

IBP100

SAP IBP Overview

PARTICIPANT HANDBOOK INSTRUCTOR-LED TRAINING

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Typographic Conventions

American English is the standard used in this handbook.

The following typographic conventions are also used.

This information is displayed in the instructor's presentation



Demonstration



Procedure



Warning or Caution



Hint



Related or Additional Information



Facilitated Discussion



User interface control

Example text

Window title

Example text

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Course Overview

TARGET AUDIENCE

This course is intended for the following audiences:

- Project Stakeholder
- Application Consultant
- End User
- Super / Key / Power User
- Business User
- User

UNIT 1

Introduction to Planning Processes

Lesson 1

Introduction to the course

3

Lesson 2

Introduction to Integrated Planning

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Lesson 3

Process Coverage and Planning Levels

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Lesson 4

SAP Best Practices for SAP IBP

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Lesson 5

Benefits and Key Performance Indicators (KPIs) Improved through SAP Integrated Business Planning for Supply Chain

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UNIT OBJECTIVES

- Present the general objective of the course
- Outline processes covered by SAP Integrated Business Planning for Supply Chain solution
- Describe Planning Processes and Planning Levels within the Supply Chain Planning Matrix
- Leverage SAP Best Practices for SAP IBP
- Identify SAP IBP benefits

Unit 1

Lesson 1

Introduction to the course



LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Present the general objective of the course

General Objective of This Course



This course provides an overview to the planning processes and functionality covered in the SAP Integrated Business Planning for Supply Chain solution

General Objectives

On completion of this course, the student should be able to:

Know consulting-relevant functionalities on core planning processes

Understand the basic navigation and planning steps in the user interfaces

Describe the overall SAP IBP Solution and its modules



Figure 1: General Objective



Animation: General Objective

For more information on *General Objective*, please view the animation in the lesson *Introduction to the course* in your online course.

This course provides an overview to the Planning processes and functionality covered in the SAP Integrated Business Planning for Supply Chain solution (SAP IBP).

General Objectives

On completion of this course, the student should be able to:

- Know consulting-relevant functionalities on core Planning processes
- Describe the overall SAP IBP solution and its modules

- Understand the basic navigation and Planning steps in the user interfaces



LESSON SUMMARY

You should now be able to:

- Present the general objective of the course

Introduction to Integrated Planning



LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Outline processes covered by SAP Integrated Business Planning for Supply Chain solution

Introduction to Integrated Business Planning and SAP Integrated Business Planning for Supply Chain

The current lesson outlines the structure of the course presenting every unit as a milestone. Every unit refers to a macro process of Supply Chain Planning. Further, Integrated Business Planning is explained as general term within Supply Chain Planning. Integrated Business Process refers to a business process used to address supply chain challenges, risks and opportunities.

The second unit addresses Integrated Planning Processes within the previous definition, answering the question - "how can we integrate business processes in the Supply Chain Planning via SAP Integrated Business Planning?".

Next unit three, presents important SAP IBP functionalities to achieve a professional user experience, such as:

- Managing Master Data via MS Excel and the SAP Fiori Launchpad
- Web-based Planning supported by the SAP Fiori Launchpad
- Planning Workspace via the SAP Fiori Launchpad

Within Supply Chain Planning, the most common challenges occur when companies focus their efforts to integrate functional Planning areas. Integrated Business Planning, as a general term within Supply Chain Management, refers to macro processes as Demand Planning, Inventory Planning and Optimization, Supply Planning and Exception Management. This course connects a professional user experience with these as explained unit by unit as follow:



Animation

For more information on this topic please view the animation in the lesson *Introduction to Integrated Planning* in your online course.

- Demand Planning (Unit Four): That is the start point of the Planning scenario. By reading historical signals aggregated at a certain time level, it is possible to recognize past behaviors, estimating impacts of possible future scenarios through mathematical algorithms.
- Inventory Planning and Optimization (Unit Five): Once the first step is done, the safety stock must be planned. This macro process defines stock level allocation at every station

of the supply network, maximizing customer service levels while minimizing fixed costs. This process can be addressed from a "Pull perspective" as an end-to-end Planning and execution process via Demand-driven Material Requirements Replenishment. On the other hand, Inventory Optimization focuses on a "Push approach" creating a one Planning/ process step in a forecast driven way.

- Supply Planning (Unit Six): This characterizes demand signal propagation in a downstream direction, achieving long-term and short-term readiness. That means, at this stage, companies should already know how high their total demand per SKU would be, having estimated safety stock without any surplus. Among Supply Planning, shortages are identified to extend capacity supply through strategical and tactical decisions optimizing capacity utilization.
- Exception Management with SAP Supply Chain Control Tower (Unit Seven): This process refers to the identification of atypical supply and demand signals - "What do companies do when things don't go according to the plan?" -, measuring impacts at the hand of key performance indicators to solve irregularities in the network.

SAP IBP addresses every macro process listed before, that is, it combines Supply Chain monitoring, Sales and Operations Planning, Demand Management, Inventory Planning, and Supply Planning into a comprehensive solution, which also supports the integration of data from external systems such as SAP ERP or SAP Advanced Planning and Optimization. SAP IBP provides applications to facilitate the following key differentiators:

- Balancing of demand and supply
- Harmonization of Planning across corporate functions through organizational visibility and alignment
- Responsive Planning with advanced algorithms, optimization, and what-if scenario simulation Planning
- Demand-driven Supply Chain Planning based on Demand Sensing, analysis, and predictive forecasting
- Multi-stage Inventory Optimization and improved customer service levels
- End-to-end Supply Chain visibility with real-time monitoring, Analytics, alerting, and exception management
- Creation of product allocation and supply plans, and ability to respond to changes with simulations and gating factor analysis

SAP Learning System Access

If you have an active subscription to the SAP Learning Hub, you can also select a SAP IBP system to practice the course exercises using the following link.

[SAP Learning System Access](#)



LESSON SUMMARY

You should now be able to:

- Outline processes covered by SAP Integrated Business Planning for Supply Chain solution

Unit 1

Lesson 3

Process Coverage and Planning Levels



LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Describe Planning Processes and Planning Levels within the Supply Chain Planning Matrix

Process Coverage and Planning Levels

SAP IBP brings your Supply Chain Planning processes together under one roof.

SAP IBP: Six Modules in One Platform



Animation

For more information on this topic please view the animation in the lesson *Process Coverage and Planning Levels* in your online course.

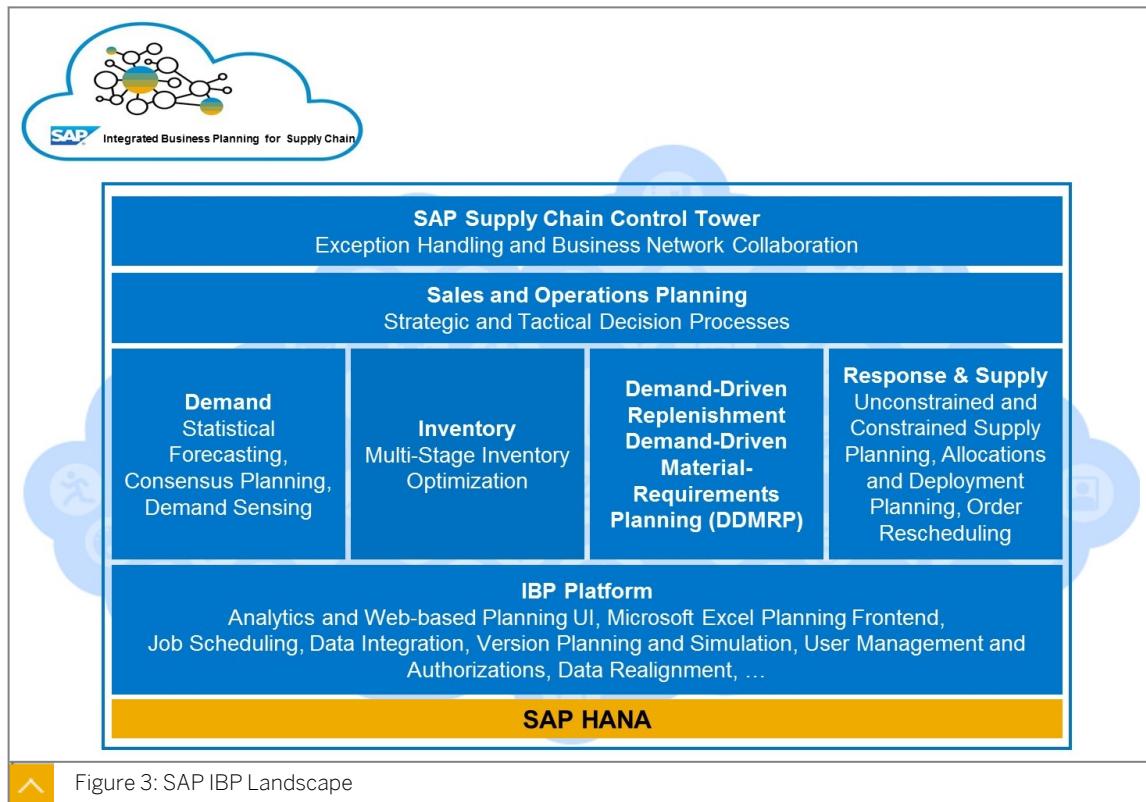


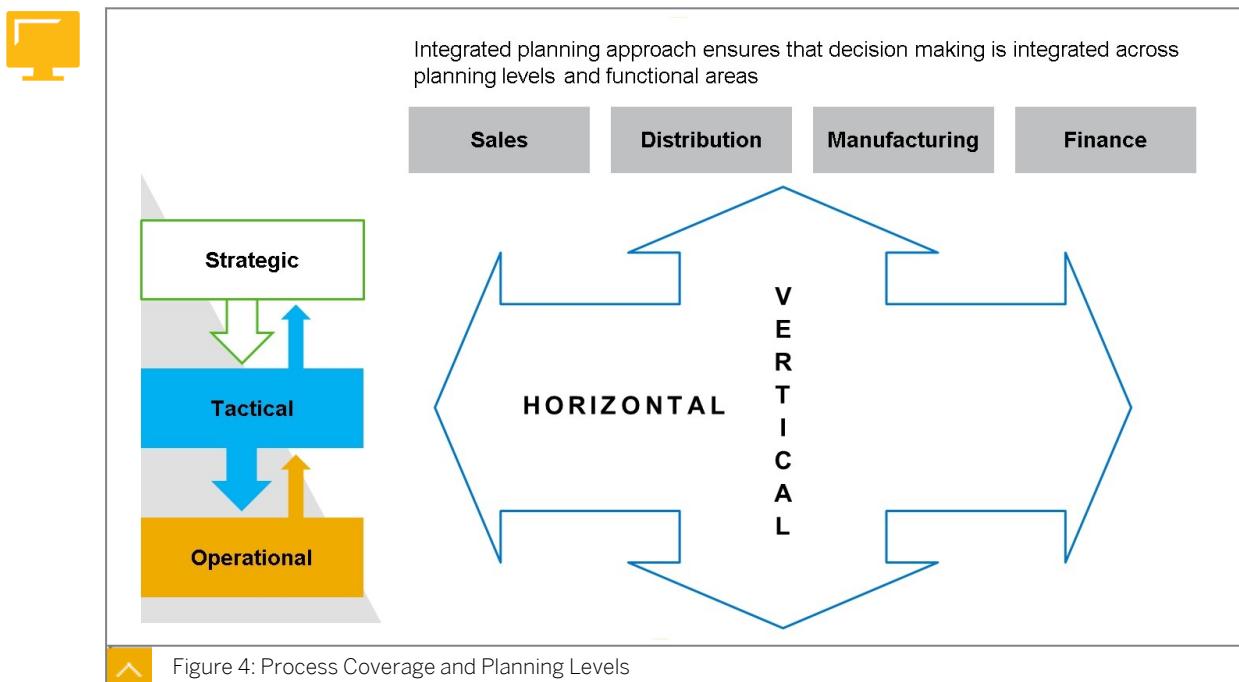
Figure 3: SAP IBP Landscape

SAP IBP enables an organization to bring all its Sales and Operations Planning processes together under one roof: reporting, Planning, and executing using the same data set. The above figure shows the different SAP IBP modules as:

- SAP 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
- Response and Supply: Unconstrained and Constrained Supply Planning, Allocations and Deployment Planning, Order Scheduling

Demand-driven Replenishment: Material Requirements Planning (DDMRP) is a fundamental part of the SAP IBP modules as well, constructing the entire SAP IBP landscape. SAP IBP builds a platform with Analytics and a Web-based Planning UI, a Microsoft Excel Planning frontend, job scheduling functionalities, data integration capabilities, version Planning and simulation features, user management and authorizations components, and data realignment options. Last but not least, SAP IBP is powered by SAP HANA.

Horizontal and Vertical Integration



SAP IBP addresses Integrated Business Planning. This term refers to Planning processes, Planning levels, functional areas, and information signals, as described in previous unit.



Video: Process Coverage and Planning Levels

For more information on *Process Coverage and Planning Levels*, please view the video in the lesson *Process Coverage and Planning Levels* in your online course.

Planning integration, treated from different perspectives, establishes the relationship between functional areas and Planning levels. This interaction is known as Vertical and Horizontal Integration.

The following items are relevant in terms of vertical integration across the time horizon:

- Aligning the plans across the Planning levels.
- Strategic Planning sets the direction and targets for the levels below.
- Tactical Planning makes aggregated plans to meet strategic objectives, balance demand and supply, and optimize resources and working capital utilization.
- Operational Planning translates the aggregate plans to detailed plans that are executed. Focus is on throughput, delivery performance, and costs.
- Immediate feedback from execution to Planning closes the loop.

The following items are relevant in terms of a horizontal integration across business processes:

- Aligning the plans across the Supply Chain functions, for example, changes in demand are seamlessly reflected to the distribution plan, the manufacturing plan, and all the way through the procurement plans.
- Similarly, a constrained material supply and/or capacity situation will be reflected in manufacturing, distribution, and eventually sales.

The Planning Matrix Compared to the Execution Level



Animation

For more information on this topic please view the animation in the lesson *Process Coverage and Planning Levels* in your online course.



Supply chain planning processes can be categorized based on their level in the planning hierarchy

Planning Level	Time horizon	Time buckets	Planning frequency	Granularity (data and decisions)	Example planning processes
Planning					
Strategic	1-5 years	Yearly	Yearly	Low (global and market level)	Network design, make or buy decisions, fulfilment options (ETO/MTO/MTS), sourcing, capex projects, new markets
Tactical	1-18 months	Monthly /weekly	Monthly /weekly	Medium (aggregated across time buckets, customer, product and resource groups)	Balancing supply & demand, capacity planning and levelling, inventory build-up and reduction, quota planning, shift planning
Operational	0-6 weeks	Daily /in continuous time	Daily	High (specific orders, SKUs, resources)	Production scheduling, distribution planning, transportation planning, stock replenishments, order prioritization, overtime
Execution					

Figure 6: Categorization of the Planning Hierarchy

A typical Supply Chain has to address strategic to more day-to-day operational level Planning. SAP IBP makes this possible by allowing flexibility to work at different Planning data and time granularities. As data can be viewed at different levels, it is possible to use the same data for Strategic as with Operational Planning. For example, you can run Demand Planning and Supply Planning in the tactical time frame weekly or monthly. In addition, you can also run Inventory Optimization and Demand Sensing daily or weekly.

Demand and Supply Signals Classified by Planning Processes and Functional Areas



Animation

For more information on this topic please view the animation in the lesson *Process Coverage and Planning Levels* in your online course.

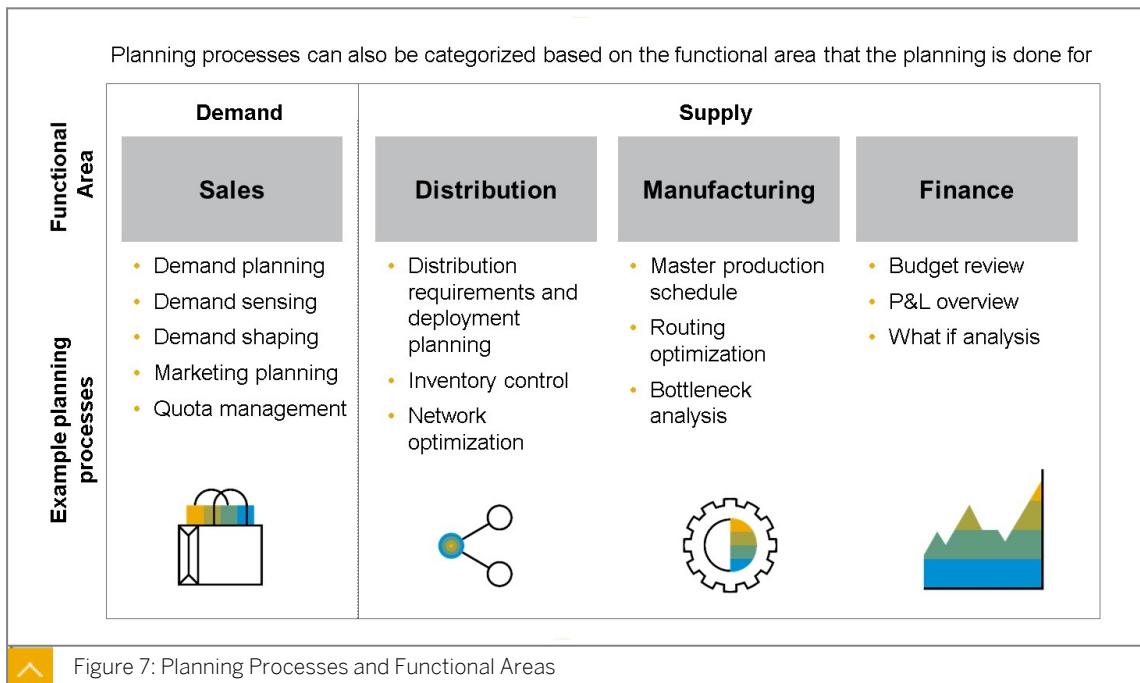


Figure 7: Planning Processes and Functional Areas

Planning processes can also be categorized using the functional area where the Planning is performed considering the information signal whether *Demand* or *Supply* — such as sales in the demand area, or distribution, manufacturing or finance on the supply side.

Financial integration allows plans to be expressed in monetary figures as well as quantities.



Animation

For more information on this topic please view the animation in the lesson *Process Coverage and Planning Levels* in your online course.

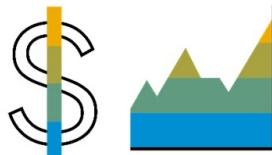


Financial integration allows plans to be expressed in monetary figures as well as quantities

- Traditional supply chain planning is done on quantities relevant for the operations: that is, material pieces, metric tons, machine or worker hours, and so on.
- Introducing monetary figures to the planning process supports two outcomes with high business impact:

Profit-driven decision making

when both costs and revenues are modelled and included in the planning process, the decision maker can select the option that maximizes the contribution to the gross-margin



Single set of numbers

when operational, financial and sales plans are based on the same numbers it reduces a lot of confusion and misalignment from daily management. It also reduces the nonproductive labor to create and maintain the overlapping plans.



Figure 8: Financial Integration

Traditional Supply Chain Planning is done on quantities that are relevant for the operations, for example material pieces, metric tons, machine hours, or worker hours. Introducing monetary figures to the Planning process supports two outcomes with high business impact: profit-driven decision making and Planning based on a single set of numbers as indicated on the slide.



Integrated Business Planning is the process used to address supply chain challenges, risks, and opportunities. Oliver Wight provides the following definition:



"Integrated Business Planning is the business planning process for the post-recession era, extending the principles of Sales & Operation Planning (S&OP) throughout the supply chain, product and customer portfolios, customer demand and strategic planning, to deliver one seamless management process."

The balance of demand and supply is typically associated with S&OP. However, SAP Integrated Business Planning for Supply Chain extends the principles of S&OP across the supply chain by

- ... using advanced demand and supply planning,
- ... which integrates with financial plans
- ... and links a strategic plan with operational execution.

Figure 9: SAP Integrated Business Planning Extends the Principles of Sales and Operations Planning

Integrated Business Planning is the process used to identify and address Supply Chain challenges, risks, and opportunities. Oliver Wright provided a definition that you can read in the figure. The balance of demand and supply is typically associated with Sales and Operations Planning. However, SAP IBP extends the principles of Sales and Operations Planning across the Supply Chain, and links Strategic and Operational Planning.

SAP Best Practices for SAP IBP describe in detail how to settle this link through Planning processes, Planning levels, pre-configured model entities, and Planning models.



LESSON SUMMARY

You should now be able to:

- Describe Planning Processes and Planning Levels within the Supply Chain Planning Matrix

Unit 1

Lesson 4

SAP Best Practices for SAP IBP



LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Leverage SAP Best Practices for SAP IBP

SAP Best Practices for SAP IBP

Getting an entry scope of the Planning processes implies the necessary activation of SAP Rapid Deployment, leveraging SAP Best Practices for SAP IBP. SAP Best Practices for SAP IBP gives you everything you need to run Planning processes in the following applications:

- SAP IBP for sales and operations
- SAP IBP for response and supply
- SAP IBP for demand
- SAP IBP for inventory
- SAP IBP for demand-driven replenishment
- SAP Supply Chain Control Tower



Note:

For more information, please consult https://rapid.sap.com/bp/RDS_IBP.

All scope items are based on a comprehensive data model, which enables you to execute an integrated, end-to-end business process. SAP Best Practices comprises Planning View templates for interactive simulations and what-if analyses, predefined dashboards for embedded analytics, alert definitions for exception-based Planning, integration for context-aware social collaboration, and sample data to showcase the end-to-end process.

Business Benefits

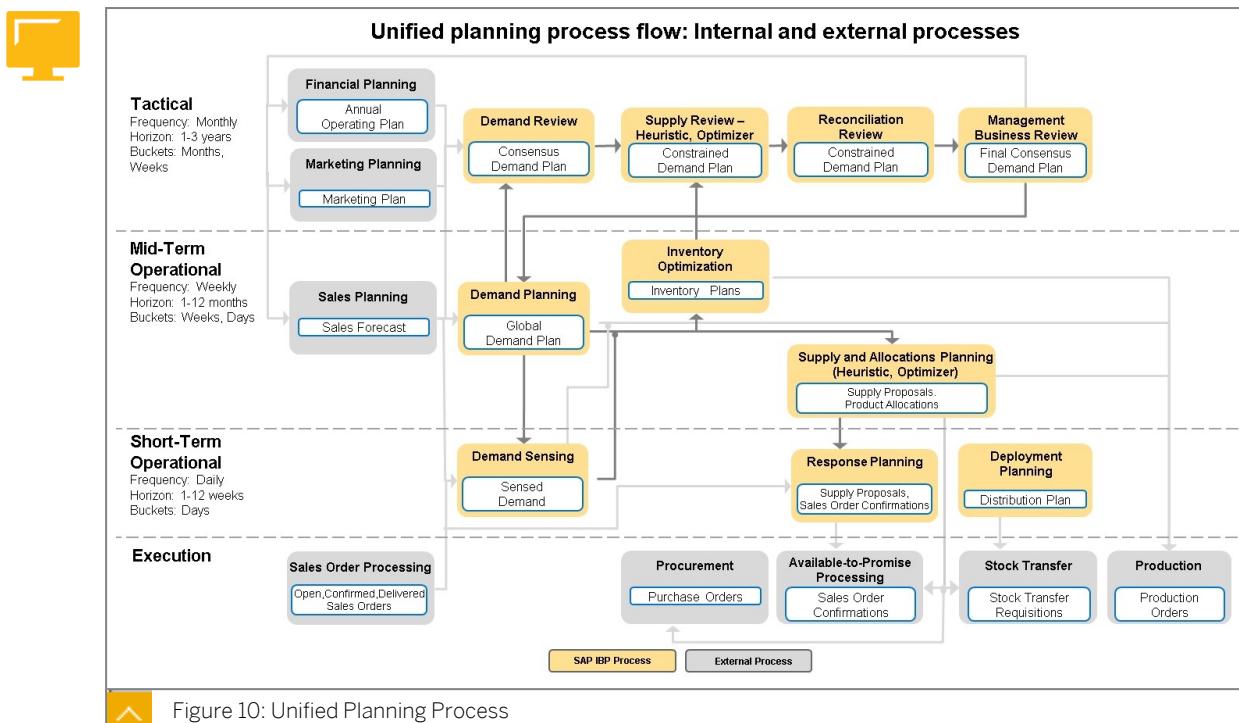
- Reduce Sales and Operations Planning costs
- Improve demand forecast accuracy and react more quickly to changes in demand
- Increase sales forecast accuracy
- Reduce inventory carrying costs and increase inventory turnover/reduce days in inventory
- Improve on-time delivery performance
- Increase revenue and reduce revenue loss due to stock-outs

- Increase user productivity by using Microsoft Excel for interactive Planning and by integrating social collaboration

Important covered Process Steps

- Detailed configuration documentation for setting up predefined SAP Best Practices processes
- Predefined Planning Views in Microsoft Excel
- Predefined charts and dashboards to analyze trends and exceptions
- Predefined process management to track progress and integration into social collaboration
- Based on integrated Planning areas, allowing you to operate and end-to-end process across all SAP IBP applications

All scope items are based on a comprehensive data model, which enables you to execute an integrated, end-to-end business process. SAP Best Practices comprises Planning View templates for interactive simulations and what-if analyses, predefined dashboards for embedded analytics, alert definitions for exception-based Planning, integration for context-aware social collaboration, and sample data to showcase the end-to-end process.



Video: Unified Planning Process

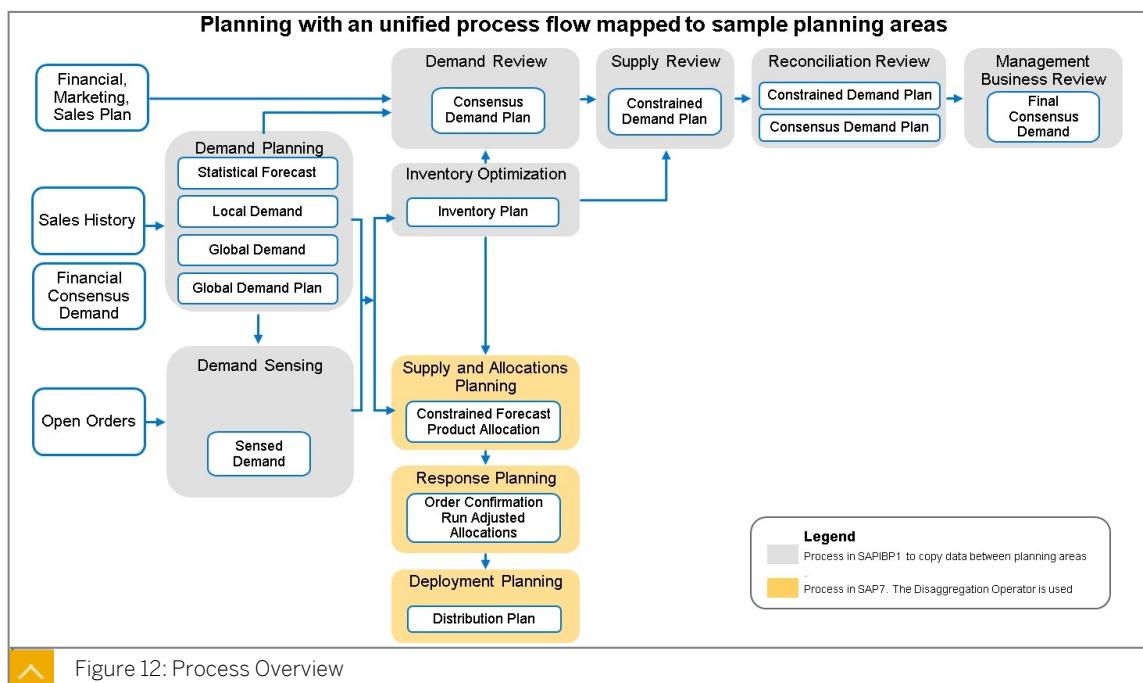
For more information on *Unified Planning Process*, please view the video in the lesson *SAP Best Practices for SAP IBP* in your online course.

In the figure, we can see how the SAP Best Practices addresses the different Planning levels through SAP IBP Processes integrating external processes. Here, it's important to highlight that frequencies, horizons, and recommended buckets for each level are general guidelines, that is, they may vary according to customer specific requirements.

Note:

You can use the unified Planning area (SAPIBP1) to jump-start the implementation in case your business process requires integration across different SAP IBP applications. The unified Planning area is a comprehensive sample Planning area that supports an integrated Planning process covering all of the applications listed above. Just like any other sample Planning area, this Planning area delivers an out-of-the-box integration scenario, which you can customize to fit your unique requirements.

For the integrated Planning process based on the unified Planning area, the SAP Best Practices for SAP IBP provides sample data, Planning View templates, predefined dashboards, configuration guides, test scripts and more. Customer test tenants and SAP Integrated Business Planning for Supply Chain, starter edition instances include an activated copy of the unified Planning area with sample content.



Note:

Please note that the sequence of the process steps demonstrates a typical use case. You can use this process "as is" or you can adapt it to your business needs.

SAPIBP1 is a sample model entity defined to unify Planning processes under one roof, included in every SAP IBP Tenant.

SAP7 is a sample model entity defined to plan orders, included in every SAP IBP Tenant and integrable within SAPIBP1 via the *Disaggregation Operator*.

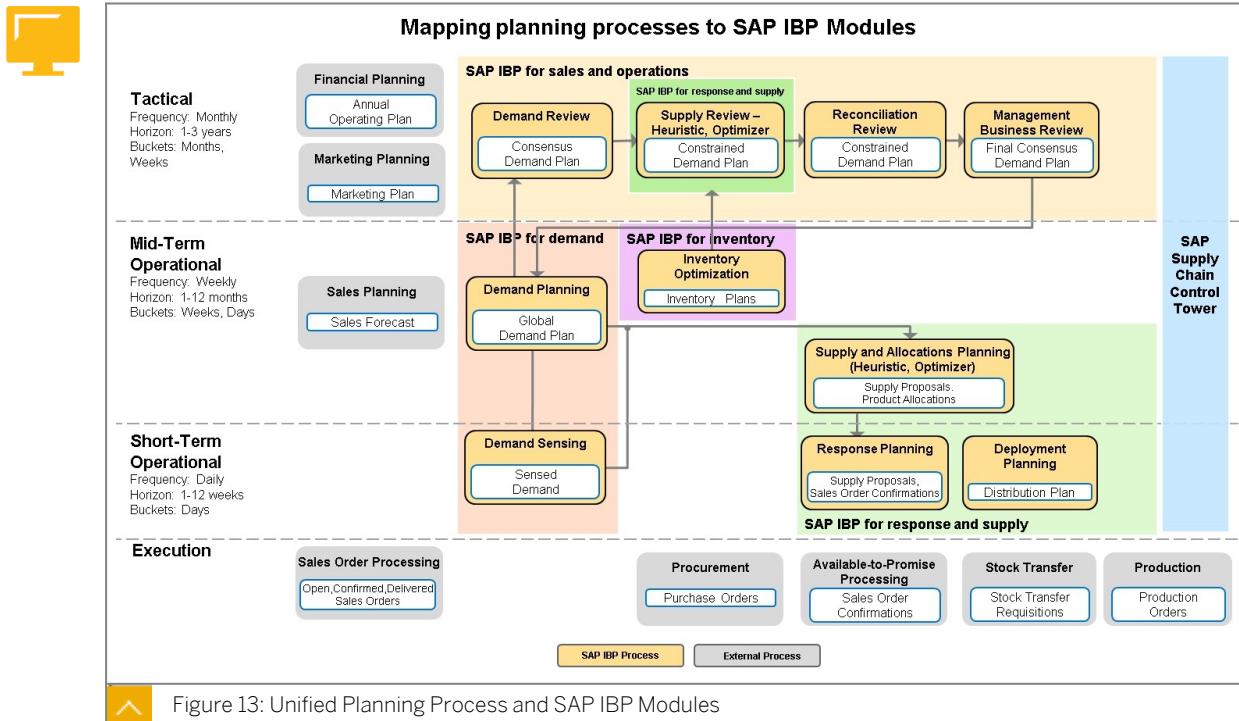


Figure 13: Unified Planning Process and SAP IBP Modules



Animation

For more information on this topic please view the animation in the lesson *SAP Best Practices for SAP IBP* in your online course.

