

SAP S/4HANA Road Map

May 2019

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About SAP road maps

Companies today are planning their digital journeys – transforming business models, reengineering business processes, and reimagining work.

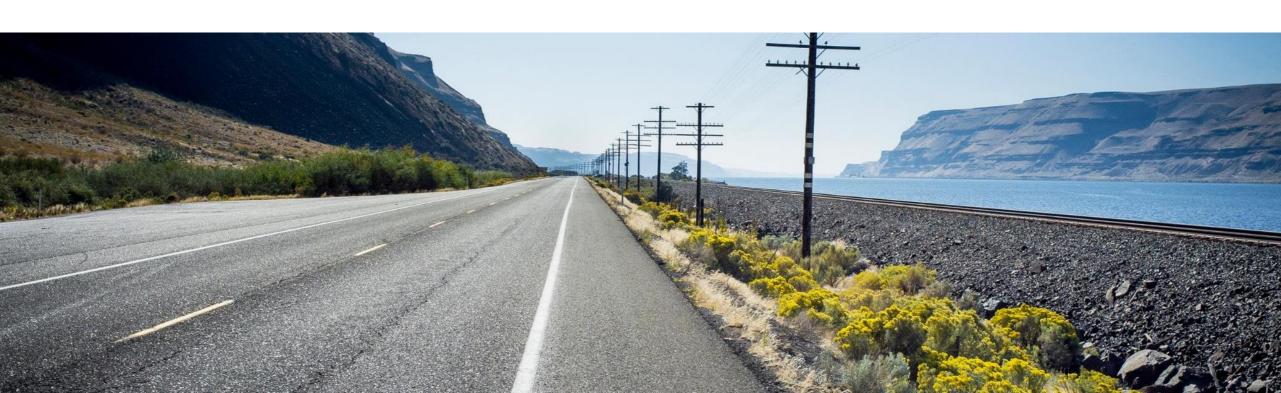
SAP road maps highlight innovations that may help you plan and implement your digital journey. They span products relevant to lines of business in your industry and explain how our innovations may add value to your business.

In our road maps, you can learn about our innovations along four different timelines:

- 1. Recent innovations for our products that have been launched in the past weeks or months and can already be purchased
- 2. Planned innovations for our products that are intended to be launched in the short term or midterm
- 3. Product direction, providing a long-term perspective on high-level development plans for innovations for our solutions inspired by your requirements
- 4. Product vision, providing a high-level and long-term business perspective on innovations for our products

Product Road Map

- Recent innovations
- Planned innovations
- Product direction
- Product vision



Contents

Lines of business

- Sourcing and procurement
- R&D/engineering
- Asset management
- Manufacturing
- Supply chain
- Sales
- Service
- Finance
- Human resources

Industries

- Consumer industries
 - Agribusiness
 - Retail and fashion
- Discrete industries
 - Automotive, aerospace and defense, industrial machinery and components, high tech
- Financial services
 - Banking
 - Insurance
- Public services
 - Public sector
 - Higher education and research
 - Defense and security
- Energy and natural resources
 - Oil and gas
 - Utilities

Cross-topics

- Master data management
- Foundation and analytics
- Localization
- Extensibility
- Integration

Lines of Business



LoB: Sourcing and procurement

Recent innovations

Operational procurement

- SAP S/4HANA enhanced with central purchase management capabilities
- Centralized approval for purchase orders in SAP S/4HANA
 - Reduce free-text items using machine learning with SAP S/4HANA
- Propose a material group, using machine learning with SAP S/4HANA
- Situation handling for supplier confirmation and purchase requisition processing

Sourcing and contract management

- Enablement of SAP S/4HANA as central contract management hub with contract distribution
- Legal content management overview page in SAP S/4HANA

Invoice and payables management

Payment block - avoid loss of cash discount with machine learning in SAP S/4HANA

Procurement analytics

- Material price variance analytics improved transparency
- Analytics for scheduling agreements in SAP S/4HANA
- Central purchase contract consumption

Integration

Integration of SAP S/4HANA with guided buying capabilities in SAP Ariba solutions

2019 - Planned innovations¹

Operational procurement

- Team purchasing and completion workflow
- Centralized approval of back-end purchase requisitions in SAP S/4HANA for central procurement
- Conversational voice interfaces and machine

Sourcing and contract management

Comprehensive smart-contracting scenario that integrates with legal content assembly to generate, process, and archive legal content based on preapproved clauses and templates



Auditing of procurement collaboration with blockchain

Holistic supplier and category monitoring

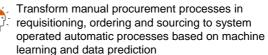
Procurement analytics

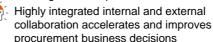
 Analytics for SAP S/4HANA for central procurement - global purchase order spend and central purchase requisitions

Integration

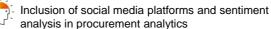
 Established procurement extensions for building partner ecosystem in SAP S/4HANA

2020 - Product direction¹

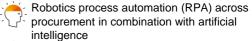


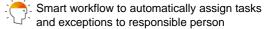


- Innovation and business value drive and determine supplier selection and relationship
- Transparent, real-time insight into supply-chain processes



2021 - Product vision¹





Digital assistant as coworker to provide insightto-action proactively

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LoB: R&D/engineering (1/5) – Discrete and process industries (1)

Recent innovations

2019 - Planned innovations¹

2020 - Product direction¹

2021 - Product vision¹

Product development foundation

- Software compatibility management
- Enhancements to the SAP Fiori app "Maintain Bill of Material"
- Consolidate enhancements to the bill of materials
- Context-based access control management for product lifecycle management (PLM) objects

Document and attachment handling

 Document management – DMS SAP Fiori app

Product development foundation

- Integration of software development tools in product development
- Derive and update product structure from a block definition diagram
- Multilevel product structure and bill of material management

Document and attachment handling

Document – thumbnail and preview

SAP Engineering Control Center

- Enhancements to SAP Engineering Control Center (feature package 10)
- Manage mechatronic design
- Enhancements to SAP Engineering Control Center

Document and attachment handling

- Document search by file content
- Document search by classification

Product development foundation

- Variant bill-of-materials management and assemblies management
- Hand over product information to SAP Asset Intelligence Network

Status and actions management/access control management

New status and action management

SAP Engineering Control Center

- Continuous influencing session (CIS):
 Customer-driven enhancements
- Integration to systems engineering

Product development foundation

- Product structure management from SAP will support today's "Super BOM" functionality in regard to high- and lowlevel configuration capabilities
- Replacement order engineering workbench (new engineer to order process)
- Status and actions management embedded with access control management

SAP Engineering Control Center

- Continuous influencing session (CIS):
 Customer-driven enhancements
- Support engineer-to-order (variant management)

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LoB: R&D/engineering (2/5) – Discrete and process industries (2)

Recent innovations

2019 - Planned innovations¹

2020 - Product direction¹

Product vision¹

Integrated recipe development

 Recipe development enhancements for SAP S/4HANA 1809

Integrated recipe development

- SAP Recipe Development functional enhancements with onpremise consolidation (1909) for recipes and contribution-based formulations
- PLM recipe development contribution-based formulation with composition breakdown
- PLM recipe development product labeling – basics

Handover to manufacturing

 Handover of engineering structures (product structure and engineering BOMs) to manufacturing BOMs

Integrated recipe development

 Context-based access control management for product lifecycle management (PLM) objects

Integrated recipe development

 PLM recipe development – product labeling – advanced features – artwork integration

Integrated recipe development

PLM recipe development – intelligent formulation and labeling support

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LoB: R&D/engineering (3/5) – Advanced variant configuration

Recent innovations

Advanced variant configuration

- Support of multilevel scenario
- Integration into SAP Commerce
- Integration of new configuration along key processes
- Integration of routing with simulation environment
- Support for characteristics of type "decimal" in object dependencies with a high degree of precision
- Improved user experience: Grouping of characteristics; handling of alternative values
- Interactive user selection of material variants during the sales order process
- Overview page for modeler
- Integration of requirement handling

2019 - Planned innovations¹

Advanced variant configuration

- Enhanced integration into processes (such as into purchase order)
- New trace functionality
- Extensibility of engine via BADIs
- Reload master data functionality in simulation environment
- Syntax enhancements, such as trigonometric functions and rounding
- Inconsistency handling
- Enhanced handling of groups

Classification

- Enhancement of classification search capabilities
- Integration of classification into batch OData CUD services

Variant configuration

 Integration of order engineering workbench into SAP S/4HANA 2020 - Product direction¹

Advanced variant configuration

- Support of multilevel SET scenario
- Enhanced engineer-to-order process
- Introduction of a configuration object
- Support of product modeling for hardware, electrics, electronics, software and services



Machine learning-supported analytics

ML-based identification of critical combination of options (production)

Classification

SOAP services for classification

2021 - Product vision¹

Advanced variant configuration

- Separate configuration for sales and manufacturing through loose coupling
- Integrated interactive 3D visualization for configurable products in engineering, sales, and production processes
- Test environment supporting systematically tests and analysis of variant configuration models

Classification

 Extended characteristic types: Long text, data files, attribute groups

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LoB: R&D/engineering (4/5) – Enterprise portfolio and project management

Recent innovations

Portfolio and project management

- Simplified enterprise portfolio and projectmanagement analytics
- Maintain Resources app for portfolio and project management



SAP CoPilot – enable conversational project monitoring

- Project collaboration
- UI5-based, project-management Gantt charts in project management
- Enablement of field extensibility for SAP Fiori apps for portfolio and project management
- Continuous improvements for the enterprise portfolio and project management

Commercial project management

- Commercial projects enhancements to forecasting (output based) including cut-off date, period KPIs, project manager overrides, and forecast accuracy
- Enhancement to visualize commercial project opportunities in a matrix
- Enhancements to commercial project alerts
- Major assemblies and installation kits
- Real-time commercial project analytics through inmemory technology powered by SAP HANA (core data services view)
- SAP Fiori app to manage project activities
- SAP Fiori apps for creating change requests and reporting issues
- Simplified enterprise portfolio and projectmanagement analytics

2019 - Planned innovations¹

Portfolio and project management

- Material grouping by MRP area
- Integration scenarios to Microsoft Project Server 2016/2019 using SAP Enterprise Project Connection

Commercial project management

- Commercial projects simpler change-request approvals and print form configurations
- Extensibility for commercial projects central documentation for extensibility objects, extension and extensibility concept
- Reports for mass assignment of team member in master project
- Audit log feature for changes in workbook
- Handling of overhauled change requests
- Variance analysis, prepopulated deviated structure elements list

Continuous improvements for enterprise portfolio and project management

2020 - Product direction¹

Portfolio and project management

Simplification and optimized data model

Enablement of selected cloud capabilities

Improved innovation process by leveraging SAP HANA technology



 Idea selection process supported through machine learning techniques

Usage of project information network for collaboration on task

Improved integration scenarios in SAP S/4HANA

- Enhanced integration to commercial capabilities in SAP S/4HANA
- Provide real-time project reporting based on SAP HANA in-memory technology
- Cloud-based integration of third-party project management tools

Commercial project management

- Planning and forecasting based on fiscal periods
- Mass valuation report during forecasting

Continuous improvements for enterprise portfolio and project management

2021 - Product vision¹

Portfolio and project management

Simplification and optimized data model

- Enablement of additional cloud capabilities
- Availability of SAP Fiori apps throughout the entire project lifecycle

Improved integration scenarios in SAP S/4HANA

- Enhanced integration to logistic in SAP S/4HANA
- Provide additional real-time project reporting based on SAP HANA in-memory technology

Continuous improvements for enterprise portfolio and project management

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LoB: R&D/engineering (5/5) – Product compliance

Recent innovations

Product marketability and chemical compliance

- Straightforward, ready-to-run solution with standardized data model for product marketability
- Comprehensive integration in order-tocash processes with embedded product compliance
- Implementation of marketability regulations as a self-contained processing and delivery unit

2019 - Planned innovations¹

Product marketability and chemical compliance

- Integration with sales-order fulfillment: analyze and resolve issues
- Integration into the product master
- Customer-specific exceptional sales order processing
- Integration into delivery processing
- Extended composition management

Dangerous goods management

- Text-based dangerous goods classification
- Dangerous goods checks and documents in sales order processing
- Dangerous goods checks and documents in delivery processing
- Output of dangerous goods data via EDI in outbound delivery processing
- Extended compliance information app

Safety data sheet (SDS) and label management

- SDS management
- SDS check and request in sales order
- Integrated SDS check and shipment in delivery
- Manual and subsequent shipment of SDS

2020 - Product direction¹

Product marketability and chemical compliance

- Integration into specification database
- Enhance marketability checks by substance volume tracking
- Purpose-driven increase of regulatory coverage together with partners
- Insight into the business by combining logistics with compliance analytics and proposing actions
- Simplified processing of regulatory updates



