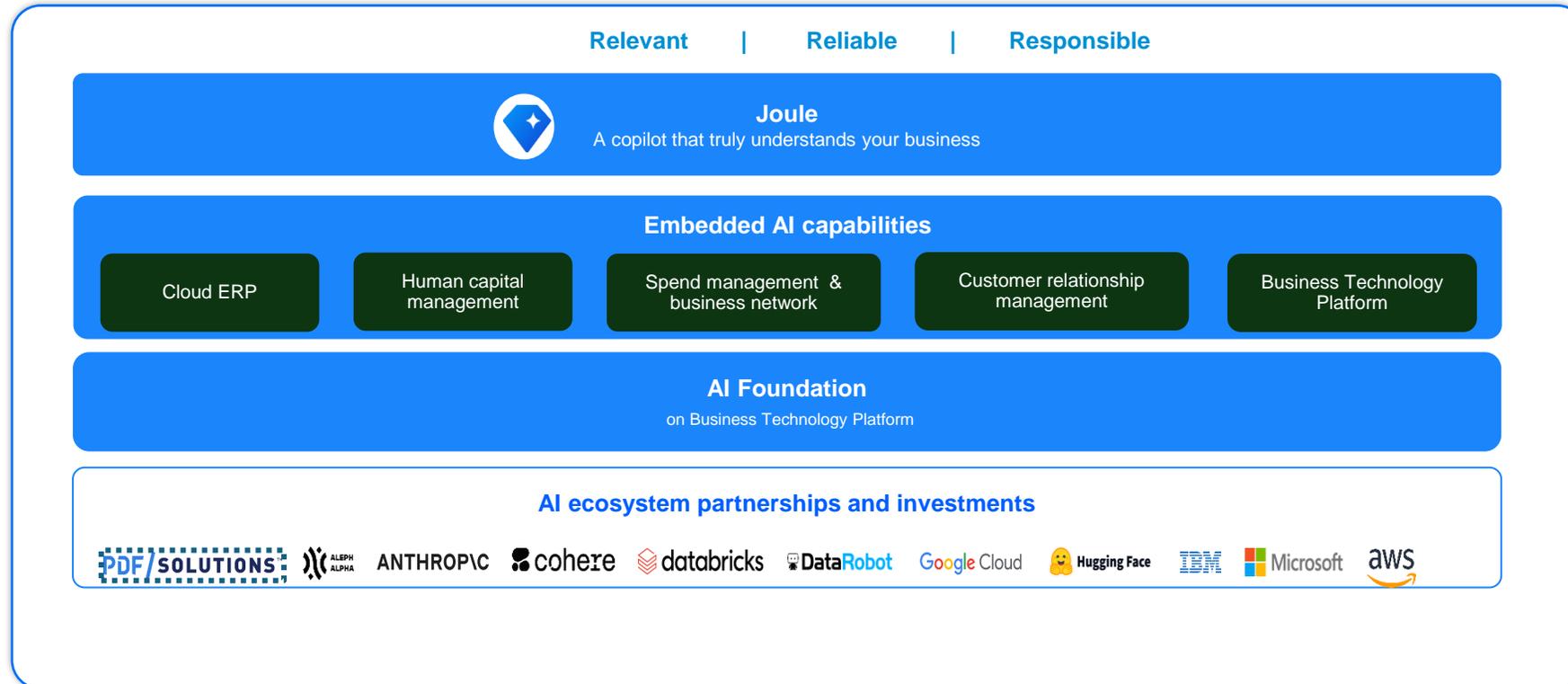
Stay ahead of competition and grow market position

