



SAP® Digital Supply Chain

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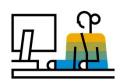
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The Digital Era is evolving into The Intelligence Era



Mainframe & PCs 1960s – 1980s



Client Server & Internet 1990s - 2000s



Cloud, Mobile & Big Data 2000s - 2010s



Intelligent Technologies 2010s - 2020s



- Transistors & silicon revolution
- Large scale Mainframe Computing adoption
- Emergence of PC's
- Plant floor automation

- Widespread PC adoption
- Broadband Internet
- ERP and business process technologies

- Mobile & Smartphone ubiquity
- Cloud Computing
- Social Networks
- Big Data

- Machine learning (ML) and artificial intelligence (AI)
- Internet of things (IoT) and distributed computing
- Blockchain

CUSTOMER VALUE CREATION

Industrial Automation

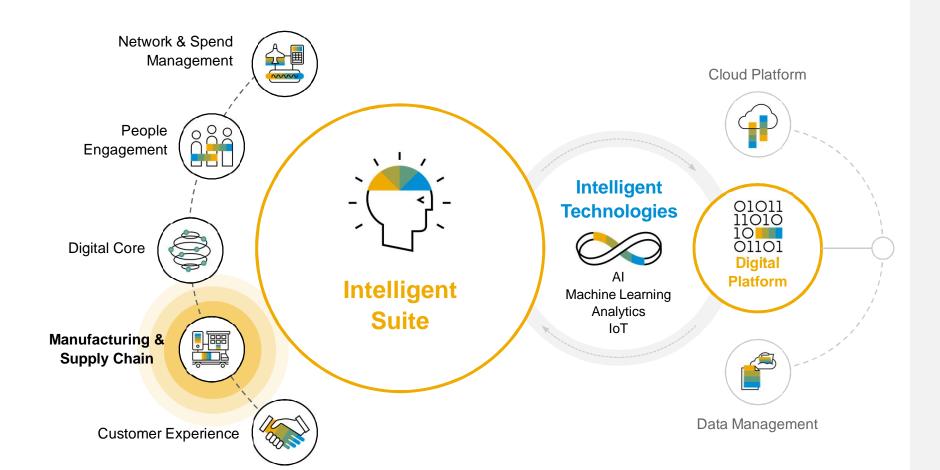
Business Process Automation Digital Transformation

Intelligent Enterprise

3

The Intelligent Enterprise

The foundation of a Digital Supply Chain



The Intelligent Enterprise features 3 key components:

1 Intelligent Suite

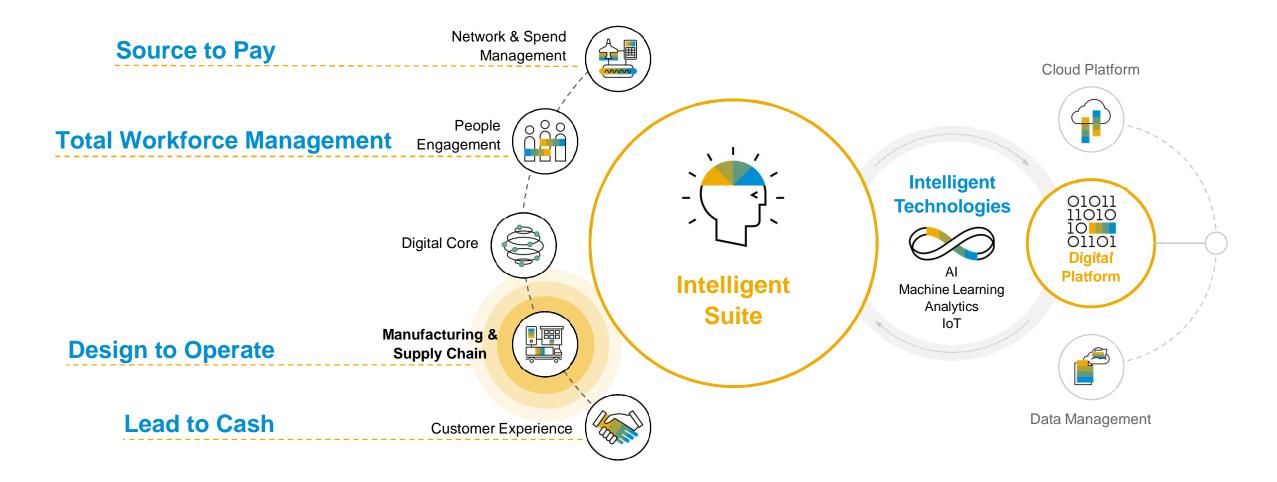
Intelligent Technologies

3 Digital Platform

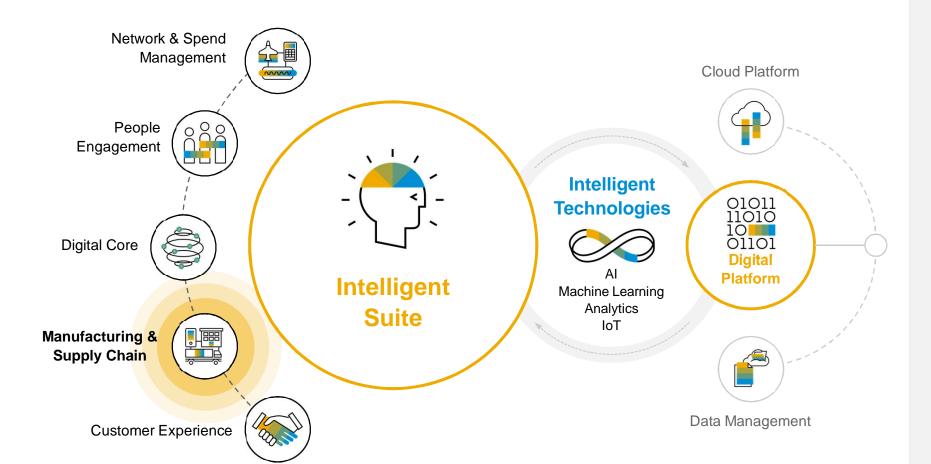
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The Intelligent Enterprise

Key End-to-End Processes



Design to Operate in the Intelligent Enterprise Key Differentiators



Design to Operate

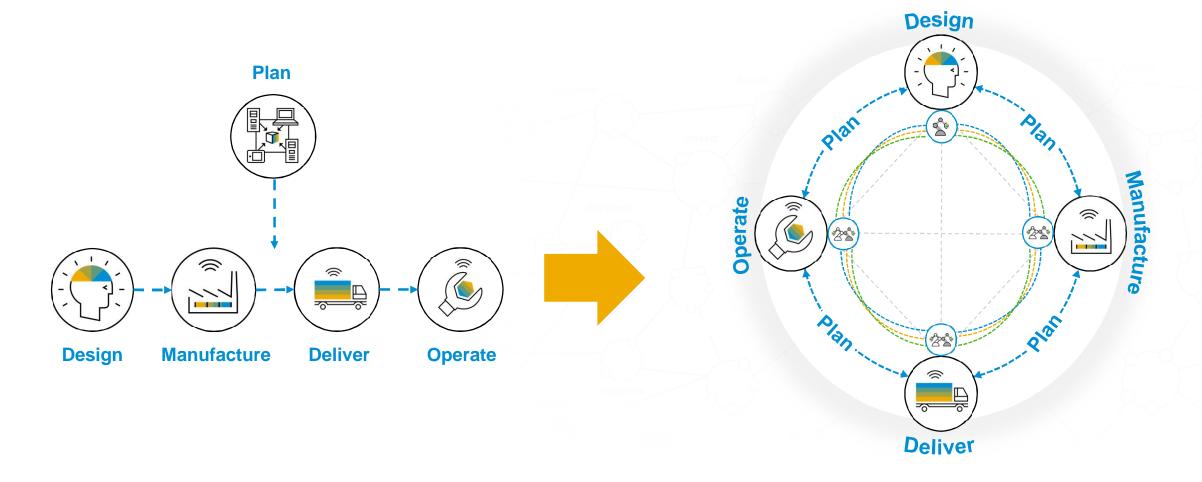
Key differentiators:

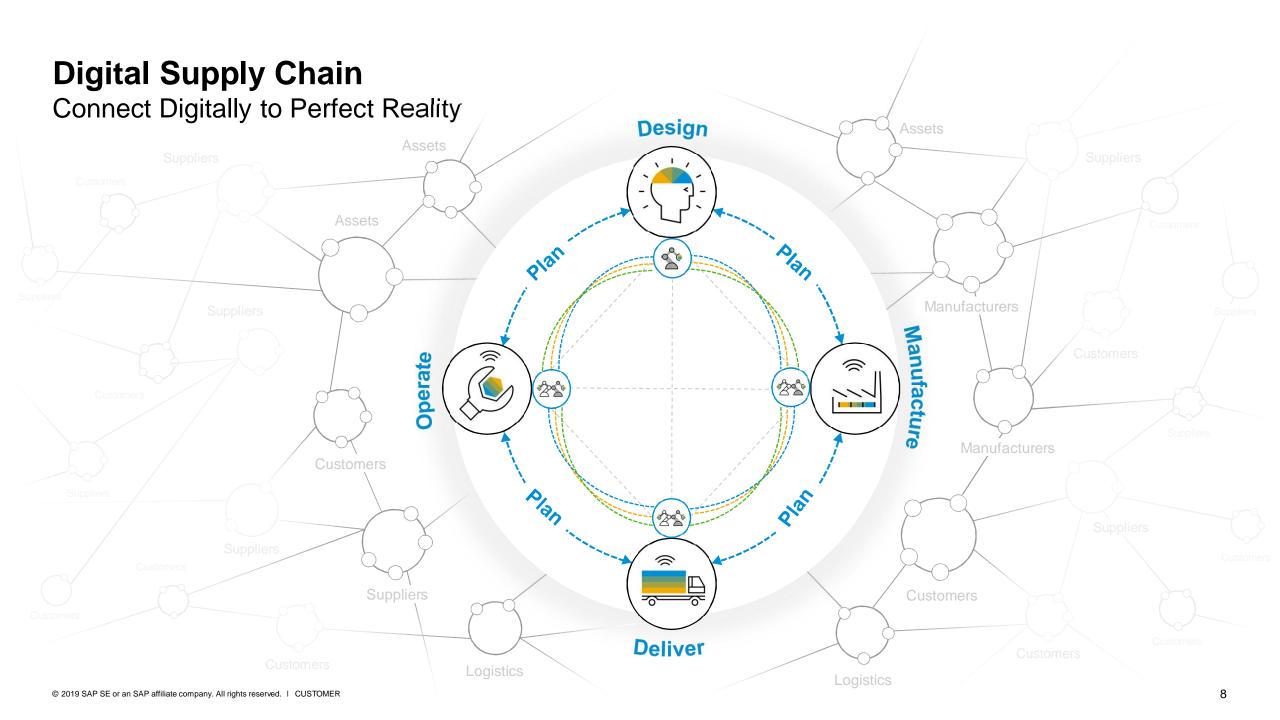
- Intelligence built into business processes
- 2 Seamless Integration

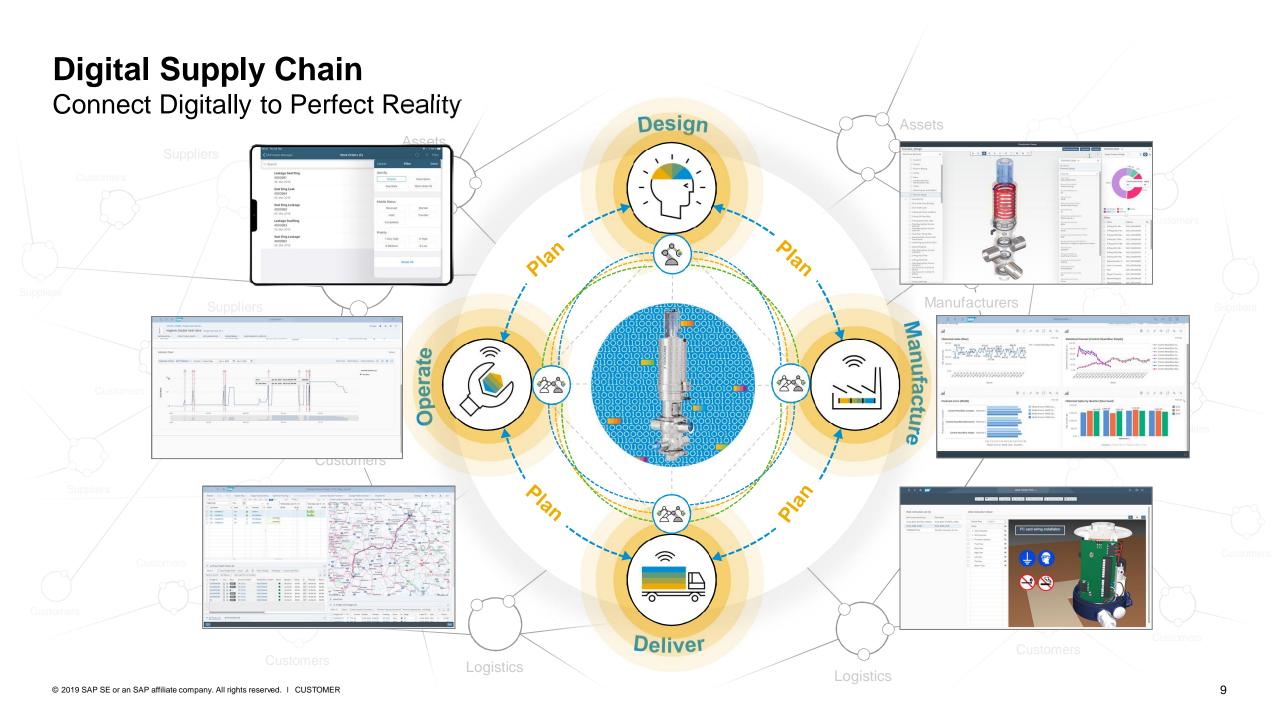
- Digital Twin along value chain
- Asset Central for all of IES
- 5 End to End Visibility