Dangerous goods management

- Dangerous goods checks and documents in transport management
- Dangerous goods checks and documents in cloud warehouse management
- Standardized data model for product data

Safety data sheet and label management

- Extended compliance information app
- End-to-end integration with SAP EHS Regulatory Documentation OnDemand

2021 - Product vision¹

Product marketability and chemical compliance



Extended automation

- Integration with target-driven recipe development
- Partner enablement for compliance requirements using SAP Cloud Platform and API hub
- Extended substance volume tracking

Dangerous goods management

- Detailed classification for dangerous goods regulations
- Additional dangerous goods checks



Extended automation

Safety data sheet and label management

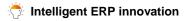
Standardized data model for primary and secondary data



Extended automation

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LoB: Asset management (1/2)

Recent innovations

Maintenance execution

- SAP Fiori app "Maintenance Planning Overview"
- Object page enhancements
 - Task list
 - Task list and operation
 - Order
 - Order and operation
 - Notification
- Technical object damage analysis for SAP Enterprise Asset Management

Analytics

- Business warehouse (BW) extractors for technical objects, preventive maintenance, maintenance orders, and notifications
- Business warehouse (BW) extractors for measurement points, measurement documents, and maintenance costs

Integration

 Integration between SAP Enterprise Asset Management and asset central (SAP Cloud Platform)

2019 - Planned innovations¹

Maintenance execution

- Confirmation for multiple maintenance orders
- Basic permit-to-work process in maintenance orders
- Object page for maintenance plans
- Object page for maintenance items
- SAP Fiori app "Planning Buckets"

Analytics

 Cost analysis for SAP Enterprise Asset Management

Integration

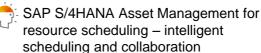
 SAP S/4HANA Asset Management for resource scheduling – automatic planning, technician planning, additional view for graphical scheduling board

2020 - Product direction¹

Maintenance execution

- SAP Fiori apps for maintenance technicians and planner to manage internal refurbishment activities
- SAP Fiori app for recording installation and dismantling of equipment

Integration



- New maintenance order capability for lean service procurement (integration into procurement)
- New maintenance order capability for capital investment management processes (integration into project management)

2021 - Product vision¹

Maintenance execution

- New planned maintenance order capability for improved material planning and procurement
- New maintenance order capability for inspection processes



Machine learning capabilities in maintenance execution (such as failure mode analysis, activity and spare part recommendation)

Analytics

- Planned and estimated maintenance cost management
- Analytical application to visualize important asset management–specific KPIs

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LoB: Asset management (2/2) – Environment, health, and safety

Recent innovations

- Improved handling of incident data capture and integration
- Display Safety-Relevant Information app
- Risk identification template functionality
- Enhanced emission management
- Improved data management in compliance scenarios
- Enhanced sampling functionality
- Basic content provider integration
- Enhanced task management
- Management of change in SAP S/4HANA

2019 - Planned innovations¹

- Improved electronic incident reporting
- Emission forecasting
- Enhanced handling of speciated emissions
- Compliance calendar for environment, health, and safety task management
- Ad hoc data collection and renovation of the data collection UI
- Managing standard operating procedures
- Managing chemical substance inventory

2020 - Product direction¹

- Incorporation of intelligent technologies into the incident and compliance management processes
- IoT and connected worker use cases
- Waste-generation tracking
- Extended content provider integration
- Use of predictive analytics and leading indicators to improve safety and risk management

2021 - Product vision¹



Further incorporation of machine learning into EHS processes



Further focus on IoT and connected worker use cases

 Innovations related to specific industry use cases (such as operational integrity)

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LoB: Manufacturing (1/3) – Production planning

Recent innovations

2019 - Planned innovations¹

2020 - Product direction¹

2021 - Product vision¹

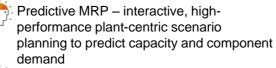
Demand-driven replenishment

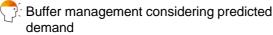
- Integration of the demand-driven planning procedure in the MRP run
- Buffer positioning with graphical representation of the supply chain and decision support
- Buffer-level management supporting timedependent buffer levels
- Buffer monitoring in planning and execution with interactive planning capabilities

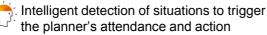
Material resource planning (MRP)

- Capacity evaluation and adjustment for MRP controllers
- Redesigned app "Display MRP Master Data Issues"

Demand-driven replenishment







Analytics for demand-driven manufacturing

Material resource planning (MRP)

 Advancement of MRP cockpit regarding capacity planning and supply handling

Production scheduling

 Capacity leveling and interactive operation scheduling considering finite capacity

Demand-driven replenishment

Predictive MRP – decision support and additional integrated use cases for plant-centric scenario planning

Material resource planning (MRP)

 MRP cockpit with advanced plan visualization

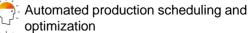
Production scheduling

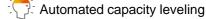
 Interactive capacity leveling and operation scheduling with decision support



Automation of regular tasks of the production planner

Intelligent production planning





 Advanced plan visualization and interactive planning

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LoB: Manufacturing (2/3) – Quality management

Recent innovations

2019 - Planned innovations¹

2020 - Product direction¹

2021 – Product vision¹

Quality inspection

- Record results during production on a regular basis
- Manage quality level in order to tighten or reduce inspection scope
- Statistical process control to monitor and control production processes

Quality improvement

- Manual recording and monitoring of defects
- Manage quality tasks

Quality improvement

- Evaluate and analyze key figures for quality management data
- Enhanced overview pages containing analytical information as entry points for different roles in QM

Quality inspection

- Record inspection results in table form
- Details for inspection characteristics in results recording

Quality improvement

- Manage and monitor defects including worklists and graphics
- Workflow for processing quality tasks

Quality improvement

- Provide analytical information, such as generic defects, for different roles in quality management
- New evaluations and additional key figures for quality management data

Quality improvement

 Enhanced nonconformance management including standardization of issue resolution procedures

Quality engineering

 Advanced and simplified closed-loop inspection planning process that includes failure mode and effects analysis (FMEA) and control plan

Quality improvement



Machine learning capabilities to enable a guided and proactive problem-solving process

Calibration inspection

Streamlined test equipment management

Audit management

 Quality improvement processes supported by audit management on SAP Cloud Platform, covering all phases of auditing (audit planning, auditing, grading, corrective action, analysis)

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LoB: Manufacturing (3/3) – Production engineering and operations

Recent innovations

Manufacturing engineering and operations

- Model and unit effectivity for bills of materials, routing, and production orders
- Major assemblies and installation kits
- Work instructions with embedded data collection
- Collecting data in a table format during the production process
- Simultaneous group for improved operation activities
- Change impact analysis on directly related purchase and production orders (make-to-project/make-to-order)

Manufacturing engineering

- Extended change-impact analysis for handovers from engineering to production
- Extended 3D support in the manufacturing-engineering process
- Effectivity filter in routing maintenance
- Routing comparison capabilities
- Common favorite folders for routing elements
- Workflow for routing
- Generate equipment-BOM from production operation and operation as-built information

Extended production operations

- Handling defects during production process
- Work assignment and personal work queue in production
- Multilanguage support for work instructions
- Add a generic rework operation to an order to correct a defect
- Check for consistencies among major assembly networks in accordance with the manufacturing BOM structure

2019 - Planned innovations¹

Manufacturing engineering

- Version-controlled phantom BOMs
- Managing components exclusively used in manufacturing BOM
- Standard library and templates in routing management
- Variant configuration in production engineering and operations

Extended production operations

- Order change management
- Asynchronous execution and after-the-fact posting
- Unplanned rework during production execution

2020 - Product direction¹

Manufacturing engineering and operations

- Extended change impact analysis
- Extended production operations
- Extended exception management

2021 - Product vision¹

Manufacturing engineering and operations



Leverage machine learning for manufacturing engineering and operations

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LoB: Supply chain (1/5) – Inventory management – batch management – kanban

Recent innovations

Predictive analytics/machine learning



Include predictive analytics in process monitoring for decision support

Goods movement

- Process and usability improvements through posting of goods receipts for production orders
- Improvements to process and usability through posting of goods receipts without reference
- Further optimization of goods receipt through cross-process feature enhancements based on the SAP Fiori UX
- SOAP API for sending and receiving "goods receipt" notes

Catch weight management (CWM)

Further removal of selected restrictions on CWM with respect to the official restriction note

Inventory analytics and control

 Batch management on plant level with unique batch IDs on material level

2019 - Planned innovations¹

Goods receipt/goods movement process

 SOAP API for material stock replication – unifying functionality and standardized messaging

Inventory analytics and control

- Overview page to support the inventory analyst in daily business by presenting selected and relevant KPIs and charts at a glance
- Inventory analysis displaying obsolete stock
- Displaying inventory values as time series with Inventory KPI Analysis app

Kanban

 Simplified kanban stock transfer with embedded extended warehouse management

Inventory analytics and control

New OData API for batch (read, create, update)

Kanban

- New SAP Fiori app for kanban signal processing on mobile devices
- OData API for kanban control cycle (read, create, update)
- OData API for production supply area (read, create, update, delete)

2020 - Product direction¹

Predictive analytics/machine learning



Real-time stock accuracy and process efficiency improvement by early prediction of slow or nonmoving stock

Intelligent process integration

 Integration of innovate end-to end processes based cross functional scenarios

Kanban

- Live analytical reporting on kanban events
- Dynamic kanban control cycle dimensioning

2021 - Product vision¹

Intelligent ERP



Automation of inventory related processes based on deep analytics supporting intelligent and collaborative scenarios as well as decision support

Kanban



Intelligent kanban alerting and situation management

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LoB: Supply chain (2/5) – Order promising

Recent innovations

Advanced available to promise

- Display and analyze product-allocation availability situation
- Support for downloading and uploading product allocation characteristic value combinations and related time series in Microsoft Excel (file format XLSX)
- Use custom and standard fields as characteristics in specific product allocation objects for the stock transport order



 Enable download and upload of product location to product-allocation-assignment data in file format

Alternative-based confirmations

 Initial determination of best plant to confirm a newly created sales order requirement

Back-order processing (BOP)

Automatically trigger an alternative back-order processing run when a confirmation strategy is violated

Release for delivery

- Visualize dependency on product allocation and delivery groups
- Consider stock transport orders

2019 - Planned innovations¹

Advanced available to promise

- Calculate a feasible confirmation by considering multiple product-allocation objects as alternative sources of supply
- Enable customers to define characteristic value groups for product allocation
- Integration of capacity/production based product allocation check in ATP standard check (PAL after PAC)

Alternative-based confirmation

Support reevaluation of alternatives in back-order processing

Back-order processing

Use custom and standard fields for sorting and filtering

2020 - Product direction¹

Advanced available to promise

 Allocation check with innovative consumption strategies considering multiple allocation plans

Alternative-based confirmation



2 Smart material substitution (1:1) to determine the best alternative material to fulfill a requirement

Enable partial confirmations in multiple plants

Back-order processing

 Enable flexible aggregation in the BOP monitor for the user to consume the mass data of a BOP result at one glance.