AI accelerates achieving business goals



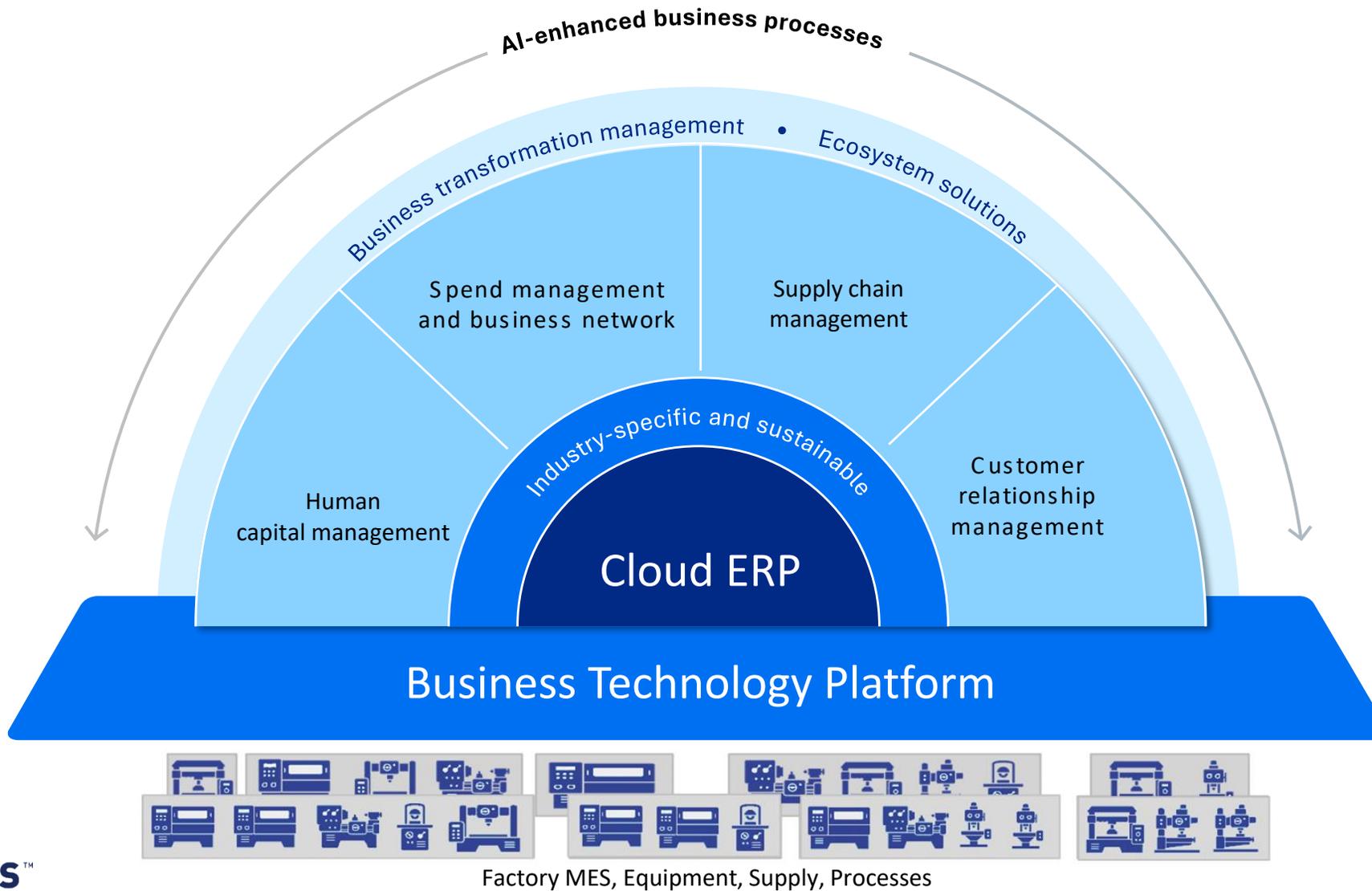
PDF and SAP AI for Enterprise Resource Planning