Demand Planning

In the Demand Planning phase, the Demand Planner plans the upcoming demands. This is done in weekly cycles and involves the following tasks:

1. Create statistical forecast:

The Demand Planning process expert creates the statistical forecast based on the historical sales data.

2. Create local demand plan:

Based on the statistical forecast, the local Demand Planner creates the local demand plan, typically for a specific location product or product group.

3. Create global demand plan:

Based on the local demand plan and the final consensus demand defined in the previous Sales and Operations Planning cycle, the global Demand Planner creates the global demand plan.

Demand Sensing

In the Demand Sensing phase, the system creates the sensed demand as follows: Based on the future ordered quantity, confirmed quantity, the delivered quantity data from SAP ERP, and the global demand plan defined in Demand Planning, the sensed demand is calculated on a daily basis. The sensed demand is an input for creating the combined demand plan in Demand Planning.

Demand Review

In the demand review phase, the Demand Planner creates a complete consensus demand plan in the medium to long term Planning horizon based on the global demand plan on a monthly basis. The plan also takes into account sales and marketing inputs and ensures that financial targets are met.

- 1. Integrate input data from external sources (such as SAP ERP):**

Some of the data used in the Sales and Operations Planning process needs to be retrieved from external sources. Examples of such data are the marketing plan, the financial plan, and the sales plan.

- 2. Create consensus demand plan:**

During the demand review, representatives from sales, finance, marketing, and Demand Planning define a consensus demand plan, using the input key figures derived from Demand Planning, Inventory Optimization, and external sources.

SAP Integrated Business Planning for Inventory

SAP IBP for inventory runs weekly and uses the combined output of the Demand Planning and Demand Sensing processes to create an inventory plan. Inventory Optimization calculates inventory targets for each material at each location in a Supply Chain, considers and compensates for uncertainties in demand forecasts, supply timing, and supply quantity. The inventory plan serves as an input to the Sales and Operations Planning process.

Supply Review

Supply review is performed in monthly cycles and includes the following tasks:

- 1. Copy input data:**

As a preliminary step in the Sales and Operations Planning process, a copy of the Combined Final Demand to the Consensus Demand and the Recommended Safety Stock key figures are created. This copy is used in the Sales and Operations Planning process, while the original key figure values are kept stable.

- 2. Create constrained demand plan:**

During the supply review, the Supply Planner creates a constrained demand plan. To calculate the constrained demand plan, the Planning algorithm uses Master Data such as sourcing rules or quotas, resources, production sources (bills of material), lead times, lot sizes, and co-products, and input Planning data such as consensus demand, inventory target, and available capacity.

Supply and Allocations Planning

You can use Supply and Allocations Planning to create product allocations and a supply plan based on prioritized forecast demands and on Supply Chain constraints. For this process, the combined final demand is copied from SAPIBP1 to sample Planning area SAP7. Later on, the constrained forecast established in SAP7 is copied back to SAPIBP1. The Disaggregation Operator is used for copying between Planning areas.

You can take care of the process making use of the following key capabilities:

- 1. Create a supply and allocations plan:**

The plan is the result of a Planning run considering rules and constraints.

- 2. Analyze results and check alerts:**

The Planner analyzes the projected stock, the constrained forecast, and the product allocations and checks potential alerts for the constrained forecast.

3. Analyze gating factors to better overcome them in the future:

Regular gating factor analysis can help the Planner build up an even more comprehensive overview of the Supply Chain and make any necessary changes so the gating factors don't occur again in the future.

4. Perform simulations based on changed supply or demand situations:

The Planner can use simulations to try out potential solutions, and then update the plan accordingly.

Response Planning

You can use Response Planning to react quickly to incoming customer orders by creating order confirmations and an adopted supply plan based on prioritized demands, allocations, and Supply Chain constraints.

You can take care of the process making use of the following key capabilities:

1. Run order confirmation:

The orders are confirmed based on priority rules and supply constraints.

2. Review confirmation results and analyze gating factors:

The Planner can review the outcome of the order confirmation run to identify any potential problems, such as stock shortages.

3. Perform simulations based on changed supply or demand situations, for example, adjusted allocations:

The Planner can use simulations to try out potential solutions, update the plan accordingly, and then perform order confirmation run.

Deployment Planning

You can use Deployment Planning to create a reliable short-term distribution plan that will consider unforeseeable events in the Supply Chain.

You can take care of the process making use of the following key capabilities:

1. Check alerts for projected stock:

A Planner can check alerts to identify a potential issue. For example, an alert is created for each location product when the value of the projected stock is negative.

The Planner can then consider these issues when distributing available supply across the network.

2. Perform a deployment run:

The Distribution Planner plans the distribution of available supply to demand.

The run takes all customer demand (sales orders), all confirmed component demands (for example, from production orders or stock transfer orders), all forecasted customer demands, and safety stock into account. It then tries to satisfy the demands with the existing supply elements. It does not look at the possibility of creating planned orders or purchase requisitions.

During the deployment run, stock transfer requisitions are created. Those stock transfer requisitions that are pegged only to supply elements that are considered available to deploy become deployment stock transfer requisitions. This is your short-term deployment plan.

3. Review Deployment Planning results and adjust a plan accordingly:

The Planner can review the outcome of the deployment run in the SAP IBP, add-in for Microsoft Excel and the Projected Stock app to identify any potential problems, such as supply shortages and adjust a plan accordingly.

4. Transfer the results to an external system:

The Planning results can also be transferred to an external system and use them in execution processes to prepare the physical transport of goods.

Reconciliation Review

During the presales and operations meeting, representatives from sales, finance, marketing, production, and Demand Planning try to resolve deviations between the constrained demand plan and the consensus demand plan, and agree on solution proposals to be decided in the sales and operations executive meeting.

Management Business Review

During the executive sales and operations meeting, senior management assesses the solution proposals from the previous step. A decision on the final consensus demand is reached, based on the final constrained demand plan. This approved value is used as an input for the Demand Planning process, for creating the global demand plan for the following week.

Visibility, Alerts, and Case Management

The SAP Supply Chain Control Tower provides visibility over the end-to-end Planning process, offers alerting capability for exception-based Planning and enables effective issue resolution with the collaborative case management functionality.



Animation

For more information on this topic please view the animation in the lesson *SAP Best Practices for SAP IBP* in your online course.

Table 1: Overview of Data Flow and Granularity

The following table shows the data flow between the SAP IBP applications and between SAP IBP applications and external systems:

From/To	Sales and Operations	Supply (time-series-based)	Demand	Inventory	Response and Supply (order-based)	External System(s)
Sales and Operations		Monthly: consensus demand plan	Monthly: final consensus demand			
Supply (time-series-based)	Monthly: constrained demand plan					Weekly: unconstrained forecast (if Response and Supply is not implemented)

From/To	Sales and Operations	Supply (time-series-based)	Demand	Inventory	Response and Supply (order-based)	External System(s)
Demand	Monthly: global demand plan			Weekly: demand forecast (global demand plan and final sensed demand)	Weekly: demand forecast (global demand plan and final sensed demand)	Daily: Final sensed demand Weekly: global demand plan
Inventory		Monthly: safety stock				Weekly: safety stock
Response and Supply (order-based)	Weekly: constrained forecast					Weekly: unconstrained forecast Daily: order confirmation run and deployment run
External System (s)	Monthly: financial plan, marketing plan	Weekly: committed forecast (if Response and Supply is not implemented)		Weekly: target service levels, forecast error	Weekly: committed forecast	
	Master Data (when required), sales plan (monthly), historical sales (weekly), sales order data (daily)					

Table 2: Periodicities and Aggregation levels

The following table lists the periodicities and the aggregation levels per Process:

Process	Periodicity	Aggregation Level
Sales and Operations Planning and Supply Planning	Monthly	From Product Family / Customer Region to Product / Location Resource / Location
Demand Planning	Weekly	Product / Customer / Location
Inventory Optimization	Weekly	Product / Location Resource / Location
Demand Sensing	Daily	Product / Customer / Location
Supply and Allocations Planning	Weekly	Days / Product / Location / Customer
Response Planning	Daily	Days / Product / Location / Customer
Deployment Planning	Daily	Days / Product / Location / Customer
Analyzing visibility, alerts, and case management	On demand	All Levels



Note:

These periodic and aggregation levels represent general guidelines and they can be adjusted for specific requirements as needed.

For additional content related to the unified Planning area, see http://rapid.sap.com/bp/rds_ibp.

For general information about Planning areas, see the model configuration guide on SAP Help Portal at <http://help.sap.com/ibp>. Choose your release and then choose *Model Configuration Guide*.

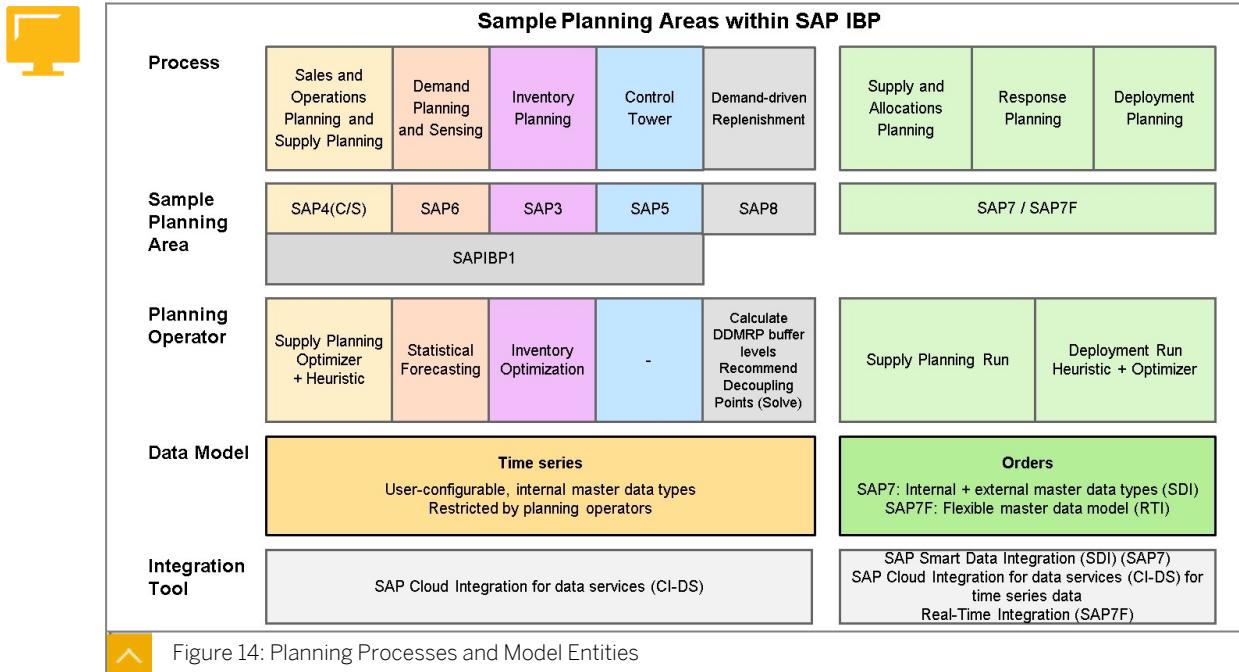
The SAP IBP web client provides access to sample SAP Planning areas, which are shipped with SAP IBP. You can use sample Planning areas as a basis for creating your own Planning areas. You can copy one of the Planning areas and extend it as necessary to meet your particular business needs. You can add your own Master Data types, key figures, calculations, and attributes.

Planning Processes and Model Entities



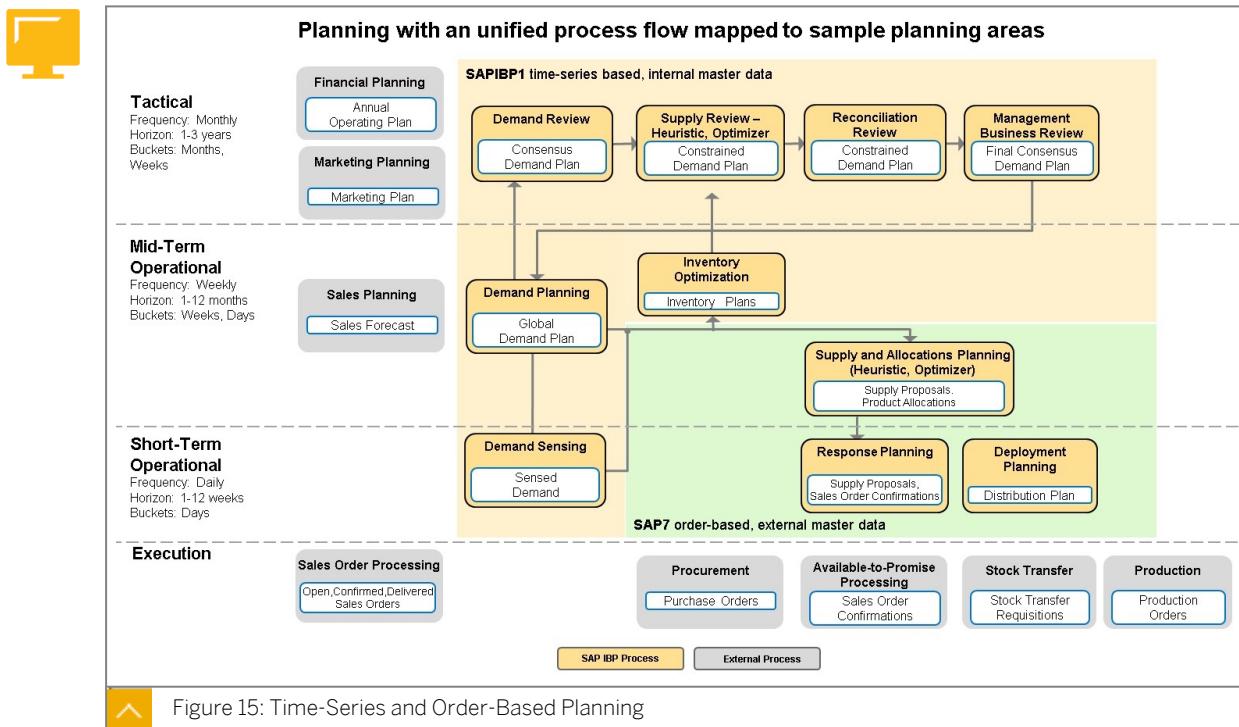
Animation

For more information on this topic please view the animation in the lesson *SAP Best Practices for SAP IBP* in your online course.



Note:

The following link provides an overview of SAP IBP features: [SAP Help → SAP Integrated Business Planning for Supply Chain → Applications and Features of SAP Integrated Business Planning for Supply Chain](#). This site presents the available application licenses. Consider this note for system sizing SAP Note: 2423668





Animation

For more information on this topic please view the animation in the lesson *SAP Best Practices for SAP IBP* in your online course.

Time-series based Planning (TSP), using advanced algorithms, helps you to calculate the flow of products through your Supply Chain to satisfy demand. Using customer demand as the starting point and taking different constraints and Planning data into account, the algorithms calculate which locations in your Supply Chain can supply the product to the customer and how much each location can supply in each period of your Planning horizon.

Order-based Planning (OBP) helps you to create a supply plan using operational data and react to short-term changes. This approach enables Supply Planning from an operational perspective: It uses detailed data from external systems, and takes into account, for example, planned orders, production orders, sales orders, and purchase orders. Compared to the time-series-based Planning functions of SAP IBP, the order-based approach takes a shorter-term view.

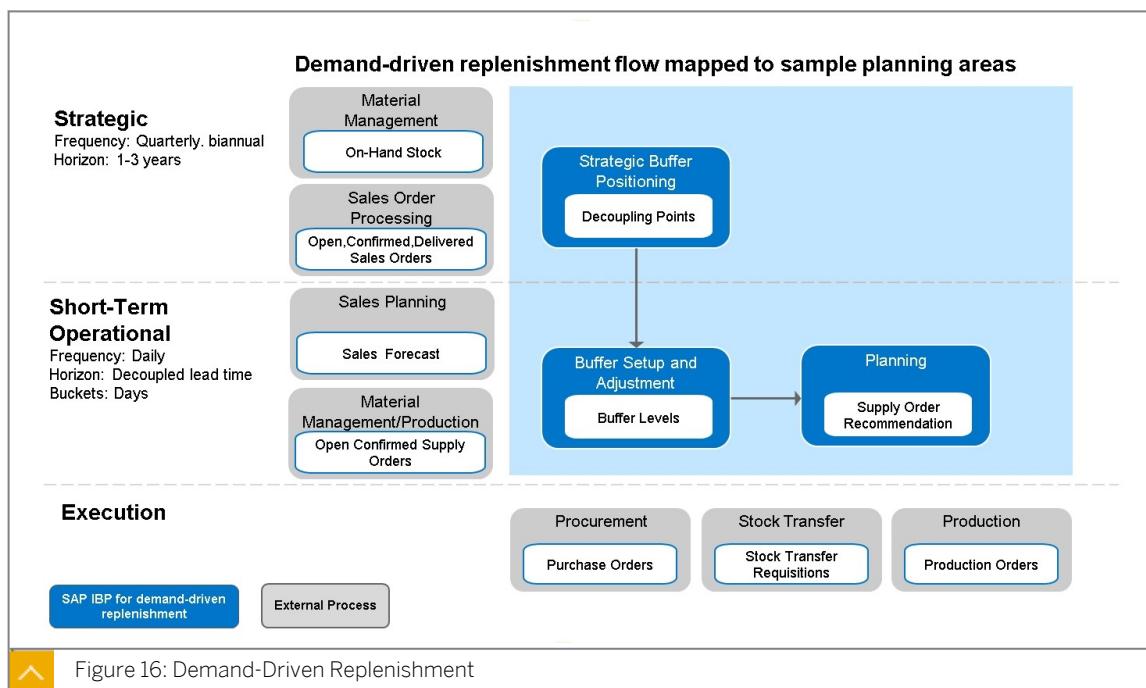


Figure 16: Demand-Driven Replenishment

The main objective with DDMRP implementations is to enable material and information flow through a Supply Chain. In DDMRP, flow is achieved in the following three ways:

- By dampening the effect of variation across the Supply Chain by decoupling lead times and identifying where to buffer quantities of inventory, and how much to buffer to ensure the shortest possible lead time and the optimum amount of inventory.
- By driving replenishment based on actual demand, rather than forecasts.
- By exposing downstream inventory and demand status to upstream sources to facilitate demand-driven prioritization of supply.

SAP Integrated Business Planning for demand-driven replenishment supports Demand Driven Materials Requirement Planning (DDMRP) as defined by the Demand-Driven Institute.

The five components of DDMRP are as follows:

1. Buffer positioning
2. Buffer sizing
3. Dynamic adjustments
4. Demand-driven Planning
5. Visible and collaborative execution.

As shown in the figure, these five steps are being supported by SAP IBP.



Note:

As well as these Planning areas, small sample Planning areas with examples of advanced configuration to meet different business requirements are provided in SAP Notes, together with information on how to request L-code if configuration can't meet your requirements.



LESSON SUMMARY

You should now be able to:

- Leverage SAP Best Practices for SAP IBP

Benefits and Key Performance Indicators (KPIs) Improved through SAP Integrated Business Planning for Supply Chain



LESSON OBJECTIVES

After completing this lesson, you will be able to:

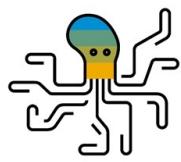
- Identify SAP IBP benefits

Benefits and KPIs Improved Through SAP Integrated Business Planning



A company can benefit from logistical complexity and volatility by gaining an advantage over their competitors

The following ways to differentiate offerings can provide significant competitive advantages to a company:



Being **agile** and benefiting from changes in demand



Being **reliable** and meeting **customer expectations**



Providing **end-to-end visibility** and monitoring



Providing **new markets** and gaining **new customers**

Figure 17: Supply Chain Complexity and Volatility

Benefits from Logistical Complexity and Volatility

A company can benefit from logistical complexity and volatility by gaining an advantage over their competitors. The following exemplary factors can influence this competitive advantage:

- In recent years, Supply Chains have become more volatile due to major geographic and demographic trends.
- Market power has shifted towards the end consumer, which was amplified by the financial crisis.
- Maturity of the millennial generation who require individualized products that are delivered immediately and purchased through new channels.

- Emerging middle class in the developing markets, which has resulted in a global rebalancing across geographies.
- Complexity of growing logistics requirements.
- An automotive service parts wholesaler guarantees their dealers and end-customers a 30 minute replenishment cycle.
- Suppliers such as Amazon have introduced a distribution center strategy, which allows them to deliver products ordered through their website within two hours.
- Retailers such as Walmart have introduced a process to deliver directly from the closest store to a customer when an order is placed online. This requires an excellent replenishment process between the distribution center and the store to avoid stock-out or an out-of-shelf situation.

Two Key Studies to Prove Improvements Achieved by SAP IBP



The SAP Integrated Business Planning for Supply Chain solution has helped companies achieve KPI and bottom-line improvements

According to an Aberdeen study of the best-in-class companies using the SAP Integrated Business Planning for Supply Chain, these companies have experienced the following benefits:

- 81.9% forecast accuracy level, up to three months in advance
- 97.2% of orders delivered to customers complete and on time
- 3% decreased cash-to-cash cycle time, year on year

The metrics shown on the right are based on a study completed by the SAP Value Engineering group, which looked at the benefits of an Integrated Business Planning solution.

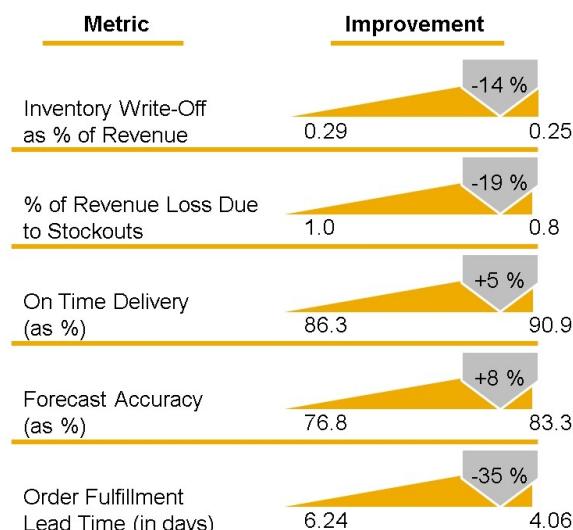


Figure 18: Metrics and Improvements through SAP IBP



Video: Metrics and Improvements through SAP IBP

For more information on *Metrics and Improvements through SAP IBP*, please view the video in the lesson *Benefits and Key Performance Indicators (KPIs) Improved through SAP Integrated Business Planning for Supply Chain* in your online course.

According to an Aberdeen study of the best-in-class companies using SAP IBP, companies who have implemented SAP IBP have experienced several benefits such as:

- Forecast accuracy level of nearly 82 percent, up to three months in advance
- More than 97 percent of orders delivered to customers complete and on time
- Year on year, a 3 percent decreased cash-to-cash cycle time

Review the figure for further details.



LESSON SUMMARY

You should now be able to:

- Identify SAP IBP benefits

Learning Assessment

1. Which one of the following options is needed to produce reliable forecasts as inputs to other Planning processes?

Choose the correct answer.

- A Supply Planning
- B Demand Planning
- C Balancing demand and Supply

2. In terms of vertical integration across the time horizon, which one of the following makes aggregated plans to meet strategic objectives, balance demand and supply, and optimize resource and working capital utilization?

Choose the correct answer.

- A Strategic Planning
- B Operational Planning
- C Immediate feedback
- D Tactical Planning

3. Which are the six modules of SAP IBP for Supply Chain?

Choose the correct answer.

- A SEN
- B SDI
- C CI-DS
- D SAP IBP for sales and operations, SAP IBP for response and supply, SAP IBP for inventory, SAP IBP for demand-driven replenishment and SAP Supply Chain Control Tower

4. What are the applications supported by the SAP Best Practices for SAP IBP for Supply Chain?

Choose the correct answer.

- A Data Services
- B Cloud Platform Integration
- C SAP IBP for sales and operations, SAP IBP for response and supply, SAP IBP for inventory, SAP IBP for demand-driven replenishment and SAP Supply Chain Control Tower

5. What are the business benefits of the SAP Best Practices for SAP IBP for Supply Chain?

Choose the correct answer.

- A Data Services
- B Cloud Platform Integration
- C Increase revenue, reduce inventory costs, improve demand accuracy and increase user productivity

6. Which following planning areas are sample planning areas?

Choose the correct answer.

- A SAPZ
- B SAPX
- C SAP4, SAP6, SAP3, SAP5, SAP8, SAP7, SAP7F, SAPIBP1

7. According to a study, which of the following benefits companies have experienced using SAP IBP?

Choose the correct answers.

- A Forecast accuracy
- B Orders delivered to customers complete and on time
- C Decreased cash-to-cash cycle time
- D Complexity of growing logistics requirements

UNIT 2

Introduction to SAP Integrated Business Planning

Lesson 1

Modules Overview

33

Lesson 2

A Double-Click on Each of the Modules

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Lesson 3

Challenges and Solutions

55

Lesson 4

Example Network Overview

57

UNIT OBJECTIVES

- Describe SAP Integrated Business Planning for Supply Chain modules
- Explain Planning Processes and Levels covered through SAP IBP
- Map Supply Chain challenges with the SAP IBP solution
- Illustrate a Supply Chain scenario

Unit 2

Lesson 1

Modules Overview



LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Describe SAP Integrated Business Planning for Supply Chain modules

Modules Overview

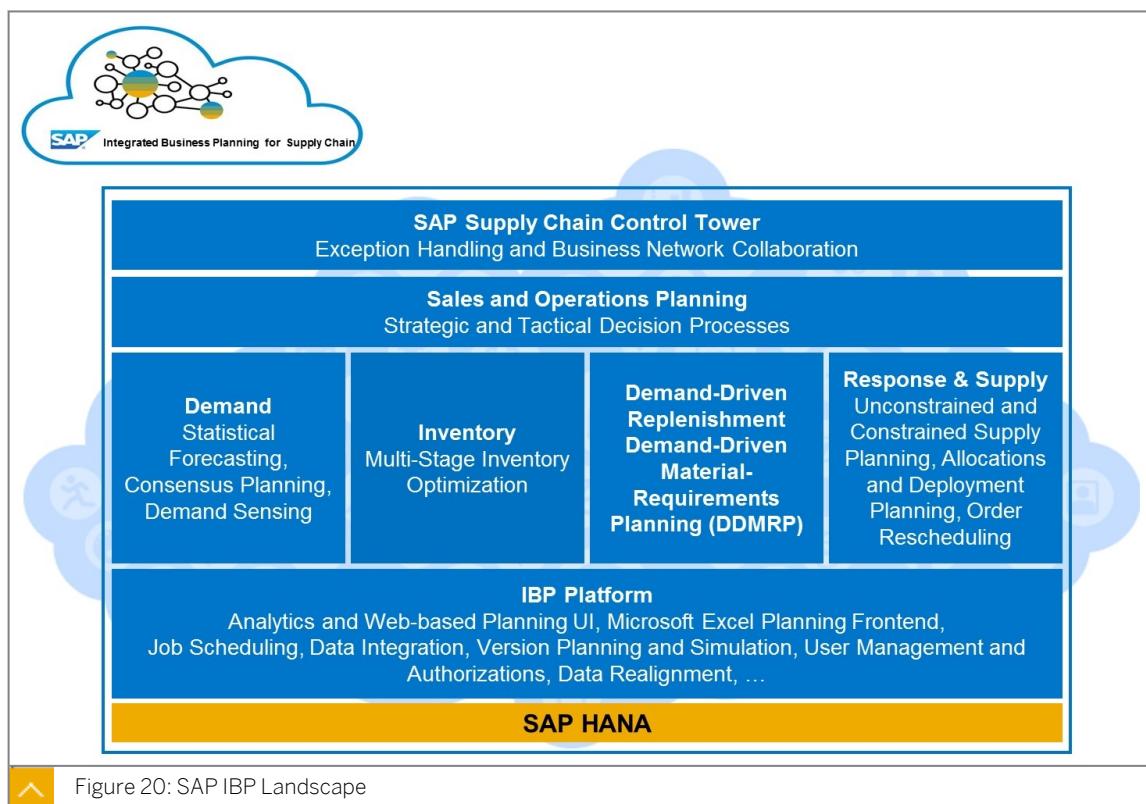


Figure 20: SAP IBP Landscape

SAP IBP is a world class cloud-solution based on SAP HANA technology. The figure shows the different modules within the SAP IBP Landscape and the processes they support. The individual functionalities come together to support the Sales and Operations Planning processes. The top most layer is the visualization layer to get a high-level view of the health and status of the Supply Chain of an organization.

SAP IBP Modules' Functionality

SAP IBP's Modules cover the core Supply Chain Planning functionality in one integrated platform.



Animation

For more information on this topic please view the animation in the lesson *Modules Overview* in your online course.

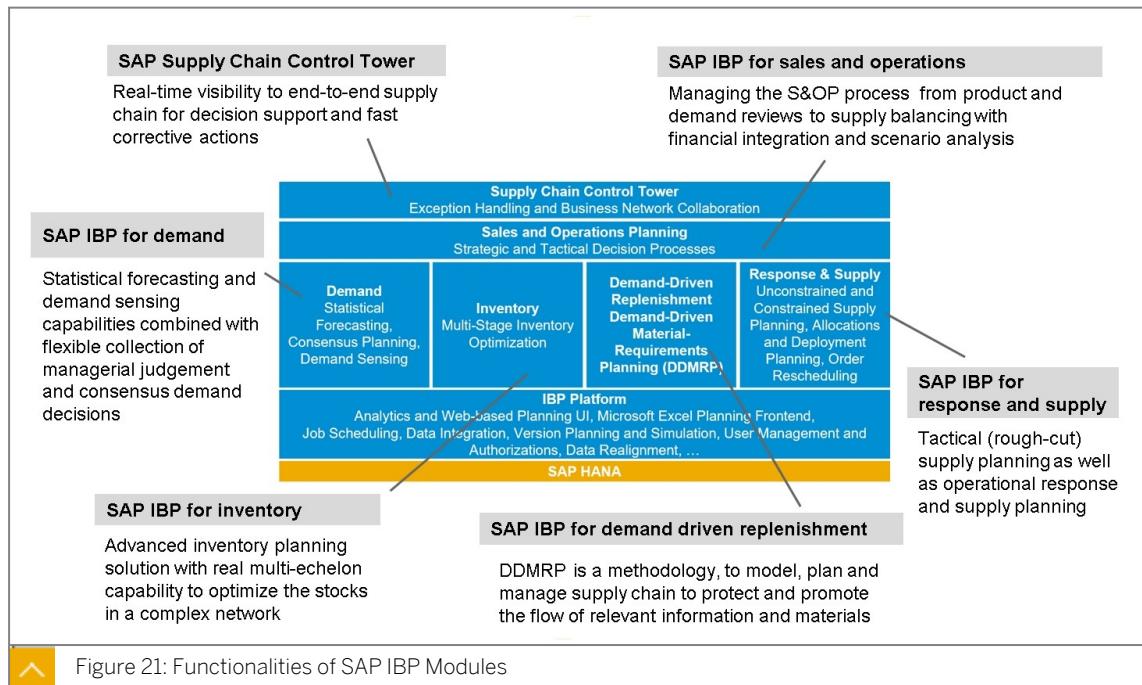


Figure 21: Functionalities of SAP IBP Modules

Let's invest some time to carefully read through the highlights of each SAP IBP module and how it contributes to the Sales and Operations Planning process.