General

- Explain the reason for a specific availability check result in ATP explanation and monitoring
- OData API simulative availability check including product availability and product allocations

2021 - Product vision¹

Back-order processing

Interactive mass-change of confirmations

Alternative-based confirmation



Intelligent selection of best confirmation alternative on order level

Flexible definition of hard constraints for alternative selection

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LoB: Supply chain (3/5) – Logistics execution

Recent innovations

2019 - Planned innovations¹

2020 - Product direction¹

2021 - Product vision¹

Delivery management

- Attachment of relevant documents to deliveries
- Enhanced SAP Fiori app to support picking activities on the inventory management level
- User productivity improvements in delivery processing through quick actions
- Release of additional core data services views for delivery documents

Delivery management

 SAP Fiori app to analyze delivery performance in SAP S/4HANA

Additional innovations to be added based on market need

Delivery management

- Cross-system process monitoring covering process steps in SAP S/4HANA core, SAP Extended Warehouse Management (SAP EWM), and SAP Transportation Management (SAP TM)
- Overview page for shipping specialists
- Overview page for receiving specialists to provide
 - Up-to-date insight into daily business activities based on key facts and figures
 - Intuitive forward navigation in order to achieve routine and exceptional task
- Drill-down options to access more detailed information
- Embedded analytics in transactional apps
- Analytical apps for KPIs such as returns rate, delivery workload, delivery processing times, delivery splits

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LoB: Supply chain (4/5) – Extended warehouse management

Recent innovations

SAP EWM (embedded in SAP S/4HANA*)

- New SAP Fiori apps
 - Physical inventory counting
 - Pack outbound delivery
- Enhanced SAP Fiori apps
- Improved integration to ERP
 - Synchronous stock posting (with IM)
 - Global batches with deactivation for dedicated plants
 - Reuse of ERP delivery number in SAP EWM
 - Integration to SAP GBT
 - Support IUID functionality for aerospace and defense industry
- TCO and TCI improvements
 - Monitor nodes and methods
 - Change logs for storage bins
 - Mass creation of warehouse products
 - Physical inventory enhancements (RF, queue)
- Decentralized EWM on SAP S/4HANA stack

2019 - Planned innovations¹

SAP EWM (embedded in SAP S/4HANA*)

- Enhanced integration
 - Backflush in repetitive
 - Harmonized control cycle
 - Synchronous ERP posting: Receive from repetitive
- Enhanced usability and analytics
- New SAP Fiori app "E-Commerce Returns" (decentral warehouses)
- New SAP Fiori app for "Pack Warehouse Stock"
- New SAP Fiori app to confirm picking tasks
- Enhancements to existing SAP Fiori app
- SAP Enterprise Search for warehouse products and bins
- CDS analytics for warehouse order/warehouse tasks
- Simplifications
 - Change logs for fixed storage bins, control cycles, transportation units, inspection rules
 - Monitor enhancements
 - Mass GI of multiple deliveries with option to reverse a single delivery
 - Use ERP delivery number for decentral EWM in SAP S/4HANA

2020 - Product direction¹

SAP EWM (embedded in SAP S/4HANA*)

- Enhanced integration
- Automotive processes
- JIT/JIS integration
- Kanban
- Repetitive manufacturing
- New and enhanced scenarios in the area of SAP TM integration
- Material flow system enhancements and robotic integration capabilities
- Integration to SAP Global Track and Trace
- Additional industry-specific scenarios like batch unit of measure for mill product industries
- Enhanced analytics for SAP EWM

2021 - Product vision¹

SAP EWM (embedded in SAP S/4HANA*)

- New and enhanced scenarios in the area of SAP TM integration
- Additional IoT scenarios
- Enhanced analytics for SAP EWM
- Additional warehouse optimization capabilities

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



LoB: Supply chain (5/5) – Transportation management

Recent innovations

- Continuous integration into SAP S/4HANA Enterprise Management
 - Automatic cost pull
 - Filtering zero charges
 - Calculation date and exchange rate date change propagation
 - Retain manual charges
 - Forwarding settlement simplification
 - Delivery update
- Improved mixed pallet building
- Package unit
- Enhancements in Gantt chart
- Scenario builder
 - Planning profiles, scheduling, and optimizer settings
- Currency reform
- Side-by-side use of SAP S/4HANA Supply Chain for transportation management with SAP S/4HANA Enterprise Management
- Freight-unit-out or freight-order-in interface for external planning
- Cloud collaboration with SAP Logistics Business Network
 - Carrier invoice

2019 - Planned innovations¹

- Continuous integration into SAP S/4HANA Enterprise Management
 - Integration of forwarding order/forwarding settlement document with SAP S/4HANA for credit management
 - BAdIs for single system posting
 - Company code determination in freight order
 - Billing transportation cost to customer
 - TM objects as part of SD document flow
 - Scheduling agreementS
- Migration tools for SAP TM to SAP S/4HANA Supply Chain for transportation management
- Cloud collaboration with SAP Logistics Business Network
 - Tour tracking with ETA update
 - Dispute management
 - Self-billing
- Leveraging the capabilities of machine learning

2020 - Product direction¹

- Simplification based on cloud experience
- Functional coverage of logistics execution transportation (LE-TRA) processes
- Integrated dock appointment scheduling
- Industry-specific enhancements, such as ecommerce and direct store delivery

2021 - Product vision¹

- Integration into supply chain planning
- Simulation of transportation freight and capacity
- Integration of advanced available to promise (aATP) for sales-order scheduling

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LoB: Sales (1/3)

Recent innovations

Sales order management and processing



Ability to quickly create a subsequent sales order from a sales quotation using natural language

(SAP CoPilot) (SAP S/4HANA)

- Execute mass changes for sales orders on the header level in SAP S/4HANA
- Approval workflow for credit memo requests in SAP S/4HANA



Track sales orders in SAP S/4HANA – display fulfillment issues

- Track sales orders using natural language (SAP S/4HANA)
- Resolve payment card issues in SAP S/4HANA – display log
- Maintain item proposals for sales documents in SAP S/4HANA (SAP Fiori for internal sales representatives)

Claims, returns, and refund management

 Accelerated returns processing in SAP S/4HANA – return third-party products to suppliers, new ship to supplier follow-up activity and inspection document in the process flow

2019 - Planned innovations¹

Sales order management and processing

- Manage duplicate orders in SAP S/4HANA
- Approval status for sales documents in SAP S/4HANA
- Approval workflow for sales quotations in SAP S/4HANA
- Billing plan whitelisted core data services views in SAP S/4HANA
- Automatically set delivery blocks for down payments with billing plans in SAP S/4HANA
- Enablement of mass changes for sales order items

Sales billing

 Preliminary billing documents in SAP S/4HANA

Process automation through workflow

- Approval status on sales document item level
- Approval workflow for sales contracts
- Approval workflow for sales plans

2020 - Product direction¹

Intelligent digital core



Machine learning and natural language processing to support the sales and billing department for a higher level of automated processes and smarter analytics

Efficiency of sales operations

 Improved sales efficiency by provisioning of a low-touch order and contract management

Process automation through machine learning



Create sales orders from unstructured data

User experience for professional users

- SAP Fiori app for sales order (create/change) enhancements
- SAP Fiori app for sales quotation (create/change)
- SAP Fiori app for free goods display

Process automation through workflow

- Approval workflow for debit memo requests
- Approval workflow for sales inquiries

2021 - Product vision¹

Sales order management and processing

- Multiple delivery block handling
- Truckload optimization with SAP Transportation Management

User experience for professional users

- SAP Fiori app for credit memo request (create/change)
- SAP Fiori app for debit memo request (create/change)
- SAP Fiori app to track the customer returns process
- SAP Fiori app for customer returns without reference (create/change)

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LoB: Sales (2/3)

Recent innovations

Sales monitoring and analysis

- Monitor your delivery performance using predictive analytics in SAP S/4HANA in-time supply of procurement processes for the creation of outbound deliveries
- Compare planned and actual sales data in SAP S/4HANA
- Determine the quotation-conversion probability using predictive analytics and machine learning in SAP S/4HANA
- Maintain sales planning data for profit centers in SAP S/4HANA
- Release core data services views to customers in SAP S/4HANA

Sales billing

- Convergence of customer billing data Microsoft Excel upload in SAP S/4HANA
- Enable periodic "billing document creation" runs through relative date selection (SAP S/4HANA)
- Sales billing and invoicing in SAP S/4HANA – perform split analyses

2019 - Planned innovations¹

Sales monitoring and analysis

- Maintain sales planning data enhanced authorization management and visualization of plan data in a chart (SAP S/4HANA)
- Key-figure reporting for sales with SAP Analytics Cloud and SAP S/4HANA
- Key performance indicators for analyzing sales orders in SAP S/4HANA
- Integration with SAP Analytics Cloud
- Provisioning of sales KPIs for SAP Analytics Cloud content
- Continuous enhancement of embedded analytics contents for sales based on new transactional innovations

Sales billing

- Support for PayPal in billing document requests and billing documents in SAP S/4HANA
- Manual invoicing

2020 - Product direction¹

Sales monitoring and analysis

- Provisioning of further sales KPIs
- Customer returns analytics

Sales billing

- Renovated "over the counter" sales using manual invoicing with logistics integration
- Integration to SAP Transportation Management and international trade management

Price management

Price planning

Natural language interaction in sales

- Daily briefing for the sales manager
- "Show me" and update action for sales documents

2021 - Product vision¹

Sales billing

- Billing self-service portal
- Billing fully localized

Price management

- Price optimization
- Central pricing solution for the intelligent suite



Natural language interaction in sales processes

- Query of sales KPIs and drill-down
- Creation of sales documents without reference

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LoB: Sales (3/3)

Recent innovations

Integration

- Integration of SAP digital payments add-on with SAP S/4HANA Sales – delete credit card authorizations and credit card authorization history
- OData API for sales orders (create, update, delete) (SAP S/4HANA)
- OData API for sales orders without charge (create, read, update, delete) (SAP S/4HANA)
- OData API for sales contracts (create, update, and delete) (SAP S/4HANA)
- OData API for sales quotations (create, update, and delete) (SAP S/4HANA)
- OData API for return orders (create, update, delete) (SAP S/4HANA)
- OData API for sales documents credit block (read, check, release, reject) (SAP S/4HANA)
- OData API for credit memo request (create, update, delete) (SAP S/4HANA)
- OData API for debit memo request (create, update, delete) (SAP S/4HANA)
- OData API for customer material information records (create, update, and delete) (SAP S/4HANA)
- OData API for delivery documents credit block (read, check, release, reject) (SAP S/4HANA)
- Release core data services views to customers in SAP S/4HANA
- SOAP API to replicate sales order data using the data replication framework (SAP S/4HANA)

2019 - Planned innovations¹

Integration

- OData API for sales inquiries (create, update, and delete) (SAP S/4HANA)
- SOAP and OData API for billing document requests (create, read, delete, and reject) (SAP S/4HANA)
- SOAP and OData API for billing documents (create, read, and cancel) (SAP S/4HANA)
- OData API for purchase-price condition records (read) (SAP S/4HANA)
- OData API for sales prices (create, read, update) (SAP S/4HANA)
- SOAP API to replicate sales area data using the data replication framework (SAP S/4HANA)
- Integration of SAP Commerce Cloud with SAP S/4HANA Sales
- Integration of SAP Sales Cloud with SAP S/4HANA Sales (enhancements)

2020 - Product direction¹

Integration

- Integration of SAP Marketing Cloud with SAP S/4HANA Sales
- Ariba Network seller-side integration for SAP S/4HANA

2021 - Product vision¹

Additional innovations to be added based on market need

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LoB: Service

Recent innovations

2019 - Planned innovations¹

2020 - Product direction¹

2021 - Product vision¹

SAP S/4HANA for customer management*



Service management

- Service interfaces for intelligent compliance management with machine learning capabilities
- Service contract management
- Support and OData APIs
- UX experience
 - Navigation through SAP Fiori launchpad

SAP S/4HANA service

- Field service management integration
- Analytics and monitoring
 - Service management overview
 - Service analytics
 - Service fulfillment issue analysis
- System consolidation
 - Merge add-on into SAP S/4HANA core
- Migration support
 - Migration of service master data

SAP S/4HANA service

- Service plans
- In-house repair management
- Complaints management
- Business solution management
 - Business solution contract
 - Controlling integration
 - SAP Customer Experience solution integration
- Analytics and monitoring



BW extractors

 Intelligent analytics: Issue scoring, predictive margin

SAP S/4HANA service

- Service projects
- Scenarios for coexistence of service management and plant maintenance
- Service business management
- 3rd-party service
- Warranty management
- Business solution contract
 - Commercial cockpit
 - Integration entitlement management
 - Integration EPPM projects
- Service intelligence



Predictive margin for contracts

^{*}SAP S/4HANA for customer management 2.0 is an add-on to SAP S/4HANA 1809 FPS01

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LoB: Finance (1/4)

Recent innovations

Accounting

Purchase order accruals

Leveraging soft close and prediction

- Accounting for incoming sales orders
- First commitment scenarios

Parallel valuation

Multiple currencies for follow-on processes

Profitability

- COGS split based on actual cost components
- Statistical sales conditions

Financial planning

- Plan data allocations reworked to update new universal planning persistency
- Connectivity of SAP Analytics Cloud to on-premise planning environment

Business reporting content

Enhancements for flexible hierarchies

SAP S/4HANA consolidation

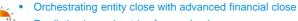
- Legal consolidation
- Consolidation of plan data
- Increased level of detail in consolidation data
- Intercompany reconciliation report
- External system integration

2019 - Planned innovations¹

Accounting

- Further scenarios for universal allocation
- Machine learning for accrual management
- Optimized functional area derivation for overhead-cost calculations

Leveraging soft close and prediction



Predictive journal entries for purchasing processes

Parallel value flow

Further enablement of multiple currencies

Profitability

 First scenarios for top-down distribution based on universal journal

Financial planning

Cockpit to manage financial plan data

Organizational change

Impact analysis

SAP S/4HANA consolidation

- Matrix consolidation
- Automated consolidation of investments
- Group structure manager
- Group share calculation
- Integration into advanced financial closing
- Integration scenarios with planning applications
- Advanced intercompany reconciliation

2020 - Product direction¹

Accounting

- Further scenarios for accrual management
- Subsequent implementation of currencies
- Time-dependent tax

Accounting standards

Adoption of future legal requirements of accounting

Leveraging soft close and prediction

- First prediction scenarios for 3rd-party integration
- Integration of top-down and bottom-up prediction

