SAP Integrated Business Planning
Strategy & Outlook

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Plan and respond with SAP Integrated Business Planning


Sales
- Driver-based Planning (Risks and Assumptions)
- Integrated Sales, Marketing, Financial Planning
- Forecast Automation*

Demand
- Statistical Forecasting
- Product Lifecycle Planning
- Demand Sensing

Financial
- Driver-based Planning (Risks and Assumptions)

Microsoft Excel Planning interface
- Business Network Collaboration with SAP Ariba
- SAP Ariba

Real-time Analytics
- Vendor managed Inventory (VMI)*

Flexible Process Modelling
- Pre-packaged KPI
- Forecast Error Calculation
- Finite Supply Planning
- Response Planning
- Network Visualisation
- Deployment

Social Collaboration
- Network Visualisation
- Social Collaboration

Response & Supply
- Forecast Error Calculation
- Response Planning
- Pegging

Strong investment from SAP also in 2019 and beyond!

Integration | Extensibility | Cloud | Machine Learning

10 SAP data center | 550+ customers from 53 countries and 23 industries | 60+ implementation partners | Gartner MQ-Leader

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This is the current state of planning and may be changed by SAP at any time.
## Release Cycles

**Continuous Innovation Delivered Quarterly**

<table>
<thead>
<tr>
<th>Quality</th>
<th>Stability</th>
<th>Performance</th>
<th>Features &amp; Usability</th>
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### Release 2005
- Release 1911
- Release 1908
- **Release 1905**
- Release 1902
- Release 1811
- Release 1808

### Release 2002
- Release 1911
- Release 1908
- **Release 1905**
- Release 1902
- Release 1811
- Release 1808

### Release 2019
- Release 1911
- Release 1908
- **Release 1905**
- Release 1902
- Release 1811
- Release 1808

### Release 2020
- Release 1911
- Release 1908
- **Release 1905**
- Release 1902
- Release 1811
- Release 1808

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Quarterly Roadmap Updates
Detailed planned innovations for the next 3 releases

SAP Data Centers
Growing Worldwide Coverage

New SAP Data Centers in 2018/19
- Dubai
- Frankfurt
- Riyadh
- Tokyo
- NS2
  - for regulated industries in US
  - planned for 2019

Hyperscalers (Future Direction)*
- Google Cloud (planned for 2019)
- AliCloud (planned for 2019)
- Microsoft Azure (planned for 2019/20)

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What are our key focus topics?
Strategic Topics & Key Areas of Investment

Cloud Operations
- Scaling & Performance
- Security
- Test Automation
- Monitoring

Integration & Business Network Collaboration
- Near real-time integration
- Supplier & Customer Collaboration
- Collaborative Enterprise Planning (SAC)

Extensibility

Usability
- Web-based Planning
- Advanced Visualization
- Flexible Modelling & Configuration

Advanced Planning
- Operational Supply Planning
- Demand-Driven MRP
- Seamless Planning Processes
- Industry-specific support

Intelligence & Automation
- Intelligent Visibility & Response
- Machine Learning
- Decision Support

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Usability
IBP Excel add-in
Upcoming innovations

Strong Investment in performance improvements for IBP’s main Planning UI

- **Performance, Performance, Performance**

- **Persistent Sorting** (planned with IBP 1911):
  - Current Situation: The entries in a planning view are sorted by the selected attributes (ascending A to Z) and from left to right.
  - We plan to enhance the IBP functionality to be able to consistently sort the planning view attributes via the Edit Planning View screen.

- **Advanced planning filters on planning view** (planned with IBP 1911):
  - Extending filter options to allow for example to use wildcards (*) or ranges to define the filter criteria for the attributes shown on the planning view.
Web-Based Planning UI for basic planning tasks
Fiori app to analyze and change planning data in IBP

Adjust Data via IBP Excel Add-In

Adjust Data via Web-based Planning App

Planner using a PC

Sales Representative at customer location using a tablet

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Web-based Planning app
Upcoming innovations

Continuous investment to complete the set of planning capabilities required for the occasional planning user

- **Versions**: Compare (*Delivered with 1905*) and Promote
- **User-defined Scenarios**: Create, Compare, Promote
- **Simulations and Drilldown**: e.g. Simulate (basic)
- **Fixing**: Open planning view with fixing indicator
- **Planning Notes**: Review planning notes
- ...