SAP IBP is a modern and flexible planning tool to enable businesses to cope with market volatility and complexity.



Animation

For more information on this topic please view the animation in the lesson *Modules Overview* in your online course.

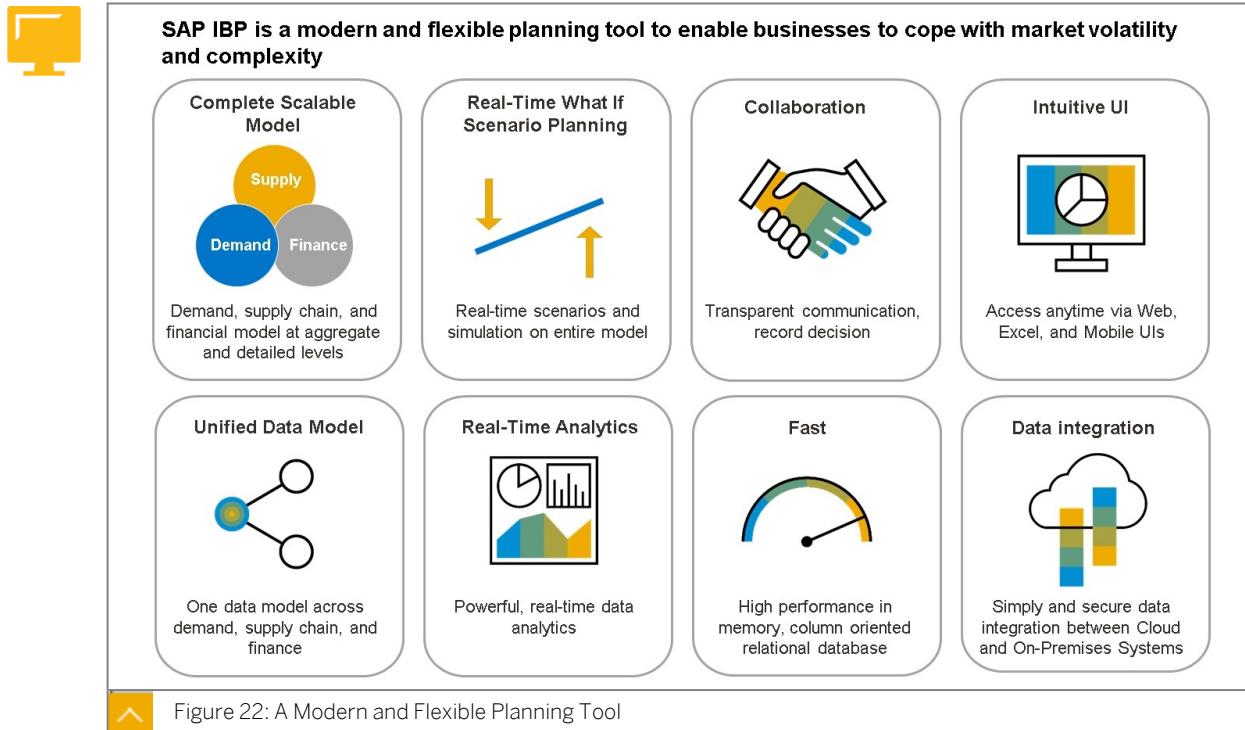


Figure 22: A Modern and Flexible Planning Tool

SAP IBP is a completely scalable solution with a unified data model. It offers simplified data integration to and from SAP IBP with an easy implemented concept via Microsoft Excel and the Web-based user interfaces. It offers easy collaboration within and between internal groups such as those created by Demand and Supply Planners, Finance team members, and Sales relevant employees. It provides what-if scenario capabilities and real-time Analytics to show the status of the key performance indicators of a Supply Chain at any given time.

How does SAP Integrate Business Planning for Supply Chain Fit into my Supply Chain?

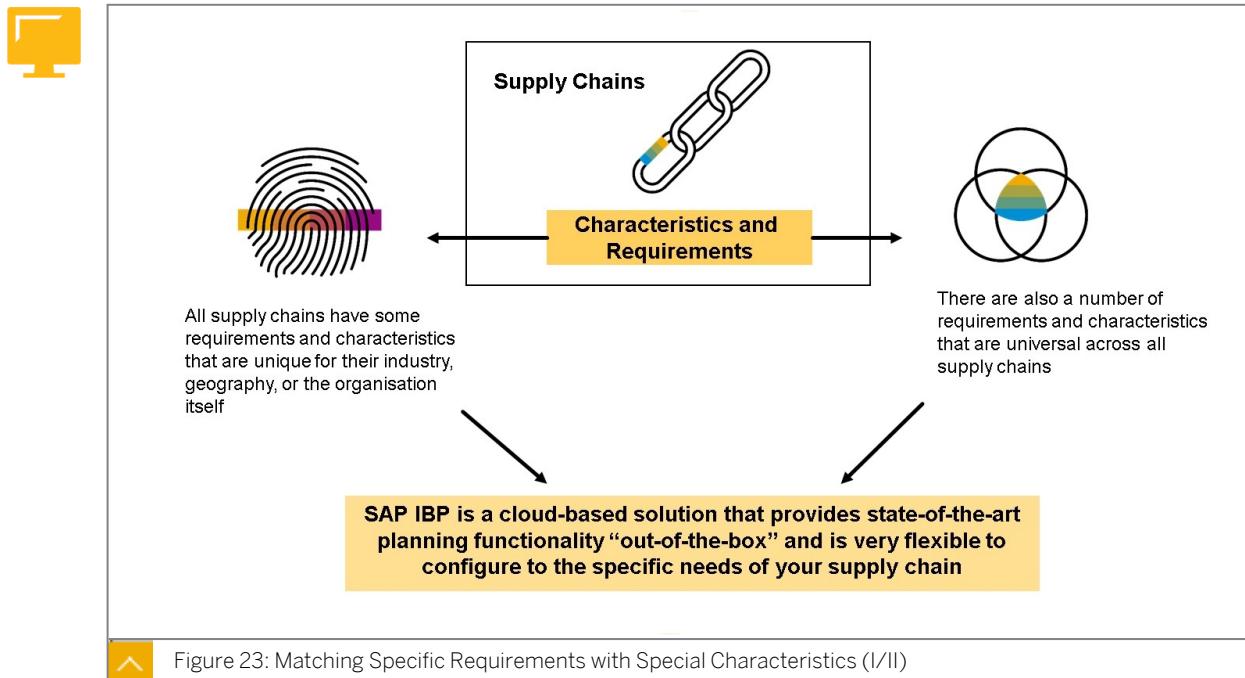
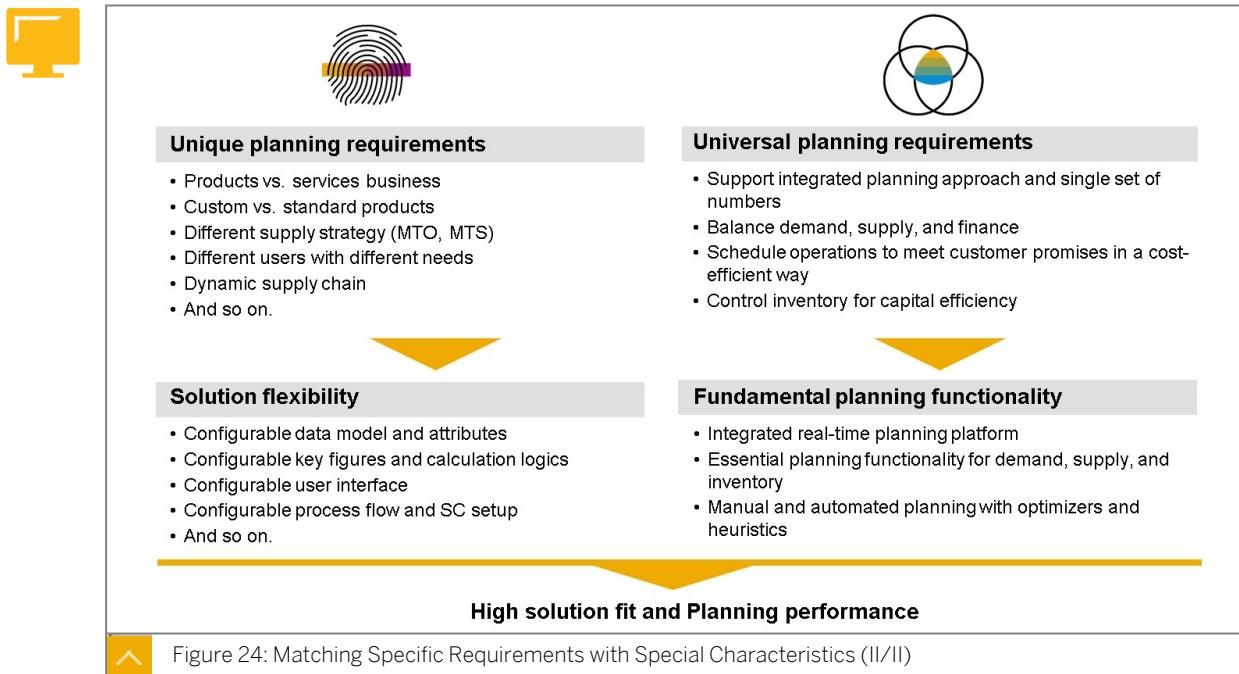


Figure 23: Matching Specific Requirements with Special Characteristics (I/II)



Video: Matching Specific Requirements with Special Characteristics

For more information on *Matching Specific Requirements with Special Characteristics*, please view the video in the lesson *Modules Overview* in your online course.

All Supply Chains have some requirements and characteristics that are unique to their industry, geography, or to the organization itself. There are also a number of requirements and characteristics that are universal across all Supply Chains. SAP IBP is a cloud-based solution that provides state-of-the-art Planning functionality “out of the box” and is very flexible to configure to the specific needs of a Supply Chain.

SAP IBP Architecture

SAP IBP is a cloud-based solution running on SAP HANA. A user can access this solution via Excel, Web, and Mobile.

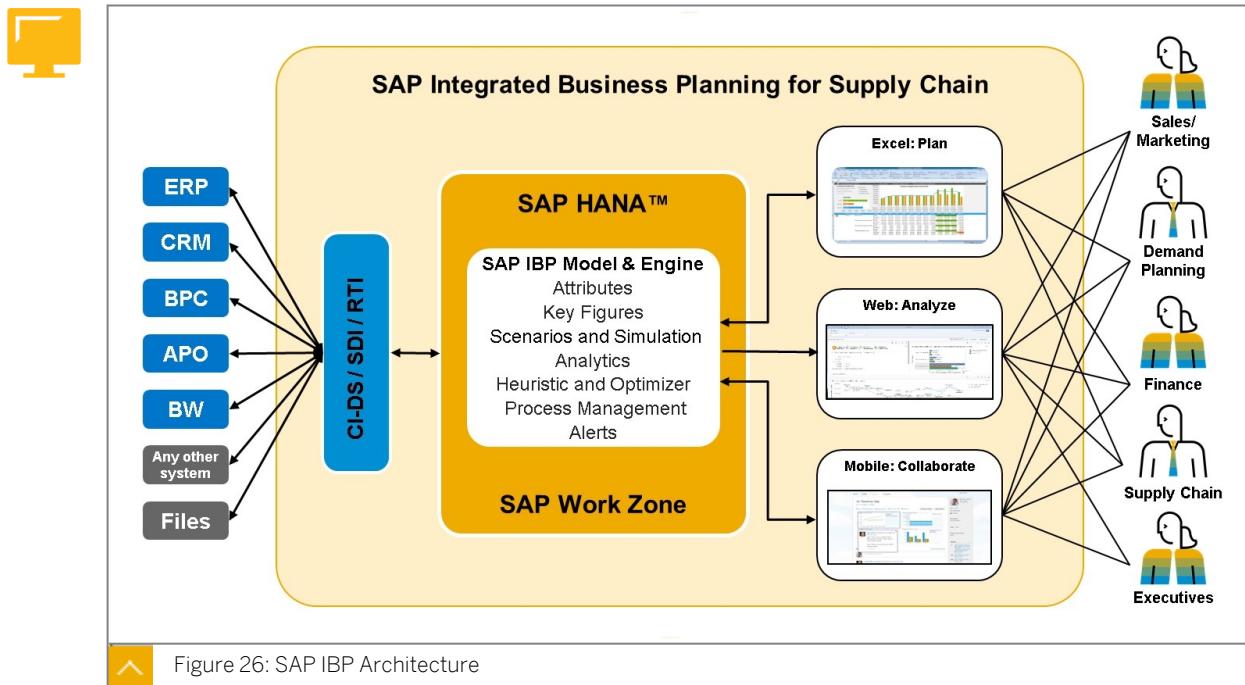


Figure 26: SAP IBP Architecture



Video: SAP IBP Architecture

For more information on *SAP IBP Architecture*, please view the video in the lesson *Modules Overview* in your online course.

On the left, there are some of the systems an organization might have from which data needs to be integrated to SAP IBP. Inbound and Outbound integration take place via CI-DS (Cloud Integration) and SDI (Smart Data Integration). CI-DS is for time-series based Planning while SDI is for order-based Planning. Integration sends data to and from SAP IBP modules guaranteeing security and confidentiality. On the right side, there are users of the system who use SAP IBP Excel, Web, or Mobile interfaces to review, change, and manage data affecting the Supply Chain.

Harmonized Data Model

One harmonized data model facilitates your organization's planning.

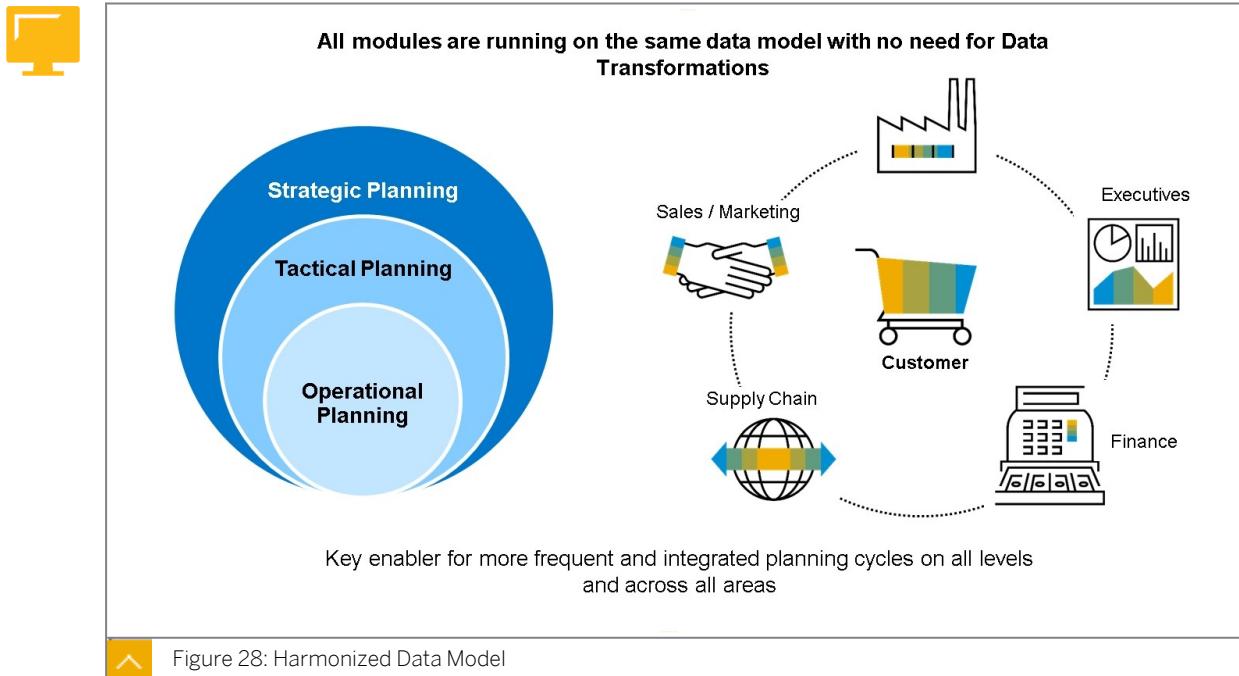


Figure 28: Harmonized Data Model

All Time Series modules are run on the same data model with no need for data transformations. This is a key enabler for more frequent and integrated Planning cycles on all levels and across all areas.

A harmonized data model requires an unified user experience. Therefore, SAP IBP has user interfaces as Web-based and Excel-based. In addition, SAP IBP Solution can be accessed via Mobile. These user interfaces constitutes an intuitive and an unified user experience for all users, including collaboration capabilities.



Animation

For more information on this topic please view the animation in the lesson *Modules Overview* in your online course.

Browser-based WebUI

- Real-time insight and monitoring
- Exception handling / alerts
- S&OP Process and Task Management
- Model Configuration
- Job Scheduling

SAP IBP, add-in for Microsoft Excel

- Real-time insight and monitoring to analyze the data
- Advanced planning and data management
- Real-time what-if scenario simulations
- Master Data Management

SAP Work Zone (Rel. 2108)

- Sharing information or objects
- Managing process-related tasks
- Keeping up-to-date about recent activities

Planners and Business Users

Administrators

Consultants

Planners and Business Users

Planners and Business Users

Planners and Business Users

Figure 29: Unified User Experience



LESSON SUMMARY

You should now be able to:

- Describe SAP Integrated Business Planning for Supply Chain modules

Unit 2

Lesson 2

A Double-Click on Each of the Modules



LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Explain Planning Processes and Levels covered through SAP IBP

A Double-Click on Each of the Modules

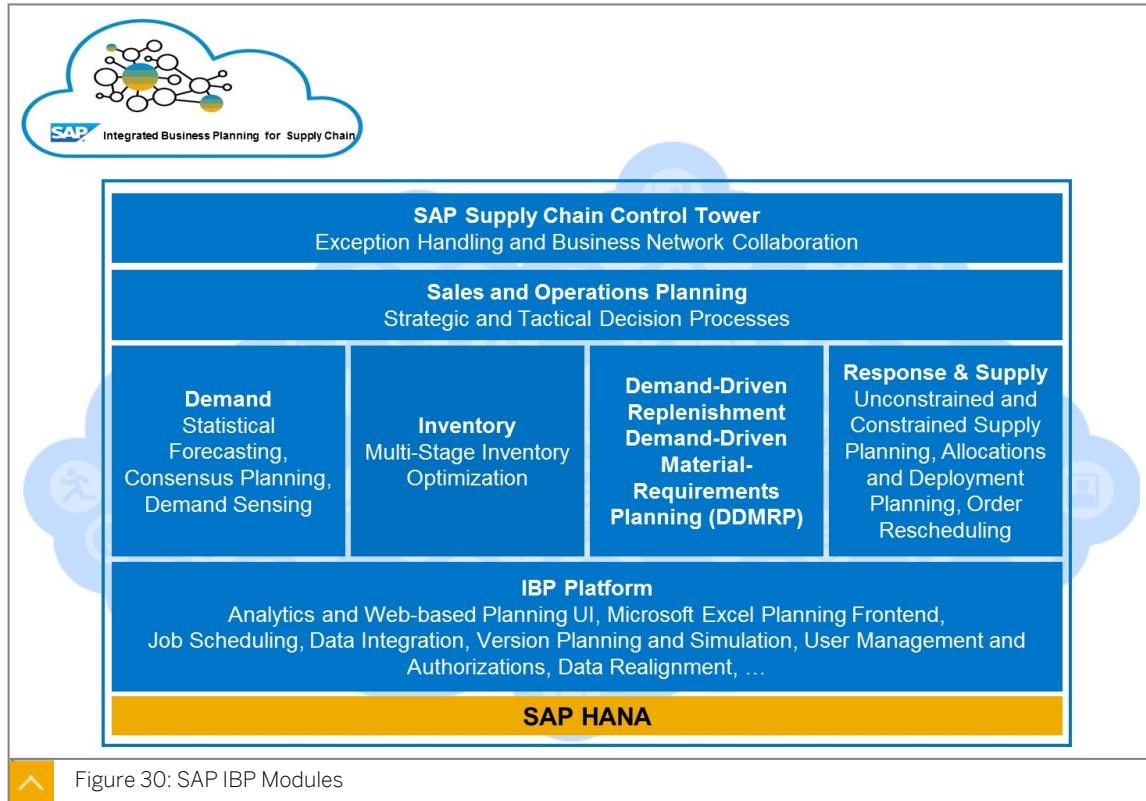
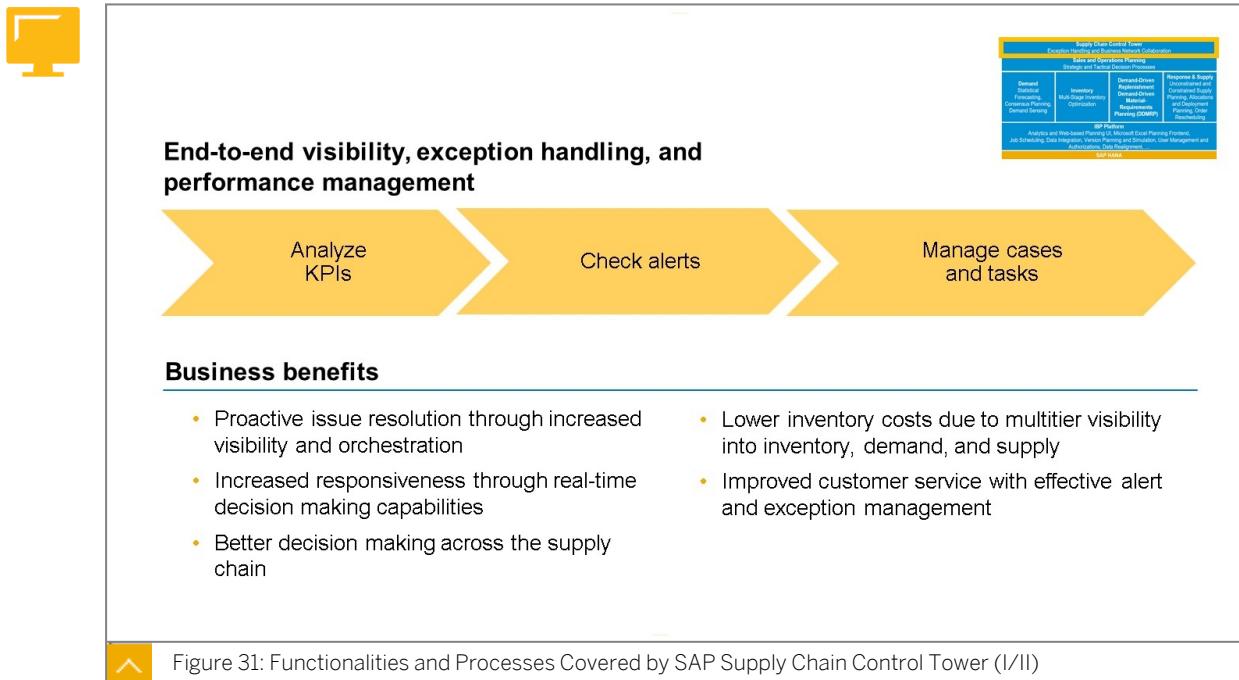


Figure 30: SAP IBP Modules

SAP IBP brings your Supply Chain functions together under one common roof, including sales and operations Planning processes coverage with Modules such as: SAP Supply Chain Control Tower, SAP IBP for supply and operations Planning, SAP IBP for demand, SAP IBP for inventory, SAP IBP for Demand-Driven Replenishment (SAP IBP for DDR), and SAP IBP for response and supply.

SAP Supply Chain Control Tower



Several components of SAP Supply Chain Control Tower cover the tasks for end-to-end visibility, exception handling, and performance management:

- Analyze Key Performance Indicators (KPIs)
 - Review KPIs to understand how Supply Chain is performing and to identify possible issues and required actions.
- Check Alerts
 - Review alerts to quickly respond to situations where process is clearly not corresponding to normal nor to targeted limits (for example, big changes in stock levels, forecast accuracy, service level, and so on.)
- Manage Cases and Tasks
 - Leverage the built-in case and task management for resolving problems.



Animation

For more information on this topic please view the animation in the lesson *A Double-Click on Each of the Modules* in your online course.

Business Benefits

- Proactive issue resolution through increased visibility and orchestration
- Increased responsiveness through real-time decision making capabilities
- Better decision making across the supply chain
- Lower inventory costs due to multi-tier visibility into inventory, demand, and supply

- Improved customer service with effective alert and exception management

Key Functionality

- End-to-end visibility to supply chain
- Real-time monitoring, smart alerts, analytics, and exception-based management
- Multiple options for visualizing the supply chain data
- Drill-down capabilities to quickly grasp the issue in detail
- Built-in case and task management for resolving problems in a collaborative and efficient way

The key functionalities of SAP Supply Chain Control Tower is about end-to-end visibility of the Supply Chain, real-time monitoring, Supply Chain visualization, drill-down capabilities for detailed analyses, built-in case, and task management.

SAP Integrated Business Planning for Sales and Operations

Sales and operations planning process

```

graph LR
    A[Product review] --> B[Demand review]
    B --> C[Supply review]
    C --> D[Demand-Supply balancing]
    D --> E[Executive decision]
  
```

The process consists of five sequential steps: Product review, Demand review, Supply review, Demand-Supply balancing, and Executive decision.

SAP Integrated Business Planning Framework

Supply Chain Control Tower	
Executive Dashboard, Planning Environment	
Sales and Operations Planning	
Demand Planning	Supply Planning
Inventory Management	Material Requirements Planning
Demand-Order Management	Manufacturing Planning, Master Scheduling
Demand & Supply Uncoupling, Resource Management, Distribution Planning, Replenishing	
SAP Analytics and Web-based Planning, SAP Material-Flow Planning, Forecasting, Data Integration, Planning, Simulation, User Management and Administration, SAP BusinessObjects Planning and Consolidation	

Business benefits

- Effectively balance demand and supply, and attain financial targets
- Optimize product mix and customer/market allocations for maximum margin contribution
- Align strategic, long-term supply chain planning with operational, short-term planning
- Create the optimal business plan to drive revenue growth and increase market share
- Improve on-time delivery
- Improve capacity utilization

SAP IBP for sales and operations provides the following basic functions:

- Product Review
 - Plan for product life-cycle (new product ramp-ups, old product phase-downs).
 - Plan for code-changes, product and component replacements, and so on.
- Demand Review
 - Finalize the consensus demand plan to be used as the starting point for the Sales and Operations Planning processes (unconstrained demand).
 - Generate demand scenarios relevant for the Sales and Operations Planning processes (for example, expected, high, or low or event-based scenarios).
- Supply Review
 - Review critical resources against demand.
 - Assess capacity scaling options.
- Demand-Supply Balancing
 - Develop initial feasible supply plan.
 - Develop what-if scenarios for breaching supply-demand gaps.
 - Analyze scenarios and financial impacts.
 - Prepare recommendations for executive meeting.
- Executive Decision
 - Run a structured Sales and Operations Planning meeting with cross-functional representatives to decide on the plan to follow.
 - Hand over the decisions to execution.

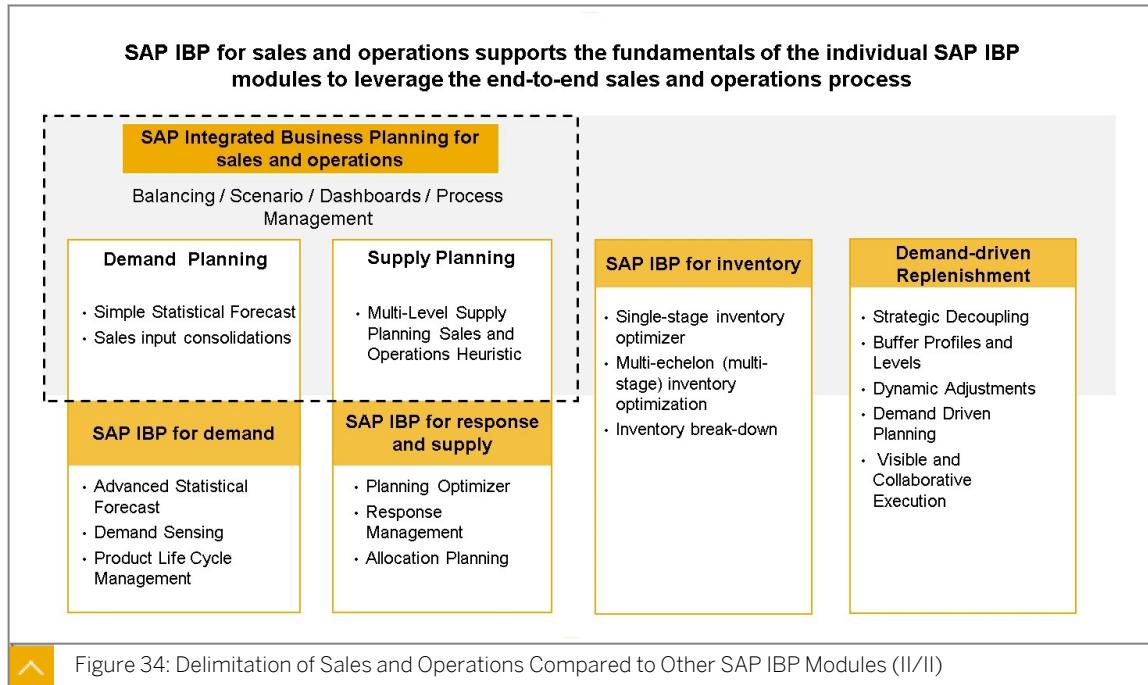


Animation

For more information on this topic please view the animation in the lesson *A Double-Click on Each of the Modules* in your online course.

Business Benefits

- Effectively balance demand and supply, and attain financial targets
- Optimize product mix and customer/market allocations for maximum margin contribution
- Align strategic, long-term supply chain planning with operational, short-term planning
- Create the optimal business plan to drive revenue growth and increase market share
- Improve on-time delivery
- Improve capacity utilization



SAP IBP for sales and operations supports the fundamentals of the individual SAP IBP modules to leverage the end-to-end sales and operations process. The sales and operations process comprises of the following:

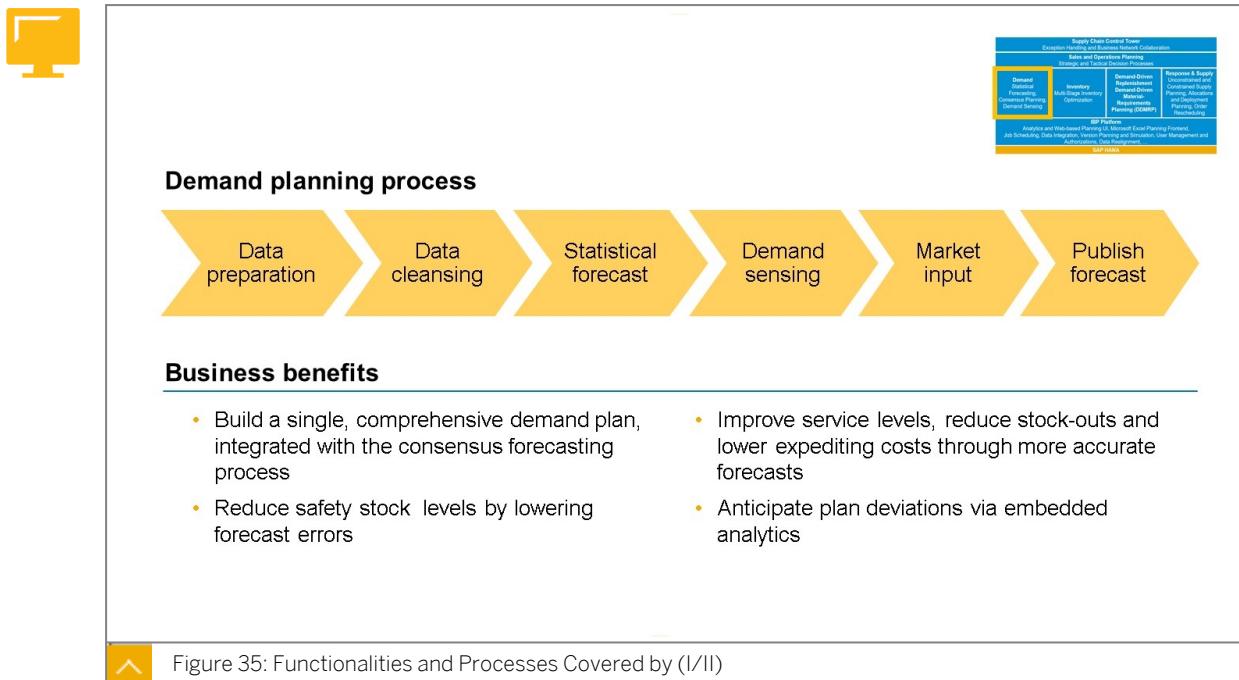
- Demand Planning with statistical forecast and input consolidation
- Supply Planning with capacity overview and Planning heuristics
- Scenarios and simulations Planning can be done to simulate what-if analysis
- Process management to follow the process step by step is a strong tool to enable a proper flow and understand its completion status

As per the figure above, we can see a strong integration between the processes.

