SAP Innovation Day for Supply Chain



9 November 2023

Manufacturing Demo in VR of the Industry 4.0 Center Walldorf

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SAP Innovation Day for Supply Chain - Agenda

12.15 – 1 pm	Registration, Coffee & lunch with opportunity for: • Networking • Manufacturing Pop-up Factory VR demo • Meeting up with our partners: Ideo, McCoy, Quinso, Capgemini
1pm – 2.15pm	Opening Session (central stage) • SAP opening: **John McNiff** (15mins) • Opening keynote external speaker/special guest (60 min) - **Peter Hinssen**
2.15pm– 2.45pm	Coffee break with opportunity for: • Networking • Manufacturing Pop-up Factory VR demo • Meeting up with our partners: Ideo, McCoy, Quinso, Capgemini
2.45 – 3.45pm	Break outs (innovations SAP) ➢ **Planning (Wouter van Heijst/Fabienne van der Wegen) -** Intelligent Planning through AI within SAP Integrated Business Planning ➢ **Logistics (Bart Smetsers) -** Streamline and execute your supply chain with SAP S/4 HANA & Business Networks for Logistics • **Asset Management (Susanne Bottemanne/Mark Roepers)** (2x30 mins) - Unlocking the Power of SAP: Revolutionizing Asset Management for Optimal Performance ➢ **Sustainability (Juriaan Mulder) -** Resiliency & Sustainability in your Supply Chain Processes with SAP's Newest Innovations
3.45 – 4.15 pm	Coffee break with opportunity for: • Networking • Manufacturing Pop-up Factory VR demo • Meeting up with our partners: Ideo, McCoy, Quinso, Capgemini
4.15 pm – 5pm	Break outs ➢ **Customer 1 Planning (Wavin)** ➢ **Customer 2 Logistics (Leviat)** ➢ **Customer 3 Asset Management (Eneco)** ➢ **Customer 4 Sustainability (Moonen Packaging)**
5pm – 5.15 pm	Closing presentation + wrap up: (central stage) • NL Head of Supply Chain wrap up and Q&A
5.15 – 7pm	Drinks & bites with opportunity for: • Networking • Manufacturing Pop-up Factory + VR demo • Meeting up with our partners: Ideo, McCoy, Quinso, Capgemini

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SAP Industry 4.0 Center Walldorf



Industry 4.0 Center Walldorf

Experience and Drive Digitization in the Factory

SAP SE

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THE BEST RUN SAP

SAP Industry 4.0 Center Walldorf

SAP POP UP FACTORY

Physically – Hybrid – Digitally

- Visit us on-site in Walldorf
- Join via web meeting
- Experience Website at your own leisure

The Pop Up Factory in the Industry 4.0 Center Walldorf offers visitors the opportunity to experience end-to-end processes from both the discrete and the process industry at first hand. On an area of more than 500m2 you will be guided step by step through the possibilities of digital production.

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End-to-End Process Scenarios from Discrete to Process Industries

The life cycle of a valve for the liquid concentrate production

DISCRETE ASSEMBLY

Design, build and operate a discrete unit to produce and mix syrups



double seated valve

Design product and assemble it

DESIGN → PLAN components → PLAN procure → MANUFACTURE components → MANUFACTURE assemble and sell → DELIVER → OPERATE

BATCH PRODUCTION

Develop a recipe for a concentrate. Produce, mix and pack the product.



Liquid concentrate

Develop recipe and produce batch

IDEA FORMULATE → PLAN intermediates / materials → PLAN procure → PRODUCE batch & packing → DELIVER → CONSUME









SAP Industry 4.0 Center Walldorf



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SAP Industry 4.0 Center Walldorf. D-to-O



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SAP Industry 4.0 Center Walldorf. D-to-O



Design to Operate for Discrete Industries

Overview of complete scenario implementation

Analytics
- Digital Boardroom
- SAC Dashboards

Networks
- Asset, Procurement, Logistics

Sustainability
- Sustainability Footprint Management

Production Engineering and Operations
- Bridge the gap between product design and manufacturing to improve process efficiency

DESIGN → PLAN → MANUFACTURE Components → MANUFACTURE Assemble and sell → DELIVER → OPERATE/SERVICE

Product Design
- Develop Requirements & Design Systems
- Product Lifecycle Costing
- Create detailed Design with either Teamcenter integration or SAP ECTR
- Supplier collaboration with EPD
- Handover to MFG

Planning
- Plan Supply and Demand with PP/DS
- REO backward integration with PP/DS
- MRP live
- Schedule Production w/o PP/DS
- Synchronized Planning / Integration of SAP IBP and PP/DS
- Plan components and deal with shortages

Short Term Production Scheduling
- Paperless & flexible production scheduling at time horizon within days based on available resources

Order Personalization/Mass Production
- Visual inspection with ML for automatic detection of non-conformances
- Flexible routings for rework
- Orchestration and control of machines by MES, PCo via OPC UA
- Capture of Data Collections and Storage in Production History Records

Order Processing
- User friendly variant configuration in web shop
- Create & release production and shop floor orders, order cockpit
- Traceability & genealogy for lot sizes down to 1

Functional Test
- As-built records as a component of traceability in production

Component Manufacturing
- Paperless operations, worker guidance with work instructions
- Electronic Product History Record
- Human Machine Collaboration
- Machine Integration in MES

Assembly
- Usage of wearables to support worker guidance
- As-built records to document assembly
- Dynamic assignment of shop orders to resources

Outbound Logistics
- Integrated Warehouse management and transport planning
- Efficiently collaborate with carriers for tendering
- GTT - Track and Trace of shipments for early reaction to disturbances

Inbound Logistics
- Advanced shipping and receiving for inbound transport

Production Logistics
- Seamless interaction between MES and WMS including WIP transports
- Integration of AGVs

Intelligent Asset Management
- Effective collaboration with operators and service providers based on digital twin of assets (asset onboarding)

Customer and Field Service
- Effective collaboration with operators and service providers based on digital twin of assets (asset onboarding)

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Public

Links to Posts and Videos



METAVERSE:
Experience the Process Industry Showcase and how I pre-mix a drink VIRTUALLY



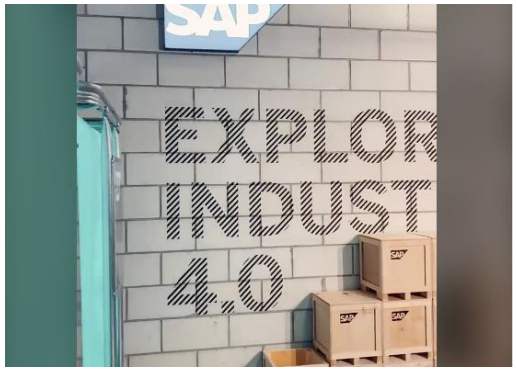
SAP Powerplant:

Intelligent Assetmanagement



Super schnelle SAP Einführung und KI in der Produktion.

Linkedin Post



Opening SAP Pop-Up Factory

Public

Industrial Metaverse | The Factory WDF50

Industrial Metaverse

Digital Experience featuring for self-consumption The Factory

D2O and D2C Overview





What can I experience?

- Experience onsite the Industrial Metaverse of the Factory – Walldorf with Manufacturing Insights as you move through the digital environment
- Get insights and analytics about the manufacturing key performance indicators and trends of the assets
- The industrial metaverse allows virtual collaboration, regardless of location, leading to efficient teamwork, streamlined workflows, and faster decision-making.
- The industrial metaverse's simulation of real-world scenarios provides immersive training experiences for employees, reducing costs, improving retention, and preparing workers better.
- Industrial metaverse can create virtual showrooms for improved customer experience, engagement, sales and immersive brand experience









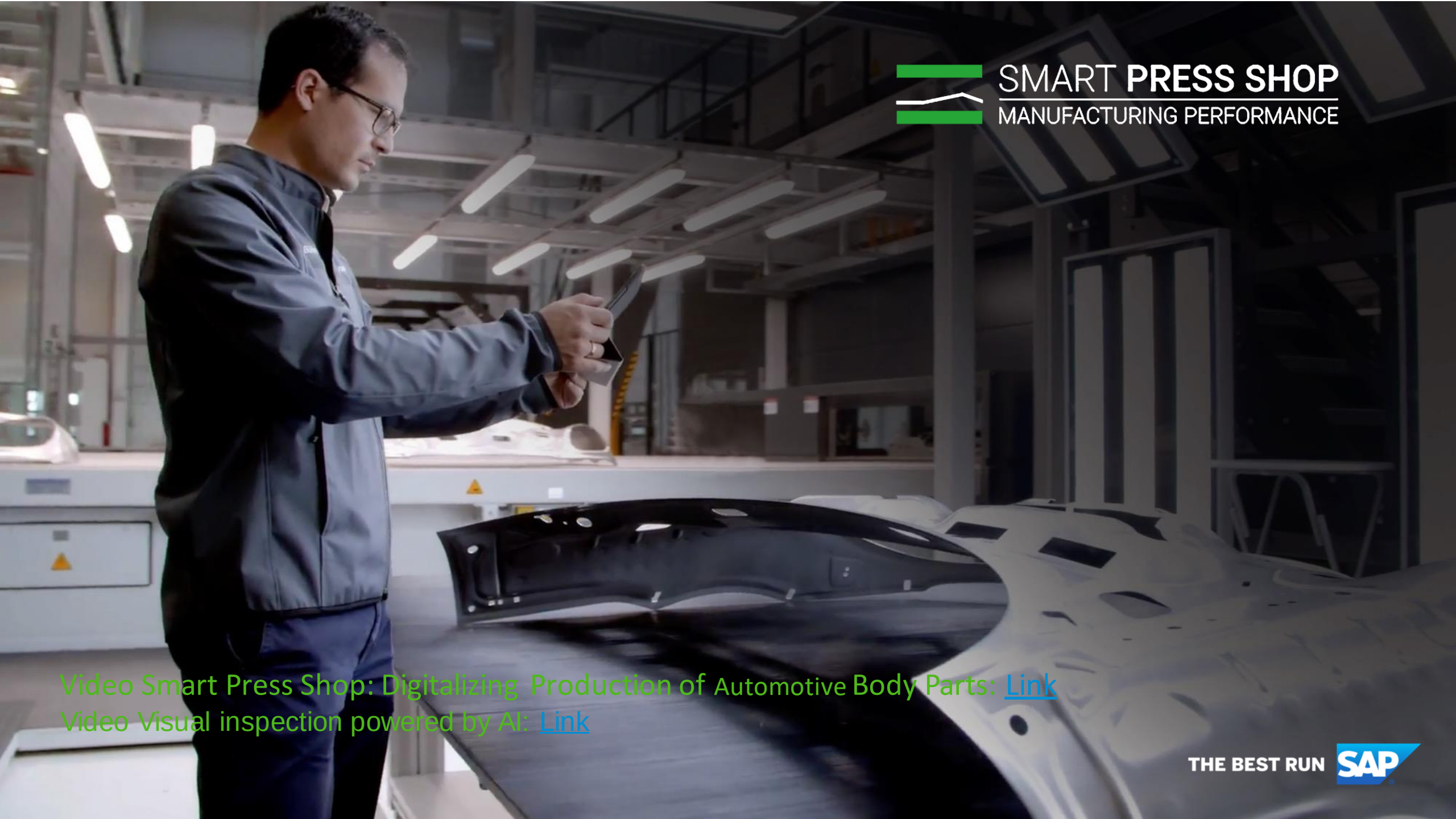
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D-to-O VR Experience



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SAP Industry 4.0 Center
The Factory
Experience SAP


SMART PRESS SHOP
MANUFACTURING PERFORMANCE
Video Smart Press Shop: Digitalizing Production of Automotive Body Parts: Link
Video Visual inspection powered by AI: Link
THE BEST RUN SAP

SAP Digital Manufacturing
Design to Operate

Industry 4.0 is all about MANAGING SUPPLY CHAIN DISRUPTION

Enable resilient, customer-centric, sustainable enterprises

Strategies intended to *reduce* costs have actually *exposed* risks:

Planning: Supplier consolidation, cost-based sourcing, and added buffer industries

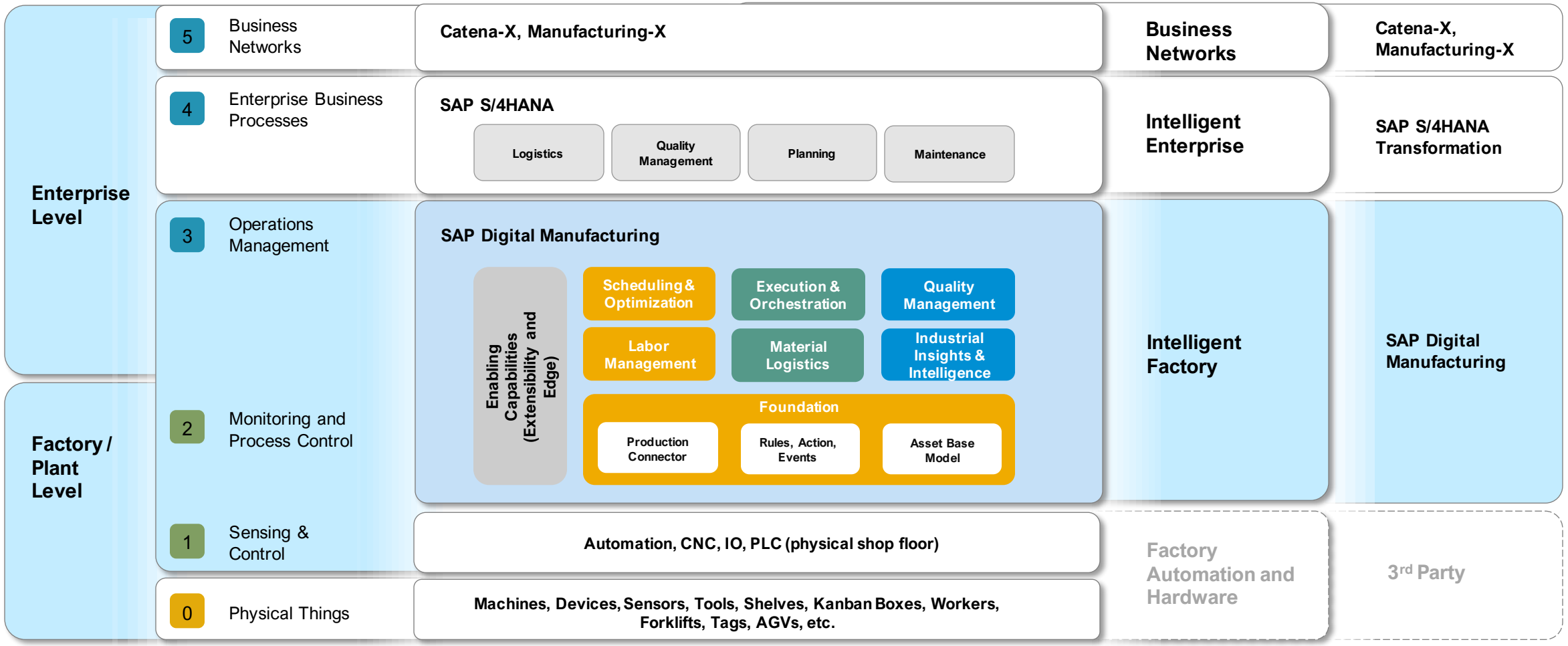
Production: Global, low cost suppliers and outsourced manufacturers as the predominant choice

Logistics: Preferred and limited transportation providers supplemented by expedited shipping fees

Operations: Reactive service and maintenance, service violation fees, and internal service workforces