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Simplified Key Figure Calculation

Reducing unnecessary planning model complexity and need for LCODE development for the most commonly requested calculations leading in some cases also to performance improvements

**IBP 1905:** Simplified key figure calculation for *cumulative aggregation* for calculations across different time buckets. E.g. Year-to-Date calculation previously required 5 planning levels, 5 calculations, and 1 master data type.

**Planned:** Simplified key figure calculation for *last period aggregation*, to offset key figure values, and rolling aggregation.

Calculation Definitions:

\[ \text{SKF@REQUEST} = \text{SUM}( \text{"SKF@MONTHPRODLOC"} ) \]

Status: Active

\[ \text{SKF@MONTHPRODLOC} = \text{IBP_CAGGR}( \text{"SKF@MONTHPRODLOC"}, \text{"SUM"}, \text{"FORWARD"}, \text{"PASTCURRENTFUTURE"}, 2) \]

Status: Inactive

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Key Figure Calculation Fiori App

**Upcoming innovations**

**Available today:** New SAP Fiori App to visualize the key figure calculation

**Future Direction:** Enhance SAP Fiori App for key figure calculations by simulation mode

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Advanced Planning
Operational Supply Planning
SAP Integrated Business Planning for Response & Supply
Overview of Key Planning Process and Capabilities for Supply Network Planning

Supply Heuristics
- Infinite time-series heuristic with finite supply propagation

Supply Optimization
- Cost-based optimization to create global feasible supply plans

Response Management
- Develop feasible supply plans and determine allocations and order confirmations

Deployment
- Create short-term distribution plans based on given supplies

Built-in Integration
Alerting / Root Cause Analysis
Fair Share Distribution
Freeze Horizons
Manual Adjustments
Simulation
APO Transformation Strategy

SAP Integrated Business Planning

Network-Centric Planning
Innovative & Rearchitected
Supply Chain Planning Processes

SAP Advanced Planning & Optimization (APO)

Supply Chain Control Tower
Sales & Operations Planning
Demand Inventory Response & Supply

Demand Planning (DP)
Supply Network Planning (SNP)
Lean Service Parts Planning (SPP)

Production Planning/Detailed Scheduling (PP/DS)
Global Available-to-Promise (gATP)
Adv. Service Parts Planning (SPP)

Finance Sales Supply Chain
Human Resources Sourcing & Procurement Manufacturing
Human Resources Sourcing & Procurement Manufacturing

SAP S/4HANA

Plant-Centric Planning
Unified Manufacturing Processes Plan to Produce in ONE System

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Demand Driven MRP (DDMRP)
Motivation

Typical Customer Statements

As-Is Situation

- I have too little stock of the products I need.
- I have too much stock of the products I don’t need.
- Overall I have too much stock.
- Nevertheless, I cannot fulfill my customer orders (in time and quantity)

What I want

- Best possible customer service levels …
- … at lowest possible (inventory) costs

Existing SAP IBP pilot projects implementing DDMRP show significant inventory reductions (20-30%)
SAP considers DDMRP as a strategic topic in SCM that generates a unique value proposition for its customers.

SAP is embracing the Demand-Driven Adaptive Enterprise Model via …

- SAP and CAMELOT ITLab are co-developing DDMRP in SAP IBP
- DDMRP will extend the capabilities of SAP IBP and allow companies to apply the new paradigm and a state-of-the-art Demand-Driven approach to their supply chains

DDMRP is an end-to-end closed loop process covering both **planning** (step 1-4) and **execution** (step 5)

Available today!