- PDF & SAP incorporating Joule LLM & PDF AI capabilities



AI Across the SAP Cloud Portfolio

Harness AI enhancements throughout all core processes



Introducing SAP Joule, the AI Copilot

Revolutionize how users work with SAP systems

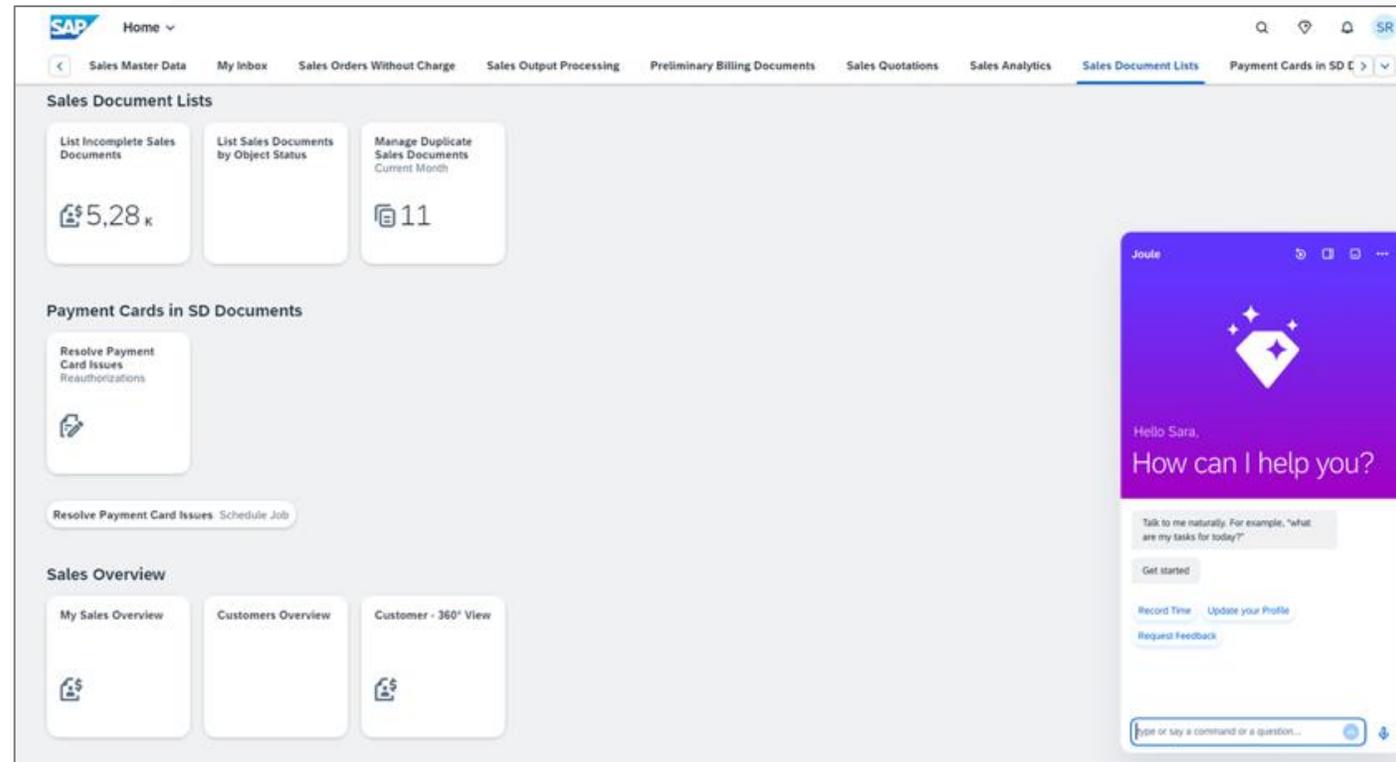
Joule is the AI copilot that truly understands your business allowing users to interact with SAP solutions just by asking questions

Streamlined and effortless access

to comprehensive help content and valuable information, conveniently available in near real-time.

Tailored information delivery based on the user's specific context, ensuring that only relevant and applicable details are provided.

Immediate and concise responses to inquiries through concise summaries of search results, ensuring quick understanding and intuitive navigation.



High Tech Industry | SAP Gen AI Use Case

“ The GenAI Supply Chain Troubleshooter will be a key enabler for AMD to manage the sales order commit process by increasing the overall effectiveness and automation of the process. It will allow us to react faster to supply chain disruptions. ”

Rajeev Jain
Sr. Director, Supply Chain Planning



Solving Supply Chain Hurdles with Generative AI

AMD



CHALLENGE:

At AMD, our supply chain specialists perform critical reviews and root cause analyses when sales orders change from original customer facing ship dates. We work to unravel the complexities behind each change, from dates to quantities, initiating a laborious process of up to 14 manual verifications. This process, pivotal for seamless operations and transparent communication with planning and customer teams, is currently a tapestry of time-intensive tasks. We're committed to transforming this challenge into an opportunity for high performance, efficiency and clarity in our supply chain management.

SOLUTION:

We enhanced sales order management with the GenAI Supply Chain Troubleshooter tool, integrated with SAP S/4HANA and built on the SAP Business Technology Platform. This novel approach provides deep analysis of sales order commitments, offering enhanced clarity on confirmations and product allocations, supply shortages, and other critical issues. It empowers AMD with actionable insights, propelling our supply chain towards higher efficiency and responsiveness. The implementation of an AI-powered chat interface simplifies complex supply chain interactions into conversational engagements, offering a groundbreaking level of user-friendliness.