Profitability

 Further scenarios for profitability based on universal iournal

Financial planning

 Integration with SAP Integrated Business Planning for sales and operations

Business reporting content

Value chain reporting

SAP S/4HANA consolidation

- Continuous group reporting
- Restatements
- Automated interunit profit elimination in inventory
- Knowledge workspace for finance
- Finance assistant
- Multiple subgroup currencies
- Intelligent data validation

2021 - Product vision¹

Leveraging soft close and prediction

Early predictive insight into business trends

Parallel value flow

 Enhance multiple valuation and currencies as basis for consolidation

Organizational change

Orchestration change cockpit

SAP S/4HANA consolidation

- Migration assistant
- Confidence information in reports
- Guided analytics

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LoB: Finance (2/4)

Recent innovations

Treasury and risk management

 Basic coverage of legislations in foreign currency hedge management and accounting for US-GAAP

Central finance

- Improvements and simplifications for onboarding and operations
- Finance data hub for consolidation

Integration with business networks

Cost center integration with SAP SuccessFactors
 Employee Central and SAP SuccessFactors
 Employee Central Payroll

Real estate

Integration with legal content management

Cash management

- Enhance liquidity forecast by integration of real
- Snapshot of historic cash position report
- Bank fee import and report
- Correspondence for bank account management (on premise)

2019 - Planned innovations¹

Treasury and risk management

- Enhancement of treasury reporting capabilities
- Expand coverage of legislations in foreign currency hedge management and accounting for US-GAAP

Central finance

- Enable cross-industry scenarios
- Extended central AP/AR payment processing
- Indirect tax reporting
- New capabilities for central projects
- Improvements and simplifications for onboarding and operations

Real estate

- Optimizations for high-volume processes
- Lease questionnaire
- Integration of Ariba Network for procurement of real estate services

Cash management

- Liquidity planning with SAP Analytics Cloud
- Cash pooling with multiple layers
- Cash manager–triggered trade request

Payments

Advanced payment factory capabilities

2020 - Product direction¹

Digital transformation with contract accounting

 Integration of SAP Bank Communication Management

Treasury and risk management

- Adoption of future legal requirements
- Treasury analytics

Central finance

- Central closing activities including soft close and prediction
- Integration into advanced financial closing
- Additional central processes
- Further financial reporting scenarios

Real estate

Machine learning to optimize real estate process

Cash management

- Bank relationship dashboard
- Increase automation of bank account management with electronic bank account management (eBAM)

Integration with business networks

 Comprehensive integration scenarios with SAP Ariba solutions, SAP Fieldglass solutions, SAP SuccessFactors solutions, and SAP Concur solutions

2021 - Product vision¹

Digital transformation with contract accounting



 Automation of the service-to-cash processes by leveraging machine learning and predictive models

Treasury and risk management



- Intelligent treasury

Real estate

Digitalize the entire building lifecycle

Cash management



Intelligent cash management

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LoB: Finance (3/4) – Subscription billing and revenue management

Recent innovations

2019 - Planned innovations¹

2020 - Product direction¹

2021 - Product vision¹

Convergent invoicing + receivables management and payment handling

- Duplicate checks for consumption items
- Contract account enhancements
- Provider contract enhancements
- SAP Fiori apps for accounts payable and receivable accountants (FI-CA): Display information
- Contract partner information on comprehensive transactions
- Customer financial integration to payment service providers using SAP digital payments add-on
- Intuitive configuration of SAP Fiori launchpad for visually harmonized transactions
- SAP Fiori apps for convergent invoicing and contract accounting in SAP Fiori Cloud

Convergent invoicing + receivables management and payment handling

- Subscription order management for subscriptions and usage-based billing scenarios
- Direct acquisition of consumption items from convergent mediation to invoicing
- Cost-based activity charges and intercompany billing in contract accounting and invoicing
- Integration of contract accounting (FI-CA) with the bank connectivity hub
- Legal requirements and International Financial Reporting Standards

Convergent invoicing + receivables management and payment handling

- Financial simulation of subscription and usage alterations for invoice forecast
- Best price billing
- Customer self-service portal for financial processes in contract accounting and invoicina
- Cost consideration of consumption for controlling/profitability analysis
- End-to-end reconciliation cockpit
- ML use case: Cash application in contract accounting

- Continued improvements in usability and real-time analytics
- Further adoption of artificial intelligence, machine learning, and predictive models (such as collection strategies, error detection and correction)
 - Support for blockchain ecosystem

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LoB: Finance (4/4) – Extensions to the digital core

Recent innovations

Adoption of legal changes in revenue accounting

- Functional round-offs for IFRS 15 and ASC 606
- Improved support for disclosures

Leverage SAP Cloud Platform for finance

 SAP S/4HANA Cloud for finance for credit integration: Integration of additional credit agencies

Leverage SAP Cloud Platform for treasury

Integration of trading platform 360T – inbound and outbound services

Leverage SAP Cloud for Real Estate for corporate real estate management

Visual workspace management

Leverage SAP Cloud Platform for consolidation

 Enhanced data collection for nonfinancial measures and nonintegrated subsidiaries

2019 - Planned innovations¹

Adoption of legal changes in revenue accounting

Increase automation for IFRS 15 or ASC 606 requirements

Leverage SAP Cloud Platform for finance



- Broaden functionality of machine learning in finance operations processes with SAP Cash Application
- Application for goods receipt and invoice receipt monitor
- SAP digital payments add-on self-service integration for certified payment service providers
- SAP digital payments add-on enablement of additional payment service provider
- Bank connectivity supporting contract accounting processes
- Virtual credit card

Leverage SAP Cloud Platform for treasury

- Headquarters subsidiary scenario for internal deals
- Cash request scenario

Leverage SAP Cloud for Real Estate for corporate real estate management

- Digital twin master data extensibility
- Further integration of partner cloud solutions
- Digital twin object-related information sharing
- Integration of IoT scenarios
 - Integration of Ariba Network
 - Integration to facility management (EAM)

Leverage SAP Cloud Platform for consolidation



Intelligent data mapping leveraging machine learning

2020 - Product direction¹

Adoption of legal changes in revenue accounting

Additional IFRS requirements

Leverage SAP Cloud Platform for finance

- Credit management cockpit
- SAP RealSpend multidimensional cost reporting

Leverage SAP Cloud Platform for consolidation

Disclosure management

2021 - Product vision¹

Adoption of legal changes in revenue accounting

Advanced revenue analytics based on machine learning

Leverage SAP Cloud Platform for finance

- Functional enhancements for delivered SAP Cloud Platform-based applications utilizing game-changing transformations
- Procurement/ company card
- Accounts receivables/ payables financing

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LoB: Human resources

Recent innovations

- Clean up business process synchronization in human capital management to support the country transfer process
- Creation of the employee-vendor role for the business-partner synchronization process
- Full use of business integration builder capabilities for SAP SuccessFactors solutions to replace business add-ins

2019 - Planned innovations¹

- Public API to interface non-HR systems with SAP S/4HANA, for improved employee access
- Roundoff of business integration builder to cover specific use cases, especially concerning hire, rehire, employee assignments, payment information

2020 - Product direction¹

- Replication of skills and licenses from SAP SuccessFactors Employee Central to SAP S/4HANA
- Replication of vendor and supplier master data to an SAP SuccessFactors solution
- Conversion of contingent workers to employees

2021 – Product vision¹

Total workforce management/intelligent suite

 Embedded analytics using SAP Analytics Cloud with financial-HR blend – controller viewing financial and HR metrics

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Industries



Consumer industries – SAP Agricultural Contract Management

Recent innovations

Contracts and pricing enhancements

- Improved contract status management and contract output handling
- Firm bid/offer pretrade
- Draft contracts and quote contracts
- Create/change/display service for CPE in contracts and orders
- Mass pricing
- Book structure enhancements commodity subaccount

Fee framework

- Document flow work center
- Diversions
- Title transfer destination with weights and grades origin
- Fee framework, manually maintained or event triggered, along the end-to-end process, incl. accruals and settlement
- Agri-production services
- Commodity derivative order trade execution with automatic broker integration
- Against actuals/exchange for physicals

Net/dry position reporting

- Enhance inventory position and MtM including inventory-based quality adjustments
- Inventory blending with weighted average calculations

2019 - Planned innovations¹

Contracts and pricing enhancements

- Automated contract pricing w. spot end of dav/immediate
- Credit sales
- Unplanned and unapplied sales
- Prepayments
- User experience enhancements: SAP Fiori launchpad intelligent tiles related to agricultural contract management end-to-end processes

Fee framework

- Capabilities to maintain no-price-established (NPE) fees
- Enhancements to fee framework capabilities to maintain carry fees and characteristic-based

Back-to-back application and settlement

- Partial load and unload weights
- Provision of framework to effectively handle multiple buy-sell scenarios
- Enable staging of loads in advance to customer assignment and during interim being managed as vard stock

Daily grain report

- Inventory compliance reporting, daily grain
- Advanced risk analytics value at risk, stress testing, and scenario analysis*
- Digital boardroom content for commodities initially with an agri-industry focus

2020 - Product direction¹

- Improved ACM TM integration
- Blockchain-based business processes for commodity trading and trade execution
- Machine learning in ACM ticketing
- Integrated commodity and FX risk management
- End-to-end limit management
- Enhanced market data integration
- Enhanced deal capture (user experience for trader) - extension of capabilities across other industries

2021 - Product vision¹

 Enhancements for integration with SAP Transportation Management for planning, scheduling, and execution of transports*

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Consumer industries – SAP Commodity Management and SAP Commodity Risk Management

Recent innovations

- Enhanced deal capture (user experience for trader) – initially with an oil industry focus
- Create/change/display service for CPE in contracts and orders
- Commodity contract management for global trade management contracts and purchasing contracts
- Commodity derivative order trade execution with automatic broker integration
- Against actuals/exchange for physicals
- Enhanced options capabilities
- Book structure enhancements commodity subaccount
- Commodity pricing gross/net invoicing for oil and gas
- Unified MtM risk analytic views

2019 - Planned innovations¹

- Commodity risk management global trade contracts integration
- Commodity risk management derivatives enhancements
- Commodity risk management derivative order trade execution enhancements
- Derivative order trade execution FX integration
- Commodity risk management enhancement to period-end valuation for global trade contracts
- Advanced risk analytics value at risk, stress testing, and scenario analysis*
- Digital boardroom content for commodities
 Initially with an agri-industry focus (SAP Analytics Cloud content)
- Risk object risk exposures from production planning, rack sales forecasts, nomination/scheduling, inventory valuation at the movement level
- Nomination scheduling integration into risk management
- Enhanced options management
- Tiered pricing

2020 - Product direction¹

- Integrated commodity and FX risk management
- End-to-end limit management
- Enhanced market data integration
- CM connections into core SAP S/4HANA functions for the Intelligent Enterprise, such as machine learning, natural language processing, and more
- - Blockchain-based business processes for commodity trading and trade execution
 - Mobile deal capture
 - Simplified hedge accounting

2021 - Product vision¹

Additional innovations to be added based on market need

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Consumer industries – Retail and fashion

Recent innovations

Retail and fashion foundation

- Store SAP Fiori apps
 - Task management "Perform store walk through"
- RFID enable "Transfer Products"
- RFID enable "Count Products"
- EWM integration enhancements for tied empties
 Cross-docking with single-recipient purchase order
- Machine learning GDS integration
- Basic scenarios
- Special scenarios
- Automatic material ledger enabling for sites

Stock separation using logistical products

Wholesale fashion enhancements

- Supply assignment enhancements
- Logistic capabilities enhancements
- Demand and supply segmentation enhancements
- Season management enhancements
- Procurement capabilities and enhancements
- Procurement and logistics enhancements
- SAP Fiori apps to manage supply assignment processes
- SAP Fiori app to manage season completeness

Enable manufacturing functionality for vertical retail and wholesale

Production planning and execution enhancements

2019 - Planned innovations¹

Retail and fashion foundation

- POS outbound via enterprise service
 RFID-based in-store transfers
 SAP Enterprise Search for selected retail objects
- Enhancements stock separation using logistical products
- Enhance article maintenance for PP-DS parameters (production planning – detailed scheduling)

Wholesale fashion enhancements

- Season management: Automation and change notification, season redetermination, season completeness check in background
- Fashion procurement capabilities: Multilevel contracts, consideration of variants of prepacks in call-offs, direct ship flexibility via reassignments of documents, plant capability check for value-added services, and more
- Decision support capabilities for supply assignment: dynamic stock sorting, supply source rule configuration, consideration of additional documents

Retail and fashion foundation



Further enable RFID-based automation

2020 - Product direction¹

- Provide support for in-store product positions (such as geolocation) and enablement of product position based scenarios
- POS inbound via enterprise service
- Industry to core enhancements
- "Click and collect" scenario
- Service-based integration articles
- Enhancement for cost component split