Available with 1905 release

DDI certified
Plan and Respond with
SAP’s Integrated Business Planning Solution

Supply Chain Control Tower
Exception Handling and Business Network Collaboration

Sales and Operations Planning
Strategic and Tactical Decision Processes

Demand
Statistical Forecasting, Consensus Planning, Demand Sensing

Inventory
Multi-Stage Inventory Optimization

Demand-Driven Replenishment
Demand-Driven Material-Requirements Planning (DDMRP)

Response & Supply
Unconstrained and Constrained Supply Planning, Allocations and Deployment Planning, Order Rescheduling

IBP Platform
Analytics and Web-based Planning UI, Microsoft Excel Planning Frontend, Job Scheduling, Data Integration, Version Planning and Simulation, User Management and Authorizations, Data Realignment, …

SAP HANA

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Driver-based Planning for Risks and Opportunities
Driver-Based Planning

Assumptions, Risks and Opportunities have a key influence on e.g. S&OP and Demand Plans

**Driver-Based Planning** captures business events with their qualitative and quantitative information to drive supply chain plans. Examples of Business Drivers include:

**Risks and Opportunities** are granular events with impact on business. Risks are Business Downsides or Vulnerabilities; Opportunities are Upsides or Chances.

**Assumption** is a baseline driver for capturing the business activity e.g. Market Assumptions, Competitor Assumption, Growth Assumption, etc.
Driver-Based Planning in IBP

- Create a Business Driver in one go. Enables combined creation of master data, planning combinations and key figure value disaggregation for time range for a Business Driver.
- Create Drivers at multiple planning hierarchy levels
- Summary and Detailed views of Business Drivers
- Include Drivers in Plan

Embedded Analytics for Decision Making

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Calendars and Timezones in IBP
Calendars and Time Zones in IBP
Planned and Future Direction

Calendars and location time zones contain important information for end users and can also improve the planning processes and algorithms.

Calendars

- Integration from SAP ECC and S/4 for **Factory Calendars**
- Integration to more than one source system
- IBP Calendars reuse Factory Calendars, but add further options
- **Maintenance UI** for IBP Calendars
- Working/non-working days can be used as **key figure values in formulas**
- Allow **different calendars** assigned on different levels
- Enable algorithms for calendars („consumption of calendars“)

Time Zones

- Enable usage of time zones for users and locations, e.g. to support the calculation of transport times between locations and calculation of „current period“ of user.
Intelligence & Automation
Machine Learning in IBP
The self-driving Supply Chain

Demand Sensing
- Pattern recognition within a SAP proprietary algorithm
  - Several live customers

Forecast Accuracy
- New Forecasting Algorithm (Gradient Boosting)
  - Available with SAP IBP 1811

Forecast Automation
- New Product Introduction (Gradient Boosting, Multilayer Perceptron)
  - PoC ongoing

Operational Excellence
- Anomaly Detection in Batch Jobs (Density-based Clustering Methods)
  - Available with SAP IBP 1902
- Job scheduling optimization (Multi Instance Learning (MIL) / Regression)
  - PoC ongoing

Visibility & Exception Handling
- Outlier Detection in Custom Alerts (DB-SCANT, K-Means)
  - Available with SAP IBP 1808

Data Management
- Anomaly Detection in Master Data (Dynamic Time Warping)
  - PoC ongoing

Intelligent Technologies
- Voice Recognition (Intelligent Bots)
  - Under discussion

Available PoCs with Customer Data

Future / Research Phase
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Vision: The Self-Learning Supply Chain

The IBP system would analyze and learn from data patterns and user actions to get to a state where it can execute corrective measures on its own.

Phase 1 – Automation and Visibility into exceptions: Run automated processes and trigger manual intervention when there are exceptions. E.g. an alert automatically creates a new case.

Phase 2 – System collects enough information on user actions, data patterns and shows similar cases from the past.

Phase 3 – System recommends course of action based on similar cases from the past.