OUTCOME:

Our adoption of a digital Generative AI supply chain experience will help to improve operations. Our intelligent assistant enables specialists, planners, and customer-facing teams to pinpoint and resolve order issues efficiently through conversational language. This seamless interface will streamline decision-making, elevate customer service, and accelerate corrective actions, hopefully propelling AMD to the forefront of supply chain innovation. The tool is not only identifying issues but also providing actionable recommendations, setting a new benchmark for problem-solving tools in enterprise resource planning.

90%

Reduction in time and cost spent on root cause analysis projected

10,400

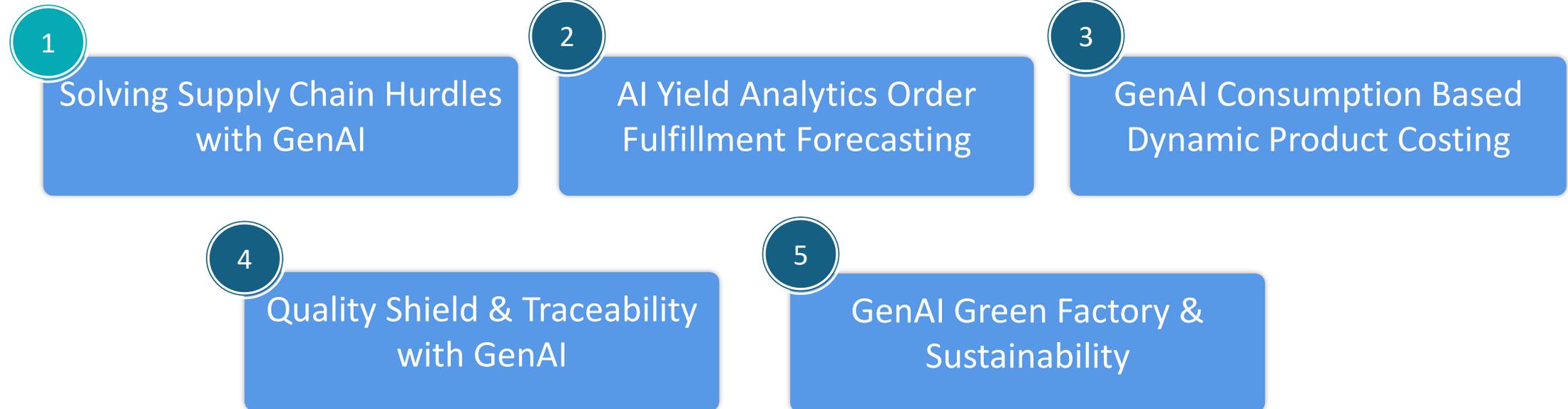
Orders analyzed each year with GenAI Supply Chain Troubleshooter

3,120

Hours of headcount productivity to be saved each year

SAP and PDF AI Solutions Summary

- Gen AI solutions that are most valuable based on customer feedback:

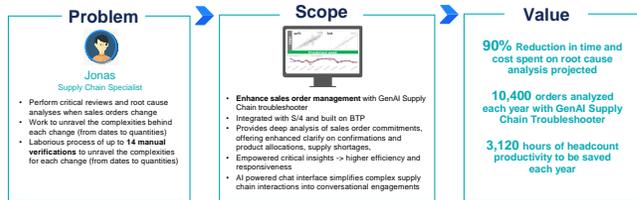


PDF and SAP gen AI Solutions

1

Solving Supply Chain Hurdles with GenAI

1 Solving Supply Chain Hurdles with GenAI

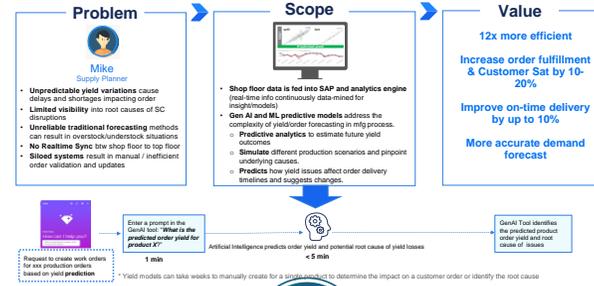


Deployed and in production

2

AI Yield Analytics Order Fulfillment Forecasting

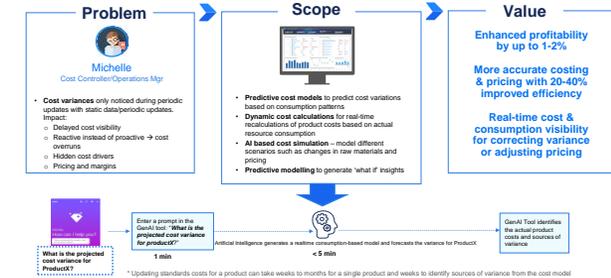
2 AI Yield Analytics for Order Fulfillment Forecasting