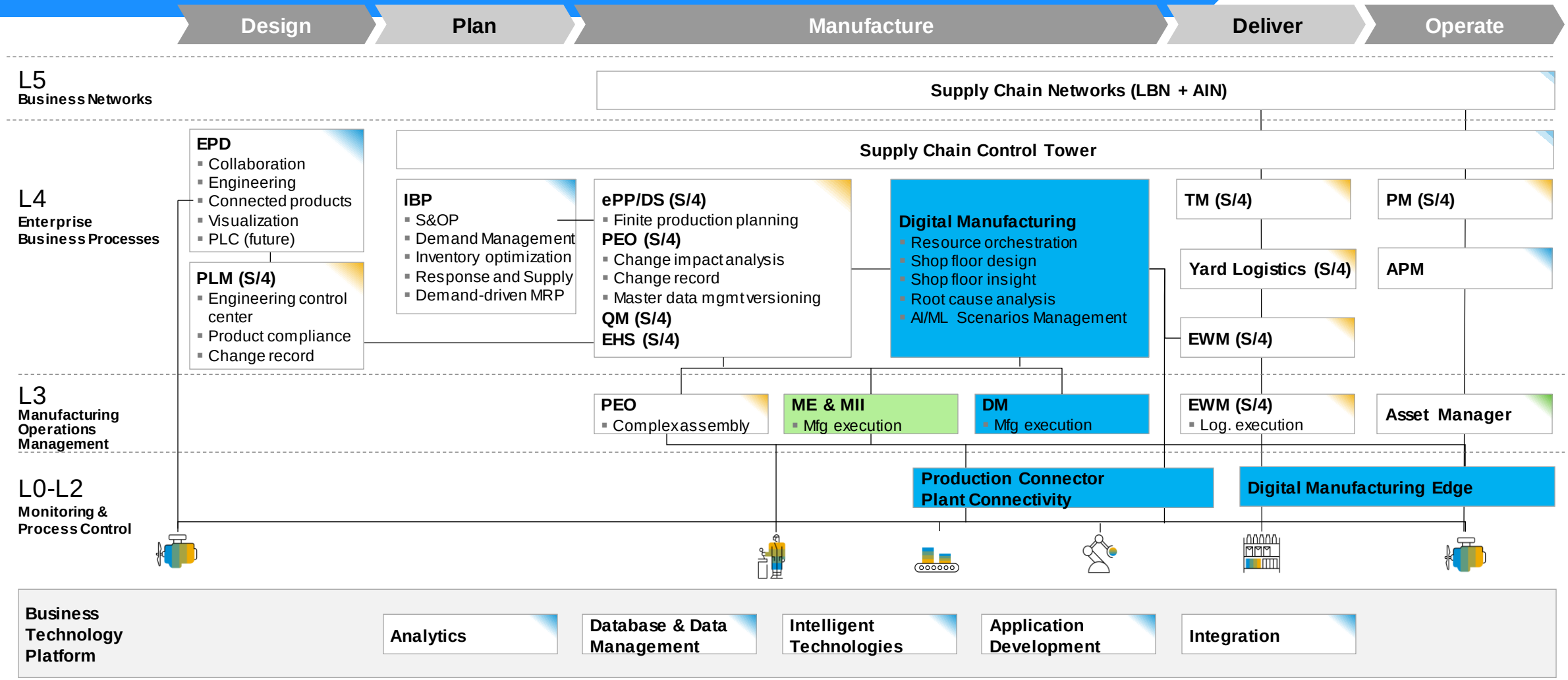
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Solution Blueprint



Public

Design to Operate – High Level Building Blocks
Discrete Industry



Abbreviations:
EPD: SAP Enterprise Product Development; **PLC**: SAP Product Lifecycle Costing; **PLM**: SAP Product Lifecycle Management; **IBP**: SAP Integrated Business Planning for Supply Chain; **ePP/DS**: SAP ERP, add-on for embedded production planning and detailed scheduling; **PEO**: SAP S/4HANA Manufacturing for production engineering and operations; **ME**: SAP Manufacturing Execution; **MII**: SAP Manufacturing Integration and Intelligence; **PM: SAP** Plant Maintenance; **EHS:** Environmental Health and Safety; **DMC**: SAP Digital Manufacturing Cloud; **PCo**: SAP Plant Connectivity; **LBN**: SAP Logistics Business Network; **TM**: SAP Transportation Management; **YL**: SAP Yard Logistics; **EWM**: SAP Enterprise Warehouse Management; **AIN**: SAP Asset Intelligence Network; **ASPM**: SAP Asset Strategy and Performance Management; **PDMS**: SAP Predictive Maintenance and Service; **QM: SAP** Quality Management

Legend:
Deployed on mobile
Deployed in the cloud
Deployed on premise & PCE
Deployed on the Edge

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Digitalize your operations and supply chain to fortify your business

Handle disruptions better, faster, with less complexity, and at a lower cost

Reactive:

X Insufficient design insights

X Restricted suppliers

X Increased manufacturing overhead

X Excessive safety stock

X As-required maintenance

X Ad-hoc service providers



Disruption

Resilient:

✓ Collaborative design

✓ Balanced suppliers

✓ Manufacturing automation

✓ Optimized inventory

✓ Predictive maintenance

✓ Verified service networks

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Resilient businesses need digitalized operations and supply chains built for speed and flexibility

Agility

Proactively and profitably sense and respond to market dynamics

Productivity

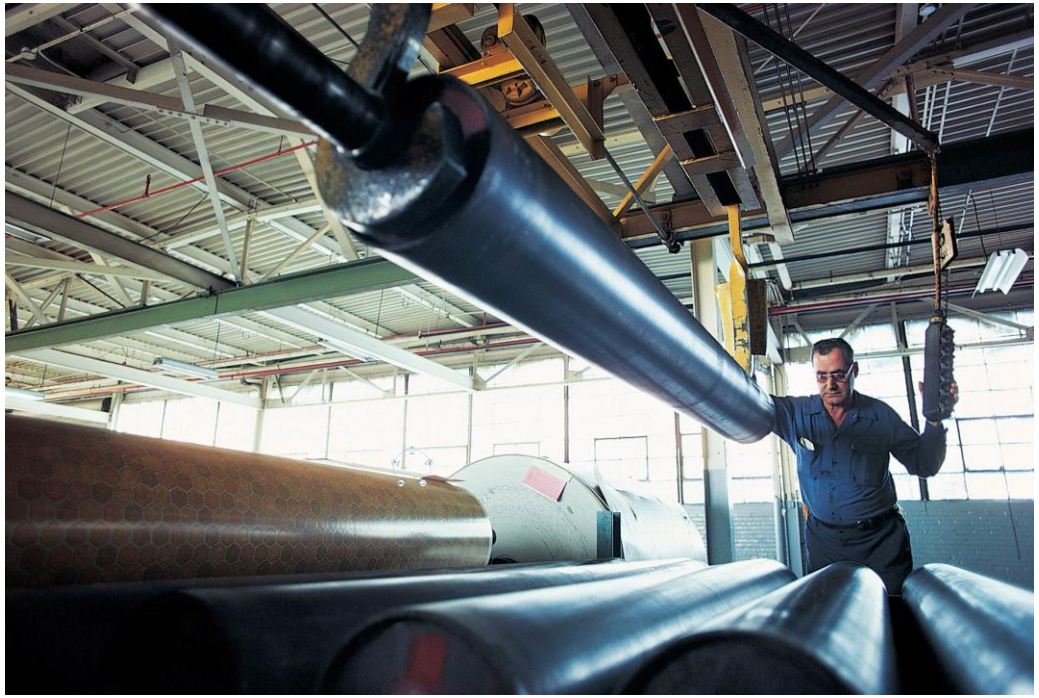
Deliver high-quality, mass-produced or make-to-order products faster

Connectivity

Unified, collaborative trading partner relationships

Sustainability

Actively manage your environmental and community impact



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SAP Digital Manufacturing
Design to Consume

Industry 4.0 is all about MANAGING SUPPLY CHAIN DISRUPTION

Enable resilient, customer-centric, sustainable enterprises

Strategies intended to *reduce* costs have actually *exposed* risks:

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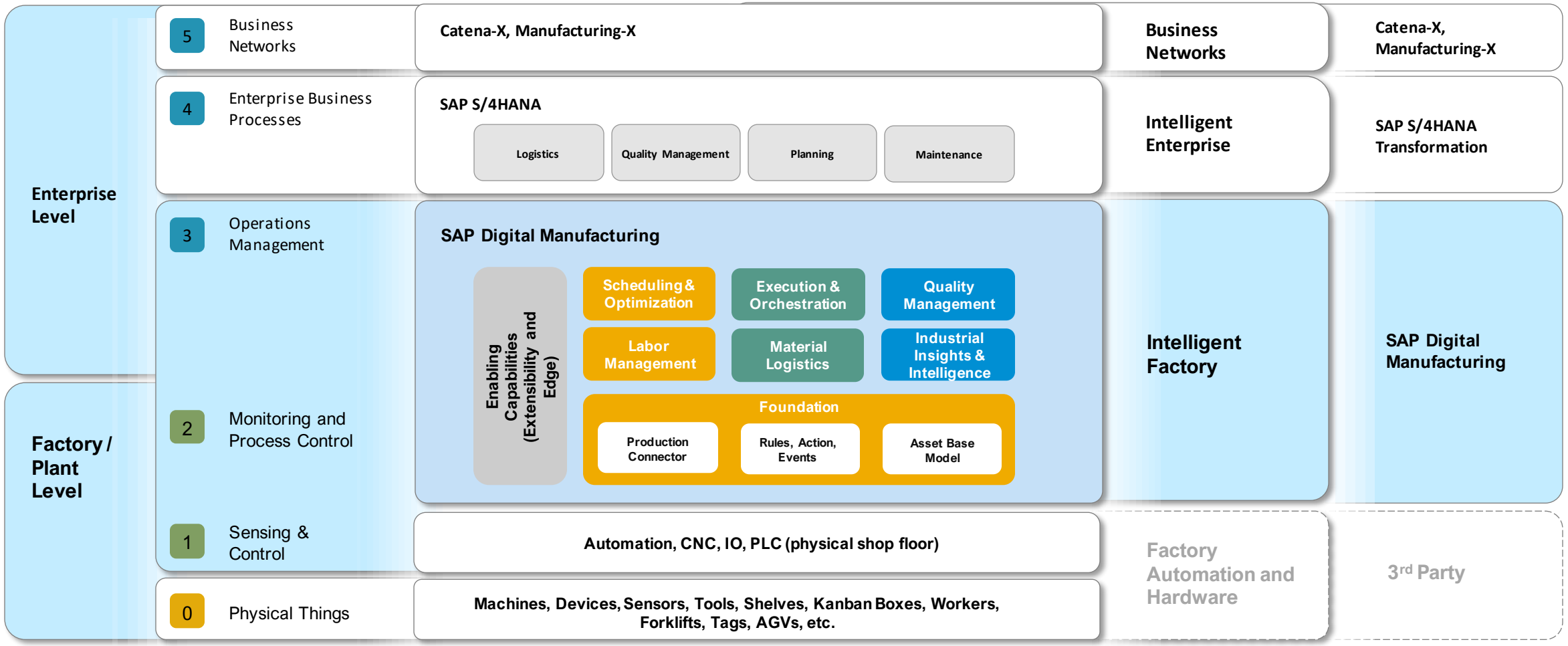
Production: Global, low cost suppliers and outsourced manufacturers as the predominant choice

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Solution Blueprint



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Digitalize your operations and supply chain to fortify your business
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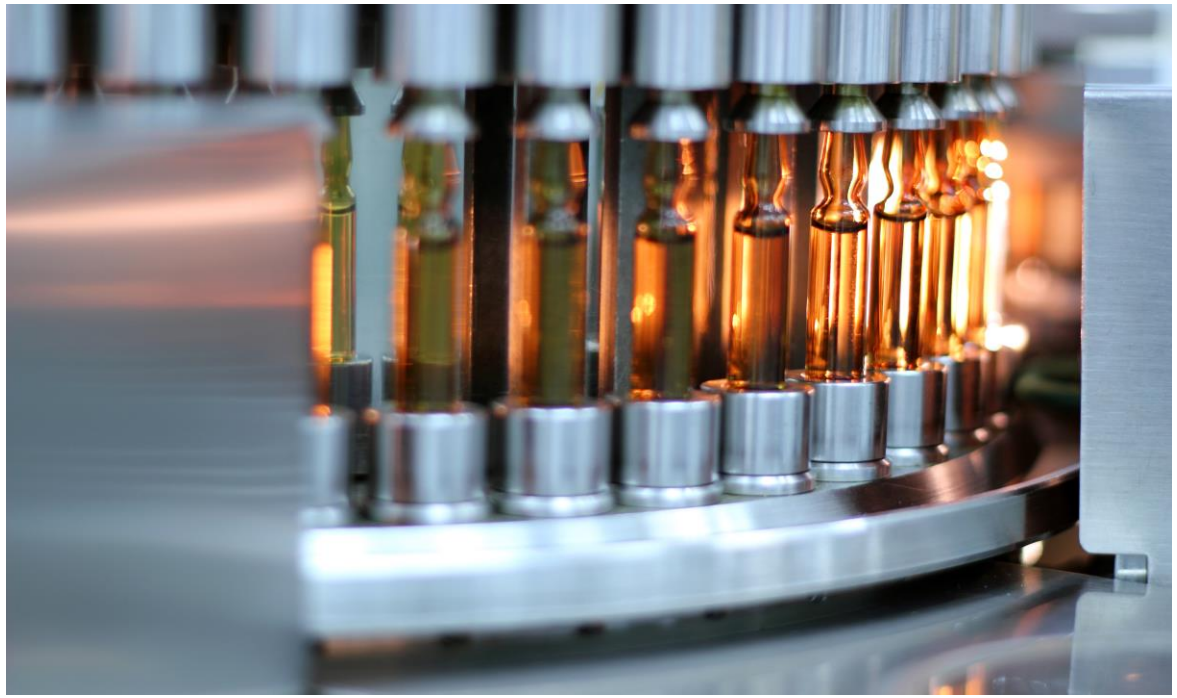
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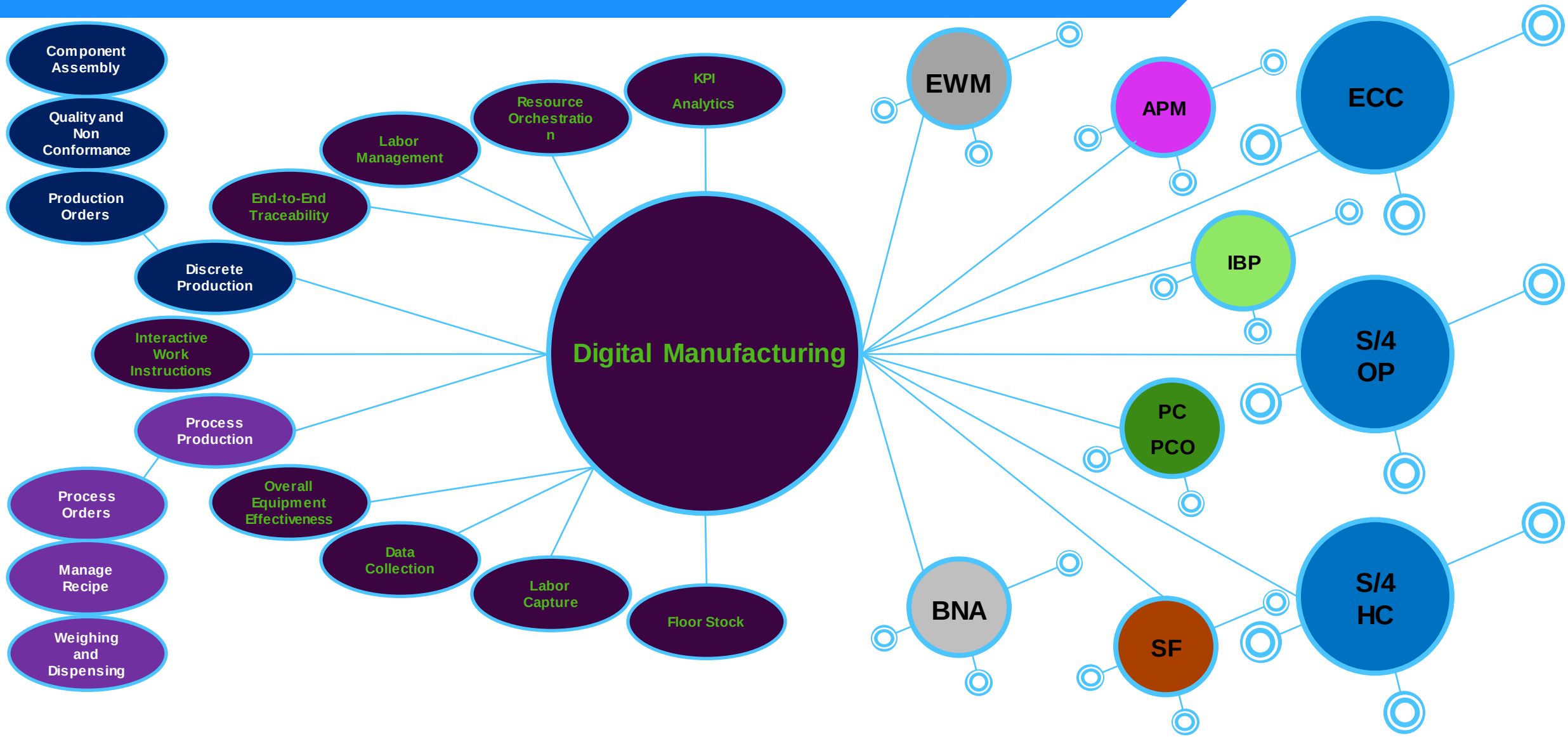