Wholesale fashion enhancements

- Basic version of stock protection/consideration of unconsumed planned demand in aATP/BOP*
- Consideration of "protected stock" in supply assignment and related SAP Fiori apps for supply demand overview
- Renewal of article personalization process in the context of make-to-order/measure (MTO/MTM) processes
- Fashion attributes as information and selection criteria in processes of the digital supply chain

2021 - Product vision¹

Retail and fashion foundation



- Intelligent sales price workbench
 Service-based integration sites
- Support for digital store processes, using technologies such as the IoT, machine learning, augmented reality, natural language processing
- In-store customer order management
- SAP BW/4HANA content foundation (phased)

Wholesale fashion enhancements

- Fashion specific attributes to influence processes of the digital supply chain
- Basic version of fair share logic for back-order processing and supply assignment*
- Enhancement for stock protection/consideration of unconsumed planned demand*
- Advanced supply demand optimization using supply assignment ("ARun") capabilities, such as machine learning/Al algorithms



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Discrete industries – Automotive, aerospace and defense, industrial machinery and components, high tech (1/2)

Recent innovations

2019 - Planned innovations¹

2020 - Product direction¹

2021 - Product vision¹

Please see next slide

Just-in-time processing

 Just-in-time supply to customer as new solution to manage summarized and sequenced JIT calls from customers efficiently

Just-in-time processing

 Extended just-in-time supply to customer scenarios with integration to SAP EWM

SAP CoPilot integration to just-in-time supply to -customer

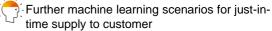
Situation handling with machine learning for just-initime supply to customer

Just-in-time supply to production as new solution to replenish material with summarized and sequenced JIT calls efficiently

SAP Project Manufacturing Management and Optimization

- Grouping, pegging, and distribution (GPD) is expected to be replaced by SAP Project Manufacturing Management and Optimization with its improved data granularity and enhanced capabilities. GPD is part of SAP S/4HANA and is expected to migrate to SAP Project Manufacturing Management and Optimization over time to ensure a smooth transition.
- PMMO foundation
- API grouping master data mass update
- Enhanced data structures including key data types for supporting subsequent releases
- Combine project manufacturing requirements with MRP data that pegs orders to the end-item deliverable level instead of high level at work breakdown structure (WBS)

Just-in-time processing



SAP Project Manufacturing Management and Optimization

- ML and advanced technology-based business services to enable:
 - Simulative cost distribution
 - Simulative/on-demand pegging engine, such as for part shortage analysis
 - What-if modeling and predictive/ML insights across finance and logistics
 - Real-time insights to better enable cost distribution analytics or earned value (EVM) project monitoring
 - Business performance and risk-based evaluations
- Enhancements for production order split
- Conversion from classic GPD
- Integration with PP/DS and EWM
- Archiving

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Discrete industries – Automotive, aerospace and defense, industrial machinery and components, high tech (2/2)

Recent innovations

2019 - Planned innovations¹

2020 - Product direction¹

2021 - Product vision¹

Integration

Product configuration for SAP Commerce Cloud

- Product configuration for SAP Commerce Cloud, integrated to variant configuration, advanced variant configuration, and pricing in SAP S/4HANA
- Promotion rules to give discounts on option level, integrated with SAP S/4HANA for order management
- Support for incomplete product variants, integrated with SAP S/4HANA

Product configuration, API-based integration

 API-based integration to customer and partner applications based on data in SAP S/4HANA

Product configuration intelligence

- API-based integration to customer and partner applications based on data in SAP S/4HANA
- Budgetary price estimation, using data in SAP
- Intelligent product selection, using data in SAP S/4HANA

Integration

Product configuration for SAP CPQ across SAP Sales Cloud, SAP Commerce Cloud, and SAP Commerce solution (on premise)

- Product configuration for SAP CPQ, integrated to variant configuration, advanced variant configuration, and pricing in SAP S/4HANA
- Solution bundle modeling for business users in SAP CPQ, on top of models from SAP S/4HANA variant configuration, advanced variant configuration
- Sales configuration modeling for business users in SAP CPQ, on top of models from SAP S/4HANA variant configuration, advanced variant configuration
- 3D visualization during product configuration

Product configuration intelligence



- Support configuration model new option introduction

 successor options, values and products, using data
 in SAP S/4HANA
- Configuration search with intelligent ranking, using data in SAP S/4HANA
- Product configuration intelligence integrated with SAP S/4HANA for advanced variant configuration

Just-in-time processing

Just-in-time supply to customers: APIs for call processing

Integration

Product configuration for SAP CPQ across SAP Sales Cloud, SAP Commerce Cloud, and SAP Commerce solution (on-premise)

- CTO to ETO special process improved across sales, engineering, costing, sourcing
- Product configuration for SAP CPQ, integrated to SAP S/4HANA – advanced integration scenarios

Product configuration intelligence

- Determine needs from unstructured text
- Chatbot digital assistant
- -Intelligent conflict resolution
- Include data from other SAP sources, such as SAP Leonardo capabilities for digital twin/loT, SAP Marketing Cloud

Just-in-time processing

Just-in-time supply to production: APIs for call processing

Integration

Flexible project manufacturing

 Extend contract flow down integration between SAP S/4HANA and SAP Ariba solutions for flexible project manufacturing

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Financial services - Banking

Recent innovations

Banking

- Amount field length extension remediation of amount field length in the general ledger to support dedicated business processes in financial service industries for SAP S/4HANA
- Enhancements to the general ledger average daily balance, multicurrency accounting, and error correction and suspense accounting in SAP S/4HANA
- SAP Loans Management for Banking, SAP S/4HANA edition – enterprise services in the area of "capital transfer"
- SAP Loans Management for Banking, SAP S/4HANA edition – enterprise services in the area of "borrower change"
- SAP Loans Management for Banking, SAP S/4HANA edition – enterprise services in the area of "interest on arrears"
- SAP Deposits Management for Banking, SAP S/4HANA edition – dual-control principle for account hierarchies
- SAP Collateral Management for Banking, SAP S/4HANA edition – BAPI to change real estate objects

2019 - Planned innovations¹

Banking

- SAP Collateral Management for Banking, SAP S/4HANA edition – business API to change collateral agreements
- SAP Collateral Management for Banking, SAP S/4HANA edition – business API to change movables
- SAP Loans Management for Banking, SAP S/4HANA edition – new versions of enterprise services in the area of "loan contract master data"



SAP Loans Management for Banking, SAP S/4HANA edition – machine learning capabilities for rollovers

 SAP S/4HANA Cloud for loans management, single tenant edition

2020 - Product direction¹

Banking

- Continuous banking innovations based on cooperation with customers
- Improve end-to-end integration capabilities within the banking solution portfolio, such as financial services data management integration
- Optimization of core banking processes to further reduce total cost of ownership (TCO) and to utilize the power of SAP HANA
- Innovate banking product portfolio by integrating new technologies such as blockchain or machine learning to enable the Intelligent Enterprise

2021 - Product vision¹

Banking

- Drive the transformation of our marketleading core banking platform to provide our customers with the next generation of core banking solutions
- Enable banks on their transition to become real digital end-to-end banks and deliver flexibility to be relevant for third-party value chains



Build SAP Leonardo capabilities for banking with core banking services as basis, enriched by partner- and customer-specific services, and integrate with banking-specific processes in SAP S/4HANA

 Integrate banking-specific processes in cloud solutions from SAP (such as financing within SAP Ariba solutions)

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Financial services – Insurance

Recent innovations

2019 - Planned innovations¹

2020 - Product direction¹

2021 - Product vision¹

Insurance

- Amount field length extension remediation of amount field length in the general ledger to support dedicated business processes in financial service industries for SAP S/4HANA
- Product configuration for insurance and digital products
- Virtual data model and query CDS views for reinsurance
- SAP Profitability and Performance Management sample content for carbon footprint management
- SAP Profitability and Performance Management sample content for the high-tech industry
- Group insurance as a part of SAP S/4HANA Insurance for policy management
- Enablement of coinsurance for policy management
- Remote-enabled function modules for cashbefore-cover activities in SAP S/4HANA Insurance for policy management, auto line of business
- Subledger accounting for financial products for insurance companies using SAP S/4HANA

Insurance

- Quotations and underwriting for insurance
- New functional FS-RI modules such as 'risk accumulation management"
- SAP Profitability and Performance Management sample content for several industries (such as discrete industries, public services, energy and natural resources)
- SAP Profitability and Performance Management sample content for Solvency II
- Balance sheet simulation for SAP S/4HANA for financial products subledger
- Profit and loss fixing in SAP S/4HANA for financial products subledger
- Balance sheet forecasting for SAP S/4HANA for financial products subledger
- SAP Fiori app enabling analysis of changes in insurance liabilities for financial products subledger
- End-to-end scenarios for international auto insurance product spanning from SAP Commerce Cloud across quotation management down to policy management in SAP S/4HANA
- Integrated change business process with underwriting capabilities based on FS-PQM and FS-PM

Insurance

- Make SAP S/4HANA Cloud for insurance, single-tenant edition, the natural choice for insurance
- Evolve the financial products subledger from SAP toward financial steering (for example, forecasting, planning, simulation, accountant workplace)
- Financial service data platform providing data models and management for primary insurance and reinsurance
- Innovate insurance product portfolio by integrating new technologies such as analytics/digital boardroom, IoT, machine learning, and blockchain
- Leverage SAP S/4HANA-specific principles and continuously provide innovations in the insurance area in cooperation with customers
- Enhance user experience, interfaces, integration, and operations
- Provide integration points into SAP C/4HANA insurance sales agent and customer solutions

Insurance



- Build SAP Leonardo capabilities for insurance with core insurance services as basis, enriched by partner- and customer-specific services, and integrate with insurance-specific processes in SAP S/4HANA
- Integrate insurance-specific processes in cloud LoB solutions from SAP

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Public services – Public sector (1/2)

Recent innovations

Public sector management

- SAP Fiori apps for grants management in SAP S/4HANA
- SAP Fiori apps for grants management in SAP S/4HANA (enhancements)
- Virtual data model for analytics in grants management
- Extended reference document number moreaccurate reporting and integration

Social service management

 Social services management as part of SAP S/4HANA for customer management

Tax, benefits, and payment processing for public sector

- SAP Fiori analytical apps for SAP Tax and Revenue Management for Public Sector - total amount and total number form bundles
- SAP Fiori analytical apps for SAP Tax and Revenue Management for Public Sector: Overdue filers/overdue form and active registrations per tax type, taxpayer, and more
- SAP Fiori app "Form Bundles"
- Business role for the customer service representative - tax and revenue management

2019 - Planned innovations¹

Public sector management

- U.S. federal ledger in universal journal
- Simplified multilevel budget structure in SAP S/4HANA

Tax, benefits, and payment processing for public sector

 Financial customer care as part of SAP S/4HANA for customer management

Investigative case management

 Investigative case management as part of SAP S/4HANA for customer management

Connected products (SAP Cloud Platform)

 Behavioral insights – TRM and PSCD data integration

2020 - Product direction¹

Tax, benefits, and payment processing for public sector

 Debt management as part of SAP S/4HANA for customer management

Leverage blockchain usage in governments

- Trusted workflows
- Document digitalization

Connected products (SAP Cloud Platform)

- Behavioral insights extensions
- Additional applications based on data foundation for public sector

Leverage Experience Management solutions from SAP with Qualtrics for public sector



Machine learning and predictive business actions for government capabilities



Increase automation for government processes and embed digital assistant features

2021 - Product vision¹

Connected products (SAP Cloud Platform)

 Additional applications based on data foundation for public sector

Leverage Experience Management with Qualtrics for public sector



Machine learning and predictive business actions for government capabilities



Increase automation for government processes and embed digital assistant features

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Public services – Public sector (2/2)

Recent innovations

2019 - Planned innovations¹

2020 - Product direction¹

2021 - Product vision¹

Integration to SAP SuccessFactors solutions

 Concurrent employment features in SAP SuccessFactors solutions

Integration to business networks – SAP Concur solutions

 SAP Concur solution integration with funds and grantee management

Leverage SAP Analytics Cloud for digital boardroom for public sector

SAP Digital Boardroom – public sector content

SAP Commerce, citizen engagement accelerator

- EU data privacy compliance
- Citizen assets
- Citizen dashboards

Integration to SAP SuccessFactors solutions

- Additional features for concurrent employment in SAP SuccessFactors solutions
- Integration of hire-to-pay functionality in SAP SuccessFactors solutions with financing objects in public sector management

SAP Commerce, citizen engagement accelerator

- Bookings (appointments, places)
- Granular permissions enhancement to the relationships and permissions model
- Asset model extended to launch a service request within an asset
- Google maps integration in yForms
- SAP Service Cloud integration