Phase 4 – System self-learns user actions and automatically executes corrective measures (self-healing supply chain).
Process Automation and Management by Exception

Assign Alert Subscriptions to Process Management Automations to run process automated and intervene on exceptions in planning results. e.g. Supply Planning should not start if Forecast Accuracy < 85%

Run Automated Processes

Manage by Exceptions

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Intelligent Visibility and Response
Control Tower Evolution
The Next Step: End-to-End Planning and Visibility across Value Chains

**Strategic Level**
- Demand Plan
- Inventory Plan
- Deployment Plan

**Operational Level**
- Supply Plan
- Manufacturing Plan
- Inventory Plan
- Demand Plan

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SAP Supply Chain Control Tower
Intelligent Visibility

Asset Management
- Maintenance Plans and Orders
- Reliability information
- Spare parts demand and supply

Manufacturing
- Production Plans and Detailed Scheduling
- Deployment Plans
- Capacity information, Manufacturing Orders

Sales Execution
- Sales Plans
- Available-to-Promise Checks
- Sales Orders and PoS Data
- Risks and Opportunities

Logistics & Supply
- Transportation Plans
- Freight orders
- Inventory information
- Supply Chain execution data

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Future Direction: Intelligent Visibility

**Detect**

**Prescriptive Guidance supported by exceptions and events**
- Centralized alerting/notifications based on planning and execution, including rules and ML determined exception conditions
- **Guided resolution** based on predefined resolution options
- **Guided resolution** with the impact of alternative solutions
- **Exception trend** analysis reporting with automatic adjustment of process
- Display of alerts and context from local Control Towers (external source)
- ML-based correlation of exceptions, events, and actions across LoB and business processes

**Discover and Analyze**

**Visibility across functions and LoBs**
- **Single view** of the entire supply chain displaying planning and execution data, exceptions, and performance status:
  - Network view
  - Timeline view
  - Where-used view
- Supplier **risk data** to drive simulations and understand performance impacts
- **Real-time data** from logistics and 3rd party sources
- Efficient **what-if simulation** across planning and execution determining the impact and predicted performance
- Flexible search and display of aggregated and detailed data with navigation to local Control Towers
- Predictive analytics across the product and order networks, exploring new opportunities with ML

**Take Action**

**Actionable insight**
- **Navigation to connected systems** to take actions, automated actions in enabled applications
- **Workflow and social collaboration** across applications
- **Customer side collaboration**
- **Autonomous and semi-automatic process chains between applications**

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Integration & Business
Network Collaboration
Planned integration capabilities

Direction update

Strong investment area with a two-fold approach. First, integration content to reduce implementation efforts. Second, work on the near-real time integration of data to IBP.

Time series-based integration with SAP S/4HANA and SAP ERP
- Enhancements to the add-on concept approach to enrich integration content with SAP Cloud Platform Integration for data services
- Integration with S/4 HANA Cloud

Order-based integration with SAP S/4HANA and SAP ERP
- Near real-time integration
- Integration with S/4 HANA Cloud

Integration with SAP C/4HANA – SAP Sales Cloud and SAP Marketing Cloud
- Outbound integration of demand plans
- Inbound integration of opportunities into sales forecast quantity

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SAP Vision for Collaborative Enterprise Planning

SAP’s vision for Collaborative Enterprise Planning is to bring together all siloed planning processes across the enterprise.

SAP Analytics Cloud and SAP Integrated Business Planning integrate to provide the **Financial Planning and Digital Boardroom** visibility to complete the **Collaborative Enterprise Planning** process.

- **Digital Boardroom** – Integrate Supply Chain data from IBP with real time data from S/4 and other LOBs in SAC for full 360 view of the business.

- **Integrated Financial Planning** to align Corporate Financial Plan including P&L from SAC with Demand and Supply plans in IBP

**Step 1:** Visualize SAP IBP Data in SAC Digital Boardroom (ODATA Read APIs available)

**Step 2:** Integrated Financial Planning with data write back to IBP from SAC (Planned with IBP 1908)
Lean Spare Parts Planning for Maintenance-Repair-Overhaul (MRO)
Integration with SAP Intelligent Asset Management

Re-think and transform MRO to get demand planning, maintenance planning and inventory optimization closer together by considering the Asset as a Customer.
- Increases **Asset up time** by making sure the right asset is available at the right time and the right place
- Reduces **MRO costs**, improves the **service level and asset performance**
- Provides **full visibility on spare parts stock availability** across the supply chain
- Shorten the mean time to repair and **improve maintenance quality**
- Predicts & Manages spare parts inventory and stock levels according to maintenance plans and asset insights

Make sure that the right parts are available at the right time and the right place.