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SAP Digital Manufacturing Overview

The Power of Integrated end-to-end Solutions

REO - Resource Orchestration aka Scheduling
PC - Production Connector
PCO - Plant Connectivity
EWM - Extended Warehouse Management
BNA - Business Network Asset
SF – Success Factors
APM – Asset Performance Management
IBP – Integrated Business Planning



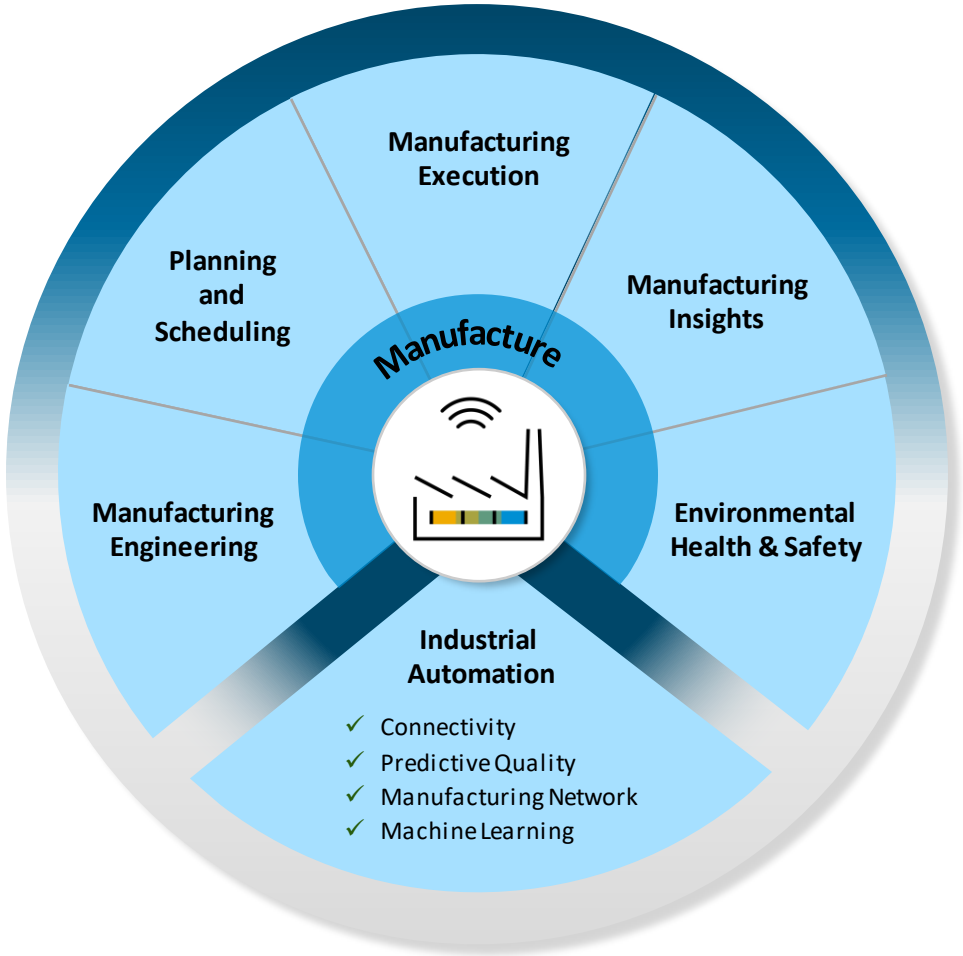
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SAP Digital Manufacturing Solutions

A complete portfolio of manufacturing solutions to support digitalization and Industry 4.0

SAP Digital Manufacturing

- Manufacturing Execution
  - IC - Modular Production*
  - IC - Quality Issue Resolution*
  - AI/ML – Visual Inspection**
- Manufacturing Insights
  - IC - Line Monitoring*
- Resource Orchestration
  - AI/ML -?
- Edge Computing



SAP S/4HANA Manufacturing

- for Production Engineering and Operations
- for Planning and Scheduling
- Environmental, Health & Safety
- Quality Management

* Industry Cloud Solutions

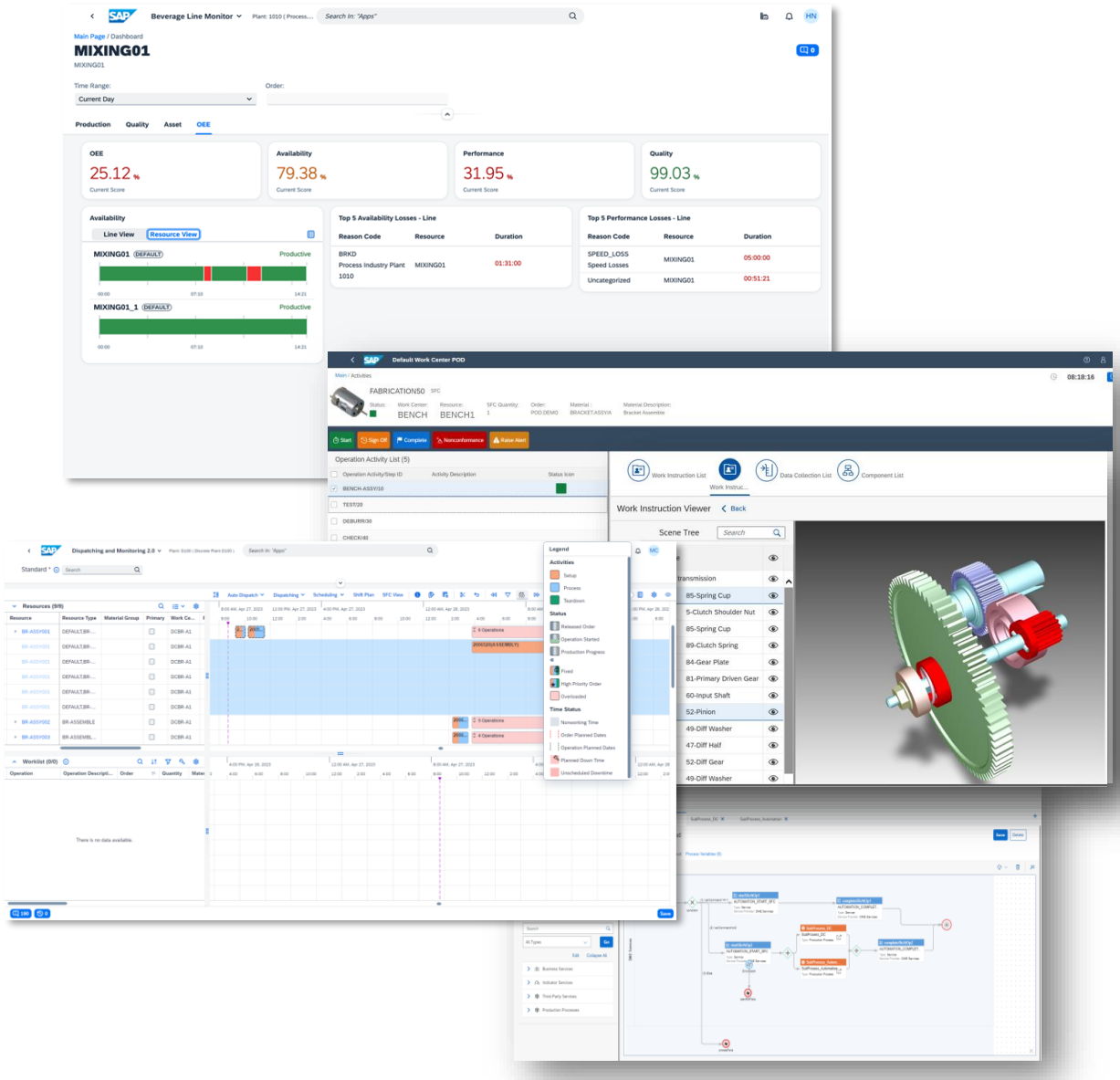
** Artificial Intelligence and Machine Learning

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SAP Digital Manufacturing

Automate processes and resources to improve manufacturing efficiency, quality and productivity

- Paperless production with intuitive user interfaces for production operators, automatic data collections and set machine parameters, thereby lowering cost, increasing productivity and quality
- Design, distribute and dynamically control manufacturing shop floor activities enabling a smart factory
- Shift and Labor planning to ensure business operations with right qualifications. Production Order scheduling and dispatching considering labor, resource and maintenance constraints to plan operations and adopt to short term changes
- Cross-plant real-time analytics for manufacturing performance e.g. Perfect Order Fulfillment, Overall Equipment Effectiveness, loss analysis along with machine data to identify improvement opportunities
- Ability to collect and share product genealogy data between members of the network to trace accountability and provide transparency

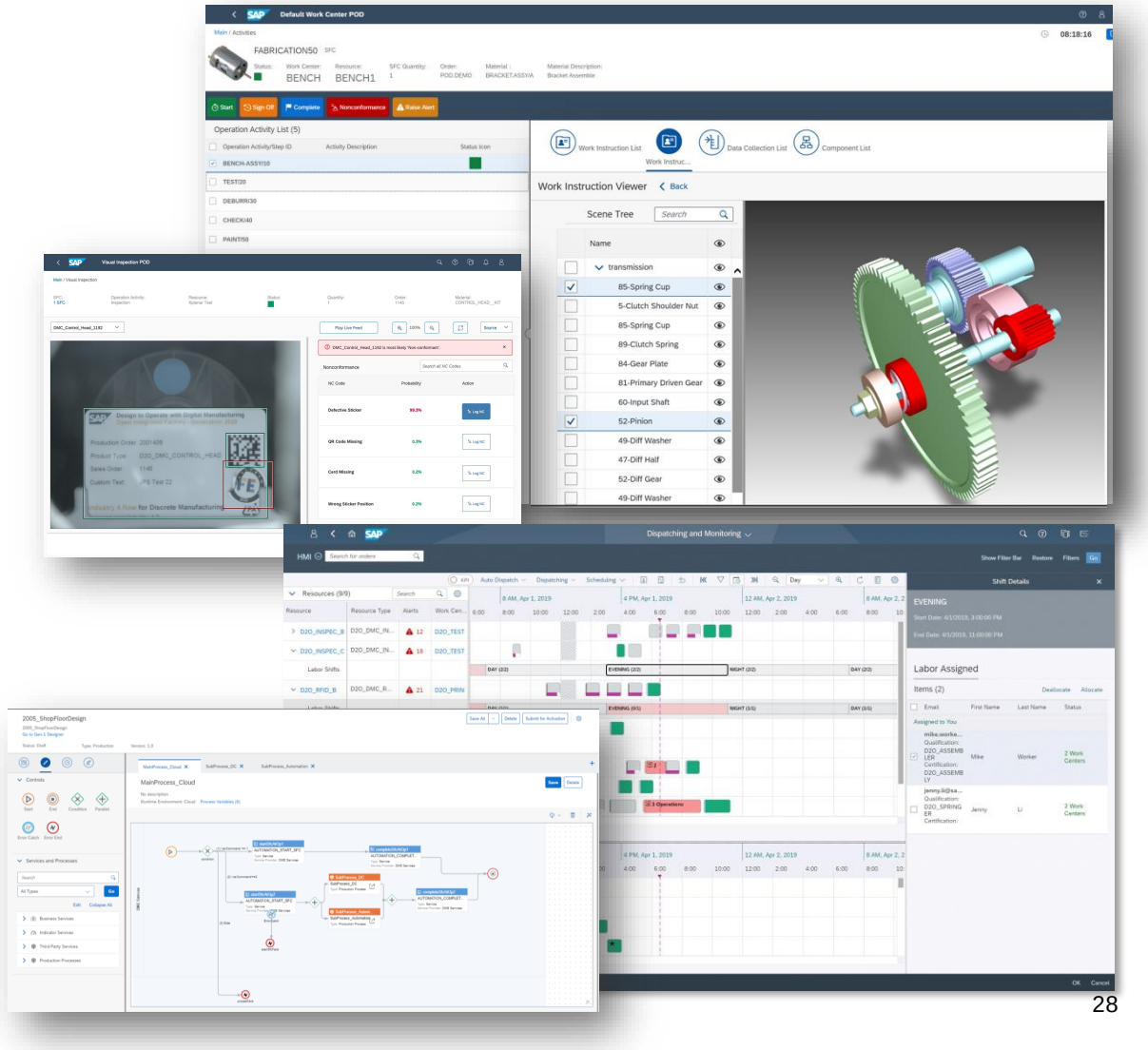


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SAP Digital Manufacturing for execution: Schedule, automate processes and resources to improve manufacturing efficiency, quality and productivity

SAP Digital Manufacturing for execution (DMe) – Discrete Industry

- Enable resource orchestration by dispatching and sequencing operations to compress the manufacturing lifecycle and provide real-time production performance tracking
- Implement top-floor to shop floor scenarios to achieve rapid return-on-investment through out-of-the-box integration to SAP solutions
- Utilize intuitive user interfaces (UI) for production operators and transform to paperless production, lowering cost and increasing productivity
- React quickly to unexpected events by monitoring the entire manufacturing process to optimize resources and speed execution utilizing built-in intelligence
- Machine learning models assist operator on the shop floor to execute visual inspection tasks of manufactured products