Integration to SAP SuccessFactors solutions

- Capability to finance positions with additional PSM cost objects such as fund and grant and allocate multiple cost distributions
- Enhancements to SAP SuccessFactors Employee Central integration with payroll solutions from SAP to consume additional PSM cost objects
- SAP SuccessFactors solution integration with position budgeting and control
- Capability to define additional PSM cost objects in SAP SuccessFactors
 Employee Central Time Management (employee worksheet, overtime, ...)
- Concurrent employment additional features for SAP SuccessFactors Performance & Goals, SAP SuccessFactors Compensation, and SAP SuccessFactors Learning

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Public services – Higher education and research (HE&R)

Recent innovations

SAP Student Lifecycle Management

- SAP S/4HANA Higher Education and Research for student lifecycle management
- General Data Protection Regulation (GDPR) compliance for SAP Student Lifecycle Management
- BRFplus integration for postprocessing framework in SAP Student Lifecycle Management

Leverage public sector management innovations

- SAP Fiori apps for grants management in SAP S/4HANA
- SAP Fiori apps for grants management in SAP S/4HANA (enhancements)
- Virtual data model for analytics in grants management

Leverage SAP Analytics Cloud for digital board room for public sector

- SAP Digital Boardroom public sector content
- SAP Digital Boardroom higher-education research content

Integration to SAP SuccessFactors solutions

 Concurrent employment features in SAP SuccessFactors solutions

Integration to business networks - SAP Concur solutions

 SAP Concur solution integration with funds and grantee management

2019 - Planned innovations¹

SAP Student Lifecycle Management

SAP Customer Connection for SAP S/4HANA Higher Education and Research for student lifecycle management

Integration to SAP SuccessFactors solutions

- Additional features for concurrent employment in SAP SuccessFactors solutions
- Integration of hire-to-pay functionality in SAP SuccessFactors solutions with financing objects in public sector management

2020 - Product direction¹

Integration to SAP SuccessFactors solutions

- Capability to finance positions with additional PSM cost objects such as fund and grant and allocate multiple cost distributions
- Enhancements to SAP SuccessFactors Employee Central integration with payroll solutions from SAP to consume additional PSM cost objects
- SAP SuccessFactors solution integration with position budgeting and control
- Capability to define additional PSM cost objects in SAP SuccessFactors Employee Central Time Management (employee worksheet, overtime, ...)
- Concurrent employment additional features for SAP SuccessFactors Performance & Goals, SAP SuccessFactors Compensation, and SAP SuccessFactors Learning

Leverage Experience Management with Qualtrics for higher education and research



Machine learning and predictive business actions for academic capabilities



Increase automation of academic processes and embed digital assistant features

2021 - Product vision¹



Machine learning and predictive business actions for academic capabilities



Increase automation of academic processes and embed digital assistant features

Leverage Experience Management with Qualtrics for higher education and research

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Public services – Defense and security

Recent innovations



SAP S/4HANA for extended warehouse management, explosives management edition

- Enablement of "item unique identification" (iUID) in the relevant processes and tables of embedded SAP EWM
- Automated dynamic bin creation and management in embedded SAP EWM
- Planograph: SAP Fiori app providing a graphical overview of explosives storage facilities including the display of compliance information for explosives
- Compatibility and net explosive quantity (NEQ) limit checks during management of explosives within storage facilities



SAP S/4HANA for extended warehouse management, explosives management edition, EWM decentralized

- Enablement of "item unique identification" (iUID) in the relevant processes and tables of decentralized SAP EWM
- Automated dynamic bin creation and management in decentralized SAP EWM
- Planograph: SAP Fiori app providing a graphical overview of explosives storage facilities including the display of compliance information for explosives
- Compatibility and net explosive quantity (NEQ) limit checks during management of explosives within storage facilities

2019 - Planned innovations¹

Defense and security - force element renewal

- Foundation of defense and security processes in the digital core around the new force element concept
- Functions to plan, to set priorities, and to allocate scarce defense and security resources
- New object to represent defense capabilities and their assignment to force elements

2020 - Product direction¹

Defense and security (innovate and extend)

- Capability and force element modeling
- Real-time capability/readiness analytics and operational reporting on live transactional data
- Replenishment of material or services through self-service catalog user interface
- Simulation and enhanced analytics capabilities
- Air/sea/land worthiness
- Relocation capabilities
- Disconnected operations: Leverage newest technologies to allow collaborative processes in communication challenged environments across a number of defense and security concept of operations.

2021 - Product vision¹

Defense and security (innovate and extend)

- Simulation and enhanced analytics capabilities
- Disconnected operations: Enable collaborative processes in communication challenged environments by providing offline sustainment capabilities for (quasi) permanent teams (such as ships)



Predictive business actions in defense operations



Machine learning for defense capabilities



Increase automation for defense processes and operations

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Energy and natural resources (1/2) – Oil and gas

Recent innovations

Oil and gas downstream

- Integrating IS-Oil exchange fees with CPE
- Excel download capabilities within inventory planning workbench (IPW)

Oil and gas upstream

- Hydrocarbon accounting (North America)
 - Redesigned New Mexico tax reporting
 - Improved data management
- Joint venture accounting
- UI visual harmonization

2019 - Planned innovations¹

Oil and gas downstream

- New SAP Fiori app "Scheduling Assistant" (feasibility and cost/price analysis)
- Cost framework for supply chain
- Predication of primary and secondary costs for decision support in IPW and scheduling assistant
- Mobile event capture app (offline)
- Margin determination and visualization
- Enhanced commodity management integration
- Commodity pricing engine for exchange fees
- SAP Trader's and Scheduler's Workbench nomination integration with SAP Commodity Management
- Billing runs for sales/purchase differential invoicing

Oil and gas upstream

- Hydrocarbon accounting (North America) OP and STE
 - Combined UOM-PRA solution
 - Data aging
 - Regression testing workbench
 - Enhanced generic tax reporting
- Joint venture accounting
 - Move to new JVA data model based on universal journal
 - Improved venture bank accounting

2020 - Product direction¹

Oil and gas downstream

- Enhanced trading functionality: easy deal entry sheet (sales/purchase harmonization)
- Collaboration functionality for oil and gas players in downstream, such as blockchain-based demurrage negotiation and lifting communication
- Pattern-based cost prediction
 - SAP Integrated Business Planning and SAP S/4HANA cost model integration

Oil and gas upstream

- Hydrocarbon accounting (North America)*
- Out-of-the-box integration of UOM/PRA with FI/JVA in cloud
- APIs for 3rd-party integration and migration support in UOM/PRA
- Canadian hydrocarbon accounting as standard solution
- Joint venture accounting
- JVA-cFIN integration (incl. UJE)
- PSA Rollup Rule ACDOCA adaption

2021 - Product vision¹

Oil and gas downstream

- Enhancement of selected standard SAP Fiori apps for oil and gas
- Margin optimization
- Support of further collaboration scenarios using industry standards, such as PIDEX

Oil and gas upstream

- Hydrocarbon accounting (global)*
 - Global hydrocarbon accounting as a standard solution
- Joint venture accounting
- Enhanced JVA reporting
- Land lease interface

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Energy and natural resources (2/2) – Utilities

Recent innovations

2019 - Planned innovations¹

2020 - Product direction¹

2021 - Product vision¹

Utilities

- Analysis of meter reading
- Analytical insight and exception resolution in utilities billing and invoicing – SAP Fiori app for billing specialists (utilities)
- SAP S/4HANA Utilities integration with SAP Marketing Cloud solution

SAP S/4HANA Utilities for customer management

 SAP S/4HANA Utilities for customer management – enabling service in the interaction center

Utilities

- Machine learning applied to resolving implausible meter reading results and outsorted billing documents
- Enablement of SAP S/4HANA Utilities for the integration with SAP S/4HANA Cloud for contract accounting and invoicing
- Product simplification
- SAP S/4HANA utilities intelligent metering for German energy
- Billing enhancements
- Renewable Energy Sources Act (EEG) billing

SAP S/4HANA Utilities for customer management

 Replication-free and harmonized master data/sales for residential customers

Utilities

- Enablement of business process exception management and extensibility SAP Fiori apps for billing specialists (utilities)
- Analytical insight and exception resolution in meter reading – SAP Fiori apps for meter data specialists (utilities)
- Machine learning application for business process exceptions and for guidance of users in SAP Fiori apps
- Modernization of core functionality (hybrid scenarios) in SAP S/4HANA Utilities by integrating with cloud solutions from SAP (customer and energy focus)

SAP S/4HANA Utilities for customer management

 Sales for commercial and industrial customers/scope round-up

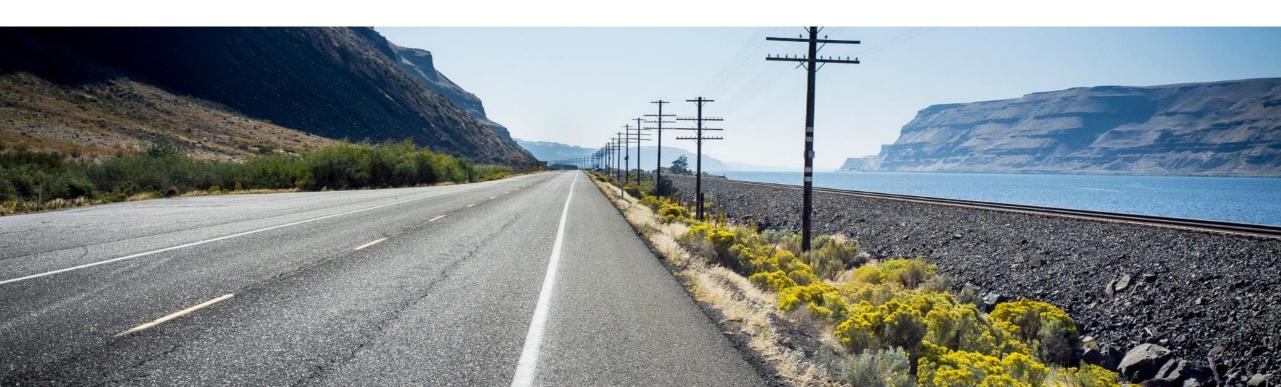
Utilities

- Machine learning application for business process exceptions and for guidance of users in SAP Fiori apps
- Modernization of core functionality (hybrid scenarios) in SAP S/4HANA Utilities by integrating with cloud solutions from SAP (customer and energy focus)

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Cross-Topics





Master data management (1/2) – Master data governance

Recent innovations

2019 - Planned innovations¹

2020 - Product direction¹

2021 - Product vision¹

Consolidation and mass processing

- Scope and process enhancements in consolidation of master data – identification of duplicates and calculation of best records
- Scope and process enhancements in mass processing of master data – increased data coverage

Central governance

- Product: Adopt SAP S/4HANA simplifications and industry-specific enhancements
- Business partner: Integration with; SAP S/4HANA Cloud for data enrichment enhancement in multiple customer and vendor assignments
- Financial data: Adopt SAP S/4HANA universal journal, such as G/L accounts as basis for cost element; support for new domain: internal order

Data quality and process quality

- Managing data quality rules for products and measuring and analyzing quality of product master data
- Enhanced SAP Fiori user experience in process analytics – summary dashboard and analytical list pages

Continuous improvements

 Various innovations, continued enhancements and round-offs in core MDG disciplines such as consolidation, central governance, mass processing, process and data quality analytics – for example, based on feedback from SAP Customer Connection program

Integration scenarios

- Enhanced integration with SAP Cloud for Customer
- Mass enrichment for on-premise deployment of master data governance

Data quality management

Enabling rule mining in master data quality management

Expand the foundation . . .