Top floor wants the Connected Supply Chain but

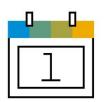
... continues to organize in departmental silos







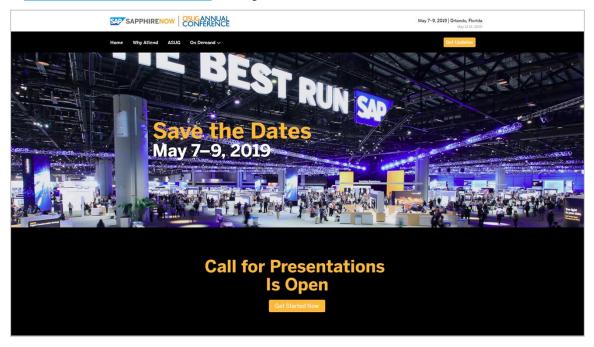
2019 Design to Operate Showcases!



HANNOVER MESSE April 1–5, 2019



SAPPHIRE NOW May 7–9, 2019 Orlando, Florida



2019 Design to Operate Showcase Videos!





https://www.youtube.com/watch?v=vZhpO1G7 hw



https://www.youtube.com/watch?v=gnpQ-k24XYM



https://www.youtube.com/watch?v=gnpQ-k24XYM



https://www.youtube.com/watch?v=oeUgg4vIJAM

Design to operate (overview)

Design Plan Create product design, early Hand over to Create master Receive customer feedback Plan demand for Plan **supply** for - define requirements and cost estimates and master new/changed new/changed production schedule. manufacturing and service system concept for data for new/changed product. to manage BOM and components. components. new/changed product. routing. **Procure** Manufacture (subassemblies) Procure **components** to Manage and track Receive procured **Schedule** Receive **Produce** subassemblies and inbound delivery. subassembly subassemblies build subassemblies. components into warehouse. production. into warehouse. track progress. Manufacture (finished product) Sell **Deliver Produce** finished — Receive customer **Schedule** Register Receive Plan transport, pick, Perform and track serialized finished finished product product and track finished product pack, and load product, outbound transportation sales order. into warehouse. and receive proof of (assemble to order) production. for **delivery**. progress. product. delivery. **Operate** Monitor assets with IoT data, perform Receive asset Plan asset Perform inspection, Request **product** analysis, predict asset failure. master data and maintenance. maintenance, and improvement. onboard asset. repair.

Design to operate (overview)

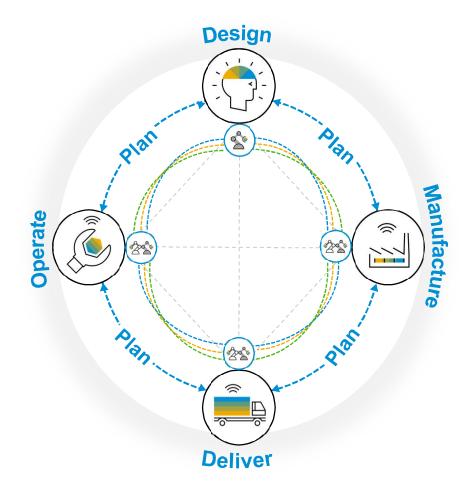
Plan Design Plan supply for Receive customer feedback Create product design, early Hand over to Create master Plan **demand** for - define requirements and cost estimates and master manufacturing and service new/changed new/changed production schedule. to manage BOM and system concept for data for new/changed product. components. components. new/changed product. routing. SAP S/4HANA* SAP S/4HANA* SAP 3D Visual Enterprise* · SAP S/4HANA Cloud for SAP Engineering Control Center SAP Integrated Business Planning* · SAP Integrated Business Planning • SAP Engineering Control Center SAP S/4HANA* SAP Asset Intelligence Network SAP S/4HANA* SAP S/4HANA* intelligent product design SAP Product Lifecycle Costing Manufacture (subassemblies) **Procure** Procure **components** to Manage and track **Produce** Receive procured Schedule Receive subassemblies and subassembly build subassemblies. inbound delivery. components into subassemblies warehouse. production. into warehouse. track progress. SAP S/4HANA* SAP S/4HANA* (EWM**) SAP S/4HANA* SAP S/4HANA* (EWM**) SAP Digital Manufacturing Cloud SAP S/4HANA* • SAP Logistics Business Network SAP Logistics Business Network SAP S/4HANA* · SAP Digital Manufacturing Cloud* **Deliver** Sell Manufacture (finished product) Schedule **Produce** finished — Register Receive Plan transport, pick. Perform and track outbound Receive customer serialized finished finished product finished product pack, and load product, transportation and receive sales order. product and track (Assemble to Order) production. into warehouse. proof of delivery. for **deliverv**. product. progress. SAP S/4HANA* • SAP Digital Manufacturing Cloud* • SAP Digital Manufacturing Cloud* SAP S/4HANA* (EWM**) SAP S/4HANA* (TM***) SAP Digital Manufacturing Cloud* SAP S/4HANA* (TM***, EWM**) SAP Logistics Business Network SAP S/4HANA* SAP S/4HANA* SAP Asset Intelligence Network SAP Asset Intelligence Network Operate **Monitor** assets with IoT data, perform Perform inspection, Request **product** Receive asset Plan asset master data and analysis, predict asset failure. maintenance. maintenance and improvement. onboard asset. repair. SAP S/4HANA* SAP S/4HANA* SAP Asset Strategy and Performance SAP Asset Manager SAP Asset Intelligence Network SAP S/4HANA* SAP Pred. Maintenance and Service · SAP Pred. Maintenance and Service SAP S/4HANA Cloud for intelligent SAP Pred. Maintenance and Service SAP Predictive Engineering Insights SAP Asset Intelligence Network · SAP Predictive Engineering Insights product design