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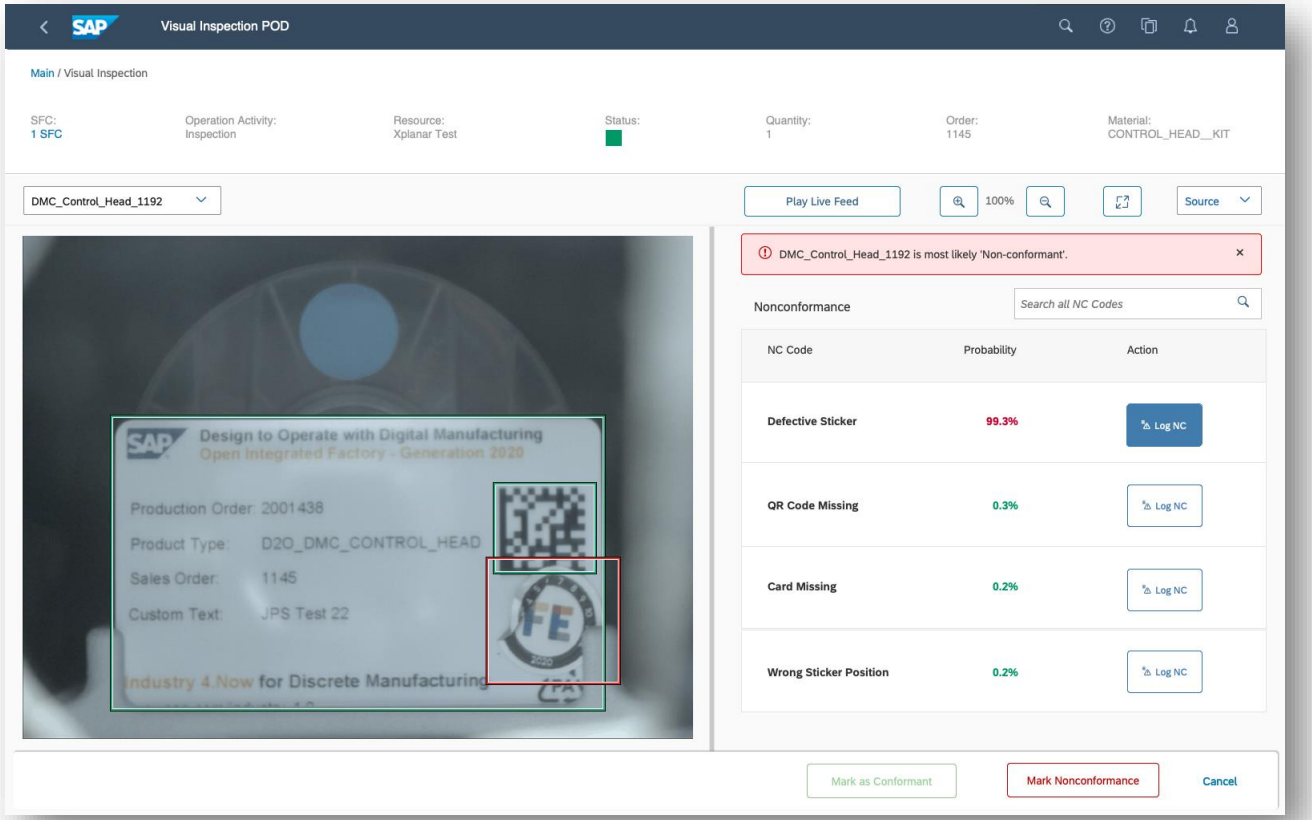
SAP Digital Manufacturing for execution

AI/ML Scenario: Visual Inspection - Assist Non-Conformance Logging

Machine learning models **assist operator** on the shop floor **to execute visual inspection tasks** of manufactured products. Using a **Production Operator Dashboard,** it **simplifies** the **identification of defects** and **logging** the right **Non-Conformance** to ensure defective parts are handled as business requires.

Key Capabilities

- Upload pre-trained machine learning model and deploy it to shop floor supporting the operator on visual inspection tasks
- Operator can capture images with connected cameras or can inspect images from industrial cameras provided by the data collection API
- Assist operator to identify defects and log the right Non-Conformance code using the machine learning model
- Allow the machine learning model to log the Non-Conformance automatically based on the prediction and under operator's control
- Automated collection of images and inspection results which can be reviewed, analyzed and downloaded as analytical data sets to train new machine learning models



Watch the Video on how Visual Inspection works

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SAP Digital Manufacturing for execution

Key Capabilities for Discrete Industries

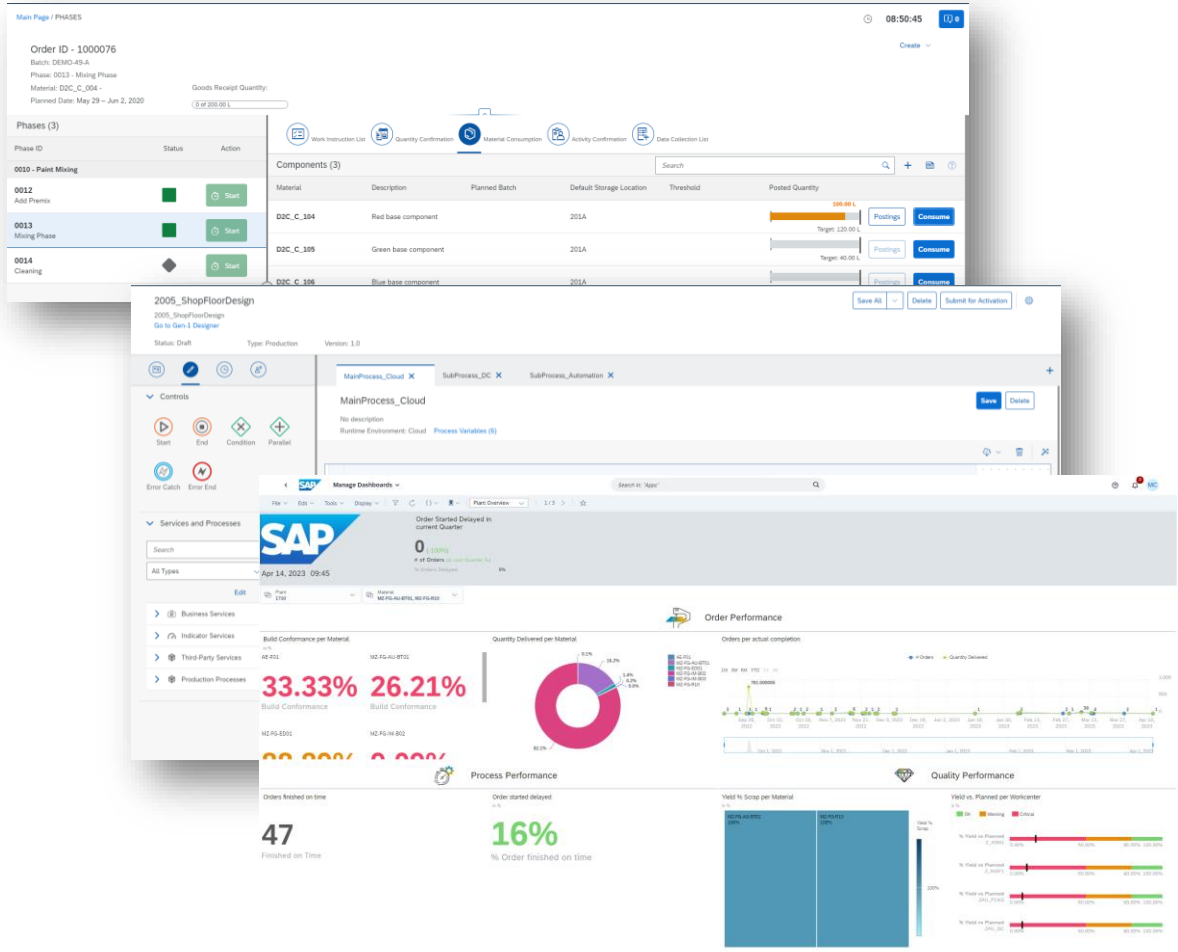
- Time Based Auto Assembly
- Interactive Work Instructions
- Electronic Buy-off
- Certification Definition and Enforcement
- Raise Alert's
- Quality and Non-Conformance
- Packaging Functionality for Finished Goods on the Shop Floor
- Overall Equipment Effectiveness
- Work in process management - Serializing, Relabeling, Splitting and Merging of SFCs
- Work in Process Management Routing's
- Production Operator Dashboards Alerts and Notifications
- Execute Production Order in Order POD
- Tooling - Integration of Tools from SAP S/4HANA with Tool Planning, Scheduling, and Logging
- Manage Orders
- Logistics Orders enable Shop Floor Level WIP Transports
- Time Tracking and Posting

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SAP Digital Manufacturing for Execution: Schedule, automate processes and resources to improve manufacturing efficiency, quality and productivity

SAP Digital Manufacturing for execution (DMe) – Process Industry

- Provision of the new Order POD to support order- **based execution** of process orders with single batches
- **Implement top-floor to shop floor scenarios** to achieve rapid return on investment through out-of-the-box integration to SAP solutions
- **Utilize intuitive user interfaces** (UI) for production operators and transform to paperless production, lowering cost and increasing productivity
- React quickly to **unexpected events** by monitoring the entire manufacturing process to optimize resources and speed execution utilizing built-in intelligence
- **Collaborative integration** to allow you to respond quickly to unexpected events

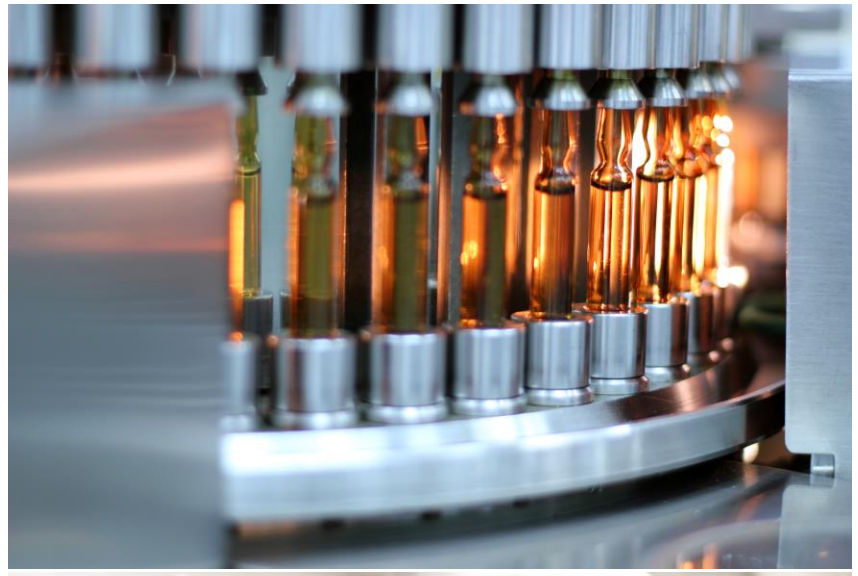


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SAP Digital Manufacturing for execution

Key Capabilities for Consumer and Process Industries

- **Extend Master Recipes** integrated from S/4HANA with Work Instructions, Data Collections and Process Parameters
- **Execute Batch related Process Orders** in the Production Order Dashboard (POD)
- **Create and Valuate Batches** for Main-Products as well as for **Co-Products and By-Products** during Production and search and **Consume batches** based on characteristics
- **Confirm process order phases** with Yield, Scrap and Activities integrated with S/4HANA
- Post **goods movements** for goods issues and receipts seamlessly integrated with S/4HANA
- **Record inspection results** integrated with S/4HANA QM
- **Integrate with the Shop Floor** in a **bi-directional** way using Equipment Connectivity (Production Process Designer) and Plant Connectivity (PCo)
- Enable **Post Production Reporting**
- **Customize** your application with the POD Designer
- Print customized **Labels**
- **View product history report** for produced batches



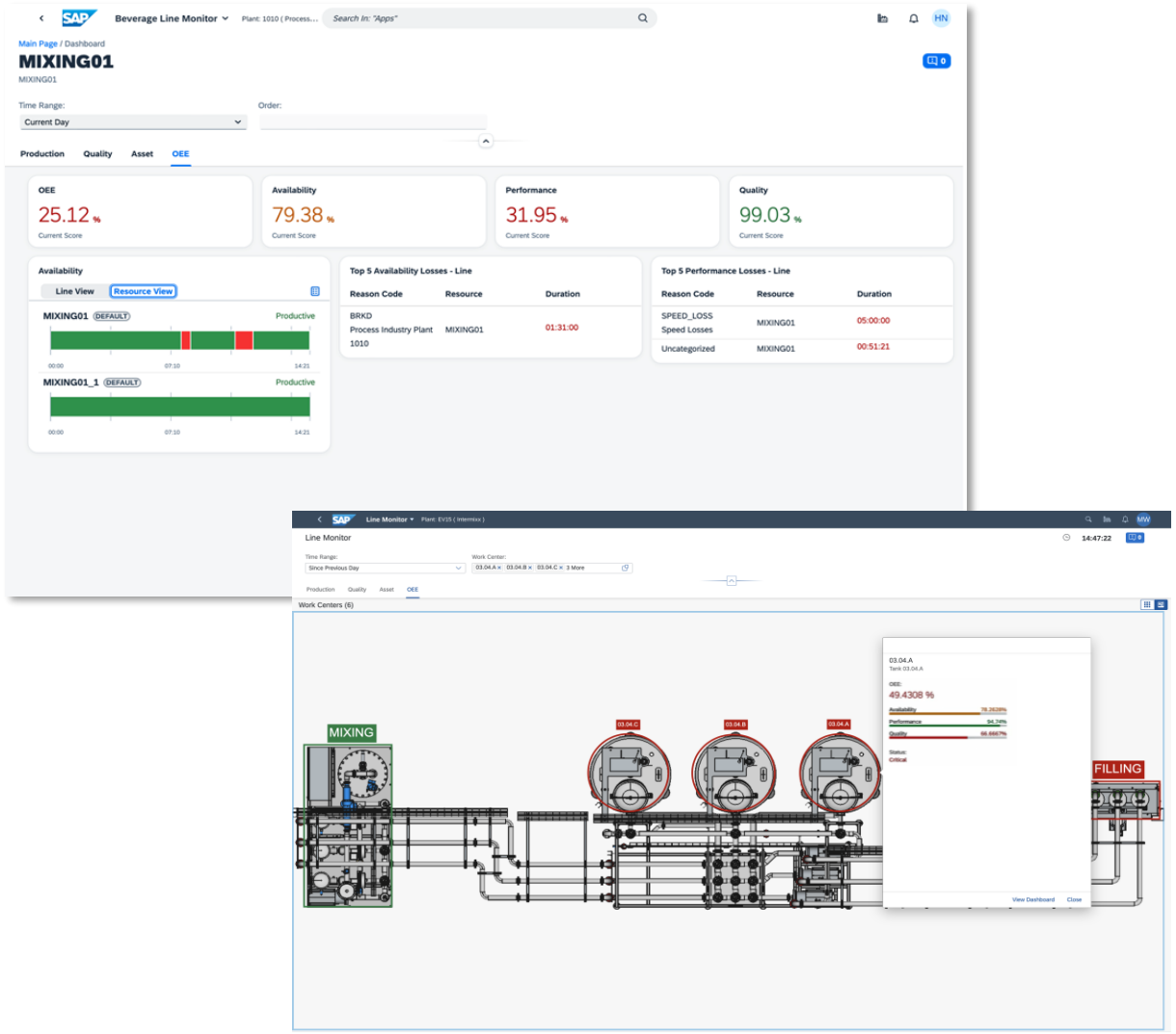


SAP Digital Manufacturing for insights(DMi)