Sales and Operations: Exercises within this course

During this course we will take you through the sales and operations exercises as part of the Demand and Supply Management, consisting of the following:

- Global demand review and consolidation
- Inventory Optimization
- Generation of an unconstrained plan with sales and operations heuristic
- Review of Capacity impact
- Simulation and Scenario management
- Generation of a constrained plan with the optimizer
- Usage of Analytics and Collaboration capabilities



SAP IBP for demand includes the following Planning process steps:

- Data Preparation
 - Ensure all required master and transactional data is maintained and available.
 - Data Cleansing
 - Remove the outliers from the history data that are likely to derail or skew the Statistical Forecasting algorithm resulting in a weaker forecast (for example, special events not expected to repeat, stock-out situations, and so on).
 - Statistical Forecast
 - Generate a base line demand forecast by applying statistical algorithms to historical demand time series.
 - Demand Sensing
 - Apply more advanced pattern recognition methods and forecasting based on multiple inputs (for example, sales history and planned promotions) to improve accuracy of the short-term forecast.
 - Market Input
 - Adjust the statistically generated forecasts based on the latest market intelligence and knowledge of the future. This input is usually collected from sales and marketing.
 - Publish Forecast
 - Finalize and make the demand forecast available for the organization and other processes.



Animation

For more information on this topic please view the animation in the lesson *A Double-Click on Each of the Modules* in your online course.

Business Benefits

- Build a single, comprehensive demand plan, integrated with the consensus forecasting process
- Reduce safety stock levels by lowering forecast errors
- Improve service levels, reduce stock-outs and lower expediting costs through more accurate forecasts
- Anticipate plan deviations via embedded analytics

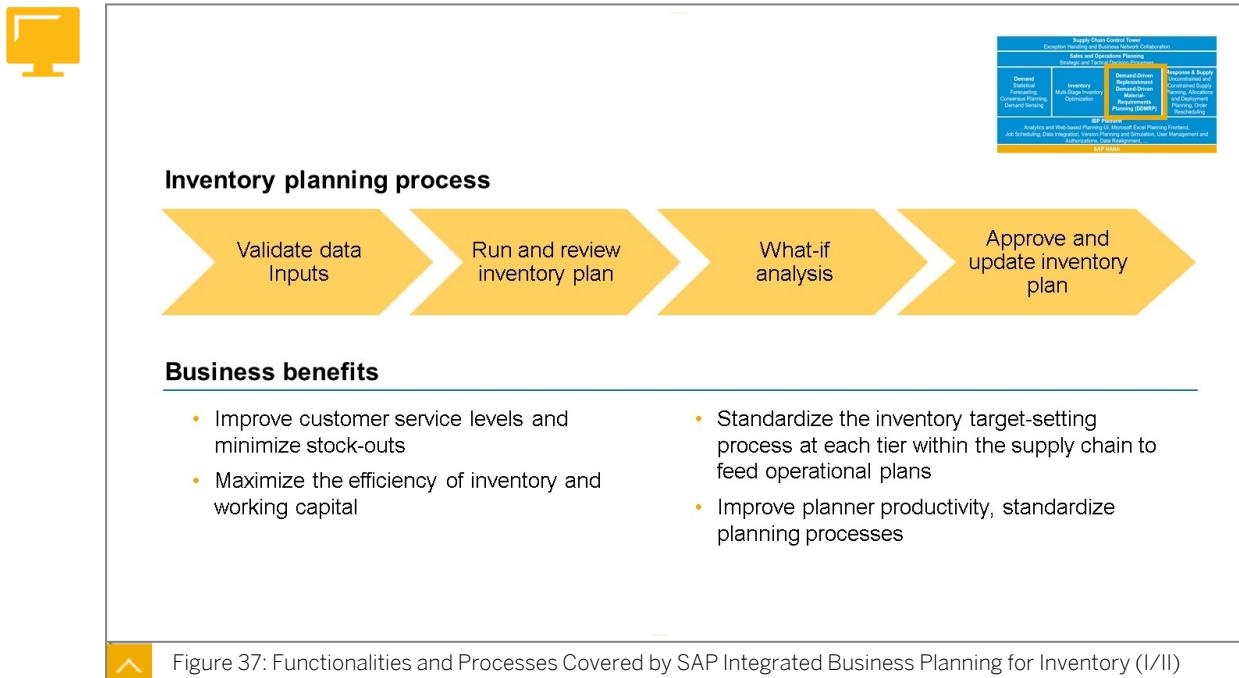


Key functionality



- Gather and cleanse historical data with system support and automation
- Statistical forecasting with a wide selection of tried and tested algorithms
- Demand sensing with modern and advanced algorithms
- Combine forecast results and define own calculations in a flexible way
- Adjust forecasts easily in the Excel front-end at flexible levels of hierarchy with automatic reconciliation
- Generate demand scenarios for further analysis

SAP Integrated Business Planning for Inventory



SAP IBP for inventory includes the following process steps:

- Validate Data Inputs
 - Review data inputs relevant for Inventory Planning. These include target service levels, demand forecasts and forecast errors and Inventory Planning related Master Data.
- Run and Review Inventory Plan
 - Use single-stage or multi-stage Inventory Optimization algorithms to generate recommended safety stock levels.
- What-if Analysis
 - Simulate the effects of different stock holding alternatives.
- Approve and Update Inventory Plan
 - Finalize safety stock decisions and make available as inputs to other Planning processes (for example, Sales and Operational Planning).



Animation

For more information on this topic please view the animation in the lesson *A Double-Click on Each of the Modules* in your online course.

Business Benefits

- Improve customer service levels and minimize stock-outs
- Maximize the efficiency of inventory and working capital

- Standardize the inventory target-setting process at each tier within the supply chain to feed operational plans
- Improve planner productivity, standardize planning processes



Key functionality

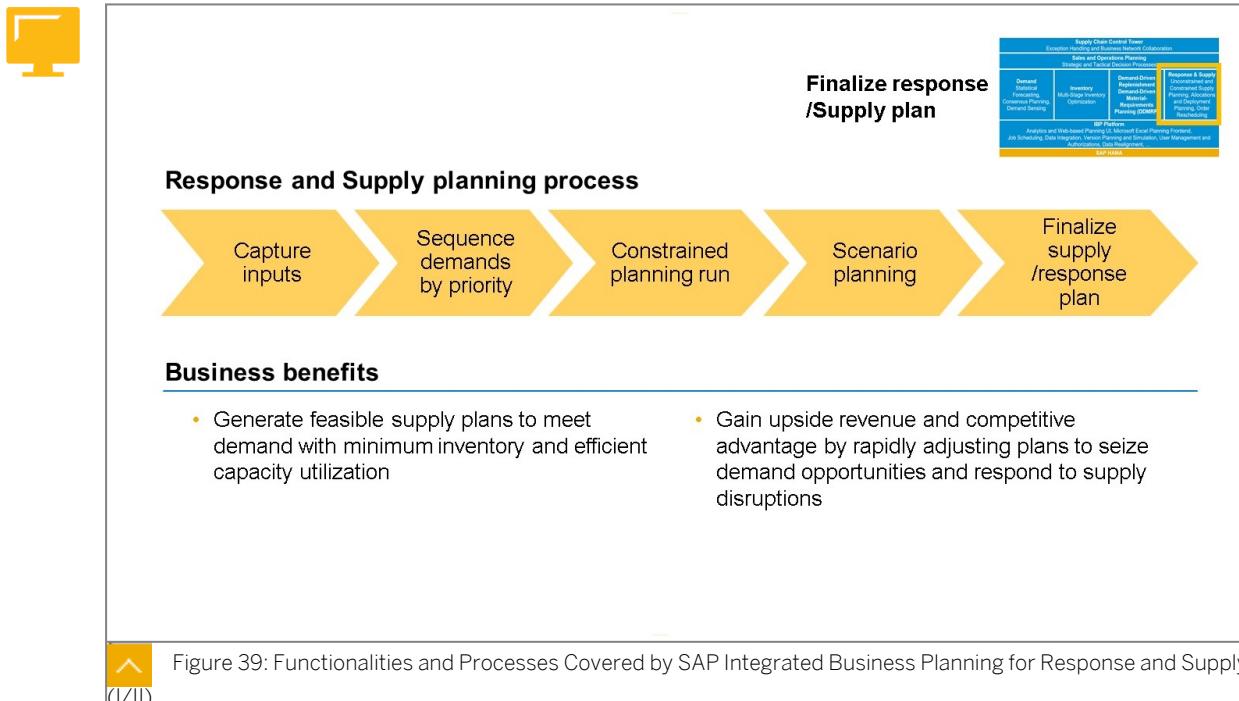
- Input data review to validate for example service levels, demand forecasts and forecast errors
- Inventory planning with single- and multi-echelon optimization

- What-if analysis
- Alerts to help manage large number of SKUs
- Manual overrides to system generated stock parameters

^ Figure 38: SAP Integrated Business Planning for Inventory: Key Functionality (II/II)

SAP IBP for inventory provides the following basic key functionality: Input data review, Inventory Planning, what-if analysis, alerts, and manual overrides.

SAP Integrated Business Planning for Response and Supply



The SAP IBP for response and supply process includes the following steps:

- Capture Inputs
 - For supply, the demand and safety stock have been planned in sales and operations, demand, inventory, or interfaced via CI-DS or from any other source.
 - For response, all information is collected via SDI from your ERP system.
- Sequence Demand by Priority
 - Step mostly used as part of the Response Planning to create a short-term prioritized feasible plan.
- Constrained Planning Run
 - Create a cost optimized plan for your short to mid-term plan using SAP IBP for response and supply.
 - Create a short-term priority based plan using SAP IBP for response and supply.
- Scenario Planning
 - Simulate short-term demand supply changes and understand the implications for your Supply Chain instantly.
 - Simulate mid-term changes in capacity or demand and review new suggested supply plan.
- Finalize Supply/Response Plan
 - Make more sound decisions with the help of documented Scenarios.



Animation

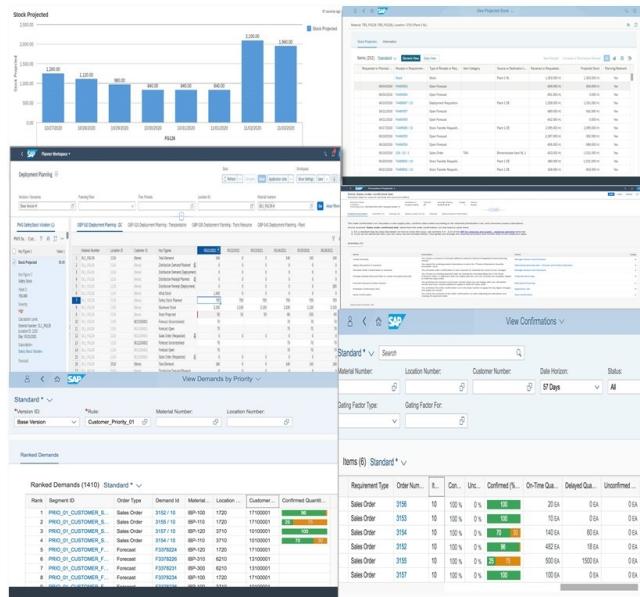
For more information on this topic please view the animation in the lesson *A Double-Click on Each of the Modules* in your online course.

Business Benefits

- Generate feasible supply plans to meet demand with minimum inventory and efficient capacity utilization
- Gain upside revenue and competitive advantage by rapidly adjusting plans to seize demand opportunities and respond to supply disruptions



Key functionality



Support tactical (time-bucketed) supply planning

- Unconstrained or constrained (optimization)
- What-if analysis of actual or hypothetical changes to demand and/or supply

Support operational (order-based) supply planning

- Generate supply orders (production, procurement, distribution)
- Unconstrained planning, constrained priority rules-driven heuristic planning, optimization-based planning (roadmap)
- What-if analysis of actual or hypothetical changes to demand and/or supply, with pegging and gating-factor analysis
- Optionally generate and provide allocations to ATP and reschedule sales orders
- New order data model and near-real-time replication from SAP ERP

Figure 40: SAP Integrated Business Planning for Response and Supply (II/II)

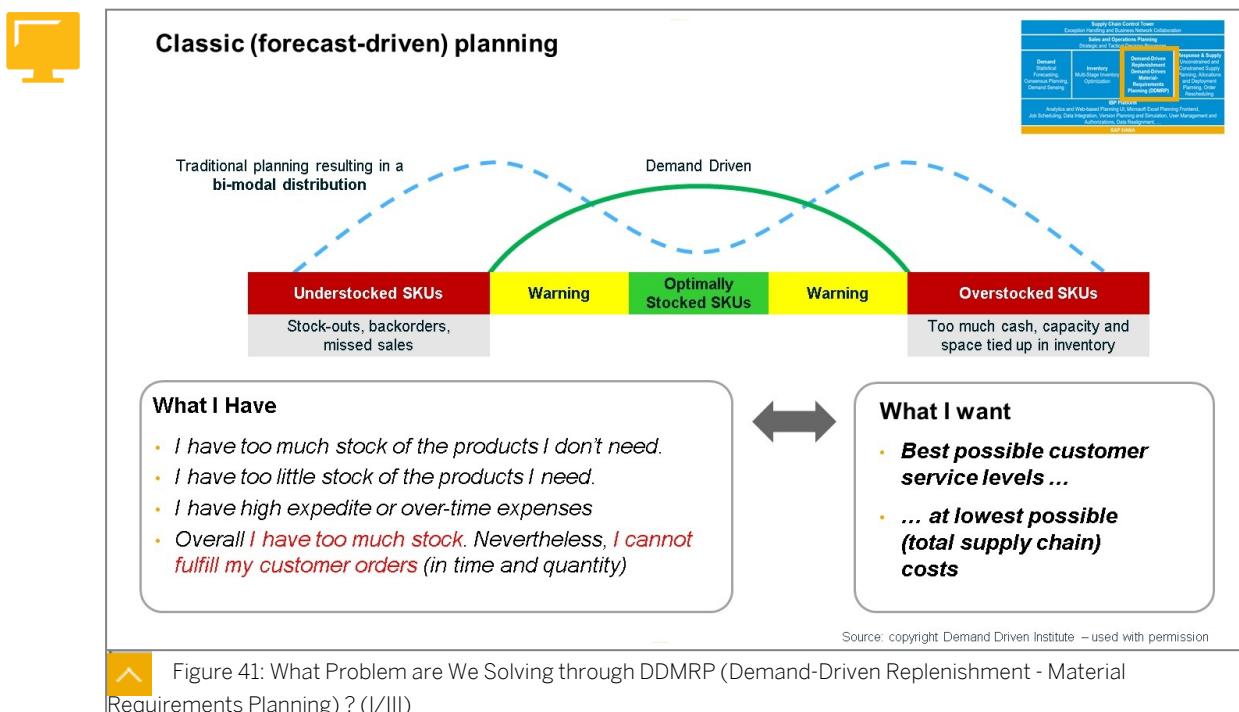
SAP IBP for response and supply includes several key functionalities to support tactical, time-bucketed and operational, order-based Supply Planning.

-Driven Replenishment

The SAP IBP for demand-driven replenishment application has the following capabilities:

- Changing the game often means changing the way you think and behave, challenging historical and deeply ingrained business practices. In a linear Planning and execution world driven by traditional Material Requirements Planning (MRP), companies find themselves locked into certain outcomes like burgeoning inventory investment and service level challenges that are natural by-products of that methodology.

- SAP IBP for demand-driven replenishment supports a methodology known as Demand-Driven MRP or simply DDMRP that re-defines the way we think and behave in Supply Chain Planning. Incorporating concepts like material flow, de-coupling points and inventory buffers. DDR supports a replenishment strategy based on actual demand instead of forecasts.
- For companies interested in or already embracing DDMRP methodology, SAP provides a complete end-to-end solution. The demand-driven operating model, as promoted by the Demand Driven Institute, including DDMRP, is an important new methodology that has the potential to drive significant improvements globally in Supply Chain management.
- DDMRP is more than a software solution – it is an end to end methodology for a new approach to Planning and execution that requires training (certification is offered), and significant business changes to processes and KPIs. Executive endorsement and support is essential, and change management is critical.
- It is common for companies who fully embrace the methodology to see significant improvements in lead time to the customer and inventory reduction of 25-50%, with near perfect customer service.



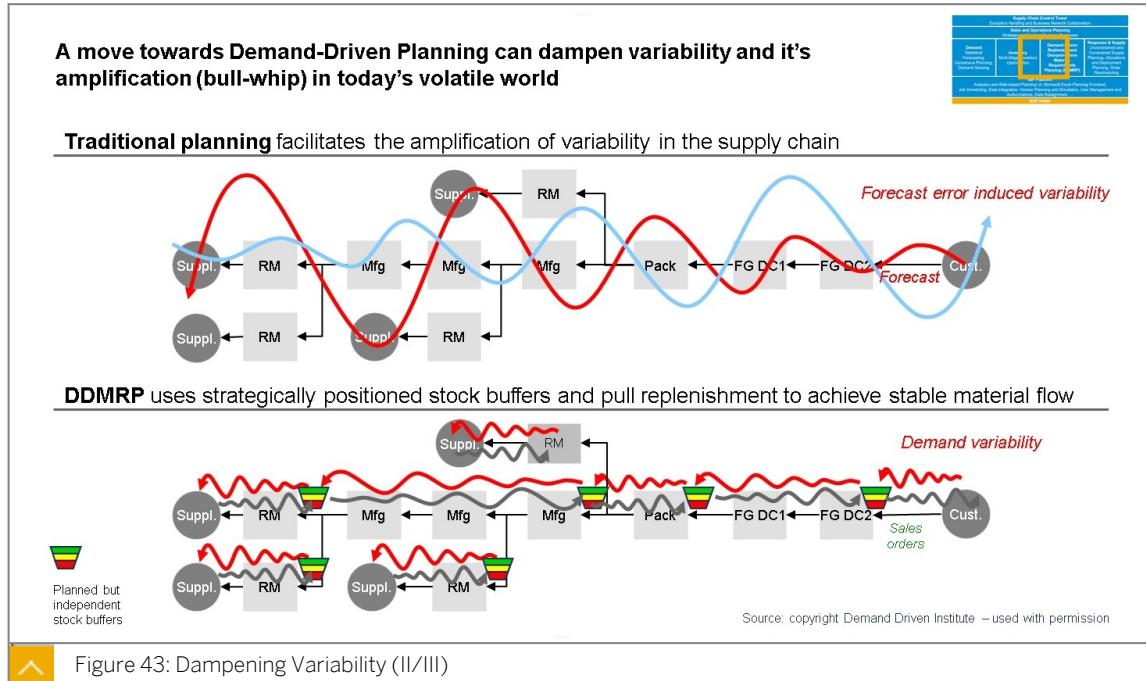
Video: Problem solving through DDMRP (Demand-Driven Replenishment - Material Requirements Planning)

For more information on *Problem solving through DDMRP (Demand-Driven Replenishment - Material Requirements Planning)*, please view the video in the lesson *A Double-Click on Each of the Modules* in your online course.

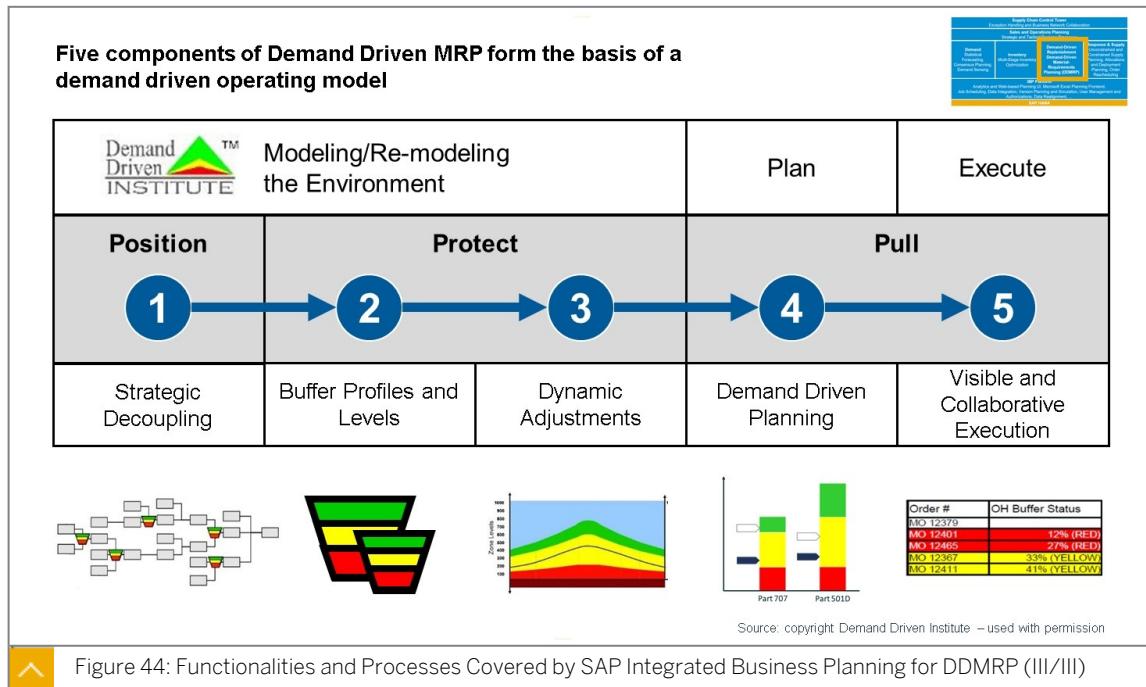
In the figure, we see a dilemma, what is expected vs. what is occurring. What is happening? Too much stock of products not needed, too little stock of products needed, and high expenditure or over-time expenses. A company expects what is being explained through the question, What do I want? - Best possible customer service levels at lowest possible (total

Supply Chain) cost -. Since traditional Planning results in a bi-modal distribution, DDMRP can solve this issue classifying the Demand via three zones:

- Red: Understocked SKUs
- Yellow: Warning
- Green: Optimally stocked SKUs



In the figure, we see a parallel representation of the traditional Planning and the DDMRP Approach. Traditional Planning facilitates the amplification of variability in the Supply Chain, while DDMRP uses strategically positioned stock buffers, considering demand classification, and pull replenishment to achieve stable material flow.



In the figure, you can see the five steps of this philosophy:

1. Strategic Decoupling
2. Buffer Profiles and Levels
3. Dynamic Adjustments
4. Demand Driven Planning
5. Visible and Collaborative

These steps deploy the DDMRP philosophy according to the Demand Driven Institute. These steps can be classified in Modeling/Re-modeling the environment, Plan, and Execute. Also, depending on the strategy, the steps are classified by: Position, Protect, and Pull. See the previous figure for more information. These steps are covered by the solution with SAP IBP called SAP IBP for DDR (-driven replenishment).



LESSON SUMMARY

You should now be able to:

- Explain Planning Processes and Levels covered through SAP IBP

Unit 2

Lesson 3

Challenges and Solutions



LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Map Supply Chain challenges with the SAP IBP solution

Challenges and Solutions



Supply Chain Challenge	SAP IBP Solution
Lack of visibility and information required to analyze and manage the end-to-end supply chain	SAP Supply Chain Control Tower
Inability to synchronize supply and demand	SAP IBP for Sales and Operations
Inability to understand and shape actual demand	SAP IBP for Demand
Difficulty to determine optimal inventory levels across the network	SAP IBP for Inventory
Forecasts are wrong , demand is volatile, and lead time vary	SAP IBP for Demand Driven MRP
Inability to manage and plan across the complex supply network	SAP IBP for Response and Supply
Inability to respond to short term changes in supply and demand	

Figure 45: The SAP IBP Modules Provide Solutions to Different Challenges in the Supply Chain

SAP IBP provides solutions to critical challenges in the Supply Chain. The match of SAP IBP modules with crucial challenges to solve these issues can be seen in the figure.



LESSON SUMMARY

You should now be able to:

- Map Supply Chain challenges with the SAP IBP solution

Unit 2

Lesson 4

Example Network Overview



LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Illustrate a Supply Chain scenario

Supply Chain Network scenario

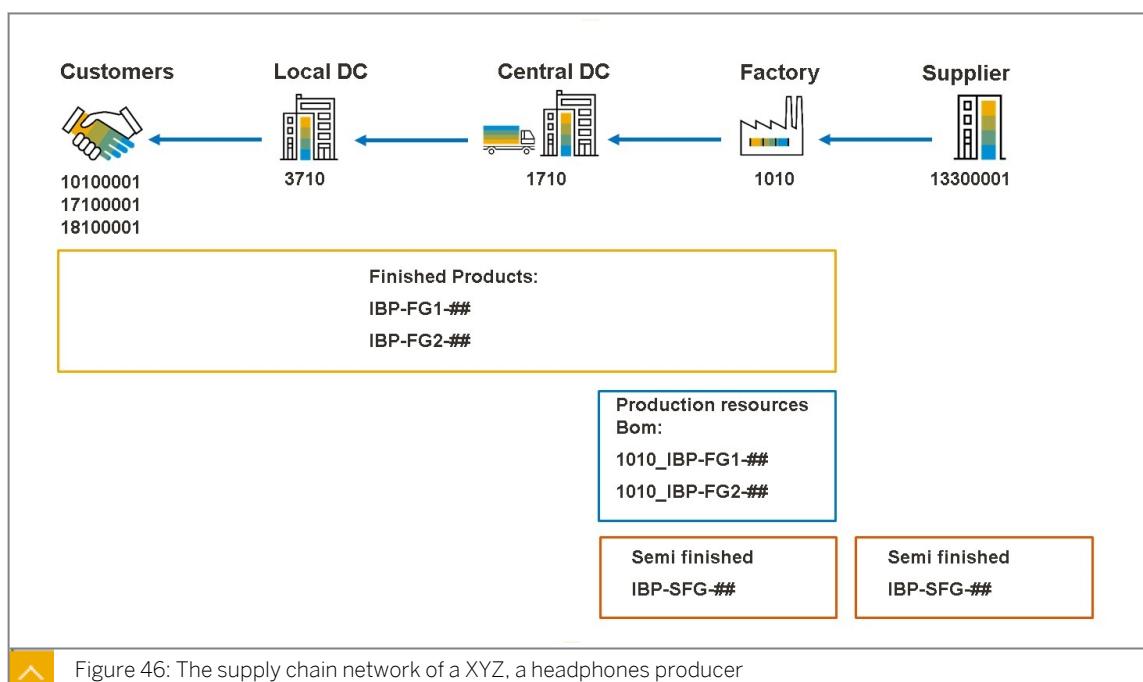


Figure 46: The supply chain network of a XYZ, a headphones producer



Video: Example Network Overview

For more information on *Example Network Overview*, please view the video in the lesson *Example Network Overview* in your online course.

A headphones producer XYZ has introduced SAP IBP for Supply Chain. This company needs to plan in advance to satisfy its clients with high accuracy optimizing costs to maximize profit. XYZ needs to supply finished headphones to different customers in regions as Americas, APJ and Europe as modeled within SAP/IBP1 in this course.

As illustrated in the slide before, this headphones producer receives components from a Supplier, for instance 13300001. This Supplier has signed an agreement to provide semi-finished goods as IBP-SFG-## to a XYZ Factory to produce finished goods of type IBP-FG1-## or IBP-FG2-##. These finished headphones are being sold via a local distribution center as 3710 to three customers 10100001, 17100001 and 18100001 located in the Americas region.



Note:
These symbols ## represent your group number

Modeling these business requirements demands a container, *SAP/IBP1* where fundamental guidelines for the model are defined. These rules are set through attributes, master data types, time profiles, versions, etc.

As evident in the previous figure, when a world-class company as XYZ, for instance, a headphones producer introduces SAP IBP for Supply Chain, this enterprise must define a path to model business processes and business requirements to optimize information and materials flow.

This road is built through artifacts definition as time profiles, attributes and master data.

Time profiles, attributes and master data establish the fundamental rules of a supply chain planning model. A time profile is defined to model data which changes depending on the time. Master data types and attributes are defined to characterize the data set.

Furthermore, time profiles, attributes and master types are configured to construct a planning area which is the supply chain model in SAP IBP. In this planning area advanced algorithms run to satisfy a worldwide customer network. As presented in the next slide, a headphones producer as XYZ can recreate several options of the plan through versions to satisfy different customer requirements designating attributes, master data types, time profiles, versions and additional model elements.

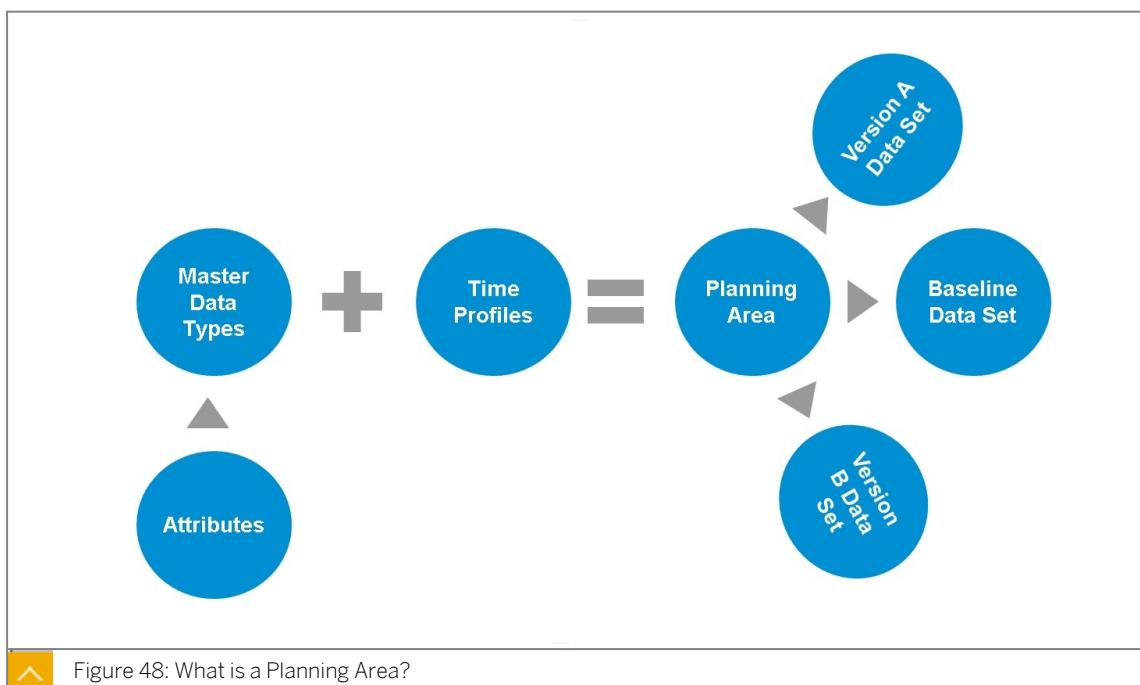


Figure 48: What is a Planning Area?