* Represent product families, see subsequent slide for detailed material list

^{**} SAP S/4HANA Supply Chain for extended warehouse management *** SAP S/4HANA Supply Chain for transportation management

Digital Supply Chain

From Design to Operate





Design

- · Reduce time to market
- · Continuously and sustainably innovate
- Deliver on customer demand



Plan

- Holistic view of demand
- Balance inventory and service levels
- Improve forecast accuracy



Manufacture

- · Optimize manufacturing processes and minimize waste
- Improve collaboration with contractors
- Increase agility and responsiveness



Deliver

- · Improve speed, efficiency and sustainability
- Deliver perfect orders consistently and profitably
- Increase utilization of warehouse and transportation

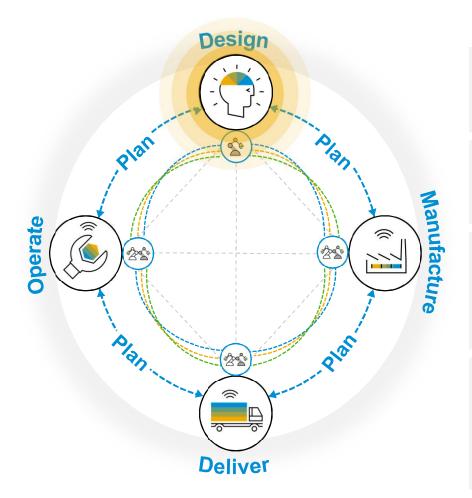


Operate

- Manage lifecycle of physical assets efficiently and sustainably
- · Predict and simulate asset behavior
- Avoid unplanned downtime

Connect Digitally to Perfect Reality – Design

Business value for R&D/Engineering



Innovate digital products and services faster

Enable new business practices by managing product and asset intelligence across networks

Institute design excellence

Drive product development based on requirements with an integrated systems engineering approach

Compliant product lifecycle management

Improve collaboration and integrate product development to be first to market with innovative, sustainable and compliant products

Increase profitability and visibility

Loop back failure and operational analysis from service to engineering for design improvement and lower product cost 8%

increase in meeting revenue goals with clearly documented and validated new product requirements.

SAP Performance Benchmarking

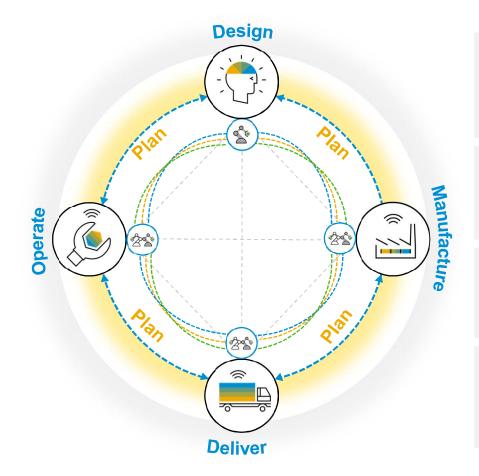
17%

decrease in time to market where product development projects are managed from concept to launch.

SAP Performance Benchmarking

Connect Digitally to Perfect Reality – Plan

Business value for Supply Chain



State-of-the-art business processes

Enable new end-to-end business processes, models and revenue streams

Synchronized planning processes

Eliminate planning silos through connected and integrated planning processes

End-to-end visibility

Provide visibility on strategic, tactical and operational levels across internal and external data

Faster planning cycles

React faster to changes in the business through complete integration across the supply chain 40%

shorter lead times with flexible rules-driven supply-demand matching.