Intelligent insights and analysis across global plant operations

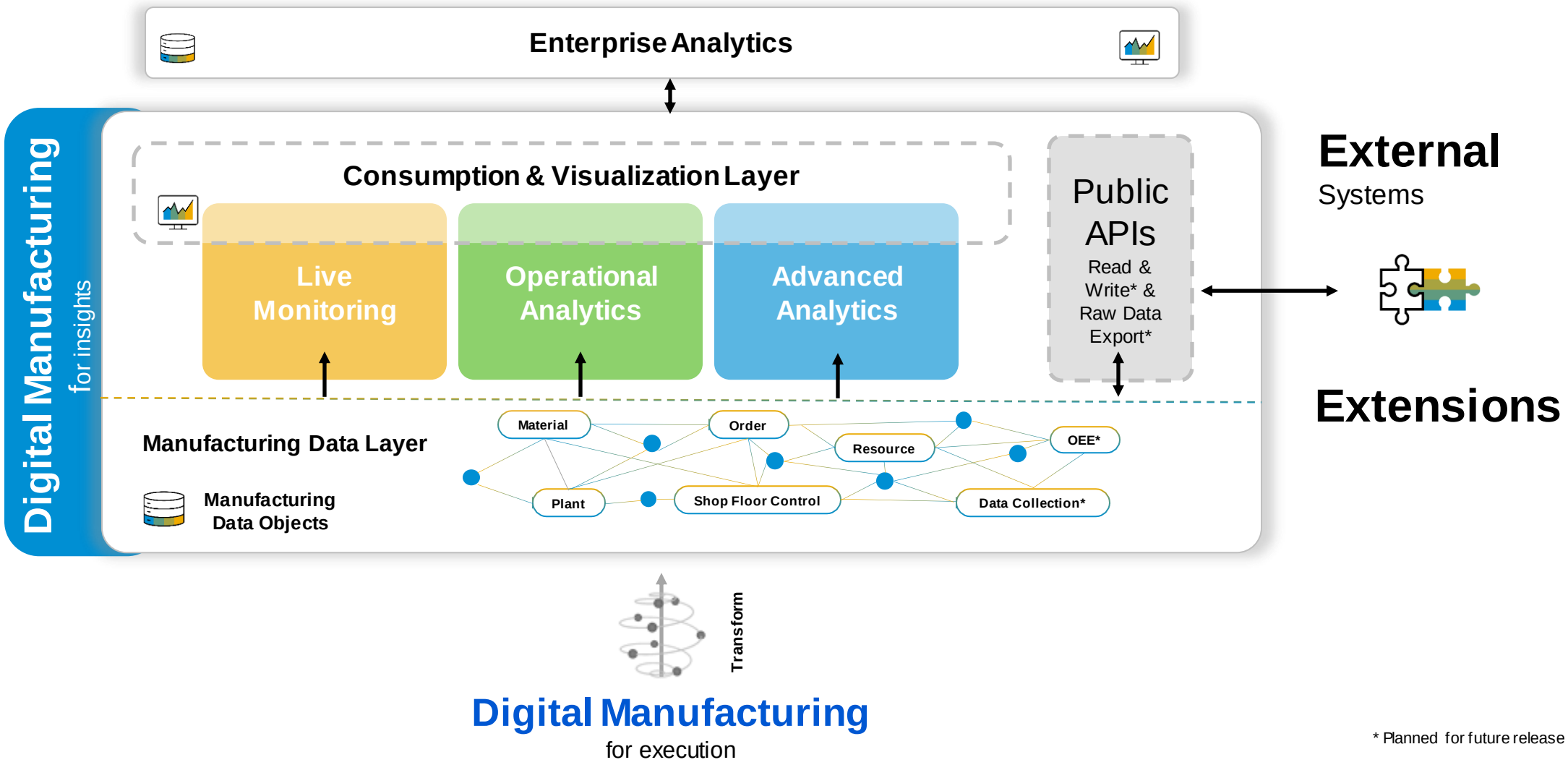
ISA-95 & ISA-88

- Self-service manufacturing analytics with harmonized access for better visibility and extensibility
- Live production monitoring along the plant hierarchy and across multiple dimensions in real-time
- Operational analytics using KPIs & dashboards to drive data-driven decisions
- Pre-delivered advanced analytics to increase productivity, quality and sustainability
- Closed-loop analytics to trigger actions fueling a continuous improvement process



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Future-proof Manufacturing Analytics

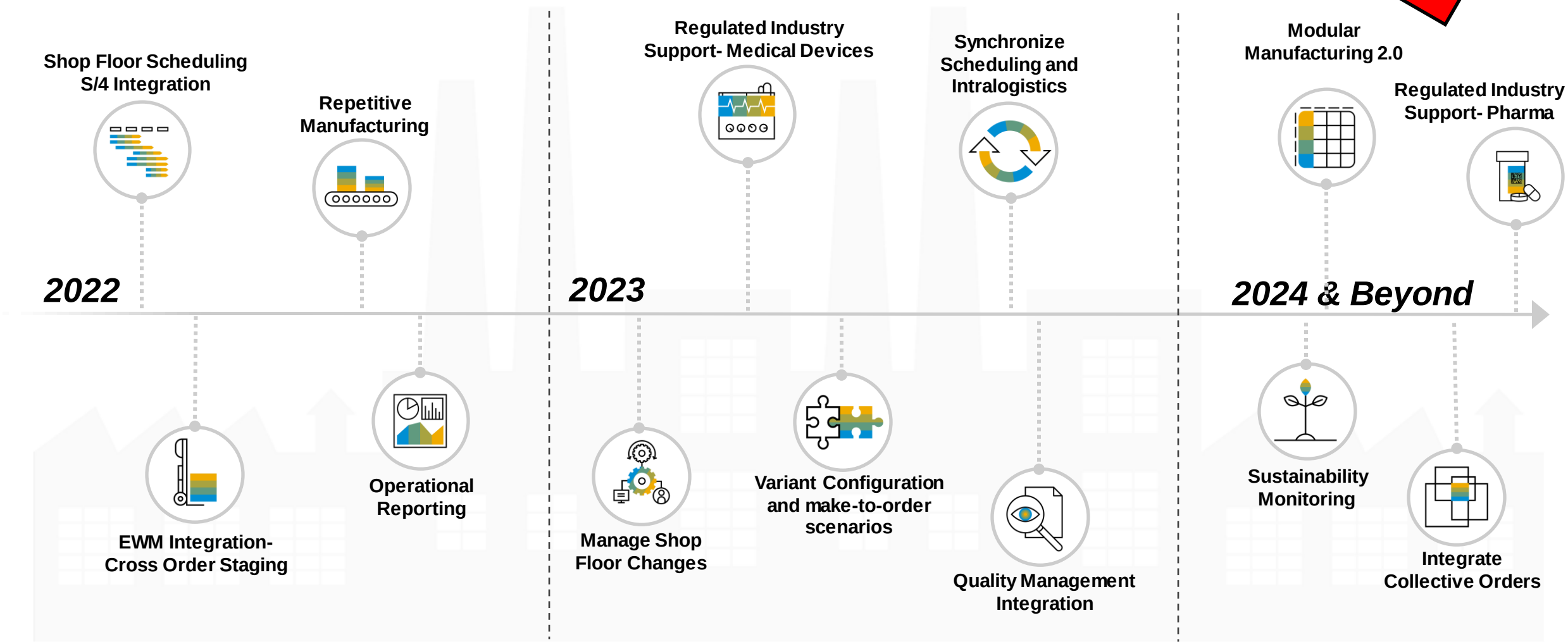


* Planned for future release

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SAP Digital Manufacturing – Product Roadmap

Reference only
Timelines can change



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Road Map Explorer

SAP Digital Manufacturing
Elevate initiative

SAP Digital Manufacturing

Elevate your manufacturing operations to the next level

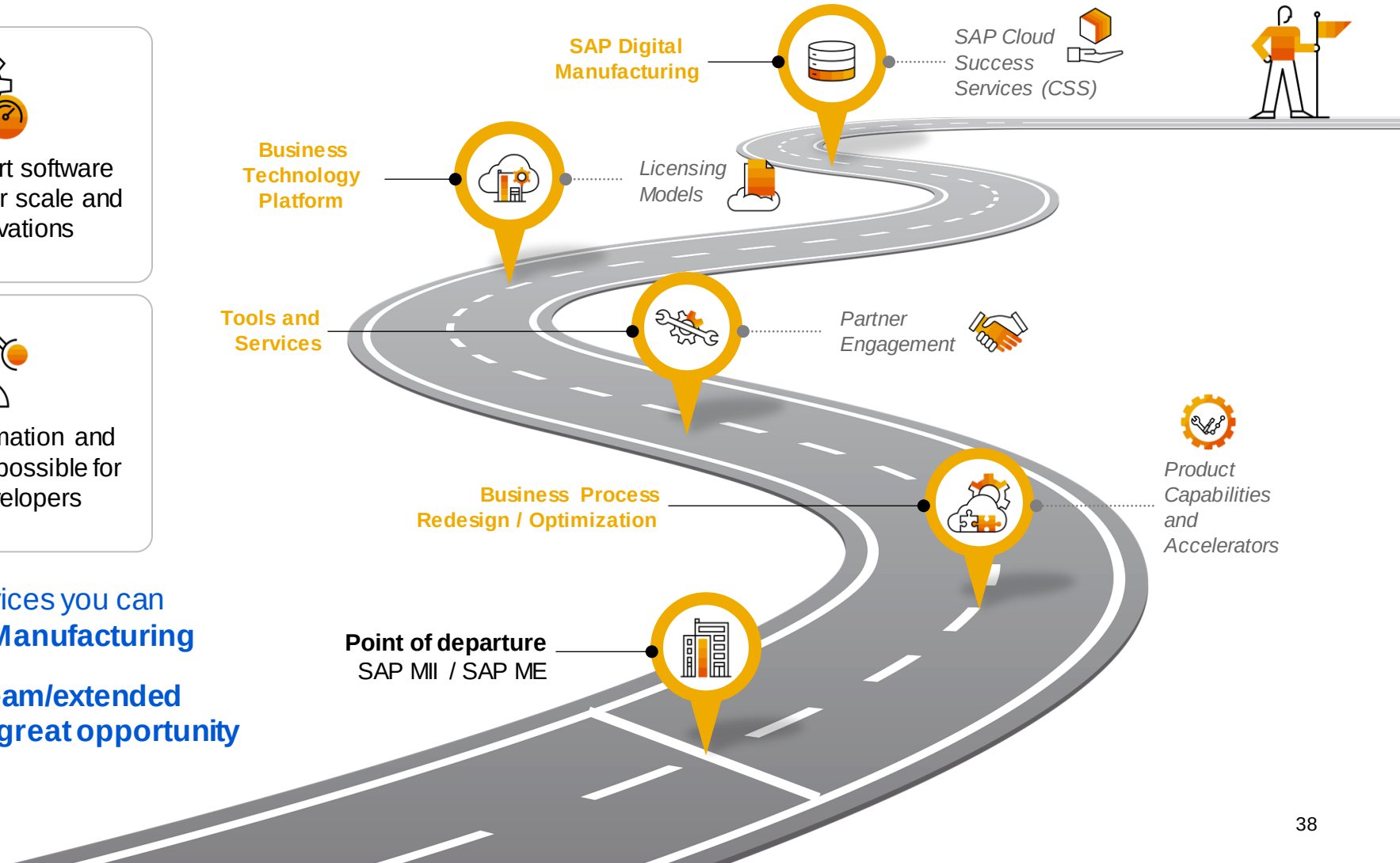
SAP Digital Manufacturing is the platform of innovation and a key component of SAPs strategic Digital Manufacturing solution portfolio.

Discrete + Process industry

State of the art software architecture for scale and rapid innovations

Resilient and hybrid Cloud – Edge architecture supporting high available 24/7 operations

Flexible automation and orchestration possible for citizen developers



Together with SAP ERP cloud + BTP services you can evolve your business to run your **Digital Manufacturing**

ME + MII will reach the end of mainstream/extended maintenance in 2027. Therefore, it is a great opportunity to start with the digital transformation

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SAP Digital Manufacturing
Top Industries

Discrete Industry



Automotive



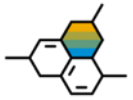
Industrial Manufacturing



High-Tech



Consumer Products



Life Sciences

Medical Device

Process Industry



Consumer Products

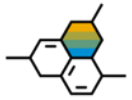


Chemical

(Batch)



O&G Petrochemical



Life Sciences

Pharma

Public

Automotive Industry
Plant Operation Challenges

Challenges

- **Quality control:** With the increasing complexity of modern vehicles, ensuring high levels of quality control on the shop floor can be challenging
- **Efficiency and productivity:** As demand for cars increases, there is a need to produce more units within a limited timeframe. This requires the shop floor to operate at optimal efficiency and productivity levels, with minimal downtime or delays in production
- **Supply chain disruptions:** The automotive industry relies on a complex network of suppliers, and any disruptions in the supply chain can cause significant delays in production, leading to lost revenue and customer dissatisfaction
- **Technological advancements:** The automotive industry is rapidly evolving, with new technologies and manufacturing processes being introduced regularly. This requires workers to continuously upskill and adapt to new tools and equipment, which can be challenging and time-consuming

What's Included

Digital Manufacturing for execution

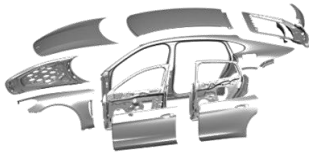
Insights
- ✓ SAC Embedded KPI Analytics
- ✓ Production Process Designer
- ✓ Dashboard Designer
- ✓ Production Connector

- ✓ Process Manufacturing
- ✓ Discrete Manufacturing
- ✓ Modular Production
- ✓ Line Monitor

Edge
- ✓ Production Connector

REQ
- ✓ Labor
- ✓ Resources
- ✓ Tooling
- ✓ Production Connector

SMART **PRESS SHOP**
MANUFACTURING PERFORMANCE



"We were looking for a modern cloud solution for our IT. SAP Digital Manufacturing Cloud convinced us in the end with its modern cloud architecture and modern user interface. We also appreciate that SAP Digital Manufacturing Cloud will develop quickly and expand further functions. We will benefit from this through the frequent updates and therefore always have the most up-to-date system" Hendrik Rothe, Managing Director Smart Press Shop

100%	100%	Fully	100%
Traceable production from raw materials to finished parts	Cloud-first software-as-a-service platform for all IT services	Paperless production processes	Powered by renewable energy

Vibracoustic



Implement and roll-out a global manufacturing operations solution to harmonize processes across all 40 production plants

- Global Testing
- Global Prototypes
- Line Series Production

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Industrial Manufacturing Industry
Plant Operation Challenges

Challenges

- **Customization demands:** Industrial machinery is often highly customized to meet the specific needs of customers. This can lead to challenges on the shop floor, as workers must be able to adapt to different configurations and ensure that each machine is assembled correctly
- **Precision manufacturing:** Industrial machinery often requires a high level of precision in manufacturing, which can be difficult to achieve consistently. Any errors or defects in production can lead to costly rework and delays in delivery
- **Complexity of machine** Industrial machinery is becoming increasingly complex, with more advanced electronics and controls being integrated into machines. This requires workers to have a higher level of technical knowledge and skill to assemble and test these machines
- **Cost pressures:** Industrial machinery is often expensive to manufacture, and manufacturers must balance the need to produce high-quality machines with cost constraints. This can lead to pressure on the shop floor to find ways to optimize manufacturing processes and reduce costs

What's Included

Digital Manufacturing for execution

insights
- ✓ SAC Embedded KPI Analytics
- ✓ Production Process Designer
- ✓ Dashboard Designer
- ✓ Production Connector

- ✓ Process Manufacturing
- ✓ Discrete Manufacturing
- ✓ Modular Production
- ✓ Line Monitor

Edge
- ✓ Production Connector

REO
- ✓ Labor
- ✓ Resources
- ✓ Tooling
- ✓ Production Connector

Public

High-Tech Industry
Plant Operation Challenges

Challenges

- **Rapid product cycles:** The high-tech industry is characterized by rapid product cycles, with new products being developed and introduced to the market at a fast pace. This requires the shop floor to be able to adapt quickly to changes in production processes and technology
- **High precision and quality requirements:** High-tech products often require a high level of precision and quality to meet customer expectations. This can be challenging to achieve consistently and may require specialized equipment and skilled workers
- **Shortage of skilled labor:** The high-tech industry requires workers with specialized skills in areas such as engineering, programming, and electronics. However, there is often a shortage of workers with these skills, making it difficult to find and retain qualified employees
- **Supply chain disruptions:** As with the automotive and industrial machinery industries, the high-tech industry relies on a complex network of suppliers. Any disruptions in the supply chain

What's Included

Digital Manufacturing for execution

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Consumer Products Industry
Plant Operation Challenges

Challenges

- **Demand forecasting:** Consumer products manufacturers must be able to accurately forecast demand for their products to ensure they can meet customer expectations while avoiding overproduction or stockouts. This requires a high level of coordination and communication between different departments within the company
- **Short product life cycles:** Consumer products often have short life cycles, with new products being introduced frequently to meet changing consumer preferences. This can lead to challenges on the shop floor, as workers must be able to adapt quickly to changes in production processes and technology
- **Packaging and labeling requirements:** Consumer products must be packaged and labeled in compliance with a range of regulations, including health and safety requirements
- **Cost pressures:** As with other industries, consumer products manufacturers must balance the need to produce high-quality products with cost constraints. This can lead to pressure on the shop floor to find ways to optimize manufacturing processes and reduce costs

What's Included

Digital Manufacturing for execution

insights
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- ✓ Production Process Designer
- ✓ Dashboard Designer
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Edge
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REQ
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- ✓ Tooling
- ✓ Production Connector

Public

Life Science Industry
Plant Operation Challenges

Challenges

- **Quality control:** Medical devices must meet strict quality control standards to ensure patient safety. This requires a high level of attention to detail and documentation to ensure that each device is manufactured to specification
- **Regulatory compliance:** The life science medical device industry is heavily regulated, with strict requirements for safety and efficacy. Manufacturers must comply with a range of regulations, including FDA regulations in the United States, which can be time-consuming and expensive
- **Cleanroom manufacturing:** Many medical devices must be manufactured in a cleanroom environment to prevent contamination. This requires specialized facilities and equipment, as well as highly trained and skilled workers
- **Product traceability:** Medical devices must be traceable throughout the manufacturing process and supply chain to ensure that any defects or issues can be identified and addressed quickly

What's Included

Digital Manufacturing for execution

insights
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ZEISS

"We are just at the beginning of our smart factory transformation journey. With the SAP Digital Manufacturing solution, we will make manufacturing more intelligent, more efficient, and more productive now and in the years to come."