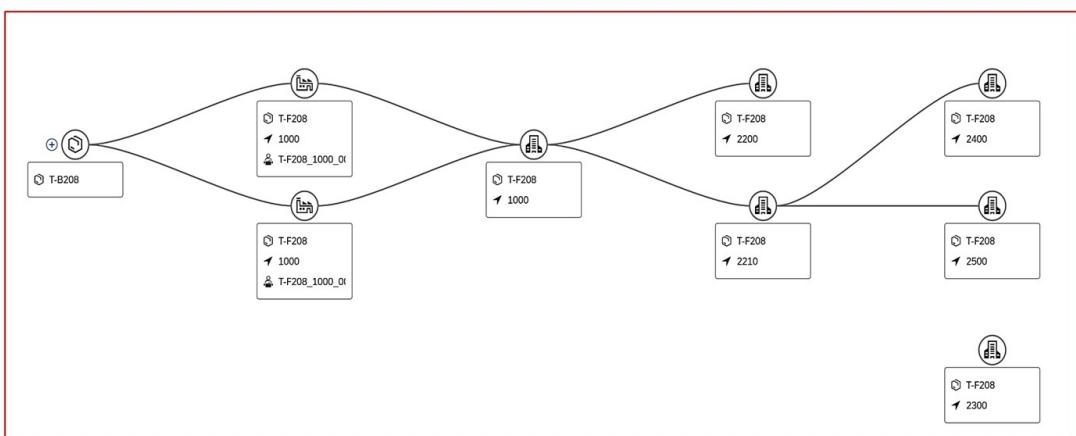
Rendering of Supply Chain Network utilizing **Network Visualization** functionality

Figure 49: The Supply Chain Network of XYZ, a headphones producer, using Network Visualization Functionality

**Video: Planning Area**

For more information on *Planning Area*, please view the video in the lesson *Example Network Overview* in your online course.

The previous slide illustrates the supply chain model of XYZ, our headphones producer, as a network visualization. This is a function of SAP IBP which allows the creation of nodes and edges to model the Supply Chain. This feature establishes relationships between the different stations of the Supply Chain. As you can see in the picture, these relationships represent the flow of materials and information, for example, finished and semi-finished goods, components, and related information. The Supply Chain Model provides a channel to check the status of the key performance indicators in real time via color conventions.

**LESSON SUMMARY**

You should now be able to:

- Illustrate a Supply Chain scenario

Learning Assessment

1. Which one of the following SAP IBP modules is used for tactical (rough-cut) Supply Planning as well as operational response and Supply Planning?

Choose the correct answer.

- A SAP Supply Chain Control Tower
- B SAP IBP for response and supply
- C SAP IBP for demand
- D SAP IBP for sales and operations

2. Identify the correct sequence of steps for the SAP IBP for inventory process.

Arrange these steps into the correct sequence.

- What-if-analysis
- Validate data inputs
- Inventory Planning
- Manual overrides

3. Match the SAP IBP Modules to different Challenges in the Supply Chain.

Match the item in the first column to the corresponding item in the second column.

Lack of visibility and information required to analyze and manage the end-to-end Supply Chain
Inability to synchronize supply and demand
Inability to understand and shape actual demand
Difficulty to determine optimal inventory levels across the network

SAP IBP for sales and operations
SAP IBP for demand
SAP IBP for inventory
SAP Supply Chain Control Tower

4. In the sales and operations planning process supported through SAP IBP modules, which one of the following options is the top most layer to get a high-level view of the health and status of the Supply Chain of an organization?

Choose the correct answer.

- A SAP HANA technology
- B Visualization layer
- C Demand sensing

UNIT 3

Using SAP IBP for Supply Chain

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UNIT OBJECTIVES

- Personalize the SAP Fiori Launchpad

- Use SAP IBP through the SAP IBP, Add-in for Microsoft Excel
- Use settings within the SAP IBP, Add-in for Microsoft Excel creating a favorite based on a template
- Manage Master data through the SAP IBP, Add-in for Microsoft Excel
- Create a planning view using the Web-based Planning App
- Analyze KPIs using Analytics and Dashboards apps
- Identify the Planner Workspace functionality
- Identify SAP IBP for MRO

Unit 3

Lesson 1

The SAP Fiori Launchpad



LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Personalize the SAP Fiori Launchpad

The SAP Fiori Launchpad

The SAP Fiori Launchpad opens a home page that contains predefined content divided into groups.

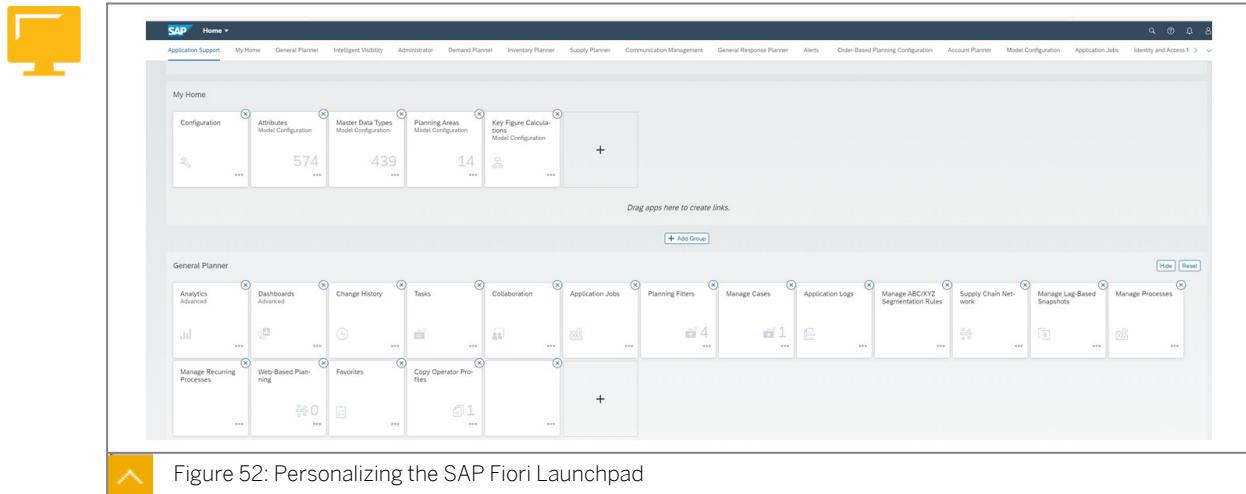


The screenshot shows the SAP Fiori Launchpad home page. At the top, there is a navigation bar with links like My Home, General Planner, Intelligent Visibility, Administrator, Demand Planner, Inventory Planner, Supply Planner, Communication Management, General Response Planner, Alerts, Order-Based Planning Configuration, Account Planner, Model Configuration, Application Jobs, Identity and Access Management, and TS Sup. Below the navigation bar is a search bar and a user icon. The main area is divided into several groups of tiles:

- General Planner:** Configuration (574), Attributes (439), Master Data Types (14), Planning Areas (0).
- Analytics Advanced:** Dashboards Advanced, Change History, Tasks, Collaboration, Application Jobs, Planning Filters (4), Manage Cases (1), Application Logs, Manage ABC/NZ Segmentation Rules, Supply Chain Networks, Manage Log-Based Snapshots, Manage Processes.
- Manage Recurring Processes:** Web-Based Planning (0), Favorites, Copy Operator Profiles (1).
- Intelligent Visibility:** Intelligent Visibility.
- Administrator:** Manage Categories, Manage Permission Filters, User Groups, Application Job Templates, Configure Remote Sources (Smart Data Integration), Manage Process Templates, Settings for Product Lifecycle, Manage Navigation to Other Systems, Global Configuration, Data Integration Jobs (3 Fatal Errors).

Figure 51: SAP Fiori Launchpad

As you can see it on the next figure, you can personalize the Launchpad home page by managing groups, managing the tiles in each group, and by setting a theme for the home page. Tiles can be easily added, removed, moved, or renamed based on your user preferences.



Unit 3

Exercise 1

Personalize the SAP Fiori Launchpad



Simulation: Personalize the SAP Fiori Launchpad

For more information on *Personalize the SAP Fiori Launchpad*, please view the simulation in the lesson *The SAP Fiori Launchpad* in your online course.

Business Example

As end-user, you would like to personalize the SAP Fiori launchpad home page to group the application tiles you use under the *My Home* group for your daily tasks.

1. Add the *Dashboard - Advanced* tile to the SAP Fiori launchpad home page.
2. Add the *Analytics - Advanced* tile to the SAP Fiori launchpad home page.

Unit 3 Solution 1

Personalize the SAP Fiori Launchpad



Simulation: Personalize the SAP Fiori Launchpad

For more information on *Personalize the SAP Fiori Launchpad*, please view the simulation in the lesson *The SAP Fiori Launchpad* in your online course.

Business Example

As end-user, you would like to personalize the SAP Fiori launchpad home page to group the application tiles you use under the *My Home* group for your daily tasks.

1. Add the *Dashboard - Advanced* tile to the SAP Fiori launchpad home page.
 - a) Open a web-browser of your preference in your virtual session via WTS (Windows Terminal Service) or Live Access.

Note:

If you are in a SAP Classroom, you are using a virtual environment where you will find the Google Chrome web-browser. We recommend usage of this Web-browser to improve the performance.
 - b) Open the SAP Fiori launchpad using log-on details and the SAP IBP URL provided by your instructor.
 - c) In the top right corner of the screen, choose the user icon.
 - d) Choose *Edit Home Page*.
 - e) Select the *Dashboard - Advanced* tile.
 - f) Drag the *Dashboard - Advanced* tile from the *General Planner* group to *My Home* group.
 - g) To save your changes, in the lower right corner of the screen, select *Close*.
 - h) Keep the Web User Interface (UI) open and stay there for the next step.
2. Add the *Analytics - Advanced* tile to the SAP Fiori launchpad home page.
 - a) In the top right corner of the screen, choose the user icon.
 - b) Choose *Edit Home Page*.
 - c) Select the *Analytics - Advanced* tile.
 - d) Drag the *Analytics - Advanced* tile from the *General Planner* group to *My Home* group.
 - e) To save your changes, in the lower right corner of the screen, select *Close*.



LESSON SUMMARY

You should now be able to:

- Personalize the SAP Fiori Launchpad

Unit 3

Lesson 2

Planning with the SAP IBP, add-in for Microsoft Excel



LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Use SAP IBP through the SAP IBP, Add-in for Microsoft Excel

Explain Planning with SAP Integrated Business Planning and Microsoft Excel

In this section, we are going to review the functionality of the SAP IBP toolbar. The SAP IBP toolbar becomes available when the SAP IBP, add-in for Microsoft Excel is installed.



PRE-REQ
The IBP Add-In is installed in Microsoft Excel to establish a secure connection between MS Excel and IBP database

WHY
We want to be able to view and change planning information in Microsoft Excel

WHAT
Allow users to review and modify plans directly in Microsoft Excel

BENEFIT
The Microsoft Excel UI provides a familiar, easy-to-use interface for demand planners, supply planners, sales, finance, and executives

Figure 54: Microsoft Excel and the SAP Integrated Business Planning Add-in

With the SAP IBP, add-in for Microsoft Excel, users benefit from a familiar interface to view information and modify plans directly in Excel.

SAP IBP Toolbar Functionality - Connection

Observe the difference between disconnecting from SAP IBP and logging off.

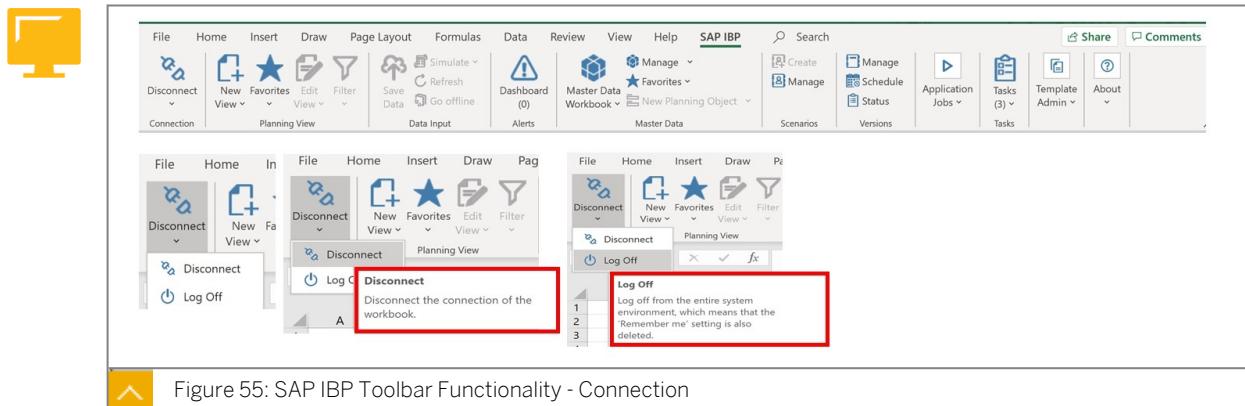


Figure 55: SAP IBP Toolbar Functionality - Connection

Activate and deactivate the connection via the toolbar-based Log on and Log off push-button.

SAP IBP Toolbar Functionality - Planning View

Favorites and new Planning View reports can be created directly from the toolbar menu.

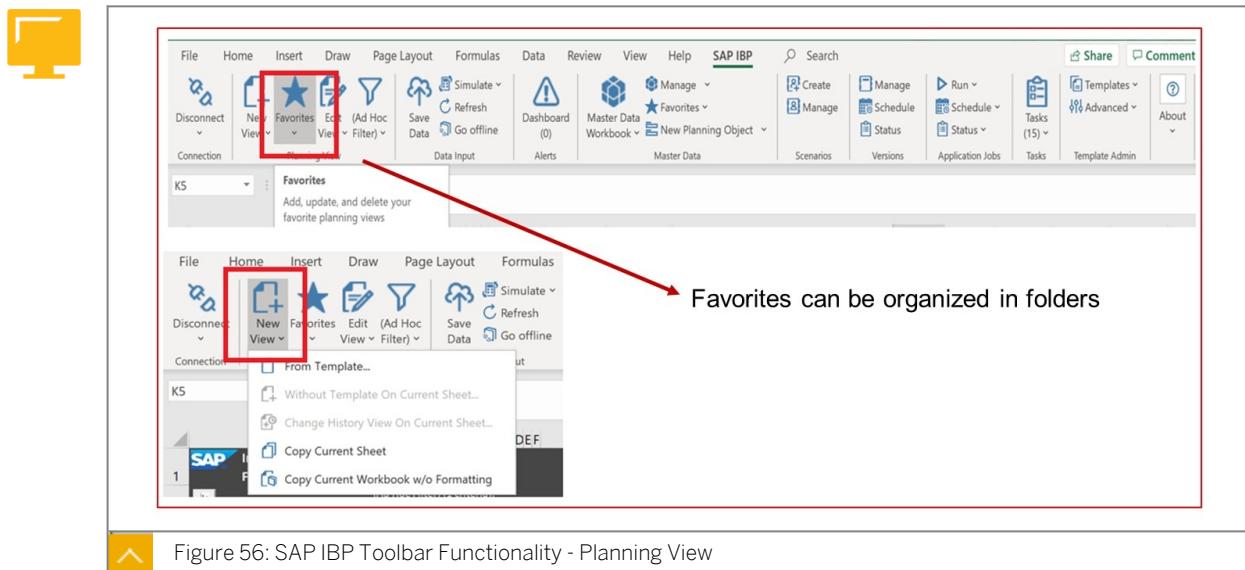


Figure 56: SAP IBP Toolbar Functionality - Planning View

In the toolbar menu, there are editing and filtering functions for Planning Views.

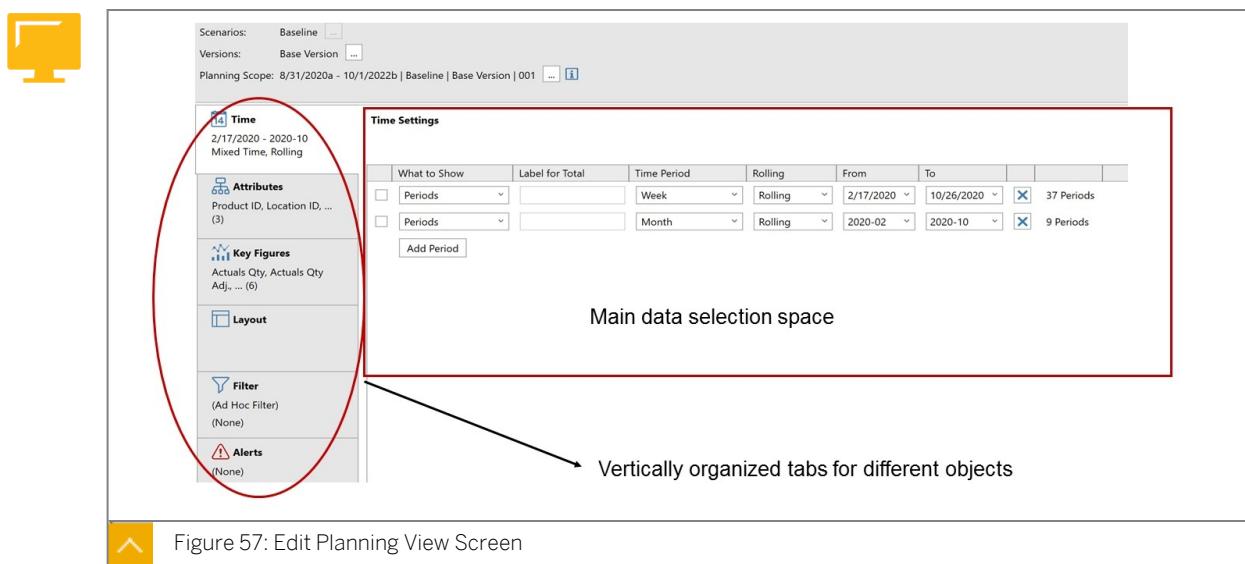


Figure 57: Edit Planning View Screen

Editing Planning Views is possible via *Edit View* → *Edit Planning View*.

Key features of Planning View settings are:

- Time settings: Time filtering on different time levels and time period (start and end period).
- Attribute selection: Provide Master Data attributes for example, Customer, Product Family, and Location ID.
- Key figure tab: Selection of transaction data Key figure in Planning View.
- Layout option: How the data will be viewed in Rows and Columns.
- Filter settings: Select a subset of data (this can be saved for future use and shared with users).

SAP IBP Toolbar Functionality - Data Input

Saving, editing, simulation on the fly, and discarding changes of data inputs; these tasks are possible via the SAP IBP toolbar functionality as well.

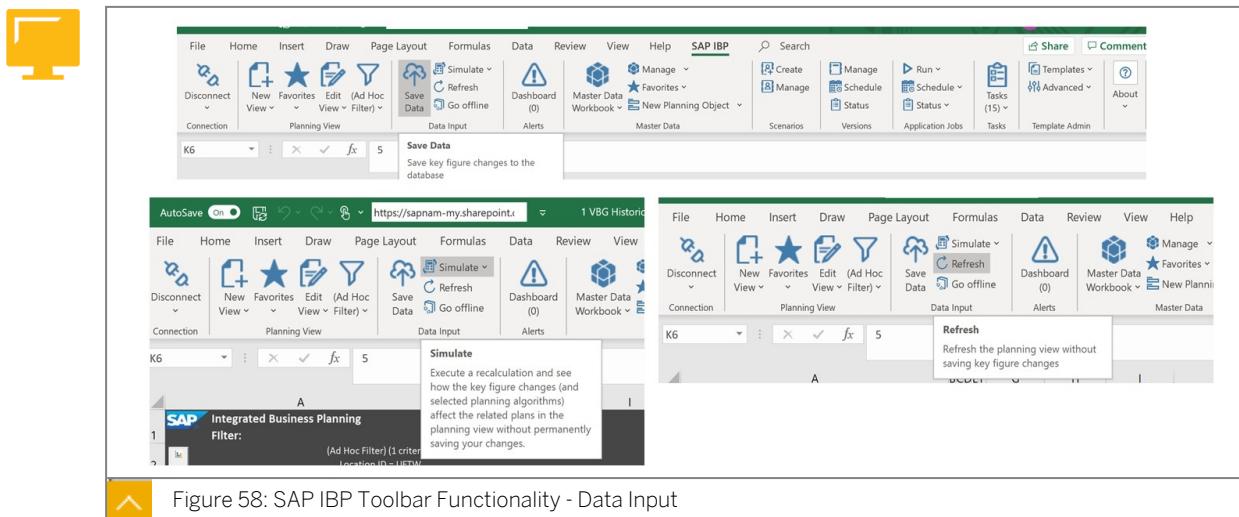


Figure 58: SAP IBP Toolbar Functionality - Data Input

SAP IBP Toolbar Functionality - Dashboard Alerts

Selecting Dashboard Alerts shows a list of valid alerts.

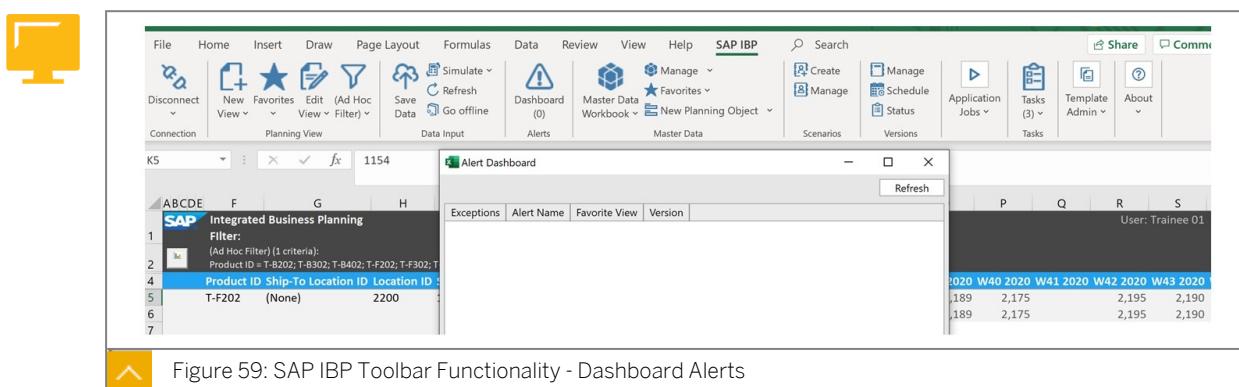


Figure 59: SAP IBP Toolbar Functionality - Dashboard Alerts

SAP IBP Toolbar Functionality - Master Data

Master Data can be created and managed from the SAP IBP toolbar.

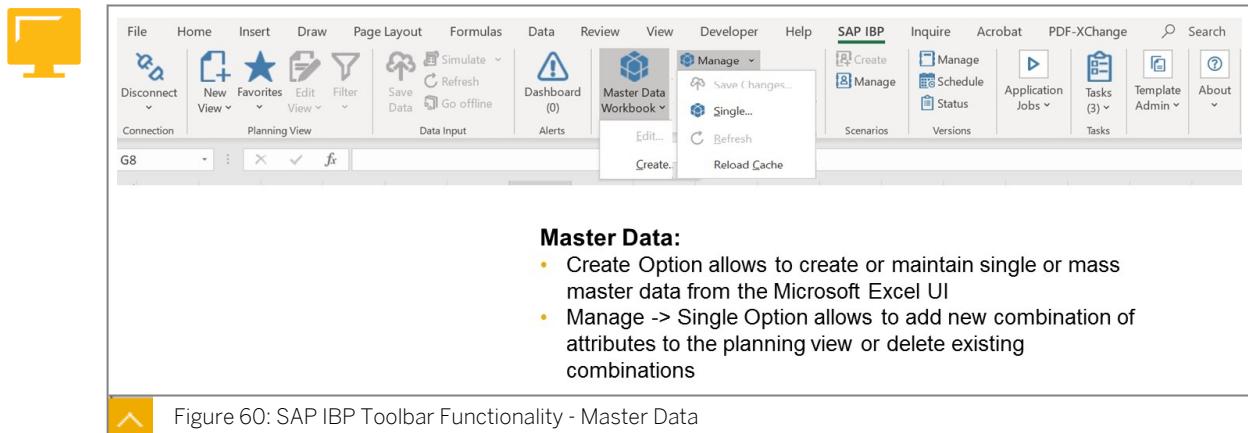


Figure 60: SAP IBP Toolbar Functionality - Master Data

SAP IBP Toolbar Functionality - Scenarios

Managing scenarios is also possible from SAP IBP toolbar.

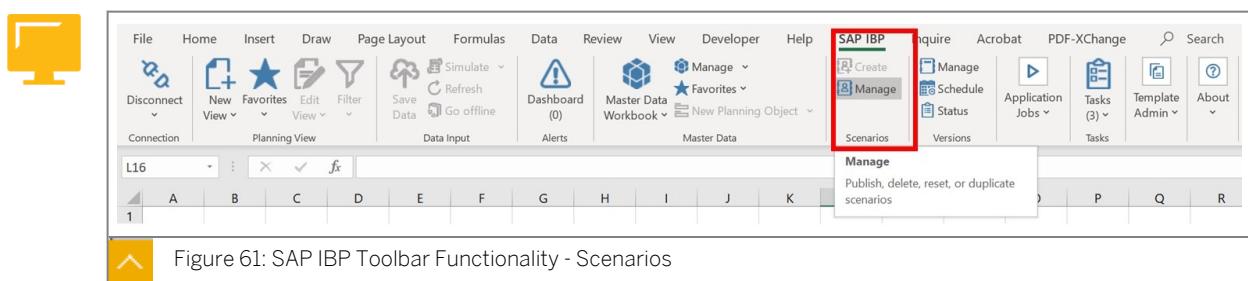


Figure 61: SAP IBP Toolbar Functionality - Scenarios

SAP IBP Toolbar Functionality - Versions

The SAP IBP toolbar provides access to copying data between versions and removing data in versions.

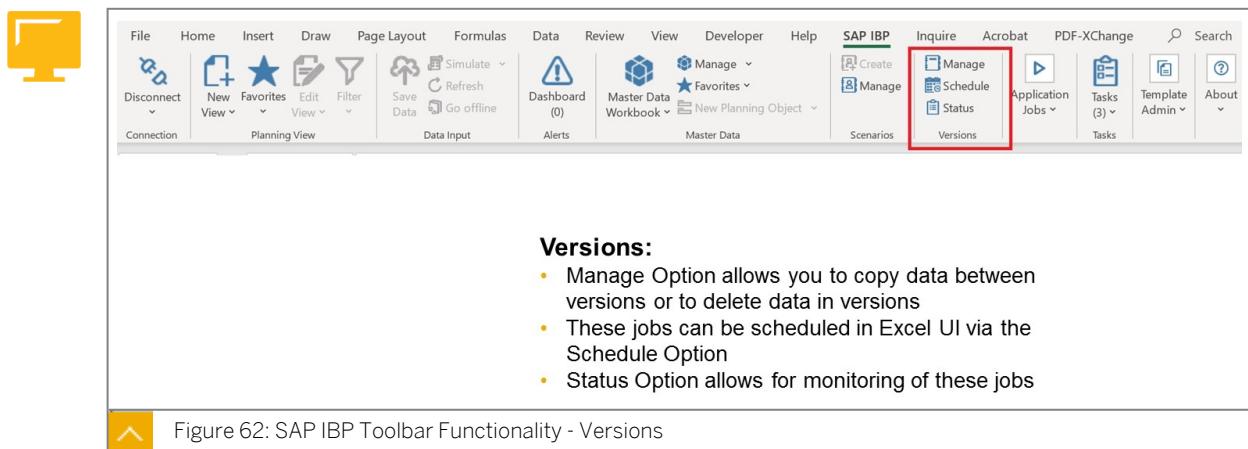
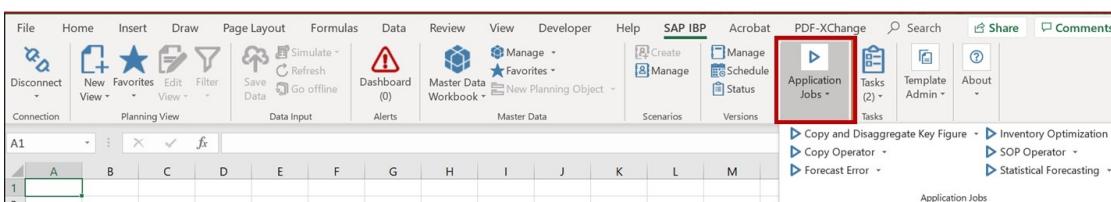


Figure 62: SAP IBP Toolbar Functionality - Versions

SAP IBP Toolbar Functionality - Application Jobs



The screenshot shows the SAP IBP toolbar with the "Application Jobs" section highlighted by a red box. The "Application Jobs" button is at the top left of the section, and a dropdown menu below it lists several options: "Copy and Disaggregate Key Figure", "Inventory Optimization", "Copy Operator", "SOP Operator", "Forecast Error", and "Statistical Forecasting". The "Application Jobs" section is part of a larger group of buttons including "Tasks", "Template Admin", and "About".

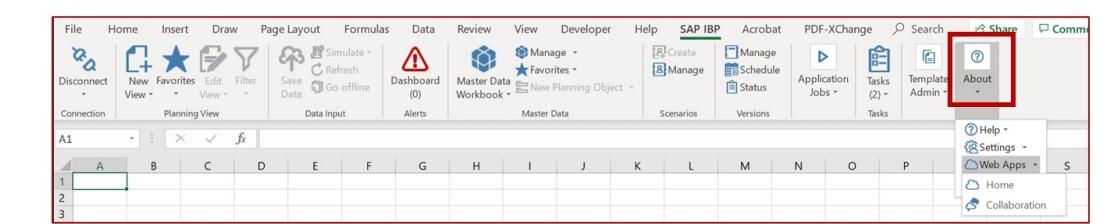
Application Jobs:

- Execute in real-time or schedule algorithms in the SAP HANA library
- Check the status of jobs and review logs

Figure 63: SAP IBP Toolbar Functionality - Application Jobs

Advanced functions like scheduling algorithms can be started from the SAP IBP toolbar.

SAP IBP Toolbar Functionality - Web Apps in the About Section



The screenshot shows the SAP IBP toolbar with the "About" section highlighted by a red box. The "About" button is at the top left of the section, and a dropdown menu below it lists "Help", "Settings", "Web Apps", "Home", and "Collaboration". The "About" section is part of a larger group of buttons including "Application Jobs", "Tasks", "Template Admin", and "Comments".

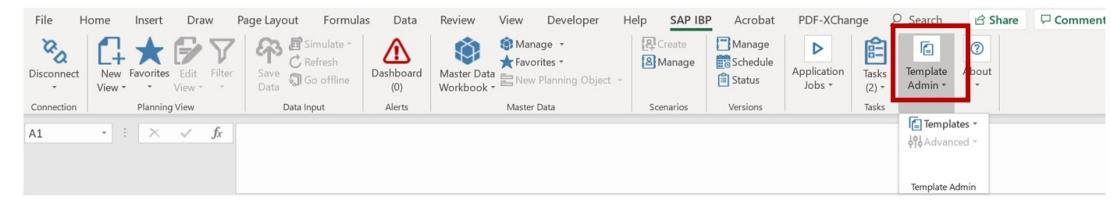
Web Apps:

- Provides access to SAP Work Zone collaboration content
- Home: Launches the Integrated Business Planning home page Web UI

Figure 64: SAP IBP Toolbar Functionality - Web Apps in the About Section

Web Client can be accessed right from the SAP IBP toolbar, providing access to apps.

SAP IBP Toolbar Functionality - Template Admin



The screenshot shows the SAP IBP toolbar with the "Template Admin" section highlighted by a red box. The "Template Admin" button is at the top left of the section, and a dropdown menu below it lists "Templates" and "Advanced". The "Template Admin" section is part of a larger group of buttons including "Application Jobs", "Tasks", "Template Admin", and "Comments".