SAP Performance Benchmarking

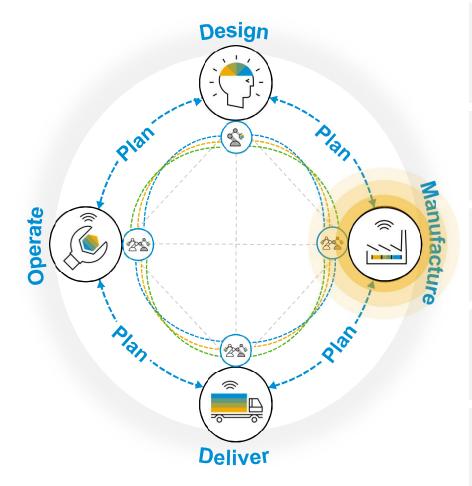
12%

fewer days in inventory with dynamic, frequently updated forecasts.

SAP Performance Benchmarking

Connect Digitally to Perfect Reality – Manufacture

Business value for Manufacturing



State-of-the-art business processes

Leverage new technologies to identify and enable business processes with highly flexible UI's

Connected manufacturing

Eliminate manufacturing silos through a single data model with connected, integrated processes

Top floor to shop floor visibility

Complete end-to-end visibility on strategic, tactical and operational levels

Faster more efficient execution

Improve throughput, increase quality, and reduce waste

Advanced analytics

Leverage configurable KPI's to identify process bottlenecks and improve performance efficiency 8%

increase in plan adherence where delivery dates are integrated with material availability and real-time manufacturing conditions.

SAP Performance Benchmarking

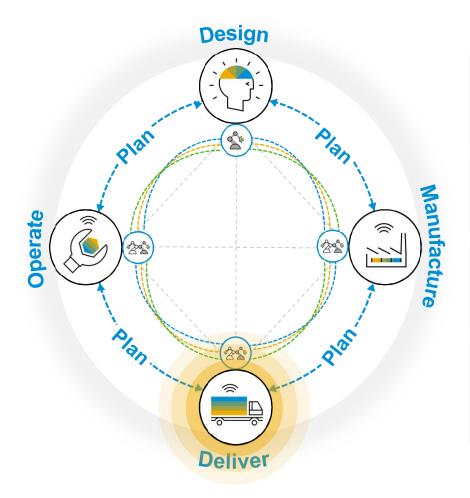
28%

decrease days in inventory where manufacturing processes are controlled through pull-based production schedule.

SAP Performance Benchmarking

Connect Digitally to Perfect Reality – Deliver

Business value for Logistics



Balance customer service and delivery costs

Enable efficient logistics and order fulfillment processes to increase speed and reduce cost and emissions

Warehouse Management

Optimize labor, storage, and fulfillment costs

Transportation Management

Reduce costs and carbon footprint and improve service, efficiency, and sustainability

Logistics Networks

Collaborate with logistics partners and improve fulfillment through visibility and IoT connectivity

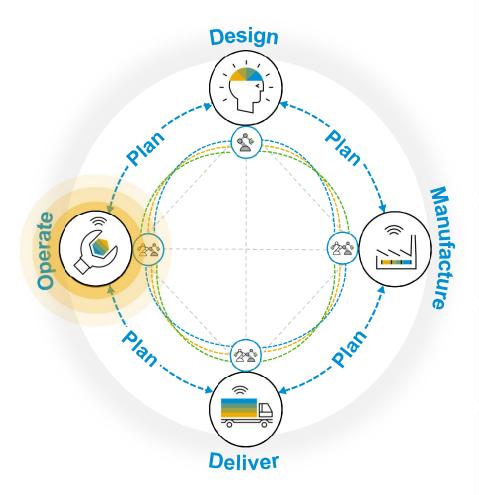
93% increase of domestic

on-time delivery.

SAP Performance Benchmarking

Connect Digitally to Perfect Reality – Operate

Business value for Asset Management



State-of-the-art business processes

Leverage new technologies to enable new asset management business processes with highly flexible UI's

Real-time insights

Provide end-to-end visibility on strategic, tactical and operational levels

Connected assets

Bring together information from operational and business systems using IoT for scalable transparency

Prediction and simulation

Drive smarter decisions, improve reliability, and reduce outages and emissions

Collaboration throughout the asset lifecycle

Share asset information and collaborate on a cloudbased business network with integrated processes 17%