Jochen Scheuerer, Head of Connected Smart Factory, Carl Zeiss AG (ZEISS Group)

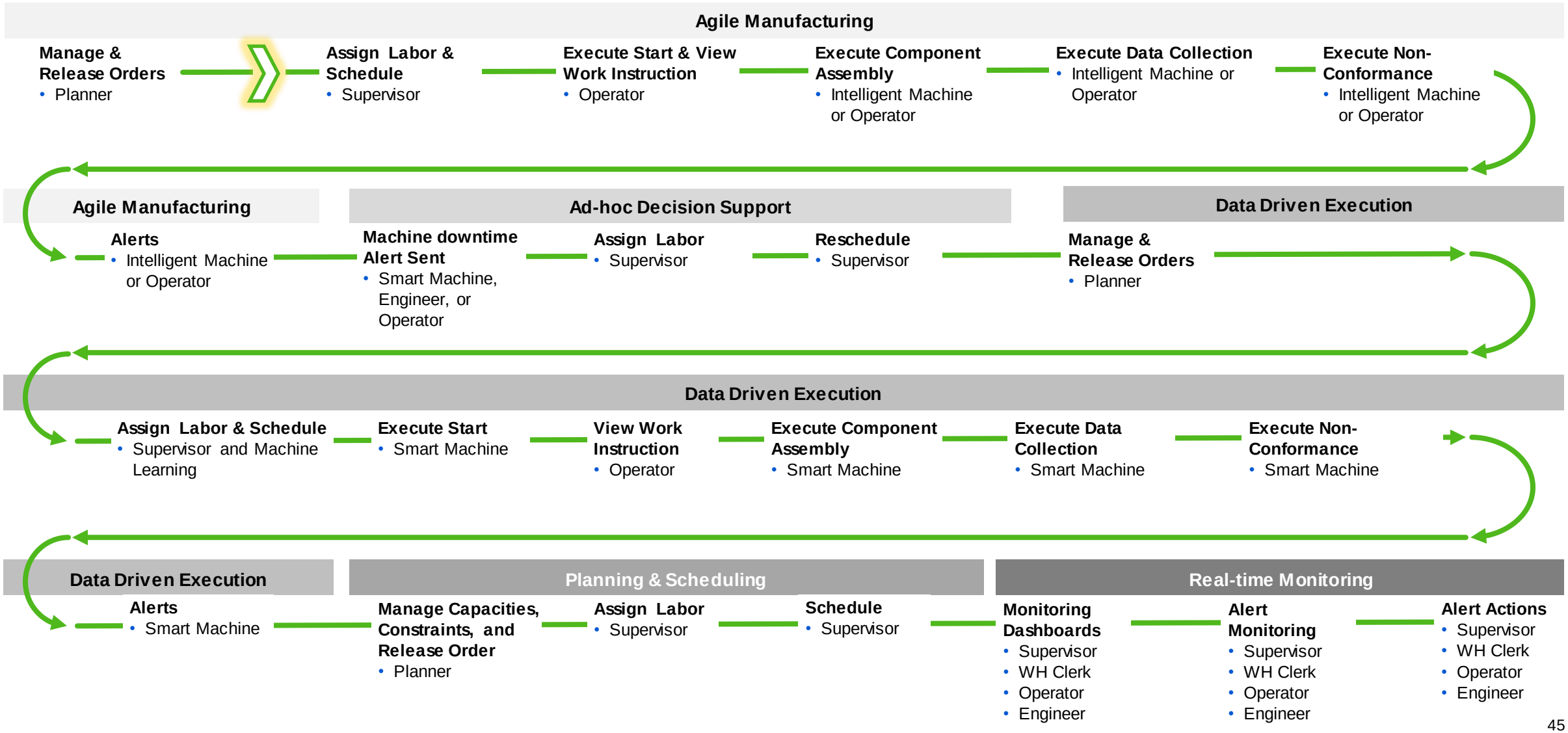
~100%
Elimination of paper-based digital history record printing

~3x
More efficient, going from 3 parallel rollouts to 10

Value-Driven Results
- Facilitated direct interaction between the shop floor and the MES, eliminating manual inputs
- Optimized manufacturing performance and delivered significant efficiency gains by integrating production execution, visibility, and analysis processes
- Enabled more accessible and transparent production information for the management team
- Increased production output and improved product quality

Public

Design to Operate Experience Journey
Discrete Industry



Public

Global Template + Public Cloud = Successful Rollouts

Benefits of a Global Template

Utilizing a Global Template

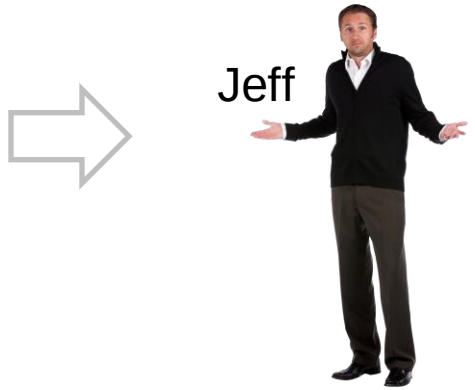
- Speed of Subsequent Rollouts in Weeks
- Standardized Best Practices across the Organization

Return On Investment(ROI)

- Realized much faster due to Global Template

Resource Driven, not by Plant

- Roll-out as slow or as quick as you want



Benefits of a Public Cloud MES

Speed of Implementation

- Months not Years
- Average Quick Start Service is 11 Weeks

Always on the Latest Release

- Quarterly Releases
- Quarterly Roll-out of New Functionality

ERP

- Integrated out-of-the-box
- Third Party ERP custom integration
- Stand-alone

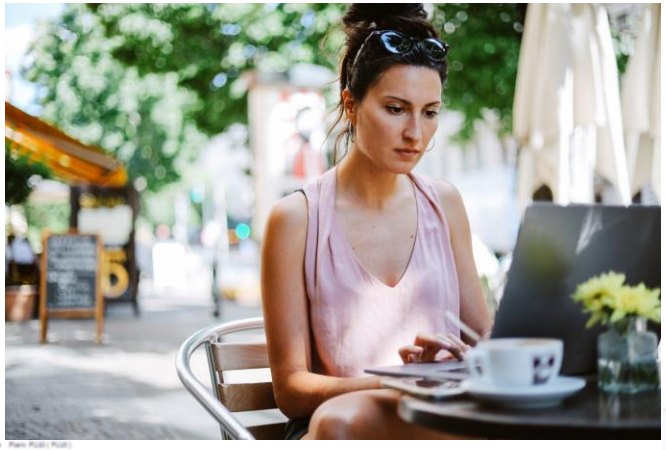
Labor Flexibility

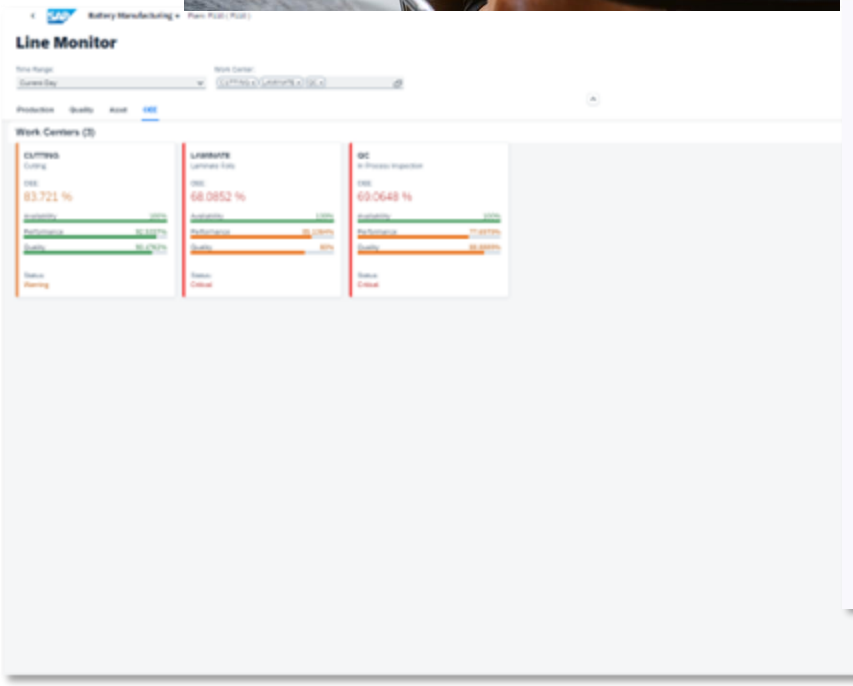
- All employees on the same platform
- Cross-Plant working
- 3D Guided Work Instructions
- 14+ Supported Languages

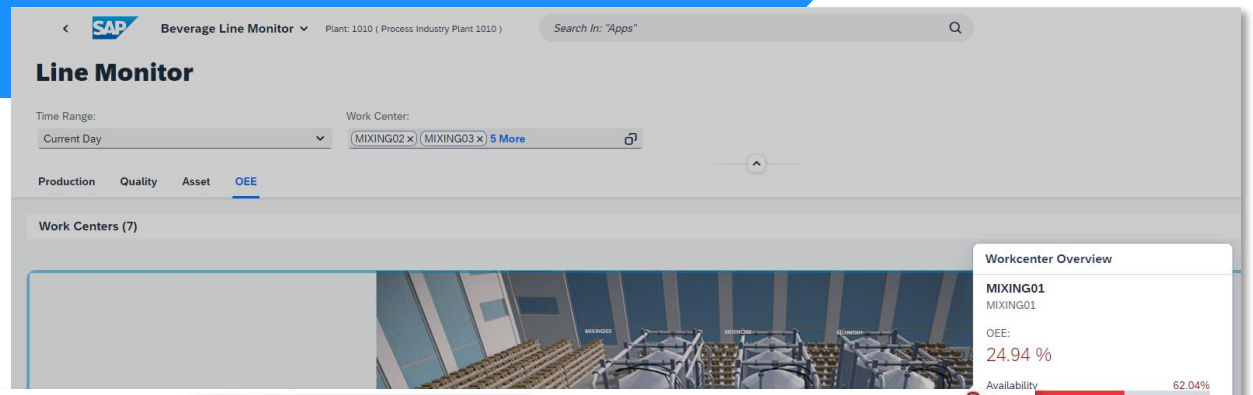
Public

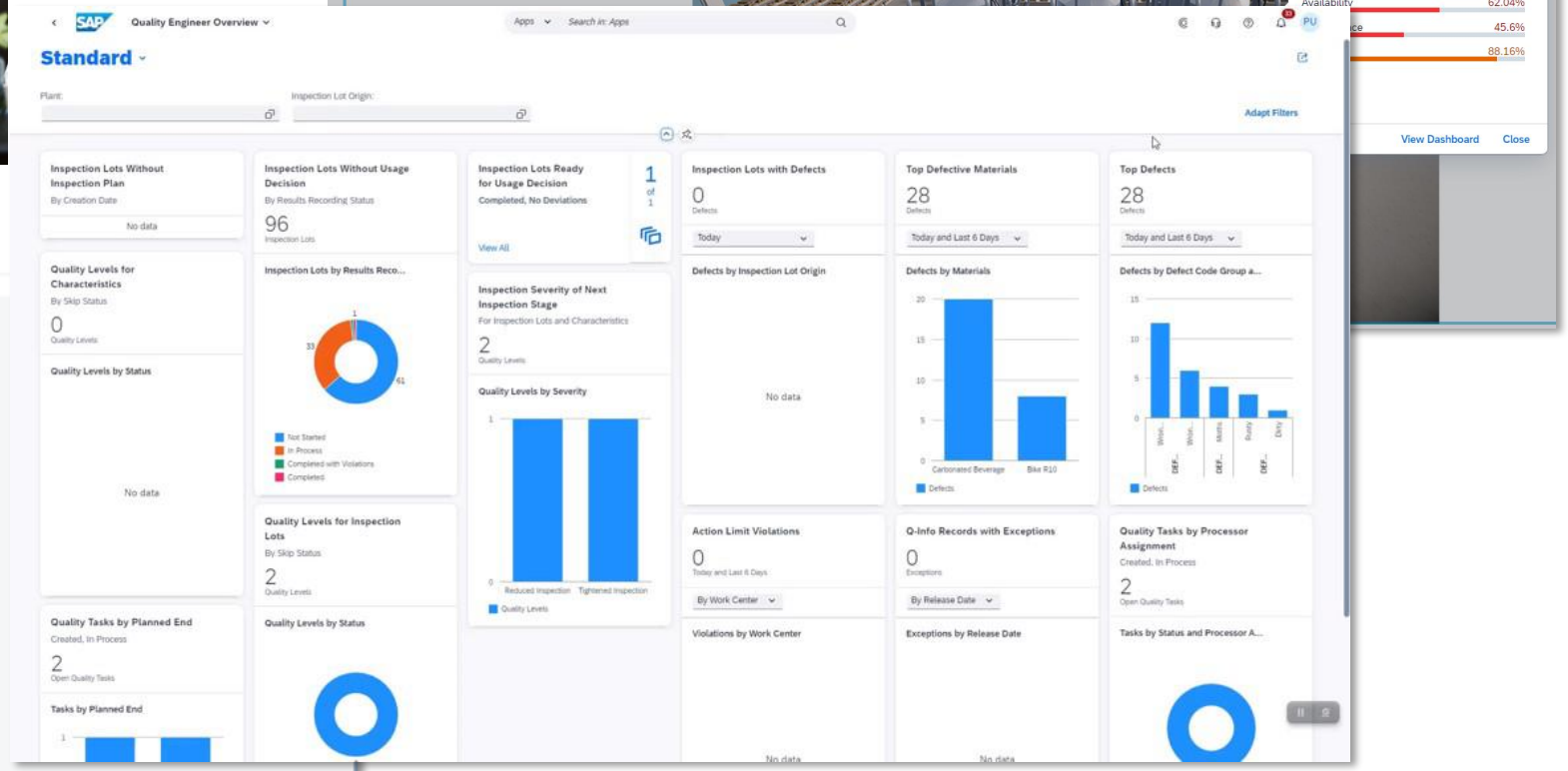
Visibility – Line, Quality, OEE

Maria – Plant Manager









Public

Thank you.