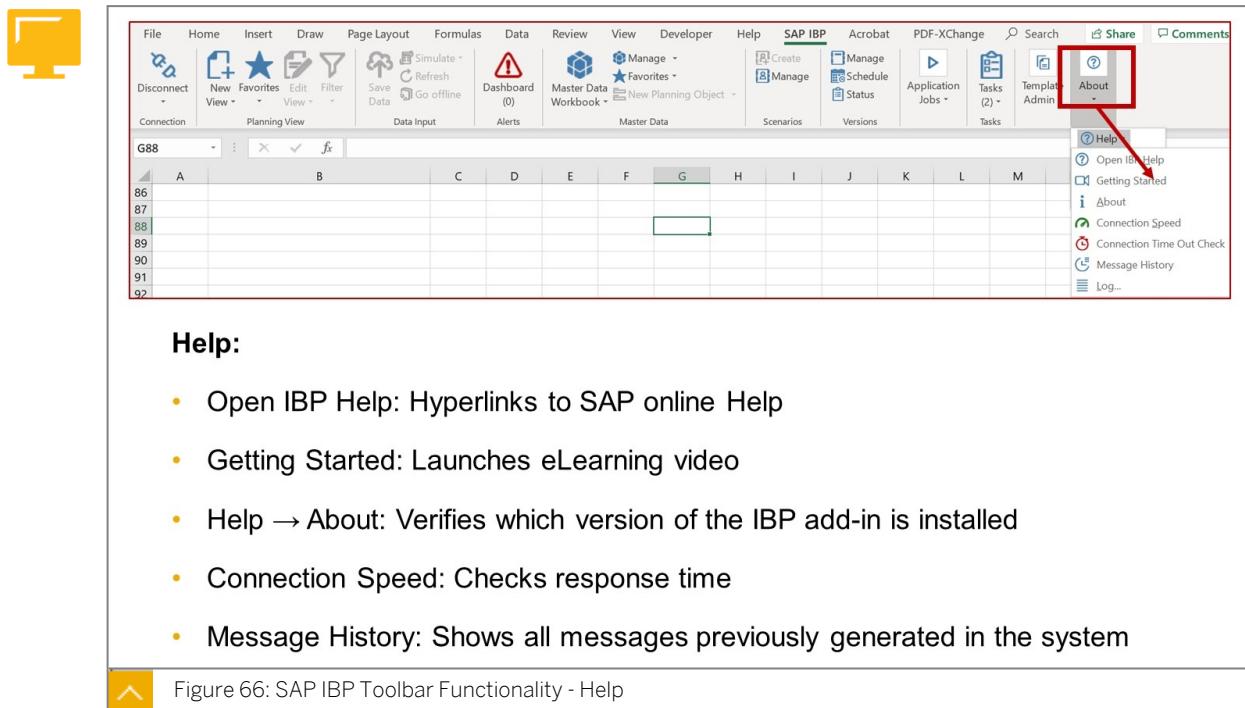
Template Admin:

- Templates: Provides customized planning views available to users based on access. Here you can add, update, delete, and organize Templates

Figure 65: SAP IBP Toolbar Functionality - Template Admin

There is a template administration functionality accessible from the SAP IBP toolbar.

SAP IBP Toolbar Functionality - Help



Help:

- Open IBP Help: Hyperlinks to SAP online Help
- Getting Started: Launches eLearning video
- Help → About: Verifies which version of the IBP add-in is installed
- Connection Speed: Checks response time
- Message History: Shows all messages previously generated in the system

Figure 66: SAP IBP Toolbar Functionality - Help

In the SAP IBP toolbar, there is a Help functionality, where you can find the following: a getting started video, information on connections, message history, and so on.

Unit 3 Exercise 2

Create your SAP Integrated Business Planning for Supply Chain Connection to the SAP HANA via Microsoft Excel



Simulation: Create your SAP Integrated Business Planning for Supply Chain Connection to the SAP HANA via Microsoft Excel

For more information on *Create your SAP Integrated Business Planning for Supply Chain Connection to the SAP HANA via Microsoft Excel*, please view the simulation in the lesson *Planning with the SAP IBP, add-in for Microsoft Excel* in your online course.

Business Example

You would like to log on to the SAP IBP, add-in for Microsoft Excel in order to navigate and work with the **SAP HANA data** in Microsoft Excel.

1. Create the connection to SAP IBP. Use the following data:

Field	Value
Connection Name	SAPIBP1 Unified Model
Server URL	Same SAP IBP URL as used in the <i>Personalize the SAP Fiori Launchpad</i> exercise
Planning area	SAPIBP1



Note:

If you are in a SAP Classroom, you are already in a virtual environment.

Unit 3 Solution 2

Create your SAP Integrated Business Planning for Supply Chain Connection to the SAP HANA via Microsoft Excel



Simulation: Create your SAP Integrated Business Planning for Supply Chain Connection to the SAP HANA via Microsoft Excel

For more information on *Create your SAP Integrated Business Planning for Supply Chain Connection to the SAP HANA via Microsoft Excel*, please view the simulation in the lesson *Planning with the SAP IBP, add-in for Microsoft Excel* in your online course.

Business Example

You would like to log on to the SAP IBP, add-in for Microsoft Excel in order to navigate and work with the **SAP HANA data** in Microsoft Excel.

1. Create the connection to SAP IBP. Use the following data:

Field	Value
Connection Name	SAPIBP1 Unified Model
Server URL	Same SAP IBP URL as used in the <i>Personalize the SAP Fiori Launchpad</i> exercise
Planning area	SAPIBP1

- a) Open Microsoft Excel in the WTS environment or via Live Access.



Note:

If you are in a SAP Classroom, you are already in a virtual environment.

- a) Choose the SAP IBP tab.
- b) Within the *Connection* section of the ribbon, choose *Log On*.
- c) Choose the ellipsis (the three points "...") button to the right of the *Connection* field.
- d) To create the connection, choose *Create* and enter the values provided in the table above.
- e) Check if the *SAML-Based Connection* option is selected.



Note:

This option determines which user credentials you use to have access to the system. You can either use your email address or a user name with a predefined password the administrator of the system has assigned to you. According to the user administration concept of your company, sometimes you can use a personalized password and log on via Single Sign-On.

- f) Choose *Look Up Planning Areas*.
- g) Enter the User Name and Password used in the exercise *Personalize the SAP Fiori Launchpad*. Here you can also choose *Remember me* to avoid typing your credentials every time.
- h) Choose *Log On*.
- i) In the *Planning Area* field, select *SAPIBP1*.
- j) To save your connection, choose *OK*.
- k) Back in the *Connection Manager* screen, select the relevant Connection Name, choose *Set as Default*, and choose *OK*.
- l) Finally choose *Log On*.



Note:

Note the SAP IBP, add-in for Microsoft Excel accesses the **SAP HANA Database**. The IBP Ribbon has changed after having executed all steps of this exercise.



LESSON SUMMARY

You should now be able to:

- Use SAP IBP through the SAP IBP, Add-in for Microsoft Excel

Unit 3

Lesson 3

Planning View Options



LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Use settings within the SAP IBP, Add-in for Microsoft Excel creating a favorite based on a template

Planning View Options



A planning view is the primary method used to modify Integrated Business Planning, which includes viewing and editing plans, and simulation and scenario planning.

A planning view displays the details of the key figures, user-defined filters, planning levels, and time selection. It allows users to view, analyse, and edit key figure data at any level of granularity.

You can change the settings in the planning view, save it as a favourite and even share it with other users.

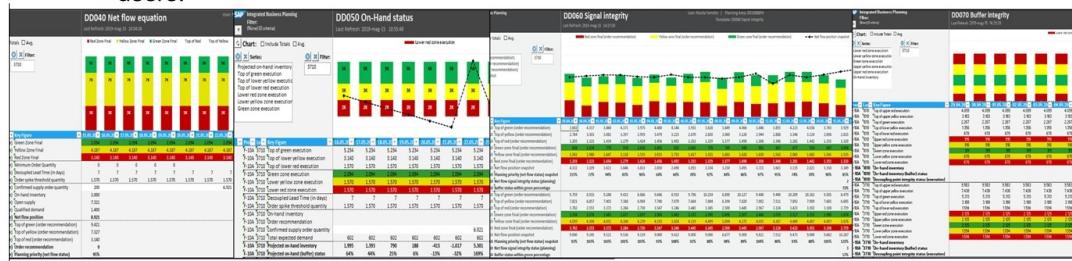
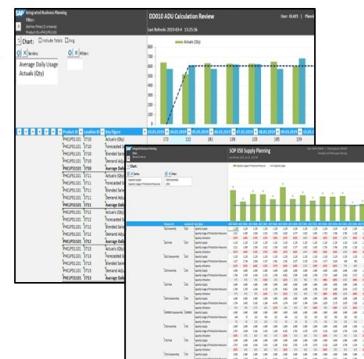


Figure 68: Planning View

A Planning View is the primary method used to modify the data in SAP IBP, which includes viewing and editing plans, and simulation and scenario Planning. It displays the details of the key figures, filters, Planning levels, and time selection. It allows users to view, analyze, and edit key figure data at any level of granularity. You can change the settings in the Planning View, save it as a favorite, and even share it with other users.

Settings in the Planning View



The time setting allows the user to select the required time granularity, the number of periods to be displayed, and whether it is a fixed-time or rolling-time window. In a rolling calendar, the number of periods is defined and the horizon shifts relative to the current month.

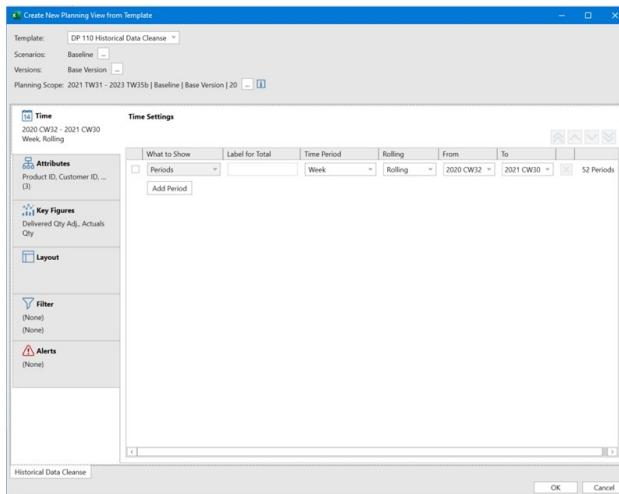


 Figure 69: Planning View - Time Settings

The time setting allows the user to select the required time granularity, the number of periods to be displayed, and if it is a fixed-time or rolling-time window. In a rolling calendar, the horizon shifts relative to the current month.



Planning Level Settings



A planning level represents a level of aggregation defined by the planner (user) for selected key figures (plans and actuals). A planning level is based on any set of attributes, which are a function of master data types.

An attribute represents data, which is associated with a master data type but is not time phased, for example, a product family, which is tied to the product master data type. A master data type is a collection of related data members, which represents one aspect of a business, for example, products, locations, and customers.

A planning level allows different users to analyze and plan information in multiple ways.

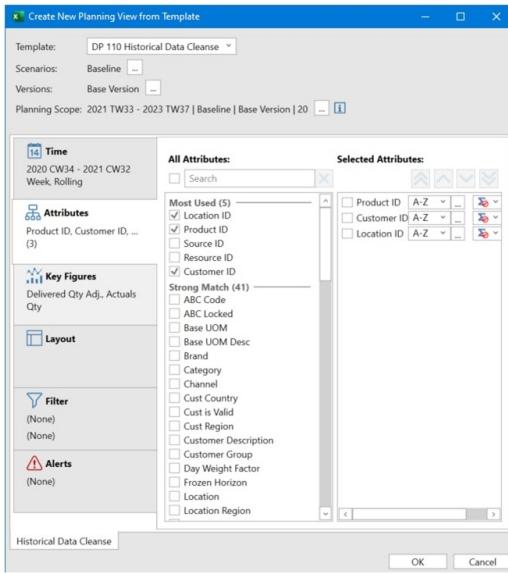


 Figure 70: Planning View - Attributes (Planning Level) Settings

A Planning level represents a level of aggregation defined by the Planner for selected key figures. A Planning level is based on any set of attributes, which are a function of Master Data types. An attribute represents data, which is associated with a Master Data type, for example, a product family, which is tied to the product Master Data type. A Master Data type is a collection of related data members, which represents one aspect of a business, for example: products, locations, and customers. A Planning level allows different users to analyze and plan information in multiple ways.



Key figures represent any data that is tied to master data types and attributes. Key figure Time series data can be imported, edited, or based on calculations. Time series data represents various plans and actuals, which includes sales forecasting, market forecasting, consensus demand planning, projected inventory, and capacity planning.

This section is also where you choose which currency and unit of measure that all figures are shown.

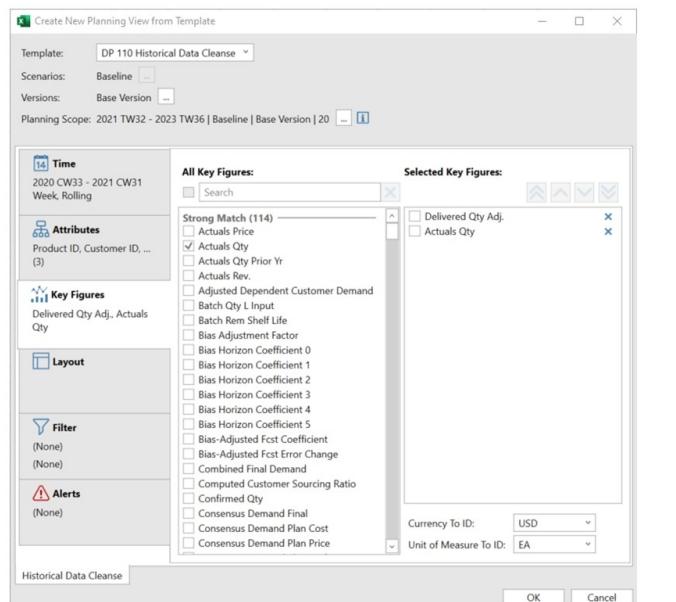


Figure 71: Planning View - Key Figure Settings

Key figures represent any data that is tied to Master Data types and attributes. A time series can be imported, edited, or based on calculations. They represent various plans and actuals, which includes sales forecasting, market forecasting, Consensus Demand Planning, Projected Inventory, and Capacity Planning. This is also where you choose which currency and unit of measure that all figures are shown.



The layout tab allows the user to choose the structure of the graphs

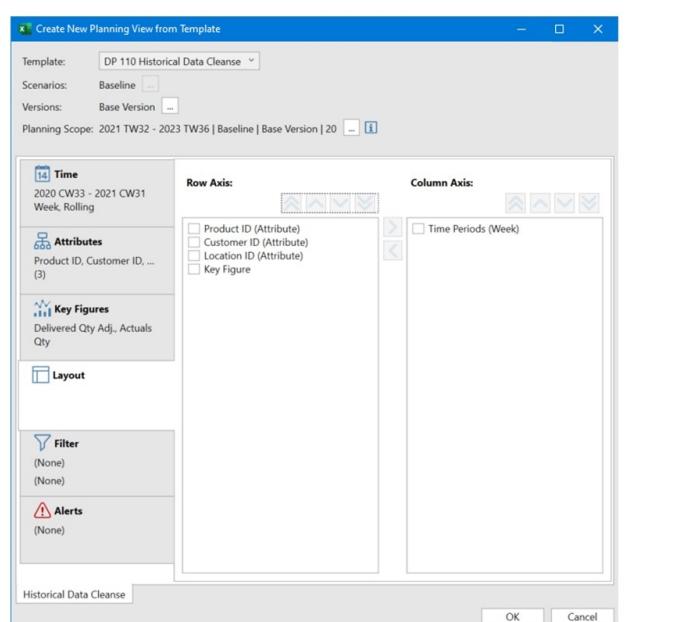


Figure 72: Planning View - Layout Settings

The *Layout* tab allows the user to choose the axes of the graphs.



A planning filter allows users to filter the data that they can access

New Planning Filter

Information Filter Criteria (1) Sharing (2) ~

Name: * New Planning Filter
Planning Area: * SAPIBP1 (Unified Planning Area)
Group: []

FILTER CRITERIA (1)

Attribute	Operator	Value
Product ID	equal to	[IBP.FG1.20] [IBP.FG2.20]

SHARING (2)

Users (1)

Name	Email	Phone
Trainee 20	soprainee20@jan0009.com	

User Groups (1)

Name	Description
IBP100	IBP100 All

Figure 73: Planning View - Filter Settings

The Planning Filter can also be created via the Web UI, through the *Planning Filters* App.



Alerts Settings

An alert can be added from this menu according to configuration in the Web UI

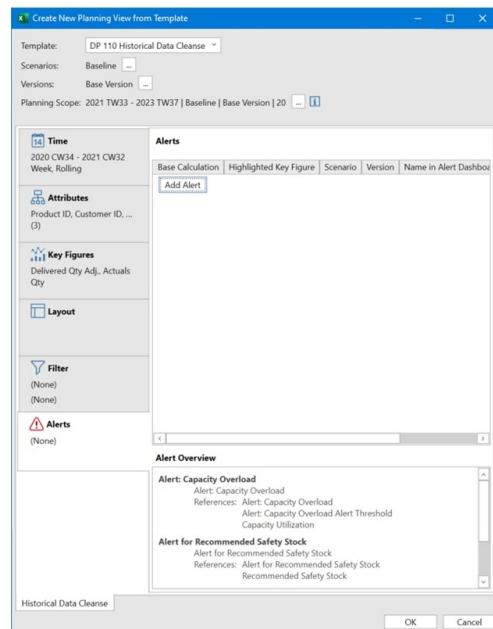


Figure 74: Planning View - Alerts Settings

An alert can be added based on the defined alerts via *Define and Subscribe to Custom Alerts* App.

Unit 3

Exercise 3

Create a Favorite Based on an Existing Template



Simulation: Create a Favorite Based on an Existing Template

For more information on *Create a Favorite Based on an Existing Template*, please view the simulation in the lesson *Planning View Options* in your online course.

Business Example

You would like to see the Sales and Operations Demand Review key figures. A template has already been created by a user in your company. Create your own Planning View based on this template and save it as a favorite for easy access later with your own data selection without altering initially any time, attributes, key figures, filter, or alerts settings.



Note:

In this exercise, when you see ##, replace the characters with your group number.

If you are in a SAP Classroom, you are already in a virtual environment.

1. Create your own Planning View using the *DP140 Global Demand Plan* template.
2. Verify and if needed, update the time settings, attributes (Planning levels), and key figures selected against those in the table below.

Category	Field	Entry
Time	Time Period	Week
	From	Current Week
	To	52 periods: Current Week +51
	Rolling	Rolling
Attributes	Product Family	Selected
	Cust Region	Selected
Key Figures	Consensus Demand	Selected
	Combined Final Demand	Selected
	Global Demand Plan Qty for SOP	Selected
	Local Demand Plan	Selected

Category	Field	Entry
	Demand Planning Qty	Selected
	Currency To ID	USD
	Unit of Measure to ID	EA

3. Create a Product ID filter called **Product ##** and choose the *IBP-FG1-##* and *IBP-FG2-##* values.
4. Save your Planning View as a favorite with the name DP Global View.

Create a Favorite Based on an Existing Template



Simulation: Create a Favorite Based on an Existing Template

For more information on *Create a Favorite Based on an Existing Template*, please view the simulation in the lesson *Planning View Options* in your online course.

Business Example

You would like to see the Sales and Operations Demand Review key figures. A template has already been created by a user in your company. Create your own Planning View based on this template and save it as a favorite for easy access later with your own data selection without altering initially any time, attributes, key figures, filter, or alerts settings.



Note:

In this exercise, when you see ##, replace the characters with your group number.

If you are in a SAP Classroom, you are already in a virtual environment.

1. Create your own Planning View using the *DP140 Global Demand Plan* template.
 - a) Open Microsoft Excel in the WTS environment or via Live Access.
 - b) Choose the *SAP IBP* tab.
 - c) Choose *Log On Connection*.
 - d) Select the relevant Connection Name and choose *Log On*.
 - e) Enter the User Name and Password used in the Unit 2, Exercise 2.
 - f) When you see the options within the IBP Ribbon are available, that is because you already logged-in, then go to *New View → From Template* in the *Planning View* section.
 - g) Select the *DP140 Global Demand Plan* template from the *Template* option in the *Create New Planning View From Template* window.
 - h) Select *Baseline* from the *Scenarios* option and the *Base Version* from the *Versions* option.
 - i) In addition, choose *Planning Scope* and choose your *Planning Unit ##*. Deselect all other Planning units which do not match with your group number.



Note:

A way to restrict specific groups of SKUs can be seen on this step through the application of *Planning Units*. The Product Portfolio can be clustered by subgroups called *Planning Units*. That means Planners who plan for a certain group of SKUs within a *Planning Unit* cannot plan for other groups automatically. For this training, trainees with a certain group number will not plan other products within other *Planning Units*.

- j) On the lower left side in the *Create New Planning View From Template* window, select the *Quantities* tab.
 - k) Choose *OK* to open the Planning View based on this template: *DP140 Global Demand Plan*
2. Verify and if needed, update the time settings, attributes (Planning levels), and key figures selected against those in the table below.

Category	Field	Entry
Time	Time Period	Week
	From	Current Week
	To	52 periods: Current Week +51
	Rolling	Rolling
Attributes	Product Family	Selected
	Cust Region	Selected
Key Figures	Consensus Demand	Selected
	Combined Final Demand	Selected
	Global Demand Plan Qty for SOP	Selected
	Local Demand Plan	Selected
	Demand Planning Qty	Selected
	Currency To ID	USD
	Unit of Measure to ID	EA

- a) Go to *Edit View* → *Edit Planning View*.
- b) On the *Time* tab, in the *Time Settings* screen area, confirm that the time period is set to *Week*.
- c) On the right side, verify that 52 periods are selected.
- d) To display the attributes selected, choose the *Attributes* tab.
- e) Confirm that the attributes in the table above have been selected.

- f) To display the key figures selected, choose the *Key Figures* tab.
- g) Confirm that the key figures in the table above have been selected.
- h) Select the Key figure to add. Use the X to remove Key Figures not needed as the case may be. Use the single up or down arrow options to change the order.

**Note:**

In the field under *All Key Figures* you can type keywords to search for the active key figures. In addition, you can put the cursor on the key figures to obtain more information.

- i) Verify that within the *Currency To ID* field, *USD* is selected in the *Key Figures* tab.
 - j) Verify that within the *Unit of Measure To ID* field, *EA* is selected in the *Key Figures* tab.
 - k) Stay in the *Edit Planning View* window for the next exercise step.
3. Create a Product ID filter called **Product ##** and choose the *IBP-FG1-##* and *IBP-FG2-##* values.
 - a) Working in the *Edit Planning View* window, go to the *Filter* tab.
 - b) On the right side of the screen, in the *Attribute* field drop-down list, select *Product ID*.
 - c) Select the selection box for *Values*.
 - d) Choose the *IBP-FG1-##* and *IBP-FG2-##* Product IDs from the drop-down list.
 - e) Choose *OK*.
 - f) Choose *Add* under *Attribute-Based Filter*.
 - g) Name your filter **Product ##**.
 - h) Choose *Add* to add this filter.
 - i) To view your Planning View, choose *OK* down on the right side of the *Edit Planning View* window.
 - j) Choose the field where *AMERICAS* is.
 - k) Select *+*, next to the *Filter* option on the worksheet.
 - l) Select the *FAMILY100-HEADPHONES-##*.
 - m) Select *+*, next to the *Filter* option on the worksheet.
 - n) Note that the graph changes according to the selected attributes and key figures, presenting the transactional data based on VBA Code within the excel file.
 4. Save your Planning View as a favorite with the name DP Global View.
 - a) In the *Planning View* options group within the IBP Ribbon, choose the *Filter* drop-down list.
 - b) Choose *Product ##* as a filter for the current Planning View.
It may already be selected.
 - c) On the SAP IBP Ribbon, in the *Planning View* screen area, choose *Favorites → Add*.



Note:

If you receive a warning that asks if you want to save your workbook, choose Yes.

- d) Name the favorite **DP Global View** and choose *Add*.



LESSON SUMMARY

You should now be able to:

- Use settings within the SAP IBP, Add-in for Microsoft Excel creating a favorite based on a template

Unit 3

Lesson 4

Master Data Management



LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Manage Master data through the SAP IBP, Add-in for Microsoft Excel

Managing Master Data

There are basically three ways to maintain *Master Data* in SAP IBP:

- Via the SAP IBP, add-in for Microsoft Excel
- Through the SAP Fiori Launchpad (Web User Interface), using the *Manage Master Data* App
- Through Data integration functions: the *Cloud Integration - Data Services (CI-DS)* and the *Smart Data Integration (SDI)* solutions

In this lesson, we will focus on the first two options.

Managing Master Data through the SAP IBP, add-in for Microsoft Excel



The screenshot shows the SAP IBP Add-in ribbon menu. The 'Master Data' tab is selected. Below the ribbon, there are three context menus displayed:

- Master Data Workbook**: Options include Edit..., Create..., and a dropdown menu with Save Changes..., Single..., Refresh, and Reload Cache.
- Manage**: Options include Add..., Update..., Delete..., Share..., and Organize....
- Favorites**: Options include Add..., Update..., Delete..., Share..., and Organize....

These context menus provide users with various options for managing master data entries and workbooks.

Figure 76: Managing Master Data via the SAP Integrated Business Planning Add-in



- Users can create a view of a master data, such as Product, Customer Source, and so on.
- Users can select whether they need one master data table in a single workbook. In other case, users can open several master data views in one single workbook adding new worksheets.
- Users can edit master data entries if *Edit* is selected before open a master data view.
- Once entries are changed, users should choose *Save changes* to keep edited information.
- Orange columns represent root attributes which are mandatory fields.



Figure 77: Managing Master Data - Create



- When a user selects *Single*, a new window appears. There, users can select the *Master Data Type*, such as Currency, Customer, Product, Customer Product, Customer Source, and so on.
- Master Data entries can be displayed, added, copied, edited or deleted.
- Display master data* allows you to see entries in every attribute.
- Add master data* by entering a new ID clicking this button. Then add the attributes and choose *Add*.
- Copy master data* by entering an existing ID and choosing this button. Then enter the new ID, choose *Copy* and choose *Add*.
- Edit master data* by entering an existing ID and choosing this button. Then edit the attributes and choose *Save*.
- Delete master data* by entering an existing ID and choosing this button. Then choose *Delete*.



Figure 78: Managing Master Data - Single

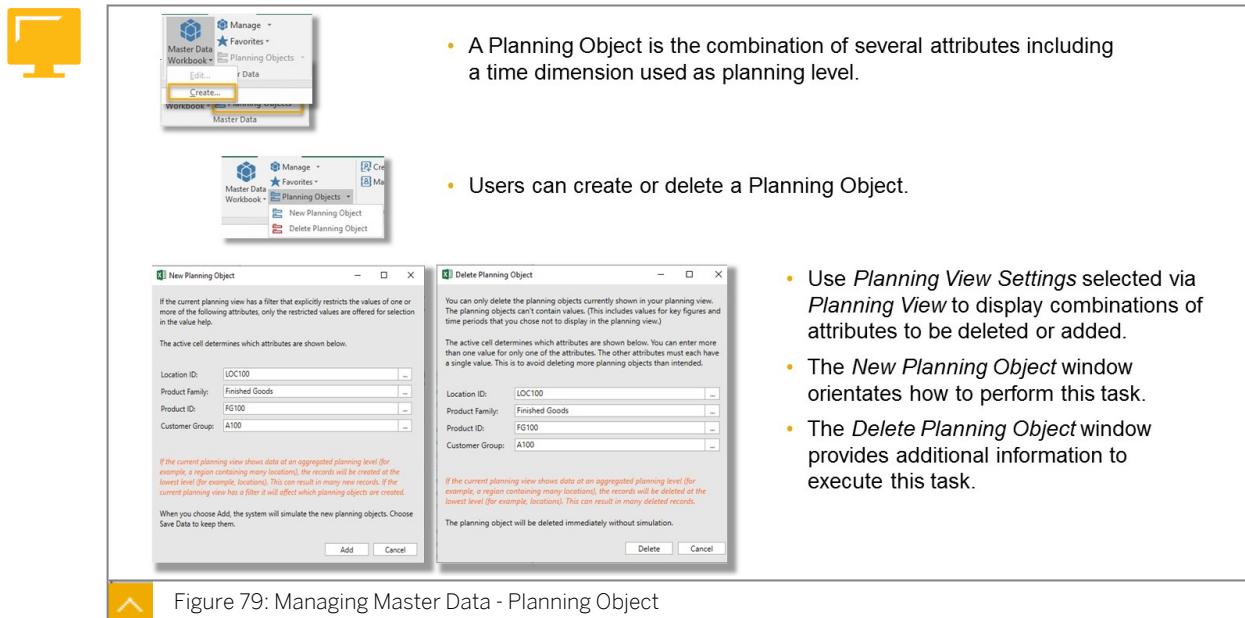


Figure 79: Managing Master Data - Planning Object

The functions for managing Master Data in the SAP IBP, add-in for Microsoft Excel allow you to make small-scale, ad-hoc changes to the Master Data in your system.

Note:

The functions are not designed to replace the regular data integration functions. We also do not recommend using these functions in systems with large data volumes or several Planning areas because the response time may be slow.

In the SAP IBP, add-in for Microsoft Excel, you have the following options for managing Master Data records:

- Single

You can add, copy, edit, or delete single Master Data records.

- Mass

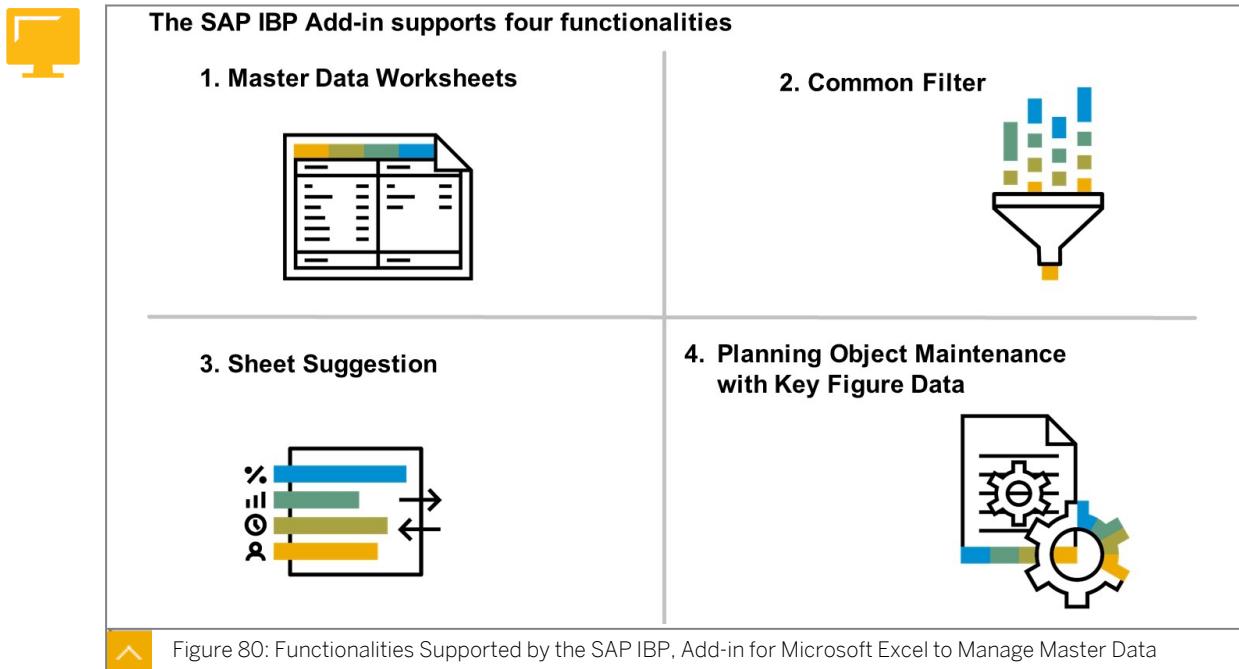
You can download Master Data records that belong to a particular Master Data type to a Microsoft Excel worksheet, where you can view or edit the data. If your configuration supports version-dependent Master Data, the system allows you to specify the version.