- Support all critical MDM capabilities in one single packaged application
- Flexibly support heterogeneous environments, with faster time to value than just a toolbox
- Leverage SAP's footprint to simplify MDM and integration across on-premise and cloud applications
- . . . and support new master data challenges
- Increasing velocity and growing amounts of master data, demand for a higher degree of automation
- Leverage new technologies, such as machine learning, to enable the new promises of the digital transformation

Support strategic trends

- MDM across on-premise and cloud apps
- Seamless master data exchange across the entire business network
- Master data for end-to-end IoT solutions spanning devices and apps

Simplify creation, management, and use of master data

- One platform for all domains and use cases
 and use cases
 and SAP HANA
- Intuitive user experience and high business user efficiency
- Embedded analytics, stewardship, monitoring, and remediation
- Further automation of routine tasks such as error correction or data completion

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Master data management (2/2) – Master data maintenance

Recent innovations

Business partner

- Simpler customer-vendor integration (CVI)
- SAP Fiori app "Manage Business Partner Master Data"
- Multiple assignments of customers or vendors to one business partner
- Enhancement of customer and supplier apps with new business fields from central customer master (XD) and central vendor master (XK) transactions
- Integration of SAP S/4HANA Cloud for data enrichment with SAP Fiori apps for supplier-master and customer-master data

Product master

Innovation product master enhancements

2019 - Planned innovations¹

Business partner

- Extended XML handling for business partner SOAP service
- Check for duplicates of business partners
- Business partner additional enhancements to multiple assignments

Product master

- Unified product master API for mass maintenance – enhancements to support migration
- SAP for Retail solutions segmentation



- Smart auto suggestion with default values for fields, based on machine learning
- BOM maintenance for processes related to product lifecycle management
- Enhancements to product SOA services to support extensibility and extended XML handling

2020 - Product direction¹

Business partner

Business partner: Relationship graph

Product master

- Product: Relationship graph
- Material versioning in product master

2021 - Product vision¹

- SAP S/4HANA as the central provider of consolidated, central master data (product and business partner) for the complete SAP world and beyond
- Product and business partner supported in all SAP S/4HANA solutions as generic entities

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Foundation, analytics

Recent innovations

Output management

- Data retention
- Support for ILM enablement
- Deletion and archiving of output requests via the consuming applications
- Provision of an archiving class by SAP S/4HANA output control
- Ability to integrate the archiving class in the archiving objects of the business applications using SAP S/4HANA output control

Responsibility management

Enable customers to apply a hierarchy in defining responsibilities

Data aging

- Dynamic tiering integration
- Use of flexible field as aging column
- Support for new industry data models
- Greater flexibility for scale out

Analytics

- KPI Modeler app
- Proactively inform users when they have exceeded KPI thresholds
- Notify end users when a threshold is crossed
- Enable users to easily subscribe and unsubscribe the KPI they are currently working on

2019 - Planned innovations¹

Output management

- Output of attachments
- Printing (PDF) attachments
- Sending attachments via e-mail
- Output via electronic data interchange
- Send outbound messages via EDI, especially IDoc
- Connect software systems to existing SAP solutions

Analytics

- KPI and report modeler
- Harmonized user interfaces for configuring key performance indicators
- Enhanced grouping and tagging concept

2020 - Product direction¹

Additional innovations to be added based on market need

2021 - Product vision¹

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Extensibility (1/4), localization

Recent innovations

2019 - Planned innovations¹

2020 - Product direction¹

2021 - Product vision

In-app extensibility

- Enable solution extensibility via customized logic for batch-number creation
- SAP Trade Management
- SAP Collateral Management for Banking, SAP S/4HANA edition – BAPI to change real estate objects
- Release of additional core data services (CDS) views for delivery documents (SAP S/4HANA)

Localization

 New countries: Austria, Brazil, India, Mexico

In-app extensibility

- Back-order processing: Use custom and standard fields for sorting and filtering
- Provide process extensibility to discrete and process manufacturing
- Tracing for custom logic and custom reuse libraries
- Translation for custom business objects
- Flexible "value help" dialog views in custom business objects
- Access control for custom business objects
- SAP Recipe Development recipe extensibility

Additional innovations to be added based on market need

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Extensibility (2/4)

Recent innovations

Side-by-side extensibility

- Dynamic generation of SAP HANA persistence in the back end from OpenAPI documents on SAP Cloud Platform
- SAP Cloud Platform, ABAP environment enhancements
- Raise business events from SAP S/4HANA (on premise) to SAP Cloud Platform
- Leverage SAP Cloud Platform for use in finance

 smart alerting in SAP Financial Statement

 Insights
- Create new OData service on SAP Cloud Platform in a Java application
- Access data from a local database on SAP Cloud Platform in a Java application
- Consume OData services from remote back-end systems to expose new services in the cloud
- Leverage SAP Cloud Platform for finance SAP RealSpend – anomaly detection
- SAP Extensibility Explorer support for SAP S/4HANA Cloud customers and partners
- Client libraries for SAP Cloud Platform Enterprise Messaging
- Publish-subscribe (pub/sub) messaging on HTTP/REST in SAP Cloud Platform
- Create an OData API on SAP Cloud Platform in a serverless environment

2019 - Planned innovations¹

Side-by-side extensibility

- Support extensions to SAP S/4HANA Cloud on SAP Cloud Platform Extension Factory
- Support batch OData operations

2020 - Product direction¹

Additional innovations to be added based on market need

2021 - Product vision

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Extensibility (3/4)

Recent innovations

Side-by-side extensibility

- Create a new plain REST API on SAP Cloud Platform in a serverless environment
- Messaging and queuing capabilities on SAP Cloud Platform
- Ready access to the latest API of SAP S/4HANA Cloud (1902) from Java applications on SAP Cloud Platform
- Support advanced OData, SOAP, and eventbased integration in extensions for SAP S/4HANA Cloud
- Enable JavaScript-based extensions of SAP S/4HANA Cloud on SAP Cloud Platform
- Create new ephemeral applications or functions in a serverless environment (Node.js on JavaScript)
- Trigger execution of a serverless function using an HTTP endpoint on SAP Cloud Platform
- Trigger execution of a serverless application or function with events raised through enterprise messaging
- Handle business events for SAP S/4HANA Cloud in Java applications on SAP Cloud **Platform**
- Dynamic generation of SAP HANA persistence in the back end from a core data services document on SAP Cloud Platform

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2019 - Planned innovations¹

Side-by-side extensibility

2020 - Product direction¹

Additional innovations to be added based on market need

2021 - Product vision

Extensibility (4/4)

Recent innovations

2019 - Planned innovations¹

2021 - Product vision

Side-by-side extensibility

- Simplify and modernize the integration of SAP Cloud Platform services into SAP S/4HANA Cloud extensions
- Messaging in SAP Cloud Platform based on Java Messaging Service (JMS)
- Extended language support
- Schedule the execution of a serverless function on SAP Cloud Platform
- Access to OData APIs for SAP solutions from Java applications on SAP Cloud Platform
- SAP Cloud Platform, ABAP environment (1905) – improved operation, flexibility, and control

Side-by-side extensibility

Additional innovations to be added based on market need

2020 - Product direction¹

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Integration (1/11) – Procurement, R&D, asset management

Recent innovations

Sourcing and procurement



Integration of SAP S/4HANA with guided buying capabilities in SAP Ariba solutions

Asset management

 Integration between SAP Enterprise Asset Management and asset central (SAP Cloud Platform)

Asset management – EHS

Basic content provider integration

2019 - Planned innovations¹

Sourcing and procurement

SAP Ariba Buying and Invoicing integration



Comprehensive smart-contracting scenario that integrates with legal content assembly to generate, process, and archive legal content based on preapproved clauses and templates

 Established procurement extensions for building partner ecosystem in SAP S/4HANA

R&D/product compliance

 Output of dangerous goods data via EDI in outbound delivery processing

Asset management

 SAP S/4HANA Asset Management for resource scheduling – automatic planning, technician planning, additional view for graphical scheduling board

2020 - Product direction¹

Sourcing and procurement

 Highly integrated internal and external collaboration accelerates and improves procurement business decisions

R&D

- Integration to systems engineering
- End-to-end integration with SAP EHS Regulatory Documentation OnDemand
- Improved integration scenarios in SAP S/4HANA
 - Enhanced integration to commercial capabilities in SAP S/4HANA
 - Provide real-time project reporting based on SAP HANA in-memory technology
 - Cloud-based integration of third-party project management tools

Asset management



SAP S/4HANA Asset Management for resource scheduling – intelligent scheduling and collaboration

- New maintenance order capability for lean service procurement (integration into procurement)
- New maintenance order capability for capital investment management processes (integration into project management)

Asset management - EHS

Extended content provider integration

2021 - Product vision

R&D

 Partner enablement for compliance requirements with SAP Cloud Platform and API hub

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Integration (2/11) – Supply chain, service

Recent innovations

Supply chain

- SOAP API for sending and receiving "goods receipt" notes
- SAP EWM with SAP S/4HANA improved integration to ERP
 - Synchronous stock posting(with IM)
 - Global batches with deactivation for dedicated plants
 - Reuse of ERP delivery number in EWM
 - Integration to SAP GBT
 - Support IUID functionality in aerospace and defense industry
- SAP TM continuous integration into SAP S/4HANA Enterprise Management
 - Automatic cost pull
 - Filtering zero charges
 - Calculation date and exchange rate date-change propagation
 - Retain manual charges
 - Service order management
 - Forwarding settlement simplification
- SAP TM cloud collaboration with SAP Logistics Business Network
- Carrier invoice

Service

- Service order management
- Service interfaces for intelligent compliance management with machine learning capabilities

2019 - Planned innovations¹

Supply chain

- Batch management new OData API for batch (read, create, update)
- Kanban OData API for kanban control cycle (read, create, update)
- Kanban OData API for production supply area (read, create, update, delete)
- ATP OData API simulative availability check including product availability and product allocations
- SAP TM freight-unit-out and freight-order-in interface
- SAP TM direct TM-EWM integration
- SAP TM cloud collaboration with SAP Logistics Business Network
 - Tour tracking with ETA update
 - Dispute management
- Self-billing

Service

Field service integration

2020 - Product direction¹

Supply chain

- SAP EWM with SAP S/4HANA integration to mill industry by supporting batch-specific unit of measure
- SAP EWM with SAP S/4HANA new and enhanced scenarios in the area of SAP TM integration
- SAP TM integration into supply chain planning
- SAP TM integration of advanced available to promise (aATP) for sales-order scheduling
- SAP TM cloud collaboration with SAP Logistics Business Network
 - Integrated dock appointment scheduling
- SAP EWM with SAP S/4HANA material flow system enhancements and robotics integration framework
- SAP EWM with SAP S/4HANA integration to SAP Global Track and Trace

Service

- Business solution management
 - SAP Customer Engagement solutions integration

2021 - Product vision¹

Service - customer management

- Business solution contract
 - Integration with entitlements management solution
 - Integration to legal contract document in CLM (SAP Customer Engagement solutions or LCMS)

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Integration (3/11) – Sales

Recent innovations

- Integration of SAP digital payments add-on with SAP S/4HANA Sales – delete credit card authorizations and credit card authorization history
- OData API for sales orders (create, update, delete) (SAP S/4HANA)
- OData API for sales orders without charge (create, read, update, delete) (SAP S/4HANA)
- OData API for sales contracts (create, update, and delete) (SAP S/4HANA)
- OData API for sales quotations (create, update, and delete) (SAP S/4HANA)
- OData API for return orders (create, update, delete) (SAP S/4HANA)
- OData API for sales documents credit block (read, check, release, reject) (SAP S/4HANA)
- OData API for credit memo request (create, update, delete) (SAP S/4HANA)
- OData API for debit memo request (create, update, delete) (SAP S/4HANA)
- OData API for customer material information records (create, update, and delete) (SAP S/4HANA)
- OData API for delivery documents credit block (read, check, release, reject) (SAP S/4HANA)
- Release core data services views to customers in SAP S/4HANA
- SOAP API to replicate sales order data using the data replication framework (SAP S/4HANA)

2019 - Planned innovations¹

- OData API for sales inquiries (create, update, and delete) (SAP S/4HANA)
- SOAP and OData API for billing document requests (create, read, delete, and reject) (SAP S/4HANA)
- SOAP and OData API for billing documents (create, read, and cancel) (SAP S/4HANA)
- OData API for purchase-price condition records (read) (SAP S/4HANA)
- OData API for sales prices (create, read, update) (SAP S/4HANA)
- SOAP API to replicate sales area data using the data replication framework (SAP S/4HANA)
- Integration of SAP Commerce Cloud with SAP S/4HANA Sales
- Integration of SAP Sales Cloud with SAP S/4HANA Sales (enhancements)

2020 - Product direction¹

- Integration of SAP Marketing Cloud with SAP S/4HANA Sales
- Ariba Network seller-side integration for SAP S/4HANA

2021 - Product vision¹

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Integration (4/11) – Finance

Recent innovations

SAP S/4HANA consolidation

External system integration

Integration with business networks

 Cost center integration with SAP SuccessFactors Employee Central and SAP SuccessFactors Employee Central Payroll

Real estate

Integration with legal content management

Cash management

- Enhance the liquidity forecast through integration of real
- Bank fee importing and reporting

Leverage SAP Cloud Platform for finance

SAP S/4HANA Cloud for finance for credit integration: Integration of additional credit agencies

Leverage SAP Cloud Platform for treasury

 Integration of trading platform 360T for inbound and outbound services

Leverage SAP Cloud for Real Estate for corporate real estate management

Visual workspace management

Leverage SAP Cloud Platform for consolidation

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 Enhanced data collection for nonfinancial measures and nonintegrated subsidiaries

2019 - Planned innovations¹

SAP S/4HANA consolidation

- Integration into advanced financial closing
- Integration scenarios with planning applications