Thomas Johannes Brückner
Digital Supply Chain and Industry 4.0 SAP NL

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SAP Digital Manufacturing

SAP Digital Manufacturing in Life Sciences

Planned Innovations for Medical Device Manufacturers

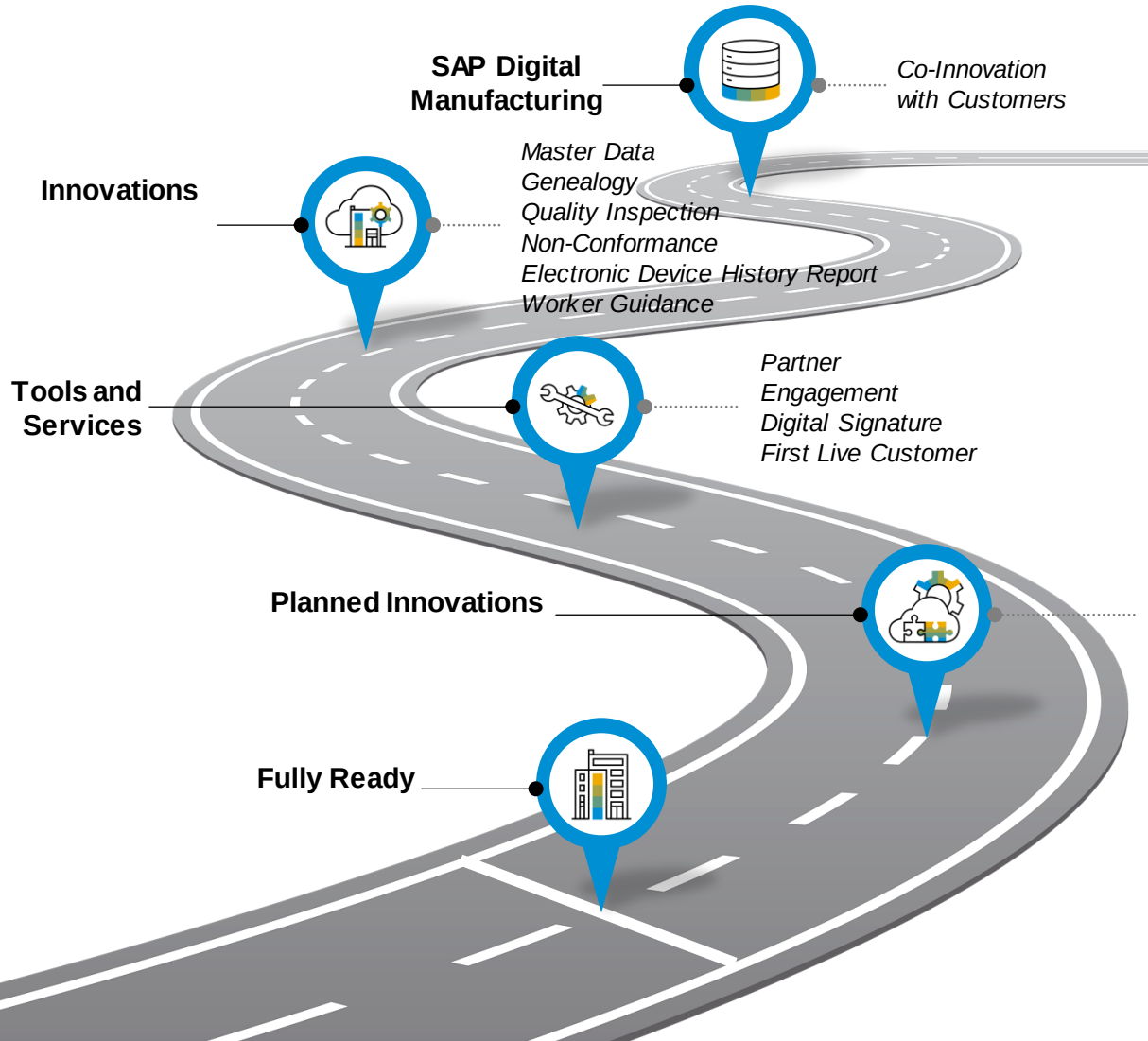
SAP Digital Manufacturing (DM) is the MES solution serving **both manufacturing and process industries**. SAP offers tools and services to our customers to achieve GxP compliance **(Std. Ref. (21 CFR Part 11 & Eudralex 11)** and FDA's **GmP standards**

Planned Innovations (Product Vision)

Functional

- Define granular user-roles with DMC **authorization** concept
- Enhanced **QM Integration**
- **Approve and Sign Master Data** objects via Electronic Signature
- Enable **Audit trail** management
- Sequence enforced **worker guidance**
- **Electronic Signature** in Production Operator Dashboard / w Signature Log
- Enhanced **Audit-Log** Viewer
- **eDHR** Process with Review, Release and electronic Signature

Future Scope



- *Define granular user-roles with DM authorization concept*
- *Approve and Sign Master Data objects via Electronic Signature*
- *Enable Audit trail management*
- *Electronic Signature in Production Operator Dashboard / w Signature Log*
- *Enhanced Audit-Log Viewer*
- *eDHR Process with Review, Release and electronic Signature*

Public

Achieving a Smart Factory Transformation in the Cloud with the SAP® Digital Manufacturing Solution and SAP BTP



Before: Challenges and Opportunities

- Desire to carry out its cloud-first digital transformation strategy, streamlining and automating shop floor and manufacturing processes
- Identification of a cloud-based manufacturing execution system (MES) to underpin its smart production lines of the future
- Very high standards of testing and documentation required to meet regulatory obligations

Why SAP, Deloitte, and Syntax Systems GmbH & Co. KG

- Extensive functionality offered by the SAP® Digital Manufacturing solution and SAP Business Technology Platform (SAP BTP) to connect top-floor business systems to shop floor equipment and provide visibility across plants
- Confidence in SAP Services and Support offerings to prepare a proof of concept for validation and operation in tandem with expert advice from SAP Enterprise Support services
- Deloitte's strategic support, helping the organization build a future-ready technology infrastructure
- Syntax's implementation expertise in SAP Digital Manufacturing and significant capabilities in building custom applications on SAP BTP

After: Value-Driven Results

- Facilitated direct interaction between the shop floor and the MES, eliminating manual inputs
- Optimized manufacturing performance and delivered significant efficiency gains by integrating production execution, visibility, and analysis processes
- Enabled more accessible and transparent production information for the management team
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Featured Partners

Deloitte. SYNTAX

Carl Zeiss AG (ZEISS Group)	Industry	Products and Services	Employees	Revenue	Featured Solutions and Services
Oberkochen, Germany www.zeiss.com	Industrial manufacturing	Optics technology	~38,000	€8.75 billion	SAP Digital Manufacturing, SAP BTP, and SAP Services and Support

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Certifications

Compliance Document Finder | SAP Trust Center

ISO 27001 / 27017/ 27018	ISO 27001: Specifies a management system that is intended to bring information security under management control ISO 27017: Provides guidelines for information security controls applicable to the provision and use of cloud services ISO 27018 : Establishes controls and guidelines for implementing measures to protect Personally Identifiable Information (PII) in accordance with the privacy principles in ISO/IEC 29100 for the public cloud computing environment.
ISO 22301	Standard for business continuity management. It's designed to protect business operations from potential disruption. This includes extreme weather, fire, flood, natural disaster, theft, IT outage, staff illness, and terror attacks.
SOC1 Type 2	SOC 1 is focused on financial reporting controls.
SOC2 Type 2	SOC 2 focuses on security, availability, processing integrity, confidentiality, and privacy of a system.
CSA STAR registry / CSA STAR Certificate	Is a rigorous third party independent assessment of the security of a cloud service provider.
C5 Type 2	C5 (Cloud Computing Compliance Controls Catalogue) intended primarily for professional cloud service providers, their auditors and customers of the cloud service providers. It defines requirements/controls the cloud providers have to comply with or which minimum requirements the cloud providers should be obliged to meet.
EU Cloud CoC	Defines a set of requirements that enable CSPs to demonstrate their capability to comply with GDPR
ISO9001	This certificate is for development following Innovation Cycle, also all LABs are listed via Appendix

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Digital Manufacturing
Language Support & Available Data Centers

The SAP Digital Manufacturing user interfaces support the following languages:

- Simplified & Traditional Chinese
- Czech
- English
- French
- German
- Hungarian
- Japanese
- Korean
- Polish
- Portuguese (Brazilian)
- Russian
- Slovak
- Spanish (Other variations of Spanish are not supported)
- Turkish
  - SAP Asset Intelligence Network (SAP AIN) doesn't support Turkish. SAP AIN apps use English as display language

The application help on SAP Help Portal supports the following languages:

- English
- German
- Japanese

Digital Manufacturing is currently available with:

- **Microsoft Azure** at the below data center
  - Europe – Amsterdam, Netherlands
  - US West

Public

Further Information

Key Links:



SAP Road Maps



SAP Manufacturing Community



SAP Support



SAP Partner Portal



SAP Innovation Discovery



SAP Help Portal

Where to go to Provide Product Feedback and Ideas:



SAP Idea Place



Influence Programs



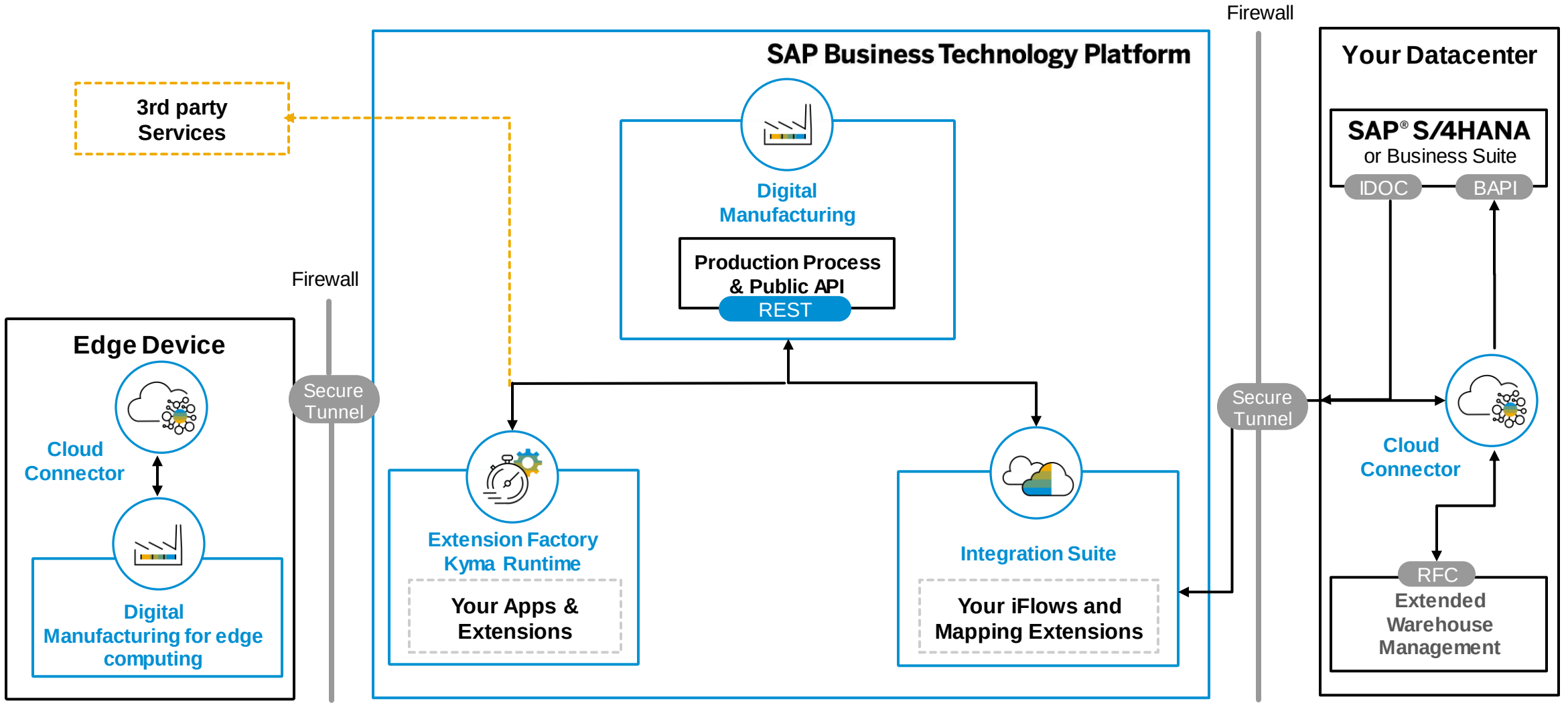
SAP User Groups

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SAP Digital Manufacturing Integration Landscape Overview

Integration Landscape Overview

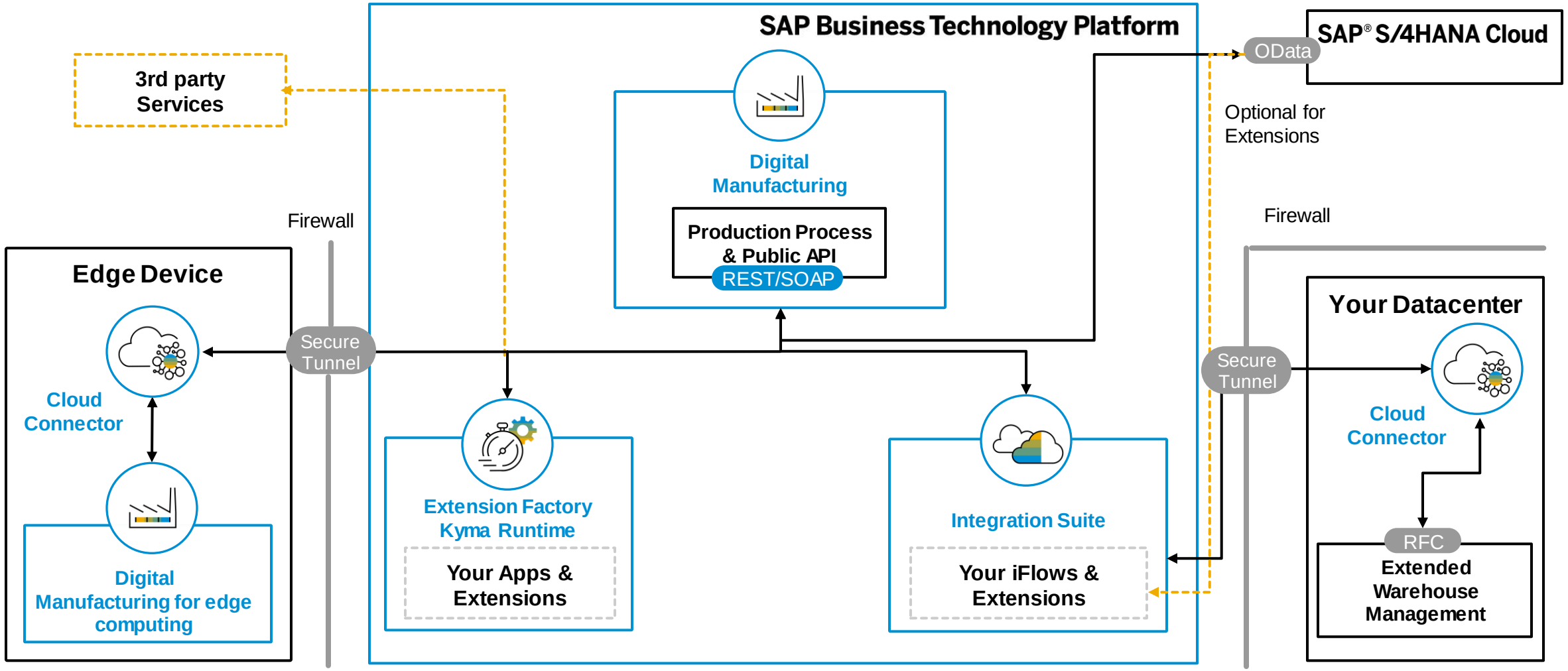
Integration Architecture for DM – S/4HANA or Business Suite