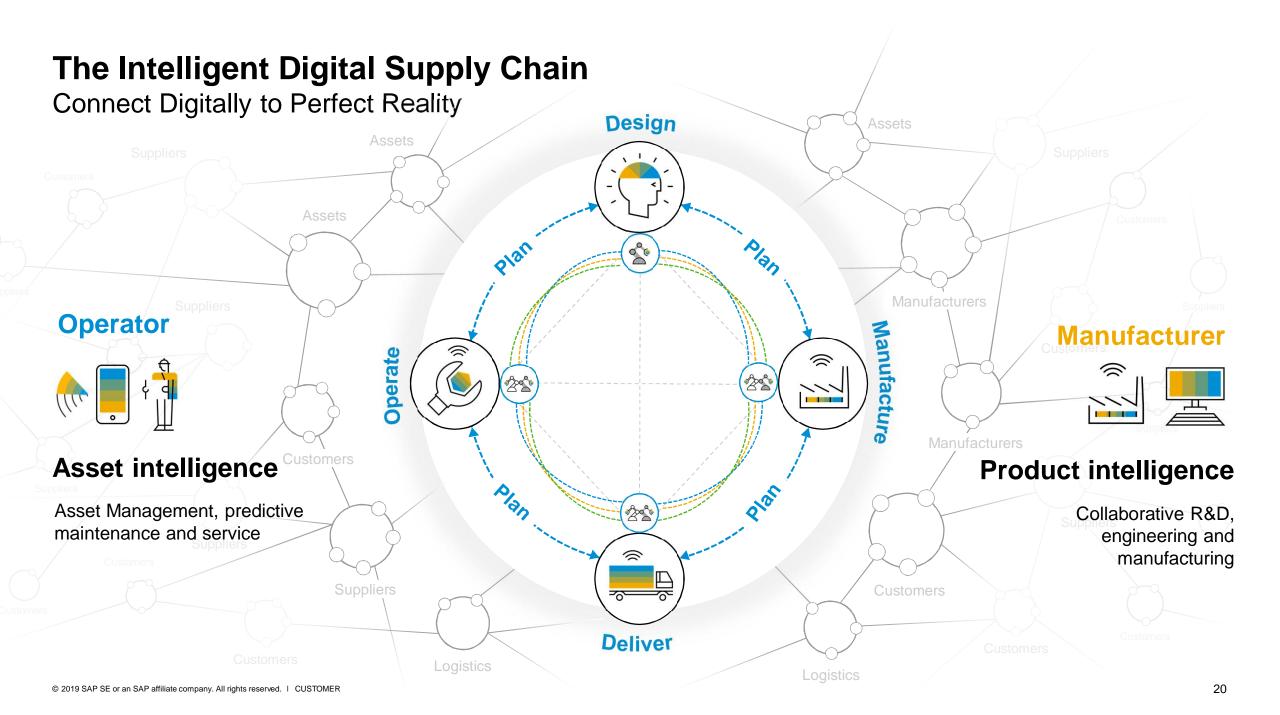
increase in return on assets where asset management systems are fully integrated.

SAP Performance Benchmarking

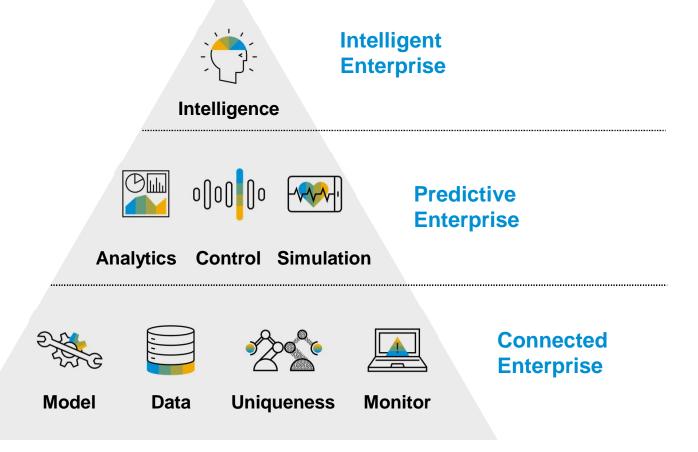
79%

decrease in accident frequency with monitoring of strong safety measures for people and assets.