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Business Network Collaboration
Demand Forecast Collaboration via Web-based Planning app for external partners

Customer or Supplier using PC or Tablet
(External IBP user)

- Customer / Sales representative updates forecast in IBP WebUI
- IBP makes forecast available to customer / sales representative in IBP WebUI
- Collaboration on Consensus Forecast
- Forecast Commit on supply plan

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Cloud Operations, Performance and Monitoring
Performance Monitoring
System Monitoring directly in IBP Customer Systems

Available: System Monitoring

- Resource Consumption now **per minute**
- Excel Sessions Statistics
- Planning Object & Time Series Statistics
- Job Scheduling Statistics

Future Direction

- **Activity Monitor** - Showing jobs and frontend requests with details
- Access to further **telemetry information** for Fiori UI runtimes, IBP backend queries and IBP Excel Add-In front-end runtimes

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Performance Topics in IBP

Overview

**IBP Backend and SAP HANA database**
- Activation based on new calculation scenario to improve performance of activation and query runtimes
- Simplified Key Figures
- Switch to SAP HANA Calculation View to improve query performance
- Normalization of the data model to reduce memory consumption
- Asynchronous execution of snapshots
- ...

**Excel UI**
- Refresh all sheets at once
- Pre-load most used favorites
- Pre-send data changes to backend
- Parallelize validation checks
- Send data changes without refresh
- Partly refresh planning views in case of data changes
- Micro-send and process data changes while user is still working in the planning view
- ...

**Operators**

Packaging - Splitting the workload in smaller packages to optimize system resource consumption
Available:
- Forecasting
- Disaggregation
- Demand Sensing

Planned:
- Supply Operators

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Wrap Up
Strategic Topics & Key Areas of Investment

Cloud Operations
- Scaling & Performance
- Security
- Test Automation
- Monitoring

Integration & Business Network Collaboration
- Near real-time integration
- Supplier & Customer Collaboration
- Collaborative Enterprise Planning (SAC)

Intelligence & Automation
- Intelligent Visibility & Response
- Machine Learning
- Decision Support

Usability
- Web-based Planning
- Advanced Visualization
- Flexible Modelling & Configuration

Advanced Planning
- Operational Supply Planning
- Demand-Driven MRP
- Seamless Planning Processes
- Industry-specific support

Extensibility

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SAP Integrated Business Planning Guides, Resources, and Communities

Solutions

The SAP IBP solution combines capabilities for sales and operations, demand, response and supply planning and inventory optimization – in the cloud.


Training

Whatever the location, budget or learning style of you require, SAP has a learning solution to fit your needs. Check out the IBP options available.


Help Portal

The IBP Help Portal provides update-to-date system, product, and application support content and references to steer you in the right direction

https://help.sap.com/ibp

Webinars & Events

Learn more about SAP IBP through the numerous events, customer and product webinars we are offering this year and explore past sessions recordings.

SAP Integrated Business Planning Guides, Resources, and Communities

**Influencer**
Join this community to submit and vote on improvement requests, and collaborate with the product team to help us enhance the solution.
https://influence.sap.com/sap/ino/#/campaign/21

**Community**
Stay up to date with the latest Community news, projects, and features. Ask questions and join in the conversation to share information and best practices with your peers.

**Innovation Discovery**
Find the innovations and features that you can turn into tangible value for your business. Use the link to uncover existing and planned innovations for the IBP Suite.
https://go.support.sap.com/innovationdiscovery/#/innovations/searchid=00109B147E561ED8AC88FDAAE3FFC0CA

**Onboarding**
Learn more about the Onboarding process. Here you will find additional information related to provisioning, administration, and integration topics.
IBP Books

SAP Integrated Business Planning in General (Processes, Overview, Capabilities, Implementation)

- Available on SAP PRESS: [Link](https://www.sap-press.com/sap-integrated-business-planning_4615/)
- Available e.g. on Amazon: [Link](https://www.sap-press.com/setting-up-and-running-order-based-planning-with-sap-ibp_4592/)

S&OP with SAP IBP


Inventory Optimization with SAP IBP


Order-based Planning with SAP IBP


Thank you!

Thomas Klemm

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