3

GenAI Consumption Based Dynamic Product Costing

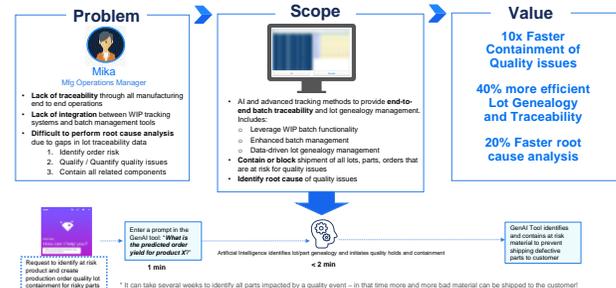
3 Gen AI Consumption Based Dynamic Product Costing



4

Quality Shield & Traceability with GenAI

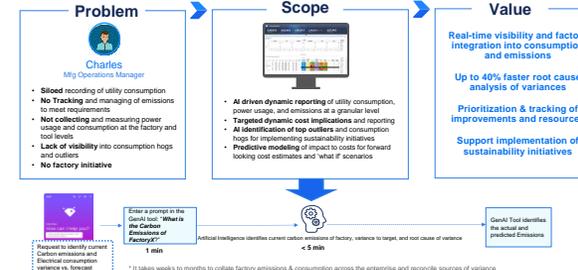
4 Quality Shield & Traceability with GenAI



5

GenAI Green Factory & Sustainability

5 Gen AI Green Factory Sustainability



Custom AI Scenarios

Unlocking value

Generative AI scenarios are purpose-built for your unique business needs.

Create value

Personalize AI solutions to ensure maximum impact and efficiency.

Faster innovation

Accelerate AI adoption for the most critical business processes via the generative AI hub in SAP BTP.

New competitive edge

Differentiate with solutions specifically tailored to your industry's needs.



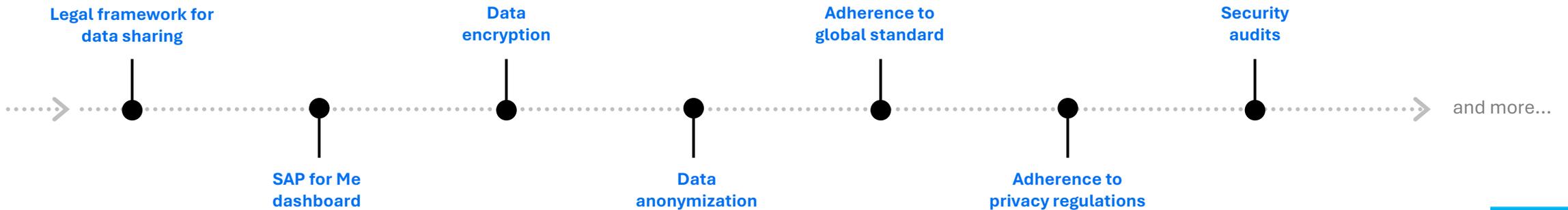
AI Built on Leading Ethics and Privacy Standards

Ensure your data remains confidential

Full transparency and control over your data provided through a centralized dashboard

Anonymized customer data that balances accuracy and maximum privacy protection.

Security and data privacy at the core of every system and process from the start



SAP Business AI and PDF Solutions with ERP

Amplify productivity, accelerate processes, explore scenarios

Business

Accelerate processes and optimize decisions

AI-powered processes and data-driven insights and recommendations to make faster, safer decisions

People

Multiply productivity and increase efficiency

Transform work through automation and simplified user experiences to drive business outcomes



Amplify productivity and boost efficiency by unleashing the power of Joule

Accelerate business processes and optimize decision making by unlocking the power of AI.

Explore, identify, and build nuanced AI scenarios leveraging generative AI hub



Thank You



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