Real estate

Integration of Ariba Network for procurement of real estate services

Leverage SAP Cloud Platform for finance

- Broaden functionality of machine learning in finance operations processes with SAP cash application
- Application for goods receipt and invoice receipt monitor
- SAP digital payments add-on self-service integration for certified payment service providers
- SAP digital payments add-on and enablement of additional payment-service provider
- Bank connectivity supporting contract accounting processes
- Virtual credit card

Leverage SAP Cloud Platform for treasury

- Headquarters subsidiary scenario for internal deals
- Cash request scenario

Leverage SAP Cloud for Real Estate for corporate real estate management

- Digital twin master data extensibility
- Further integration of partner cloud solutions
- Digital twin: Object-related information sharing
- Integration of IoT scenarios
- Integration of Ariba Network
- Integrate to facility management (EAM)

Leverage SAP Cloud Platform for consolidation
Intelligent data mapping leveraging machine learning

1. This is the current state of planning and may be changed by SAP at any time without notice.

2020 - Product direction¹

Financial planning

 Integration with SAP Integrated Business Planning for sales and operations

Digital transformation with contract accounting

 Integration of SAP Bank Communication Management

Central finance

Integration into advanced financial closing

Integration with business networks

 Comprehensive integration scenarios with SAP Ariba solutions, SAP Fieldglass solutions, SAP SuccessFactors solutions, and SAP Concur solutions

Leverage SAP Cloud Platform for finance

- Credit management cockpit
- SAP RealSpend multidimensional cost reporting

Leverage SAP Cloud Platform for consolidation

Disclosure management

2021 - Product vision¹

Leverage SAP Cloud Platform for finance

- Functional enhancements for delivered SAP Cloud Platform-based solutions utilizing game-changing transformations
- Procurement/company card
- Accounts receivables/payables financing

Integration (5/11) – Human resources

Recent innovations

- Clean up business process synchronization in human capital management to support the country transfer process
- Creation of the employee-vendor role for the business-partner synchronization process
- Full use of business integration builder capabilities for SAP SuccessFactors solutions to replace business add-ins

2019 - Planned innovations¹

- Conversion of contingent workers to employees
- Public API to interface non-HR systems with SAP S/4HANA, for improved employee access
- Roundoff of business integration builder to cover specific use cases, especially concerning hire, rehire, employee assignments, payment information

2020 - Product direction¹

- Replication of skills and licenses from SAP SuccessFactors Employee Central to SAP S/4HANA
- Replication of vendor and supplier master data to an SAP SuccessFactors solution

2021 - Product vision1

Total workforce management/intelligent suite

 Embedded analytics using SAP Analytics Cloud with financial-HR blend – controller viewing financial and HR metrics

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Integration (6/11) – Master data management

Recent innovations

2019 - Planned innovations¹

2020 - Product direction¹

2021 - Product vision¹

Central governance

 Business partner: Integration with SAP S/4HANA Cloud for data enrichment; enhancement in multiple customer and vendor assignments

Business partner

- Integration of SAP S/4HANA Cloud for data enrichment with SAP Fiori apps for suppliermaster and customer-master data
- Simpler customer-vendor integration (CVI)

Master data governance

- Enhanced integration with SAP Cloud for Customer
- Mass enrichment for on-premise deployment of master data governance

Business partner

 Extended XML handling for business partner SOAP service

Product master

- Unified product master API for mass maintenance – enhancements to support migration
- Enhancements to product SOA services to support extensibility and extended XML handling

Expand the foundation

 Leverage SAP's footprint to simplify MDM and integration across on-premise and cloud applications

Support strategic trends

- MDM across on-premise and cloud apps
- Seamless master data exchange across the entire business network



 Master data for end-to-end IoT solutions spanning devices and apps

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Integration (7/11) – SAP Agricultural Contract Management; retail and fashion

Recent innovations

2019 - Planned innovations¹

2020 - Product direction¹

021 - Product vision

Consumer industries – retail and fashion foundation

EWM integration enhancements for tied empties

Consumer industries – retail and fashion foundation

POS inbound using enterprise service

SAP Agricultural Contract Management

- Integration with SAP Transportation
 Management for planning, scheduling, and execution of transports part 1
- Supply chain planning and management integration
- Improved SAP Agricultural Contract Management integration with SAP Transportation Management
- Integrated commodity and FX risk management

Consumer industries – retail and fashion foundation



Further enable RFID-based automation and integrate with SAP Global Track and Trace



Integration with SAP Consumer Sales Intelligence

Integration with intelligent store replenishment

SAP Agricultural Contract Management

 Integration with SAP Transportation Management for planning, scheduling, and execution of transports – part 2

Consumer industries – retail and fashion foundation

• Full fashion integration into digital supply chain

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Integration (8/11) – Financial services – banking, insurance

Recent innovations

2019 - Planned innovations¹

2020 - Product direction¹

2021 - Product vision

Banking

 SAP Collateral Management for Banking, SAP S/4HANA edition – BAPI to change real estate objects

Banking

- SAP Collateral Management for Banking, SAP S/4HANA edition – business API to change collateral agreements
- SAP Collateral Management for Banking, SAP S/4HANA edition – business API to change movables

Insurance

- End-to-end scenarios for international auto insurance product spanning from SAP Commerce Cloud across quotation management down to policy management in SAP S/4HANA
- Integrated change business process with underwriting capabilities based on FS-PQM and FS-PM

Insurance

- Enhance user experience, interfaces, integration, and operations
- Provide integration points into SAP C/4HANA solutions for insurance sales agent and customers

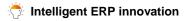
Banking

 Integrate banking-specific processes in cloud solutions from SAP (such as financing within SAP Ariba solutions)

Insurance

 Integrate insurance-specific processes in cloud line of business solutions from SAP

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Integration (9/11) – Public services – public sector, higher education and research, defense and security

Recent innovations

Integration to SAP SuccessFactors solutions

 Concurrent employment features in SAP SuccessFactors solutions

Integration to business networks – SAP Concur solutions

 SAP Concur solution integration with funds and grantee management

Leverage SAP Analytics Cloud for digital boardroom for public sector

- SAP Digital Boardroom public sector content
- SAP Digital Boardroom higher-education research content

SAP Commerce, citizen engagement accelerator

- EU data privacy compliance
- Citizen assets
- Citizen dashboards

2019 - Planned innovations¹

Integration to SAP SuccessFactors solutions

- Additional features for concurrent employment in SAP SuccessFactors solutions
- Integration of hire-to-pay functionality in SAP SuccessFactors solutions with financing objects in public sector management

Connected products (SAP Cloud Platform)

Behavioral insights – TRM and PSCD data integration

SAP Commerce, citizen engagement accelerator

- Bookings (appointments, places)
- Granular permissions enhancement to the relationships and permissions model
- Asset model extended to launch a service request within an asset
- Google maps integration in yForms
- SAP Service Cloud integration

2020 - Product direction¹

Integration to SAP SuccessFactors solutions

- Capability to finance positions with additional PSM cost objects such as fund and grant and allocate multiple cost distributions
- Enhancements to SAP SuccessFactors
 Employee Central integration with payroll solutions from SAP to consume additional PSM cost objects
- SAP SuccessFactors solution integration with position budgeting and control
- Capability to define additional PSM cost objects in SAP SuccessFactors Employee Central Time Management (employee worksheet, overtime, ...)
- Concurrent employment additional features for SAP SuccessFactors Performance & Goals, SAP SuccessFactors Compensation, and SAP SuccessFactors Learning
- Leverage Experience Management with Qualtrics for higher education and research
- Leverage Experience Management with Qualtrics for public sector

2021 - Product vision¹

- Leverage Experience Management with Qualtrics for higher education and research
- Leverage Experience Management with Qualtrics for public sector

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Integration (10/11) – Energy and natural resources – oil and gas, utilities

Recent innovations

2019 - Planned innovations¹

2020 - Product direction¹

2021 – Product vision¹

Oil and gas downstream

- SAP Integrated Business Planning and SAP Trader's and Scheduler's Workbench integration: demand and supply
- SAP Commodity Management integration

Oil and gas downstream

- Enhanced SAP Commodity Management integration
- Commodity pricing engine for exchange fees
- SAP Trader's and Scheduler's Workbench nomination integration with SAP Commodity Management
- Billing runs for sales/purchase differential invoicing

Utilities

- SAP S/4HANA Utilities integration with SAP Marketing Cloud
- SAP Commerce Cloud, utilities accelerator, integration with SAP S/4HANA Utilities

Utilities

 Modernization of core functionality (hybrid scenarios) in SAP S/4HANA Utilities by integrating with cloud solutions from SAP (customer and energy focus)

Oil and gas downstream

 SAP Integrated Business Planning and SAP S/4HANA cost model integration

Oil and gas upstream

- Joint venture accounting
 - JVA-cFIN integration (incl. UJE)

Utilities

 Modernization of core functionality (hybrid scenarios) in SAP S/4HANA Utilities by integrating with cloud solutions from SAP (customer and energy focus)

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Integration (11/11) – Discrete industries (industrial machinery and components, high tech, automotive)

Recent innovations

Product configuration for SAP Commerce Cloud

- Product configuration for SAP Commerce Cloud, integrated to variant configuration, advanced variant configuration, and pricing, in SAP S/4HANA
- Promotion rules to give discounts on option level, integrated with SAP S/4HANA order management

Product configuration, API-based integration

 API-based integration to customer and partner applications based on data in SAP S/4HANA

Product configuration intelligence – API-based integration

 API-based integration to customer and partner applications based on data in SAP S/4HANA

2019 - Planned innovations¹

Product configuration for SAP CPQ across SAP Sales Cloud, SAP Commerce Cloud, SAP Commerce solution (on premise)

- Product configuration for SAP CPQ, integrated to variant configuration, advanced variant configuration, and pricing, in SAP S/4HANA
- Support for incomplete product variants, integrated with SAP S/4HANA
- Solution bundle modeling for business users in SAP CPQ, on top of models from SAP S/4HANA variant configuration, advanced variant configuration
- Sales configuration modeling for business users in SAP CPQ, on top of models from SAP S/4HANA variant configuration, advanced variant configuration
- 3D visualization during product configuration

Product configuration intelligence

- Budgetary price estimation
- Intelligent product selection
- Guided product configuration
- Guided product configuration
 Compart configuration model
 - Support configuration model new option introduction – successor options, values and products
- Configuration search with intelligent ranking
- Product configuration intelligence integrated with SAP S/4HANA for advanced variant configuration

2020 - Product direction¹

Product configuration for SAP CPQ across SAP Sales Cloud, SAP Commerce Cloud, SAP Commerce solution (on premise)

- CTO to ETO special process improved across sales, engineering, costing, sourcing
- Product configuration for SAP CPQ, integrated to SAP S/4HANA – advanced integration scenarios

Product configuration intelligence

- Determine needs from unstructured text
- Chatbot digital assistant
- Intelligent conflict resolution
- Include data from other SAP sources, such as SAP Leonardo capabilities for digital twin and the IoT, SAP Marketing Cloud

Just-in-time processing

Just-in-time supply to production: APIs for call processing

2021 - Product vision¹

Flexible project manufacturing

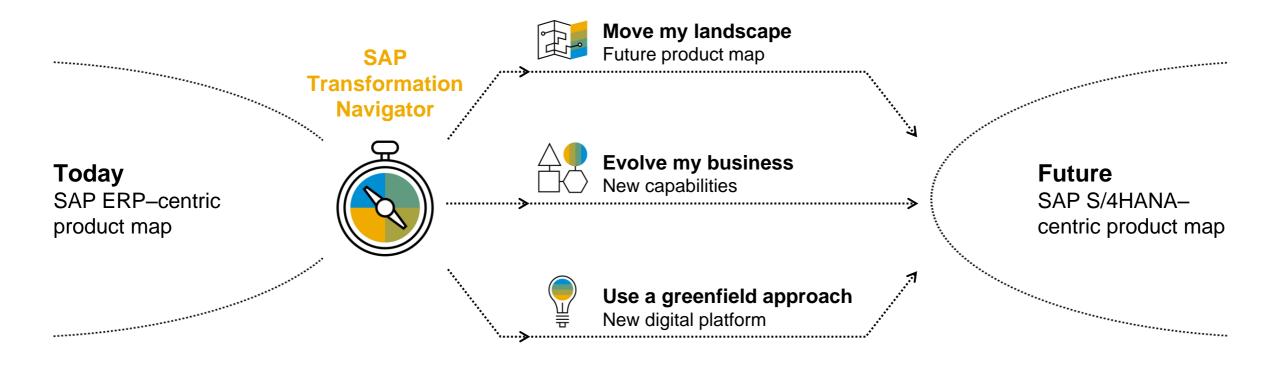
 Extend contract flow down integration between SAP S/4HANA and SAP Ariba solutions for flexible project manufacturing

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