If you execute several queries for the mass maintenance of Master Data, all queries are opened as Master Data worksheets within a Master Data workbook.

In edit mode, the system initially displays a dialog box containing information about allowed and disallowed changes. For example, you can cut and paste rows, or change record keys to create a new record. You cannot delete key columns or other mandatory columns, change the version, or create gaps between rows or columns that you want to upload.

Note:

You cannot delete any Master Data records in the back end using the mass management option. If you delete rows in a worksheet, the system disregards them when you save the data. This improves performance, but does not result in the records being deleted in the back end.



Managing Master Data via the SAP IBP, add-in for Microsoft Excel supports four functionalities, as follows:

- **Master Data Worksheets:** You create Master Data worksheets to work with Master Data in the SAP IBP, add-in for Microsoft Excel. If your worksheet is a Master Data worksheet, you can also save the Master Data displayed as a favorite and share your favorites with other users. You can open only your own favorites or the favorites other users have shared with you. If you add a new row that contains existing key attributes, no new value will be created, but the existing value will be updated. You find the functions for managing Master Data and working with your Master Data favorites in the Master Data group on the ribbon.
- **Common Filter:** You can use the common filter to apply filters on multiple worksheets of the same Master Data workbook at the same time. If you use the common filter, you can select from all of the attributes that are available in the Planning area. You can select from all of the attributes that are available in the Planning area. The system then picks from the common filter the attributes that are relevant for the sheet's Master Data type, while it ignores the ones that are not relevant. Because the common filter is applied to all of the sheets in the Master Data workbook, there is no individual sheet filter offered when you select the Common Filter check-box. If you select a Master Data type for which no filter criterion of the common filter can be applied, the system considers the Master Data type as having no filter, and returns all data related to the Master Data type.
- **Sheet Suggestion:** When you use this function, the system suggests Master Data types related to the attributes specified in the common filter of the Master Data workbook when you create or edit Master Data worksheets. You can use this function, for example, when you are adding a new product that is very similar to an existing product, and you need to create Master Data for the new product.
- **Planning Object Maintenance with Key Figure Data:** You can view, edit, and create Planning objects and stored key figure data for a selected Planning level in the SAP IBP, add-in for Microsoft Excel from the *Create Master Data Workbook* and *Edit Master Data Workbook* dialogs. You can use this function, for example, to create Planning objects for a new product based on the Planning objects of an existing product, directly in the IBP Excel add-in without having to use other data integration functions.

**Note:**

This function does not replace the other data integration functions that are normally used in SAP IBP. We recommend that you use it to create and edit smaller numbers of Planning objects.

Settings for key figure visibility and workability that exist for Planning Views do not apply when you use this function. For example, the system does not consider the following:

- Key figure permissions (read, write) that the user might have.
- Settings made for key figures where key figures are only editable in the past, future, or never.
- Where key figures are marked as external in the model configuration, the Planning objects are shown without key figure data. These key figure values are not editable.

Managing Master Data via the Web UI



- SAP Fiori Launchpad within SAP IBP provides an app for Master Data Management.
- The *Manage Master Data* app displays a start page where all master data types can be filtered and ordered by ID, Name, or Type. If needed, other fields can be selected as well to sort or display information.

- When users choose the arrow on the right side by any master data type, the app displays a new window next to the start page, which contains the entries of every master data type.
- From this application, master data entries can be created, copied, edited, sorted by filters, or deleted.
- Filters can be adjusted according to specific needs.
- Entries can be exported into a csv. file.
- This app facilitates the traceability through additional fields as *Changed on*, *Changed by*, *Created by* and *Created on*.

Figure 81: SAP Fiori Launchpad - Manage Master Data Application

For this function, SAP IBP provides a *Manage Master Data* App, a streamlined tool that supports planners and integration experts in carrying out Master Data management activities. This application provides access to all the Master Data managed in SAP IBP by your organization. As a planner, you can search, filter, and sort the full set of Master Data available in your system in a customizable and user-friendly way with high-performance, while as an integration expert, you can easily check whether external Master Data has been correctly integrated to SAP IBP.

With this app, users can execute the following tasks:

- The initial screen of the app displays a worklist of Master Data type entries. For each entry, a list report view can be accessed, which provides details on the Master Data maintained for the selected Master Data type.

- By default, the app displays Planning area-independent Master Data. However, list report views can be modified to specifically show Master Data that only exists in Planning versions.
- To support users in customizing their Master Data views, filtering, sorting, and variant management features are available in the app.



Note:

To work with the new app, you have to assign the *SAP_IBP_BC_MAN_MASTERDATA_PC* business catalog to your business role.

User restrictions for accessing Master Data in the app can be set at multiple levels. On the one hand, user access can be configured based on a combination of Business Role, Attribute Permissions, and Permission Filters, which are assigned to the business user's ID. On the other hand, Restriction Types can be defined to limit access to specific Master Data types.



LESSON SUMMARY

You should now be able to:

- Manage Master data through the SAP IBP, Add-in for Microsoft Excel

Unit 3

Lesson 5

Web-based Planning



LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Create a planning view using the Web-based Planning App

Web-based Planning

Planners can use this app to work with Planning Views for different business needs. These Planning Views support their Planning activities by allowing them to view key figure data, change it, and simulate the effects of changes before saving the data.

With this app you can create, copy, edit, and delete Planning Views. Using these Planning Views, you can view and compare key figure data from different versions and scenarios, change this key figure data, and save your changes back to the database.



Fiori app to analyze and change planning data in SAP Integrate Business Planning for Supply Chain

The screenshot shows two main views of the SAP Fiori app for SAP IBP:

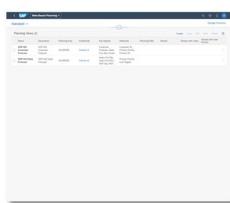
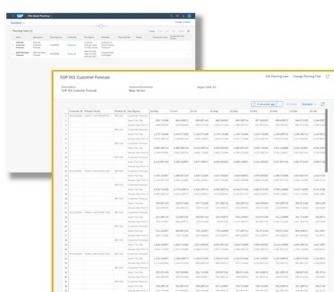
- Adjust Data via SAP IBP, add-in for Microsoft**: A Microsoft Excel-like interface for analyzing planning data. It includes a chart titled "Supply Planning and Costs" showing "Customer Demand" over time, and a table below with columns like "Product ID", "Customer ID", and "Key Figure".
- Interactive Planning Details**: A grid-based interface for changing planning data. It shows a table with columns for "Product ID", "Customer ID", "Key Figure", and months from "OCT 2018" to "AUG 2019". The table contains data for two products: PRODUCT1 and PRODUCT2 across various customer demand scenarios.

Two arrows point from the interface to icons representing users:

- An arrow points to a **Planner using a PC** icon (a person at a desk with a computer).
- An arrow points to a **Sales Representative at customer location using a tablet** icon (a person holding a tablet).

Figure 82: Planning Views within SAP IBP



- SAP Fiori Launchpad within SAP IBP provides an App for Web-based Planning
- The *Web-based Planning* app displays a start page where all planning views can be filtered and ordered by Name, Description, Planning Area, Created By, Key Figures, and so on. If needed, other fields can be selected as well to sort or display information.

- From this application, planning views can be created, copied, edited, viewed, sorted by filters, or deleted.
- When a Planning View is created via the Web-based Planning app users must select:
 - Name
 - Planning Area
 - Versions/Scenarios
 - Time Period
 - Attributes
 - Key Figures
 - Description (Optional)
 - Filter (Optional)
 - Sharing (Optional)
 - Users
 - User Groups

Figure 83: Web-based Planning Application

You can use this app to do the following:

- Create, copy, edit, and delete Planning Views.
- View and compare key figure data from different versions and scenarios on desktop and tablet.
- Change key figure data.
- Simulate the effect of key figure changes to the Planning View.
- Create, copy, edit, promote, reset, and delete scenarios.
- Share Planning Views with other users or user groups.
- Share scenarios with other users or user groups.
- See fixing information for key figure data.
- Fix and unfix key figure data.
- View, create, edit, and delete Planning notes for key figure data.
- Select reason codes and write comments for key figure changes that are captured in change history.
- Select reason codes and write comments for key figure changes that can be shared via Workspace.
- Show order information for some external key figures from Order-based Planning and navigate to corresponding Order-based Planning apps and other systems to get more details.

Figure 84 displays the user interface of the SAP Web-based Planning application. It includes a navigation bar at the top, a search bar, and a main content area with three distinct views:

- Planning Views:** A list of pre-defined planning views with details like name, description, and creation date.
- My Demand View:** A configuration screen for a specific demand view, showing planning levels (Product, Customer Group, Segment) and key figures (Demand Qty, Delivered Qty, etc.).
- Demand Planning View:** A detailed view showing demand and delivery data for various products across different locations and time periods.

Figure 84: User Experience through the Web-based Planning App

	SAP IBP, add-in for Microsoft Excel	Web-Based Planning UI
Key users	<ul style="list-style-type: none"> Planner, Key-Account Manager, Marketing and Sales, Management Supporting occasional, advanced, and power planners with complex business processes being covered 	<ul style="list-style-type: none"> In current release, supporting occasional users, for example, Key Account Managers / Sales Reps at customer sites with basic planning tasks
Business processes	Complex planning processes supported by Microsoft Excel native features, such as: <ul style="list-style-type: none"> Very flexible extensions with VBA, macros, and custom formatting Excel formulas / local key figures Offline Usage of Planning View Workbooks (share with external users) 	Basic planning process in scope: <ul style="list-style-type: none"> Today: Create planning view, analyze data, change data, save
Prerequisites	<ul style="list-style-type: none"> Add-in for Microsoft Excel requires Windows and Office installed on user's computer Tablets (except for MSFT Surface) not supported MacBooks only with Virtual Machine (Windows and Office) installed 	<ul style="list-style-type: none"> Browser-based app started from the IBP Web-UI Tablets and MacBooks supported

Figure 85: SAP IBP Excel Add-in or the Web-based Planning App?

Creating a Planning View with the Web-based Planning App

When creating a Planning View, you can define it to suit a specific business need. For example, if you want to perform Capacity Planning, you can define a Planning View that allows you to compare the capacity load, required capacity, and available capacity in particular locations on a monthly or quarterly basis. You can specify the Planning level and the key figures for the Planning View, the versions for which you want to display key figure data, the time horizon for which to show key figure data, and a filter.

After you have defined what the Planning View should contain, you can either save the Planning View or preview it. The preview is useful if you first want to check that it shows all the data that you want to work with. You can save your Planning View within the preview mode. This saves you from going back to the screen where you specified the settings for your

Planning View. You can also open the preview if you only want to view and change key figure data without saving the Planning View. In this case, you can simply discard the Planning View after you've updated the key figure data.

Sharing and Filtering with the Web-based Planning App

When you create the Planning View, you can restrict the data set you want to view by using an existing Planning filter or by specifying an ad-hoc filter. You can also change the filter on-the-fly when you're in display mode. Specifying a filter improves the system performance.

You can share the Planning Views you created with other users or with user groups. This helps you if you need to collaborate with your colleagues on a specific set of data. The other users you shared the Planning View with can change the key figure data in the Planning View. However, other users cannot change the settings of your Planning View or delete it.

Key Figures on the Web-based Planning App

- Editable key figure values and non-editable key figure values are shown in different colors. This makes it easier for you to see which values you can change.
- To protect key figure values from unintentional changes during disaggregation or by other Planners, you can fix them in the Planning View. You can fix values one at a time or several at once. You can also unfix these values. A fixed value in a cell is indicated by a filled padlock sign. A partially-fixed value is indicated by a padlock sign that is filled diagonally.
- If you want Planning notes to be shown, you can specify this in the Planning View settings. If you want them to be shown, you can specify for which Planning levels you want them to be shown (all Planning levels or the Planning level you have set for the Planning View). The Planning level is the combination of attributes set for the Planning View.

Using the Web-based Planning Application

- Time Zone:

The Web-Based Planning app uses the time zone that has been set for the system by the administrator to determine which period is the current period. In this app, the current period is relevant for the time interval that you set in the Planning View settings.

- Simulation and scenarios:

If you change any key figure values manually in the Planning View, you can simulate what effect your changes will have on dependent key figures before you save the data. The simulation does not affect the operational data until you decide to save your changes. Note that only simulations for dependent key figures are supported.

If you want to play with the data to see what an alternative plan could look like, you can create your own private scenario. The changes you make in this scenario don't affect the operational data until you decide to promote them to the version the scenario is based on. If you want to compare key figure data from different scenarios, you can add multiple scenarios to your Planning View. By default, the baseline scenario is selected.

Supported Devices Types by the Web-based Planning App

- Desktop
- Tablet

In some cases, you may want to use this app on a tablet, for example, if you're a sales representative and you're visiting a customer at their location. When you work on a tablet, please remember the following:

- If you want to enter or change key figure values for a range of periods, you need to do this separately for every period. You cannot drag and drop a key figure value to multiple cells. Similarly, you cannot copy and paste a key figure value.
- Because opening the context menu by touching and holding a cell is not possible, you cannot do the following:
 - Show all Planning notes for a cell
 - Show order information for a cell
 - Create a Planning note
 - Fix or unfix a key figure value

If you want to use any of these functions, you need to use the app on a desktop.



Note:

Information for administrators who set up the Web-Based Planning app for business users is available by navigating to: *SAP Help* → *SAP Integrated Business Planning*→ *Setting Up Web-based Planning*.



LESSON SUMMARY

You should now be able to:

- Create a planning view using the Web-based Planning App

Unit 3

Lesson 6

Analytics and Dashboards



LESSON OBJECTIVES

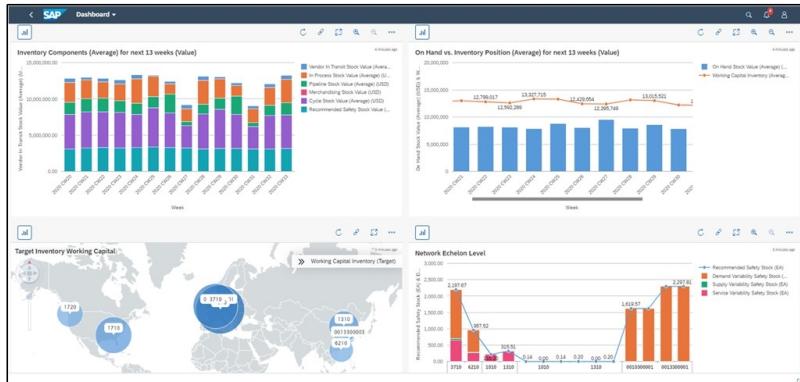
After completing this lesson, you will be able to:

- Analyze KPIs using Analytics and Dashboards apps

Analytics and Dashboards



Analytics - Overview



- Provides detailed view of all reports and KPIs
- Enables chart creation by end user
- Enables customization of data visualizations (for example, bar chart, network, geo chart)

Figure 86: Overview of Analytics

Dashboards provide a detailed view of all reports and KPIs. In a dashboard, Analytics can be added enabling chart creation by the end user and customization of data visualizations. Dashboards support KPIs, shown numbers, and process instances as well.



Note:

Analytics and Dashboards are SAP IBP Applications within all SAP IBP modules. For more information see [SAP Help → SAP IBP → Applications and Features of SAP IBP for Supply Chain](#)



Not all chart types will be relevant for all data sets. For example:

- Dual axis charts require at least 2 key figures
- Geographic charts require attributes with geo coordinates
- Heat maps only display one key figure
- Network charts require combinations of customer, location, ship-from location, product, and source
- Single value KPI tiles will not have a group by

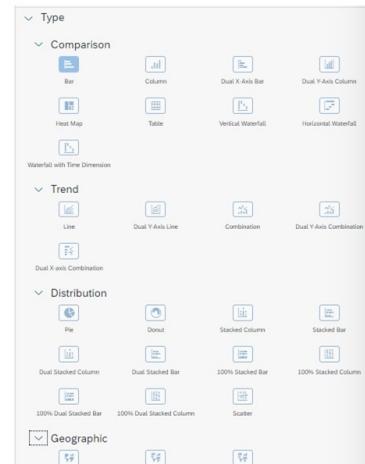
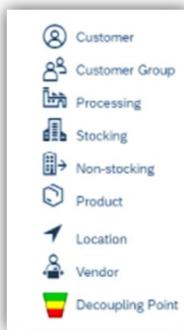


Figure 87: Chart Types

Have a look at the examples in the figure to get an impression why not all chart types will be relevant for all data sets.



Supply Chain data can be visualized at different levels of granularity



KPIs or planning data can be viewed at a desired level of granularity

For example, Customer Receipts



Figure 88: Supply Chain Network Visualization (I/II)



Note:

Supply Chain data can be visualized at different levels of granularity. Especially, KPIs or planning data can be viewed at a desired level of granularity.



Supply Chain network visualization also display relationships between stocking, manufacturing, suppliers, and customers

- Product, Location, Customer
- Product, Ship-From Location, Location
- Product, Source, Location
- Component, Source

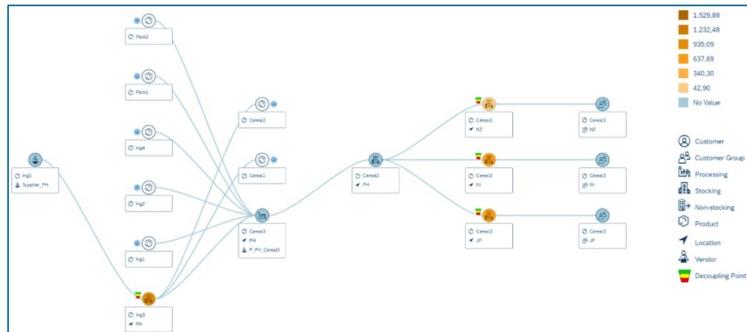


Figure 89: Supply Chain Network Visualization (II/II)

Supply Chain network visualization also displays relationships between stocking, manufacturing, suppliers, and customers, as indicated in the figure.



- Provides a summarized view of charts, KPIs, alerts and tasks
- Enables visibility to the most used or important data

Figure 90: Overview of Dashboards

A dashboard provides a summarized view of charts, KPIs, process instances, tasks, and so on. It enables visibility of the most important used data.



In one view you can see how your supply chain is being managed by showing its most important aspects.

- Provides historical and forward looking KPIs in a single view
- Enables user configurable dashboards and analytics
- Monetized impact of exception conditions



Figure 91: Understand Current Supply Chain Status with Flexible Dashboards

Dashboards provide the following characteristics:

- Share dashboard with others
- Customizable
- Multiple dashboards
- Provides historical and forward looking KPIs in a single view
- View how Supply Chain is being managed in one view



LESSON SUMMARY

You should now be able to:

- Analyze KPIs using Analytics and Dashboards apps

Unit 3

Lesson 7

Planner Workspace



LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Identify the Planner Workspace functionality

Planner Workspace

With this app, you can create and manage Planner Workspaces. With this application you can create, configure and manage Planner Workspaces. In addition, issues can be investigated and solved using special functions.

Within this lesson, we present as follow some of the newest features of the app.



The appearance settings allows you to customize how planning view data is being displayed.

You can among others, define...

- Special key figure formatting, such as highlighting or number of decimal places
- Another formatting for first or last rows per combination
- Special formatting for attribute or time period headers

Customer Description	Product Desc.	Location ID (Plant)	Key Figures			
			Customer Demand	Customer Demand Short...	Customer Revenues	Customer Demand Short...
Domestic CN Customer...	BP-30 MUSIC DODGE	6210	312	0	316	321
Customer Demand Short...			0	0	316	321
Subscription: PWNIFIED: Demand			312	319	317	317
Customer Demand Short...			0	0	319	317
Customer Demand Short...			319	319	317	317
Customer Demand Short...			0	0	317	317
Customer Demand Short...			325	320	320	320
Customer Demand Short...			0	0	320	320
Customer Demand Short...			154	151	150	150
Customer Demand Short...			0	0	150	150
Location D...	Resource Desc.	Key Figures	Key Figures			
			Capacity Supply	Capacity Utilization	Capacity Supply	Capacity Utilization
Plant Atlanta	1710 Assembly	Capacity Supply	1,800	100 %	1,000	100 %
Customer Demand Short...		Capacity Utilization	1,800	100 %	1,000	100 %
Subscription: PWNIFIED: Demand		Total Capacity Supply	1,800	100 %	1,000	100 %
Customer Demand Short...		Capacity Supply	1,800	100 %	1,000	100 %
Customer Demand Short...		Capacity Utilization	2,000	100 %	1,200	100 %
Customer Demand Short...		Capacity Supply Expansion	2,000	100 %	1,200	100 %
Customer Demand Short...		Total Capacity Supply	2,000	100 %	1,200	100 %
Customer Demand Short...		Capacity Usage of Product	1,800	100 %	1,000	100 %

Figure 92: Planner Workspace (I/V)

A Planner Workspace is a configurable work environment where you can plan, analyze issues in your plans, and solve these issues with the help of custom alerts and simulations. You can flexibly add components to your Planner Workspace , such as a custom alerts overview, analytics charts, and planning views. This allows you to adapt the UI to the needs of your specific business scenario. You can define which data you want to show for each component separately. This allows you to show different sets of data on one screen without having to switch apps.



Drilldowns defined in the Analytics Advanced app are now consumable within the Planner Workspace.

You can simply select data points within the chart and select the drilldown icon to gain further insights into your planning data.



Figure 93: Planner Workspace II/V



Alerts in simulation mode

When you make changes to key figure values in a planning view and run a simulation, a simulation status will be displayed for the custom alerts in your custom alerts overview.

It will allow you to see if, as a result of the simulation, new custom alerts have been calculated, others have changed, remained unchanged, or have been solved.

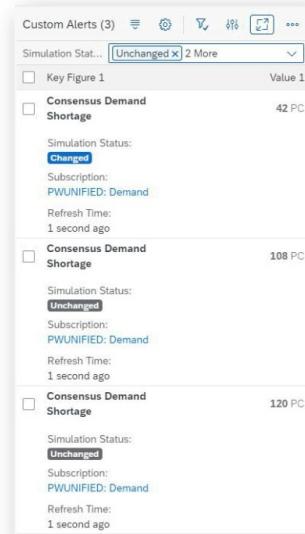


Figure 94: Planner Workspace III/V

Workspace components can interact with each other. Key figures that match a custom alert can be highlighted in planning views, which helps you to find those key figures and solve the underlying issues.



Alert highlighting based on aggregated alerts

If an underlying custom alert definition has been set up so that custom alerts are aggregated over a specified time now shows one entry for the aggregated alerts.

When you select the aggregated alerts in your custom alerts overview, the key figure values that match the aggregated alerts will be highlighted in your planning views.

Custom Alerts (8)			Capacity		
Location Desc.	Resource Desc.	Key Figures	W49 2021	W50 2021	
Plant Atlanta	1710 Assembly	Capacity Supply	1,800	1,000	
Plant Atlanta	1710 Assembly	Capacity Supply Expansion (%)	100 %	100 %	
Plant Atlanta	1710 Assembly	Total Capacity Supply	1,800	1,000	
Plant Atlanta	1710 Assembly	Capacity Usage of Product	1,000	1,000	
Plant Atlanta	1710 Assembly	Capacity Utilization	100 %	100 %	
Plant Atlanta	1710 Pack	Capacity Supply	2,000	1,200	
Plant Atlanta	1710 Pack	Capacity Supply Expansion (%)	100 %	100 %	
Plant Atlanta	1710 Pack	Total Capacity Supply	2,000	1,200	
Plant Atlanta	1710 Pack	Capacity Usage of Product	1,000	1,000	
Plant Atlanta	1710 Pack	Capacity Utilization	90 %	83.33 %	
Plant Beijing	1310 Assembly	Capacity Supply	2,000	1,000	
Plant Beijing	1310 Assembly	Capacity Supply Expansion (%)	100 %	100 %	
Plant Beijing	1310 Assembly	Total Capacity Supply	2,000	1,200	
Plant Beijing	1310 Assembly	Capacity Usage of Product	1,000	1,000	
Plant Beijing	1310 Assembly	Capacity Utilization	100 %	100 %	
Plant Beijing	1310 Pack	Capacity Supply	2,100	1,200	
Plant Beijing	1310 Pack	Capacity Supply Expansion (%)	100 %	100 %	
Plant Beijing	1310 Pack	Total Capacity Supply	2,100	1,200	
Plant Beijing	1310 Pack	Capacity Usage of Product	1,000	1,000	
Plant Beijing	1310 Pack	Capacity Utilization	95.24 %	83.33 %	
Plant Frankfurt	1010 Assembly	Capacity Supply	2,000	1,000	
Plant Frankfurt	1010 Assembly	Capacity Supply Expansion (%)	100 %	100 %	
Plant Frankfurt	1010 Assembly	Total Capacity Supply	2,000	1,000	
Plant Frankfurt	1010 Assembly	Capacity Usage of Product	1,000	1,000	
Plant Frankfurt	1010 Assembly	Capacity Utilization	100 %	100 %	
Plant Frankfurt	1010 Pack	Capacity Supply	2,000	1,000	
Plant Frankfurt	1010 Pack	Capacity Supply Expansion (%)	100 %	100 %	
Plant Frankfurt	1010 Pack	Total Capacity Supply	2,000	1,000	
Plant Frankfurt	1010 Pack	Capacity Usage of Product	1,000	1,000	
Plant Frankfurt	1010 Pack	Capacity Utilization	100 %	100 %	

Figure 95: Planner Workspace IV/V



Reason Code

When you make changes to key figure values in a planning view and save the changes, it's now possible to provide reason codes and comments for these changes.

Regional settings

You can define in the Business User app or in the Settings dialog how decimal values and dates should be displayed. These settings will be respected accordingly in Planner Workspace.

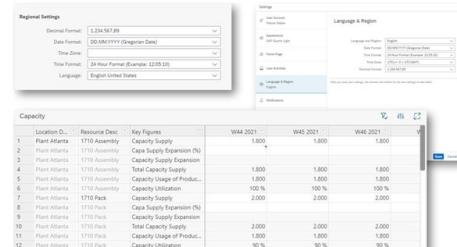
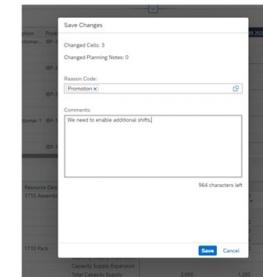


Figure 96: Planner Workspace V/V



Note:

This Application is only available for Desktop

The planning views you create as components in this app aren't available as favorites in the SAP Integrated Business Planning add-in for Microsoft Excel and vice versa. However, you can use these planning views in the Web-Based Planning app.

You can also view the custom alerts overviews that you create as components in this app in the Analytics - Advanced app.



LESSON SUMMARY

You should now be able to:

- Identify the Planner Workspace functionality

Unit 3

Lesson 8

SAP IBP for MRO



LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Identify SAP IBP for MRO

SAP IBP for MRO

The Maintenance, Repair, and Operations (MRO) process, continuously assures that the right parts and tools needed to keep assets operating are available during the maintenance activity, and it has a big impact on both top-line performance and bottom-line costs. Businesses may not directly incorporate the countless number of parts, maintenance kits, services, and other related MRO items into any final product. Yet these maintenance spare parts are what keep factories, trains, mines, and other asset-intensive firms up and running. When spare parts for these assets aren't readily available, the business impacts can be catastrophic, one of which is a complete freeze of the supply chain. For that reason, companies in that space focus on extending the asset lifecycle and increasing its availability and reliability.



Main Challenges

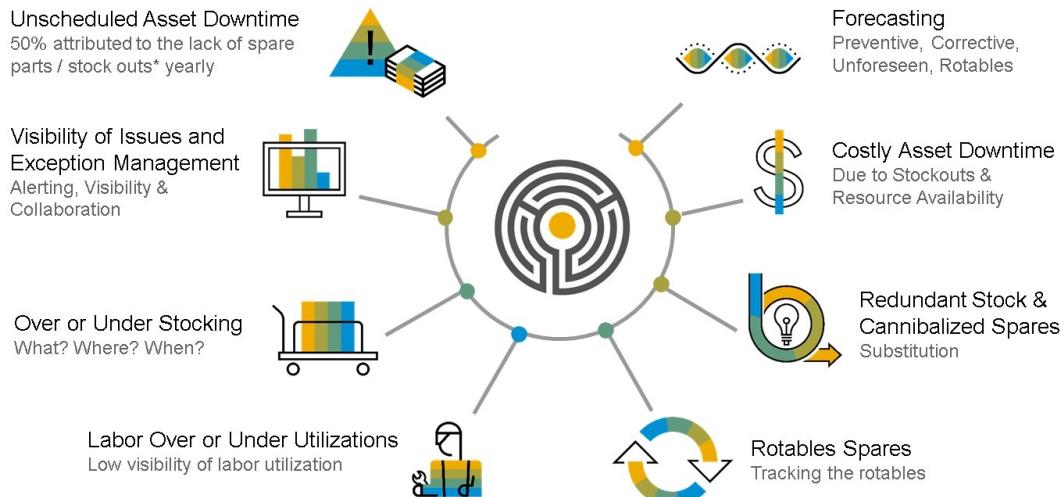
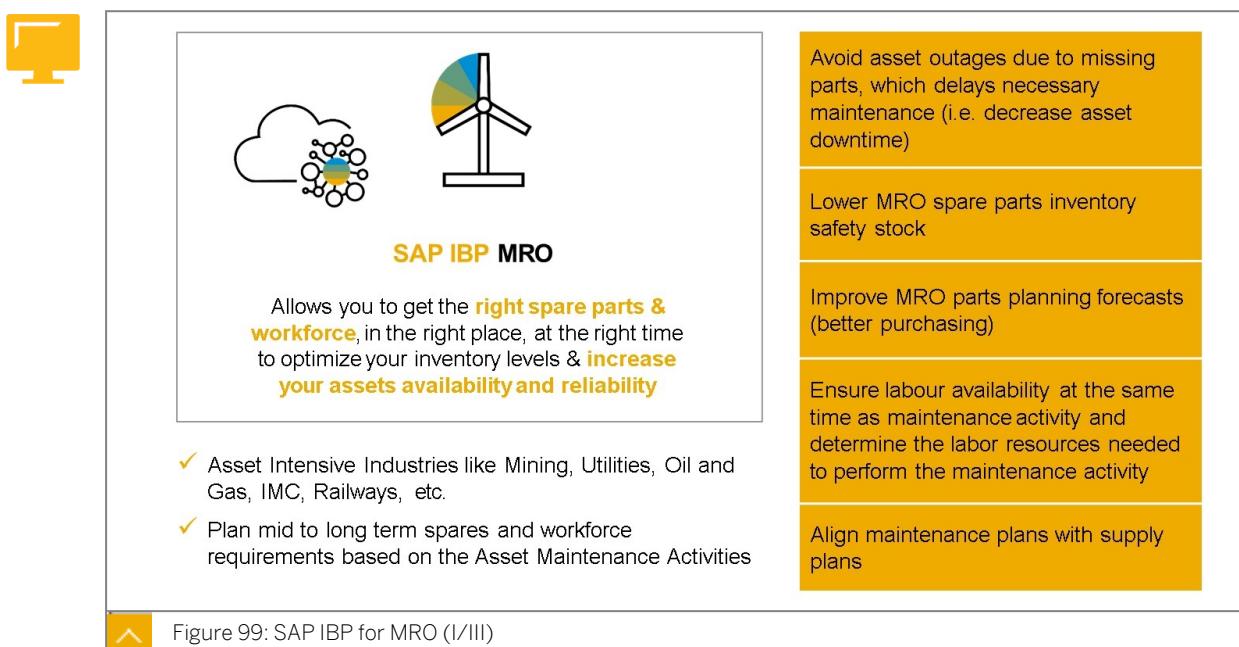
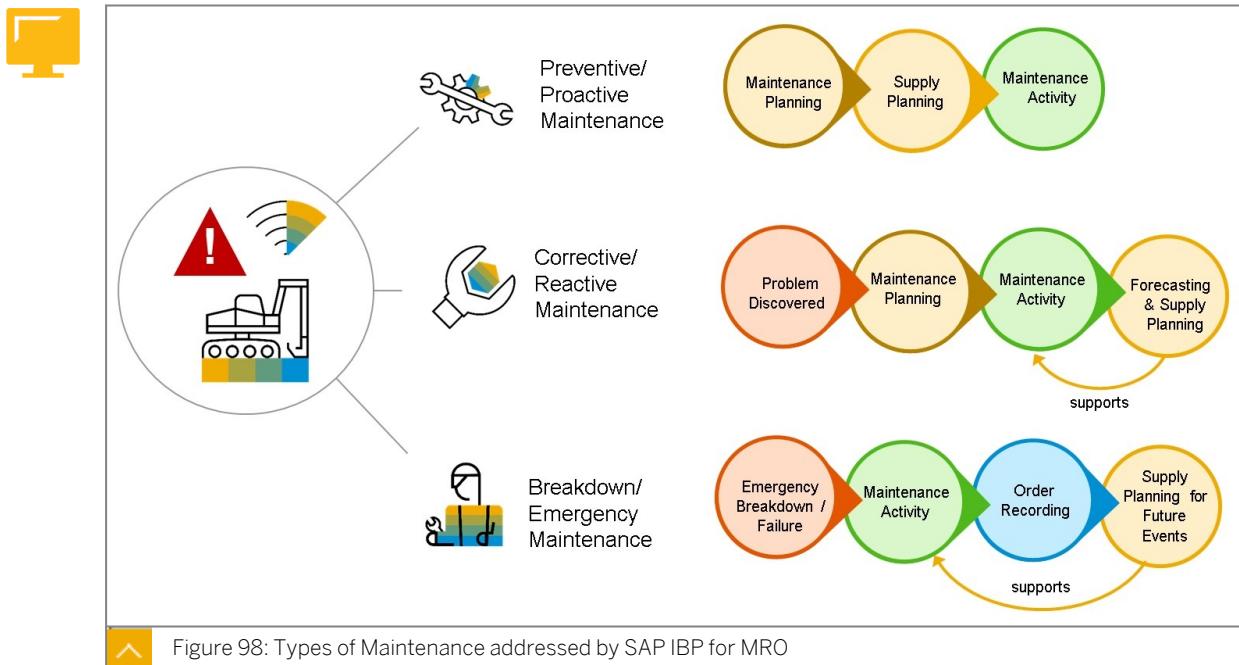


Figure 97: Main challenges addressed by SAP IBP for MRO

SAP IBP for MRO ensures customers, that they have the right spare parts, tools, and labor to do the right maintenance work at the right time and the right place.