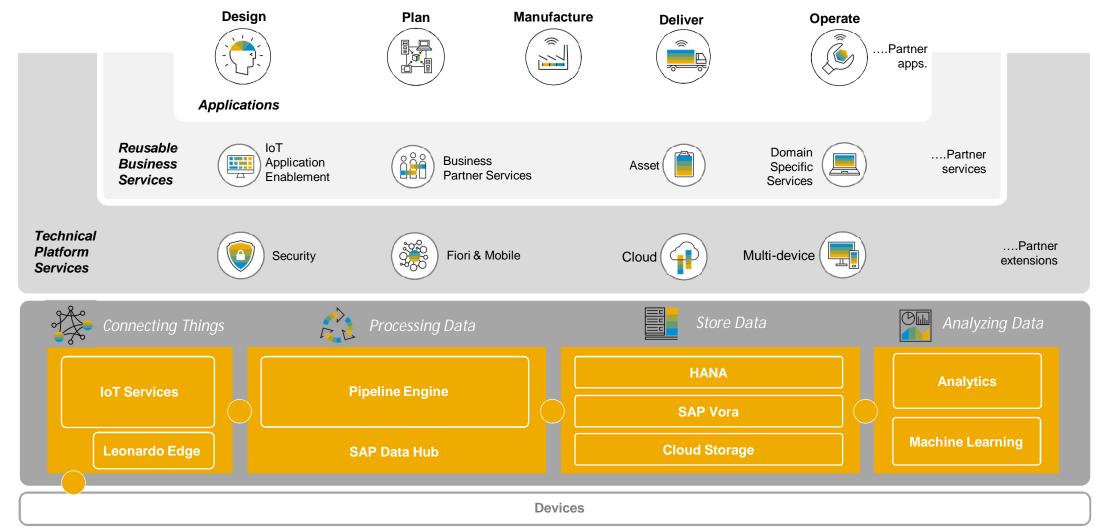
SAP Performance Benchmarking



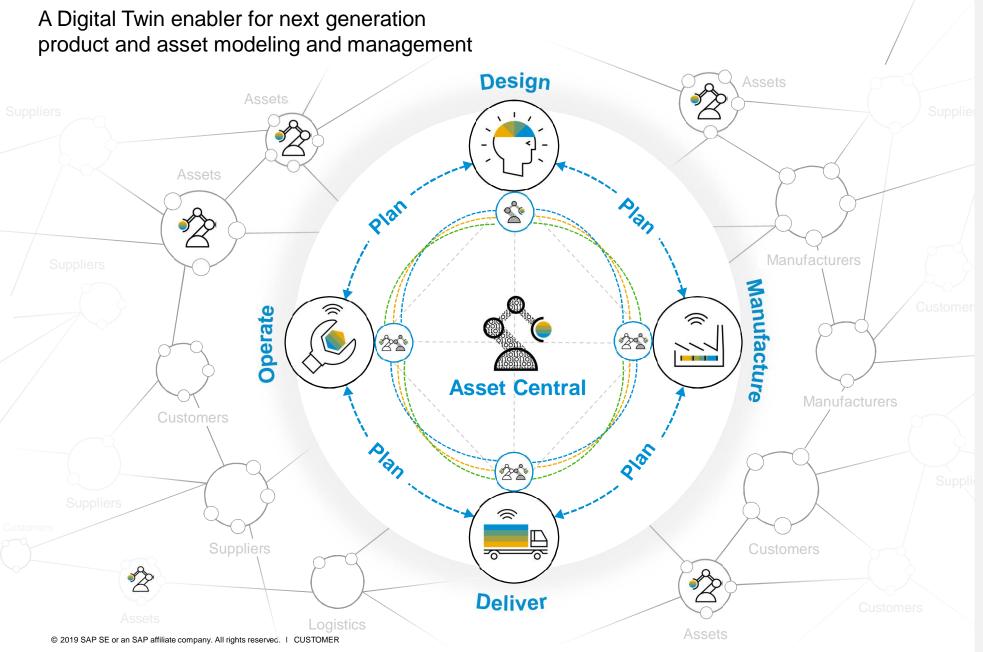
Evolution of the Digital Twin | From Data Repository to Intelligent Orchestrator



Delivering the Customer Experience with SAP Digital Supply Chain



Asset Central



Asset CentralOne Common Foundation



Asset Central provides a common master and transactional data layer, a set of out-of-the-box integrations to SAP back-end business and Internet of Things solutions and standard basic functionalities enabling common next generation product and asset modeling and management.

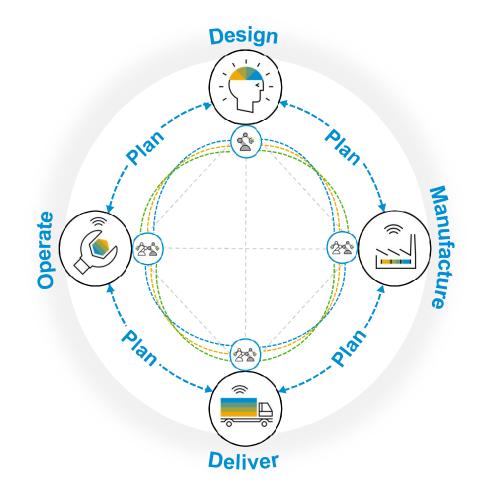
Why SAP Connect Digitally to Perfect Reality

SAP's supply chain solutions digitally connect your entire supply chain, so you can deliver at your best today, while you adapt and continuously improve to reshape how you deliver tomorrow.

With SAP, you can create a digital mirror of your complete supply chain—from design, planning and manufacturing to logistics and ongoing maintenance—embedding intelligence from beginning to end and ensuring your customers are central to each and every phase of your business.

You get total visibility as products are designed, delivered and deployed by connecting your business processes with real-time data from assets, equipment, customers and suppliers.

Only SAP can deliver all the processes and data with embedded innovations like 3D printing, IoT, machine learning, and blockchain into your everyday operations. With SAP's supply chain solutions, you get the operational visibility and customer intelligence to manage your entire supply chain digitally and execute flawlessly today, while transforming your business for the future.



Thank you.

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