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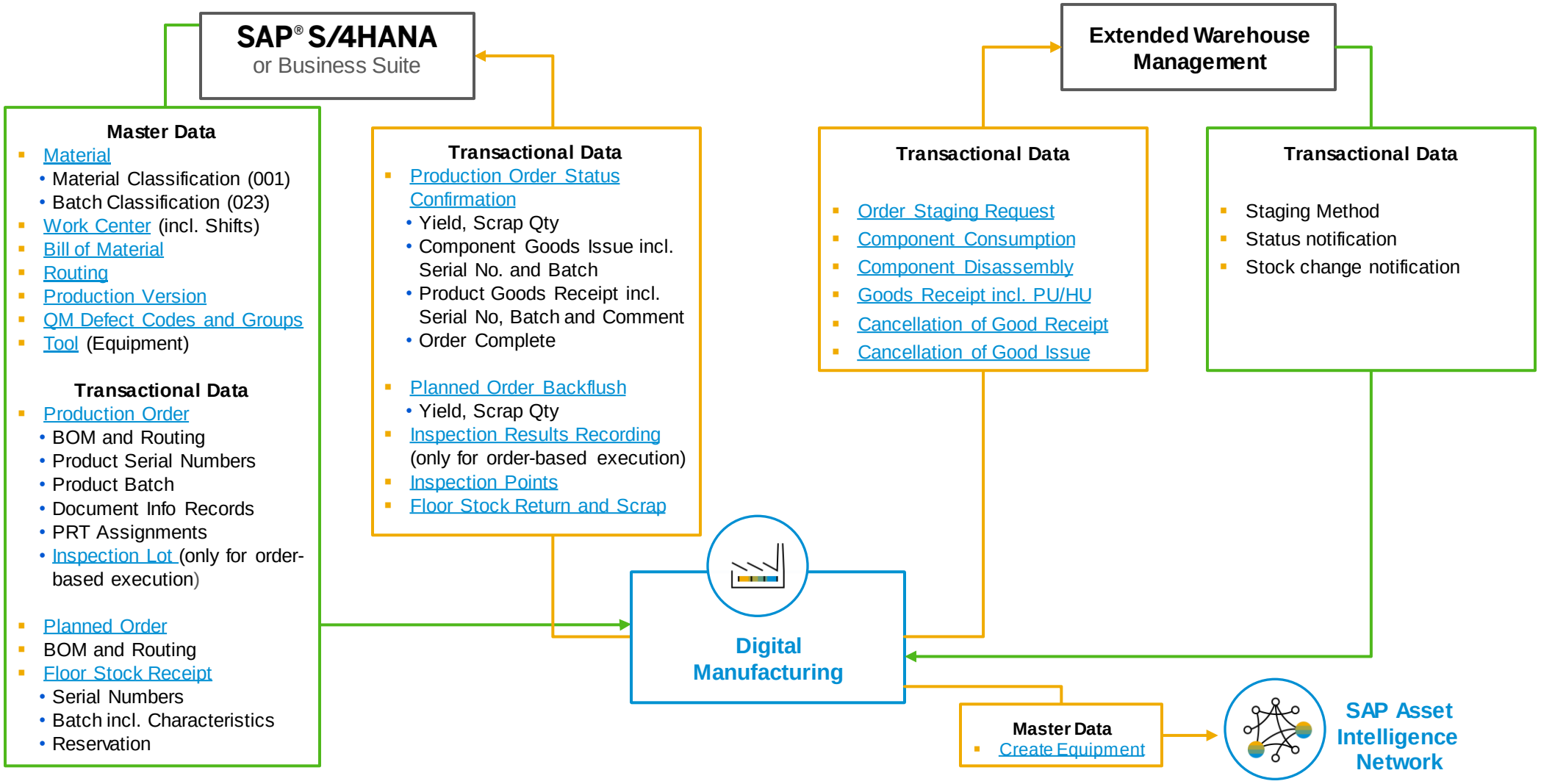
Integration Landscape Overview

Integration Architecture for DM – S/4HANA or Business Suite



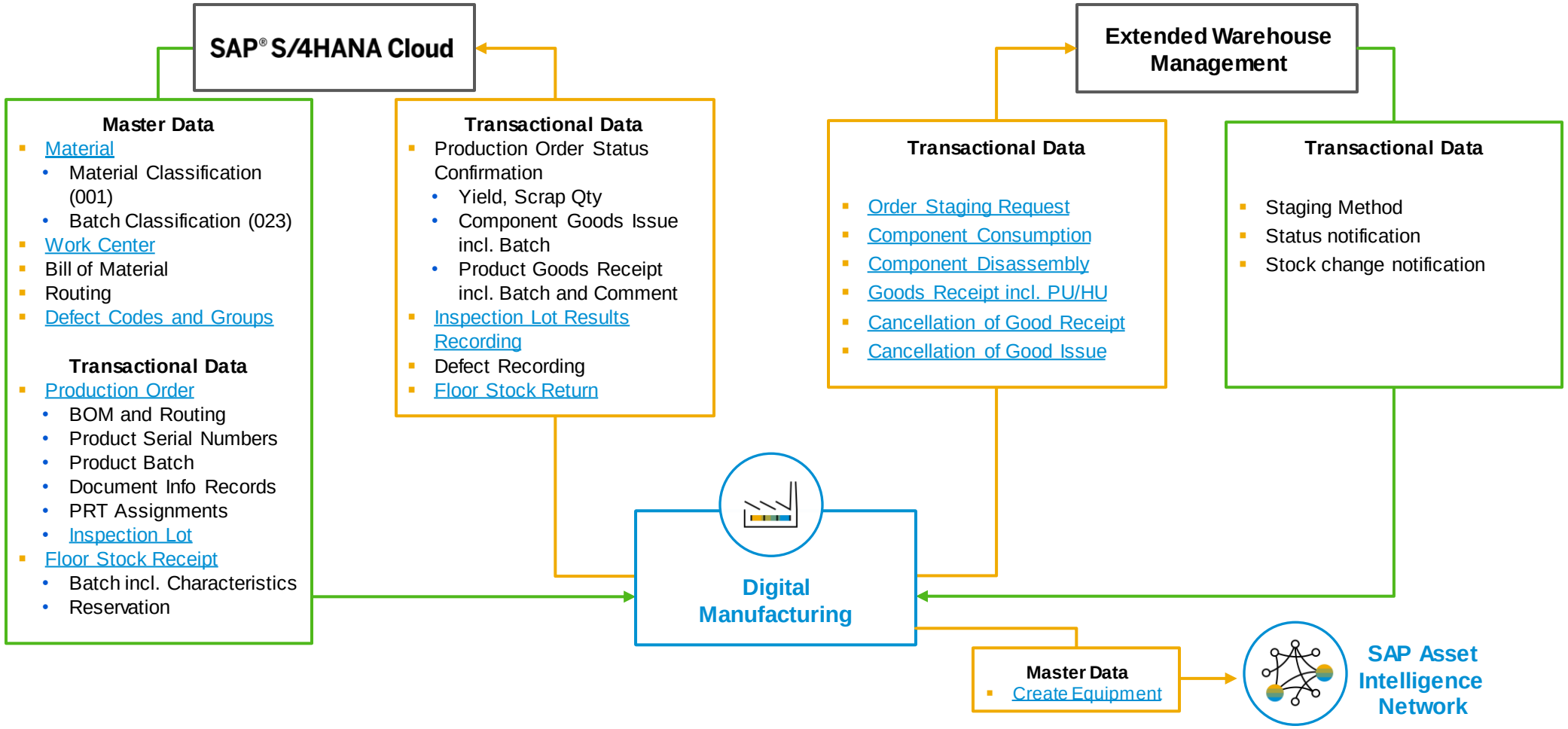
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Discrete Industries Integration Scenarios for DM S/4HANA or Business Suite



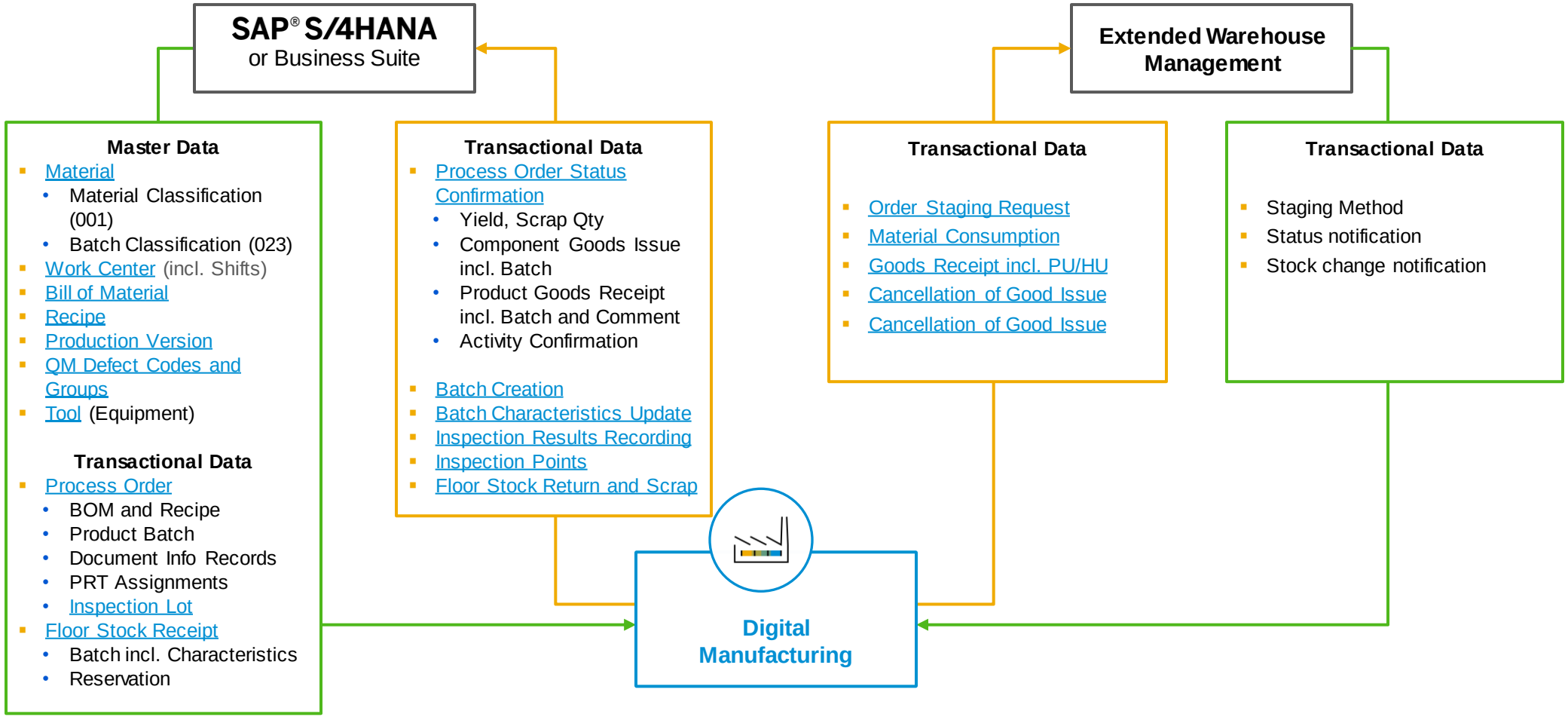
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Discrete Industries Integration Scenarios for DM S/4HANA Cloud Edition



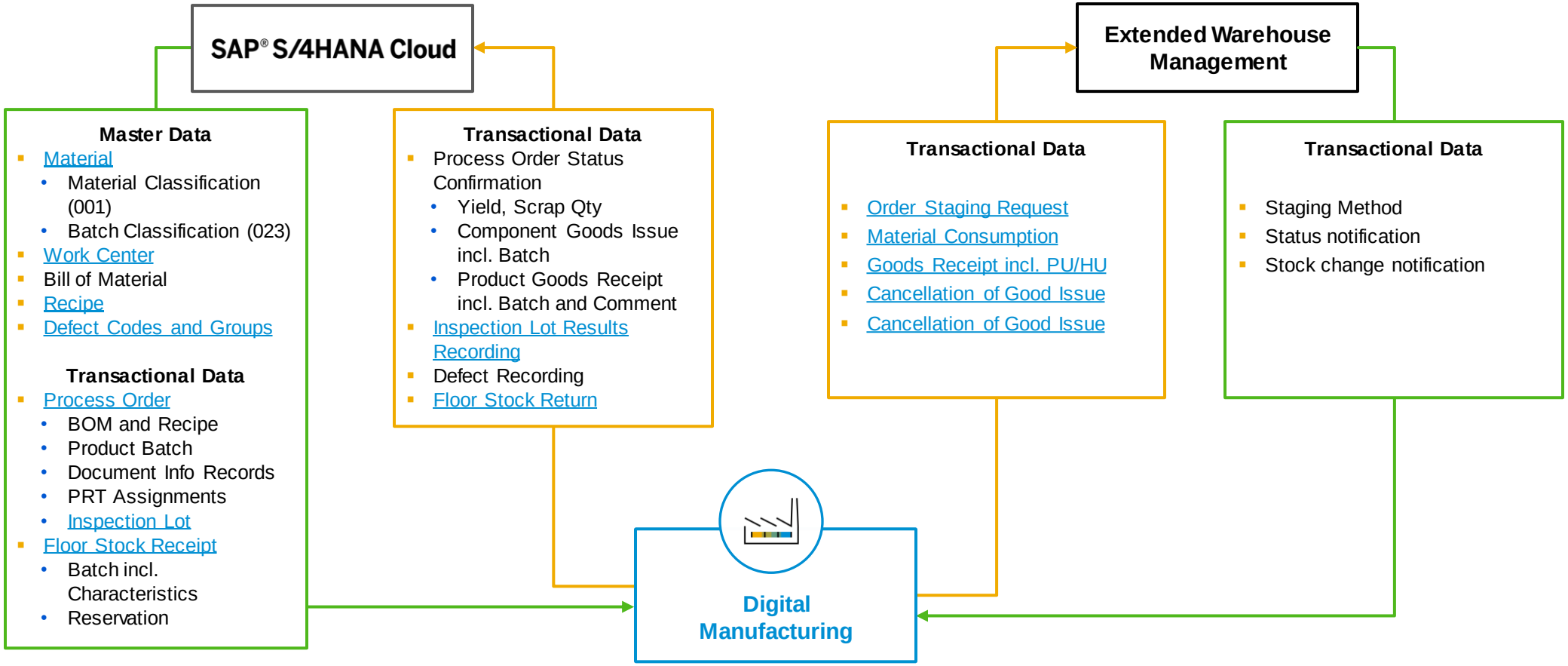
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Process Industries Integration Scenarios for DM S/4HANA or Business Suite



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Process Industries Integration Scenarios for DM S/4HANA Cloud Edition



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