An Innovation end-end pathway for **MRO parts planning process** with **SAP IBP** to optimize inventory levels and increase asset availability & reliability

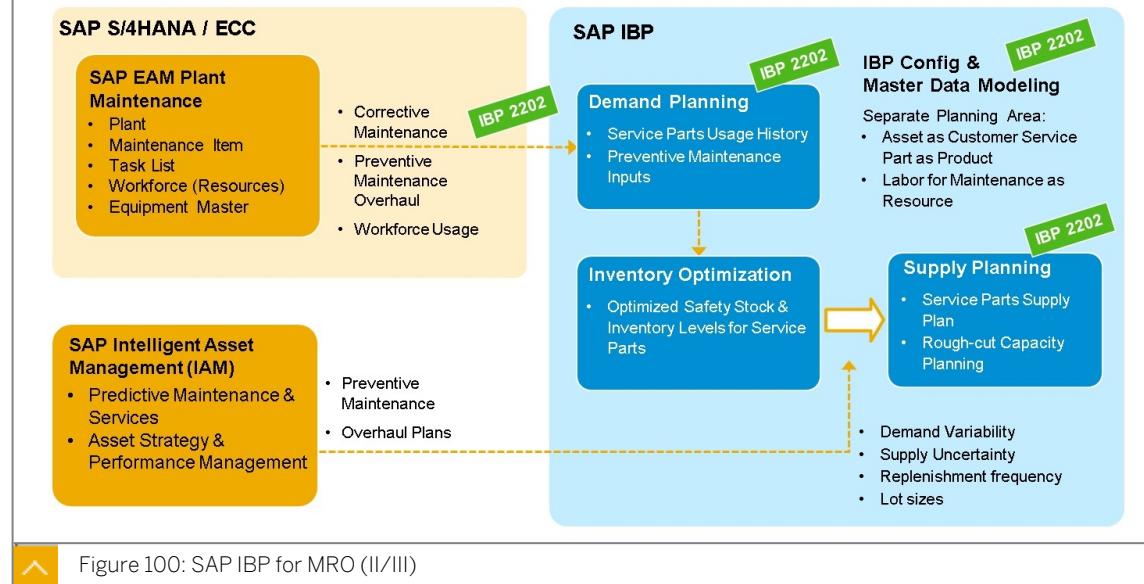


Figure 100: SAP IBP for MRO (II/III)



Based on Assets

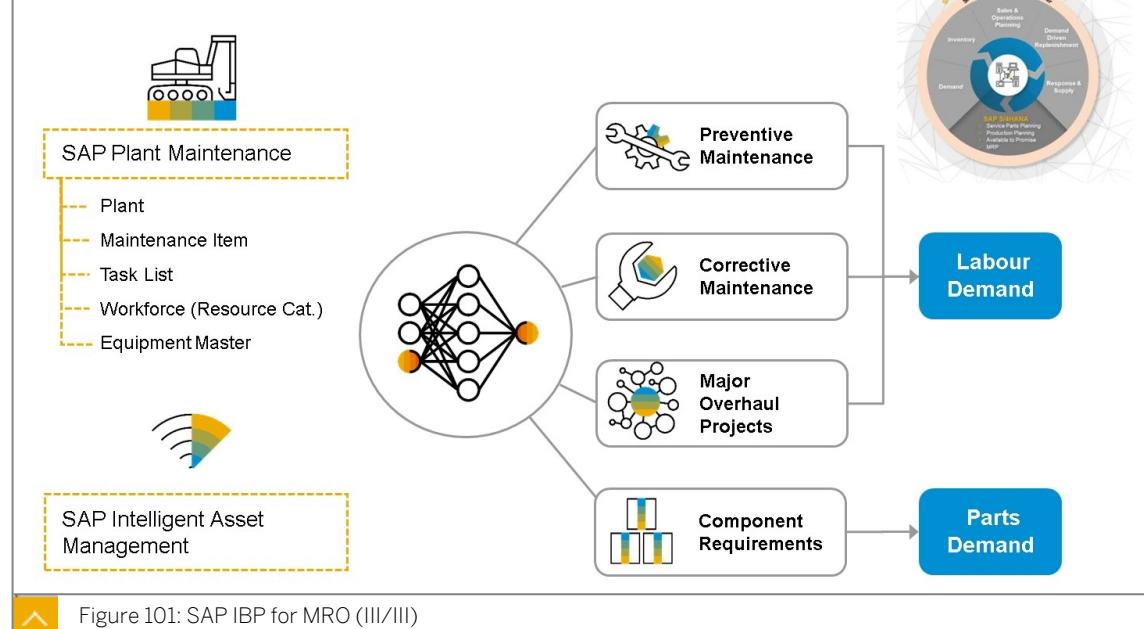


Figure 101: SAP IBP for MRO (III/III)

Using a Planner Workspace for Maintenance, Repair and Operations

A user can create Planner Workspaces from scratch and configure them for specific business needs e.g. for MRO Scenarios. With the Planner Workspace, a user can:

1. Create, configure, and manage Planner Workspaces by doing the following:
 - Create, edit, copy, and delete Planner Workspaces
 - Share Planner Workspaces with other users or user groups
 - Configure your Planner Workspace by dragging and dropping the workspace components you need for your specific business process

- Add existing custom alerts overviews, planning views, and analytics charts or create custom alerts overviews and planning views from scratch
 - Flexibly organize your Planner Workspace according to your preferences by changing the column layout and how components are displayed, or by moving components around
 - Create, edit, copy, and delete appearance settings for planning views in a Planner Workspace
 - Share appearance settings for planning views with others by making them public
 - Use different filter modes for filtering the data in the components and decide for each component which filter should be applied
 - See which filters you applied to a workspace component
2. Investigate and solve issues in your plans using the following functions:
- Find key figures that match a custom alert highlighted in a planning view
 - Change key figure data from different versions and scenarios of a planning area
 - Simulate the effect of changes on custom alerts and key figure data and save your data
 - Create, copy, edit, promote, reset, and delete scenarios
 - Share scenarios with other users or user groups
 - Show order information for some external key figures and change planned receipts from order-based planning in the planning view and navigate to the corresponding order-based planning apps and other systems to get more details
 - Schedule and run application jobs and check their status
 - See fixing information for key figure data
 - Fix and unfix key figure values
 - View, create, edit, and delete planning notes for key figure data
 - Add keywords to your planning notes

As follow a visual application of SAP IBP for MRO via the Planner Workspace app:

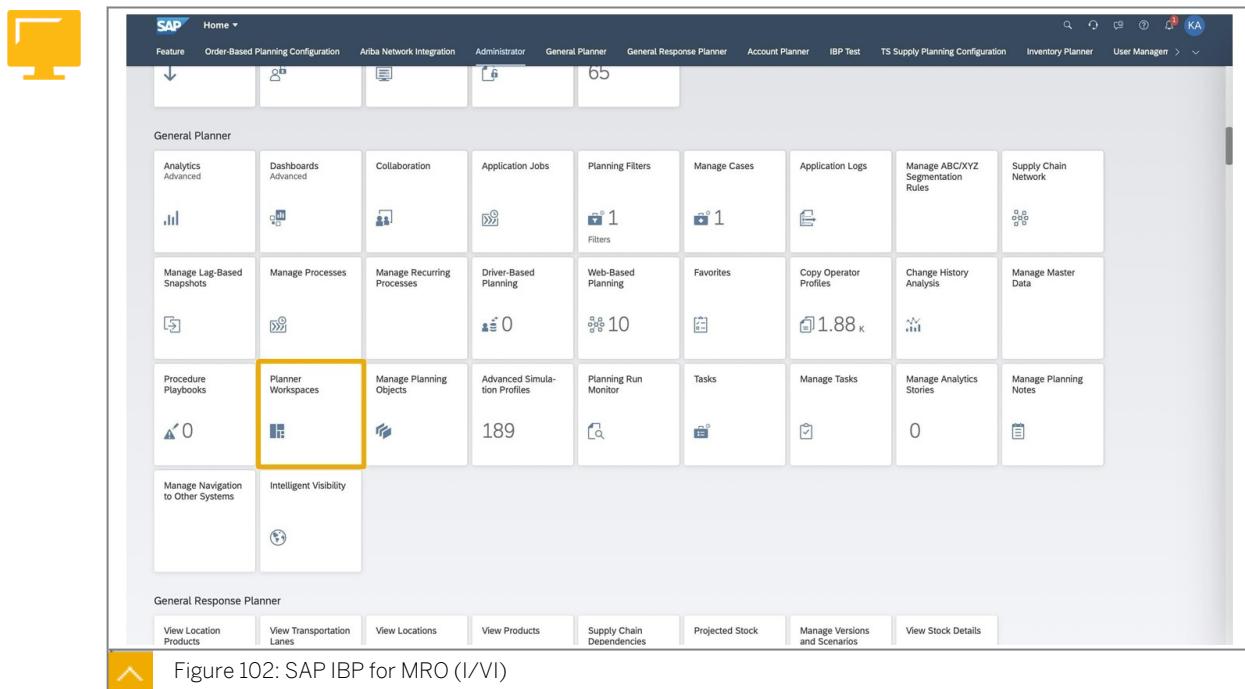


Figure 102: SAP IBP for MRO (I/VI)

First, this application is located within the general planner group

The screenshot shows the 'Planner Workspace' for 'Preventative Maintenance - Spare Parts View'. The workspace has tabs for Data, Workspace, Plan, Design, Save As, and Go. It includes sections for Versions / Scenarios, Planning Filter, Time Periods, Location ID, Maint. Activity ID / Spare Part ID, and Adapt Filters. The main area displays two tables: 'Prev. Maint. Demand Qty' and 'Spare Parts Usage (Prev. Maint.)'. The 'Prev. Maint. Demand Qty' table lists items like FR-1-MAINT PT, 701-ENSY-COSY, Cooling Sys, with details such as Location, Equipment ID or Function, Floor ID, Maint. Activity / Spare Part Desc., and Key Figures. The 'Spare Parts Usage (Prev. Maint.)' table lists items like FR-1-MAINT..., 1355: 12K H Rpl Ther., BEARING, with details such as Location, Maint. Activity / Spare Part Desc., Spare Part Desc., and Key Figures. A large table on the right shows 'Agg. Spare Parts Requirements' and 'Projected Stock of Spare Parts' for various locations and parts, with columns for Location, Spare Part Desc., Key Figures, and dates (22-Jan, 22-Feb, 22-Mar). The table contains numerous entries for components like ACCUMULATOR, ADAPTER, PIPE-HOSE, AIR CONDITIONER/HITACHI, ARANDELA, etc.

Figure 103: SAP IBP for MRO (II/VI)

As shown in the slide, different planning views can be created to for example analyze: demand quantity for preventive maintenance, spare parts usage, aggregated spare parts requirements and projected stock of spare parts.

Preventative Maintenance - Spare Parts View

Versions / Scenarios: Planning Filter: Time Periods: Location ID: Maint. Activity ID / Spare Part ID: Data 50 sec. ago Simulate Save Scenarios Application Jobs Plan Design Save As Adapt Filters

1 Equipment ID or Functional Location

2 Maintenance Activity

3 Spare Parts used

The screenshot shows a detailed view of equipment maintenance activities and their associated parts usage across various locations.

Figure 104: SAP IBP for MRO (III/VI)

With these planning views, equipment ID or Functional Location, maintenance activity and spare parts usage can be identified.

Corrective Maintenance Forecasts*

Versions / Scenarios: Planning Filter: Time Periods: Location ID: Maint. Activity ID / Spare Part ID: Data 20 sec. ago Simulate Save Scenarios Application Jobs Plan Design Save As Adapt Filters

1 Present and Future Cost for Spares

2 Present and Future Cost for Labor

3 Spare Parts Forecast

4 Resource Forecast

5 Resource Actuals

The screenshot displays financial forecasts and actual resource usage across different time periods.

Figure 105: SAP IBP for MRO (IV/VI)

With these planning views, present and future cost of spare parts, spare parts forecast, spare parts actuals, present and future cost of labor, resource forecast and resource actuals can be identified.

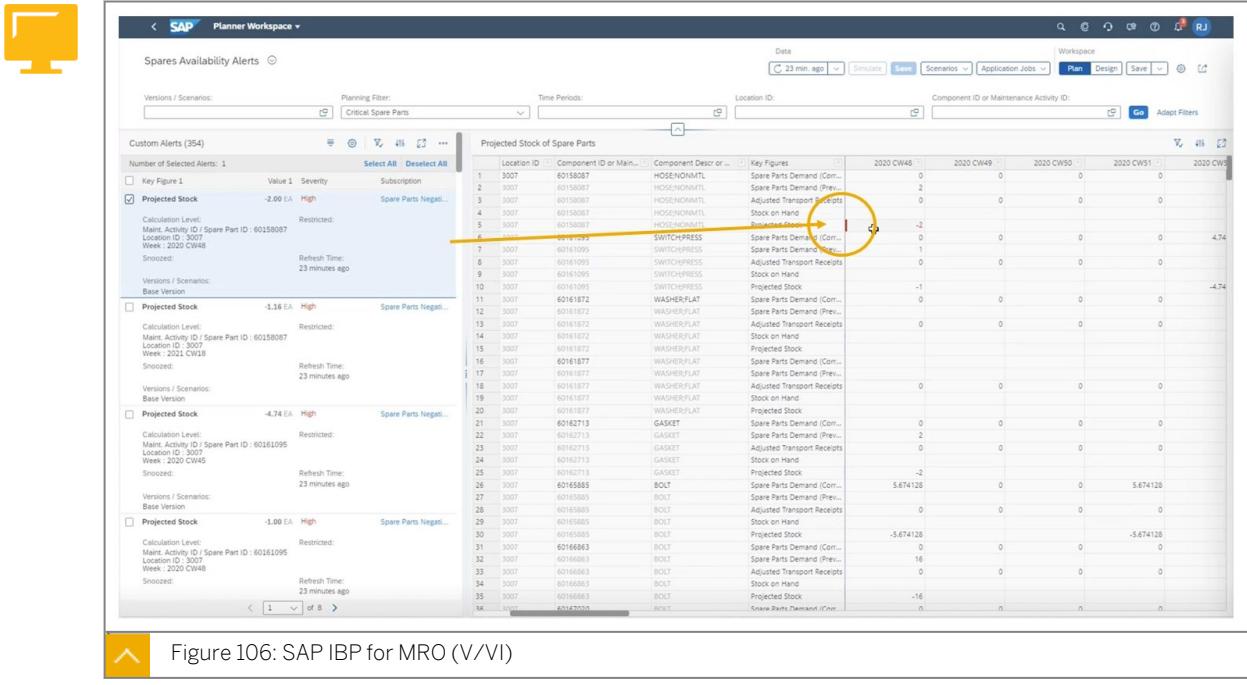


Figure 106: SAP IBP for MRO (V/VI)

Through a custom alert in the planner workspace, the current status of projected stock can be checked.



Figure 107: SAP IBP for MRO (VI/VI)

Finally, total maintenance and total labor costs for e.g. preventive maintenance can be graphically displayed through analytics and dashboards in a planner workspace.



LESSON SUMMARY

You should now be able to:

- Identify SAP IBP for MRO

Learning Assessment

1. Which of the following tasks can be personalized using the SAP Fiori Launchpad home page?

Choose the correct answers.

- A Manage groups
- B Manage the tiles in each group
- C Configure user permissions
- D Set a theme for the home page

2. Which one of the following Planning Views represents any data that is tied to Master Data types and attributes?

Choose the correct answer.

- A Planning View Key Figure Setting
- B Planning View Layout Settings
- C Planning View Filter Settings

3. How can you manage Master Data within SAP IBP?

Choose the correct answers.

- A Through the Web UI
- B Via the Excel UI
- C None of the above options

4. Can a user create Planning Views through the Web UI?

Choose the correct answer.

- A Yes
- B No
- C SAP IBP does not provide features to create Planning Views

5. Which one of the following Analytics chart types displays only one key figure?

Choose the correct answer.

- A Network chart tiles
- B Dual axis
- C Geographic charts
- D Heat map

6. What is a Planner Workspace App?

Choose the correct answer.

- A None of the listed options
- B A Planner Workspace solves issues simulations, applications jobs, planning notes, custom alerts and Planning Views for Microsoft Excel.
- C A Planner Workspace is not a configurable work environment
- D A Planner Workspace is a configurable work environment where you can plan, analyze issues in your plans, and solve these issues with the help of custom alerts and simulations.

7. What is the purpose of SAP IBP for MRO?

Choose the correct answer.

- A Use strategic decoupling points and inventory buffers to control the flow of material through the supply chain.
- B Unify financial and operational stakeholders in one S&OP process to foster collaboration –aligning inventory, service levels, and profitability.
- C SAP IBP for MRO ensures customers, that they have the right spare parts, tools, and labor to do the right maintenance work at the right time and the right place.

UNIT 4

Demand Planning

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Introduction to SAP Integrated Business Planning for Demand

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UNIT OBJECTIVES

- Address Demand Planning challenges using SAP IBP for Demand
- Cleanse sales history for a Statistical Forecast Calculation
- Adjust the demand plan
- Highlight Demand Sensing Functionalities

Unit 4

Lesson 1

Introduction to SAP Integrated Business Planning for Demand



LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Address Demand Planning challenges using SAP IBP for Demand

Introduction to SAP Integrated Business Planning for Demand

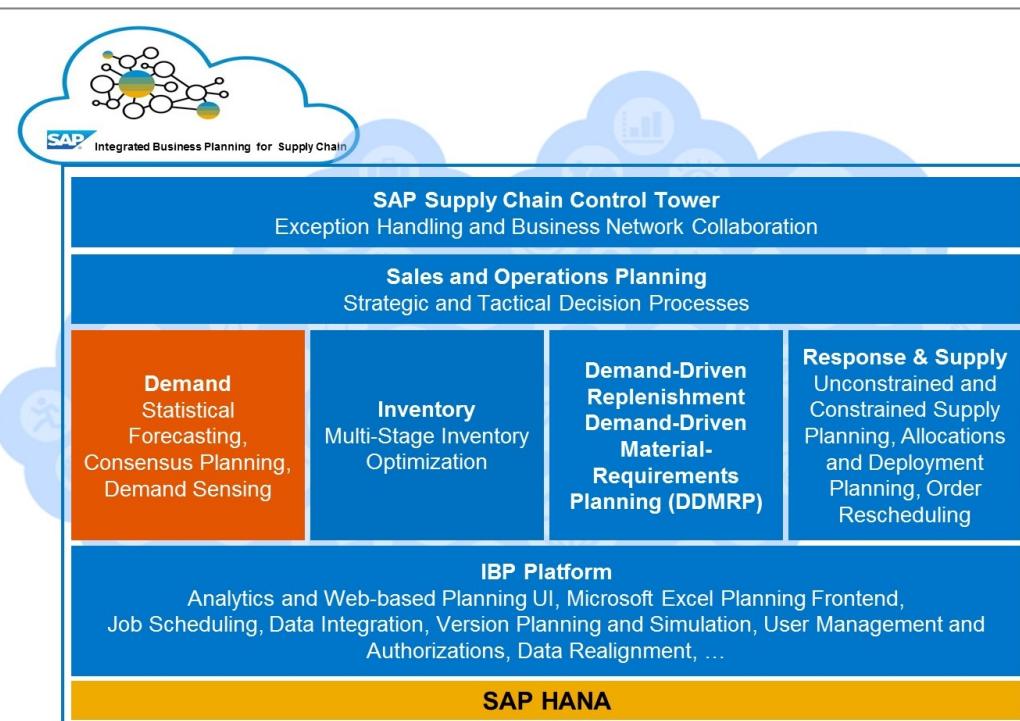


Figure 108: SAP IBP Solution

In this unit we will bring you through the main steps of the Demand Planning process in SAP Integrated Business Planning for demand as well as the process of consolidating and validating the global demand that would typically be done in SAP IBP for sales and operations.



Note:

Some functionalites explained in this chapter might require additional licenses. The following link provides an overview of the available licenses for SAP IBP: [SAP Help → SAP Integrated Business Planning for Supply Chain → Applications and Features of SAP Integrated Business Planning for Supply Chain. → SAP IBP for Demand](#)



World-class demand management solution, combining both statistical forecasting and best of breed demand sensing algorithms



Run streamlined demand management processes

Develop more accurate statistical forecasts and consensus demand plans, combining short-, mid- and long term planning horizons

Increase forecast accuracy in the short term period on a daily basis and improve subsequent process results from supply planning and inventory optimization

Integrate and analyze your trade promotions and use them to improve your overall demand plan

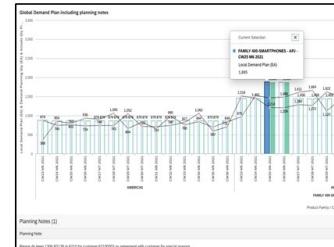
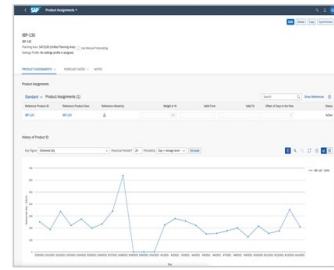


Figure 109: Traditional Demand Planning and Short-Term Demand Sensing in One Module

SAP IBP contains a world-class demand management solution, combining both Statistical Forecasting and best of breed Demand Sensing algorithms via SAP IBP for demand as explained in the figure.



Top Business Challenges

- High market volatility
- Variation in demand is increasing
- Increasing customer demand

Challenges in daily work

- Poor forecast accuracy
- Inefficient operations
- Low service level and excess inventory

Supply chain needs to adapt to a new business realities...



Supply chain volatility on the rise with changing customer expectations

Making growth depends increasingly on serving a **global customer base**

Globalization significantly increases the **supply chain complexity**

Big Data and new, innovative technologies provide new opportunities



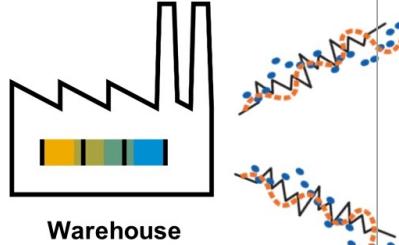
Figure 110: What Problems are We Solving?

Such a solution can help to resolve the following types of business challenges: high market volatility, increasing variation in demand, and identifying increasing and decreasing customer demand.



Demand Factors

- Simultaneous external demand from multiple customers
- Seasonal, time-varying demand
- Intermittent demand
- Promotions, Outliers
- Over- and under- forecasting
- Consideration of recent process changes
- ...and multiply! Forecast decisions needed at every point in the enterprise-wide supply chain for each product for supply planning



Customer Segment 1

(External)

Customer Segment 2

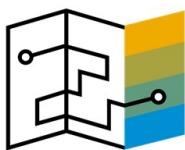
(External)

Figure 111: Demand Side

Demand forecasting needs to consider volatile factors in the future. Such changes could be changes in customer demand, changes in supply, promotions, product introductions and discontinuations. It has to predict short-, mid-, and long-term requirements.



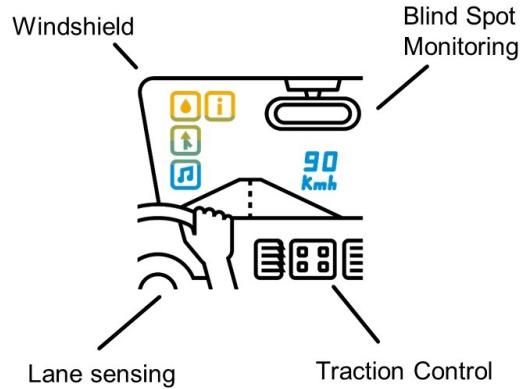
Forecasting & Planning: Maps and GPS



- High level plan
- Where are we? Where are we going?
- Various degrees of sophistication

Planning and Prep

Demand Sensing: Driver's Aids



Traction Control

Driving Value

Figure 112: Statistical Forecasting and Demand Sensing

Forecasting and Planning are conducted at a higher Planning level and for a longer time horizon. As an example, they are like the map used to define the direction for a long trip. Demand Sensing is short-term oriented, that is, it has a quick response towards a change in situation as stock or demand. This is the turn by turn, specific, targeted forecasting. As in the example, this corresponds to a slight change in direction due to an accident or better than expected travel times.



SAP Integrated Business Planning for demand



“traditional” demand planning
(mid- or long-term forecasting)

demand sensing
(short term forecasting)



Figure 113: SAP Integrated Business Planning for Demand in Short Words

SAP IBP for demand consists of traditional Demand Planning (mid— and/or long-term) and Demand Sensing (short-term forecasting).



Key Capabilities

- Demand Sensing and mid/long-term forecasting in one comprehensive demand management solution
- Detailed statistical analysis of demand data via predictive analytics tools
- Automated, exception-based planning processes as well as manual planning capabilities
- Embedded, on-the-fly, demand analytics

Business Value

- Build a single, comprehensive demand plan, integrated with the consensus forecasting process
- Improve service levels, reduce stock-outs and lower expediting costs through more accurate daily forecasts
- Reduce inventory targets by lowering forecast error
- Anticipate plan deviations via embedded analytics



Figure 114: Vision of SAP Integrated Business Planning for Demand



Mid- or Long-Term Forecasting vs. Demand Sensing

Mid- or Long-Term Forecasting is a demand planning process that helps to cope with the uncertainty of the future, relying mainly on data from the past and on the analysis of trends

Demand Sensing is the science of making these mid- or long-term forecasts more accurate, more profitable in the short-term horizon, relying mainly on data from the present and recent past and on the analysis of patterns

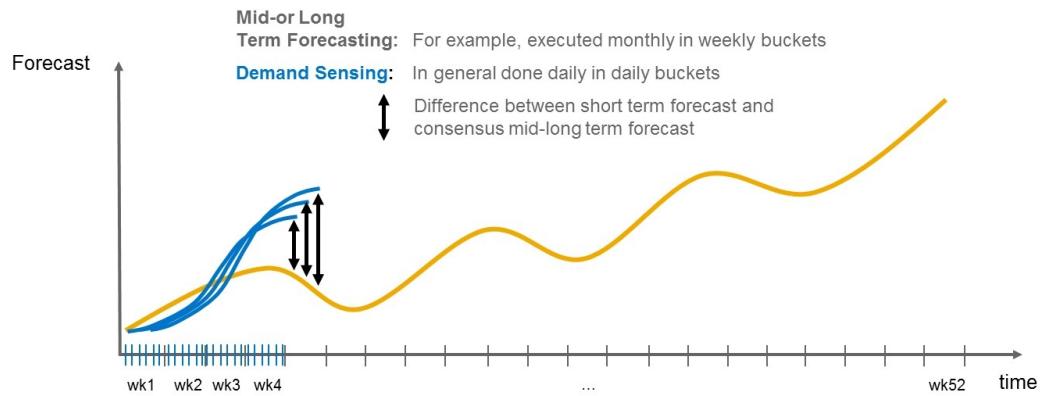


Figure 115: Horizons Within SAP Integrated Business Planning for Demand

Mid- or long-term forecasting helps you to cope with the uncertainty of the future, relying on historical data and on the analysis of trends. Demand Sensing makes these mid- or long-term results more accurate in the short-term horizon.



Demand Sensing Bridges the Gap Between Planning and Execution

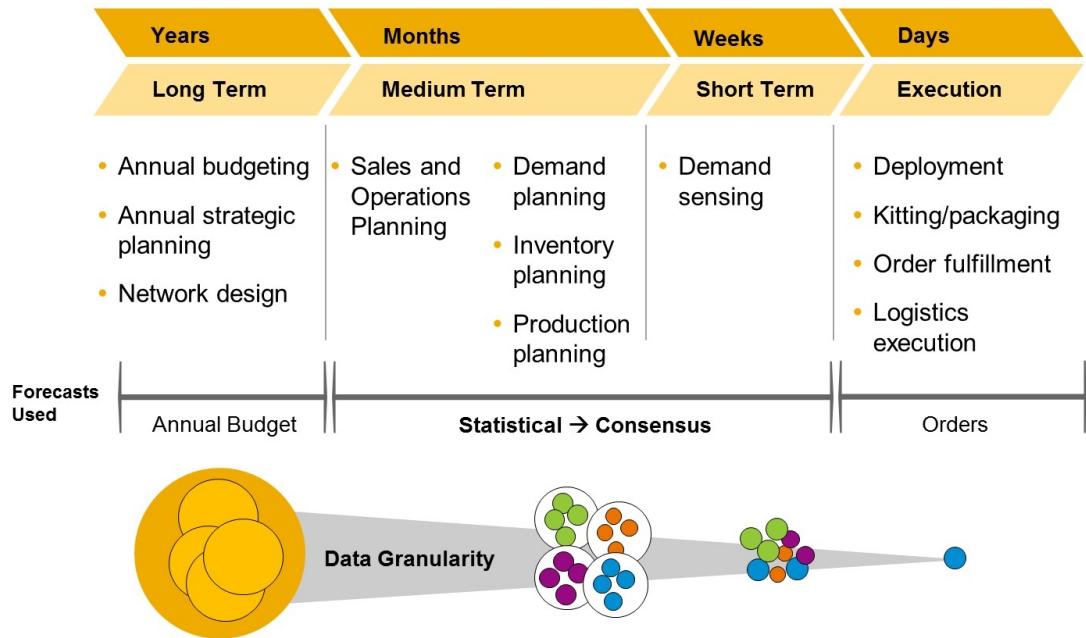
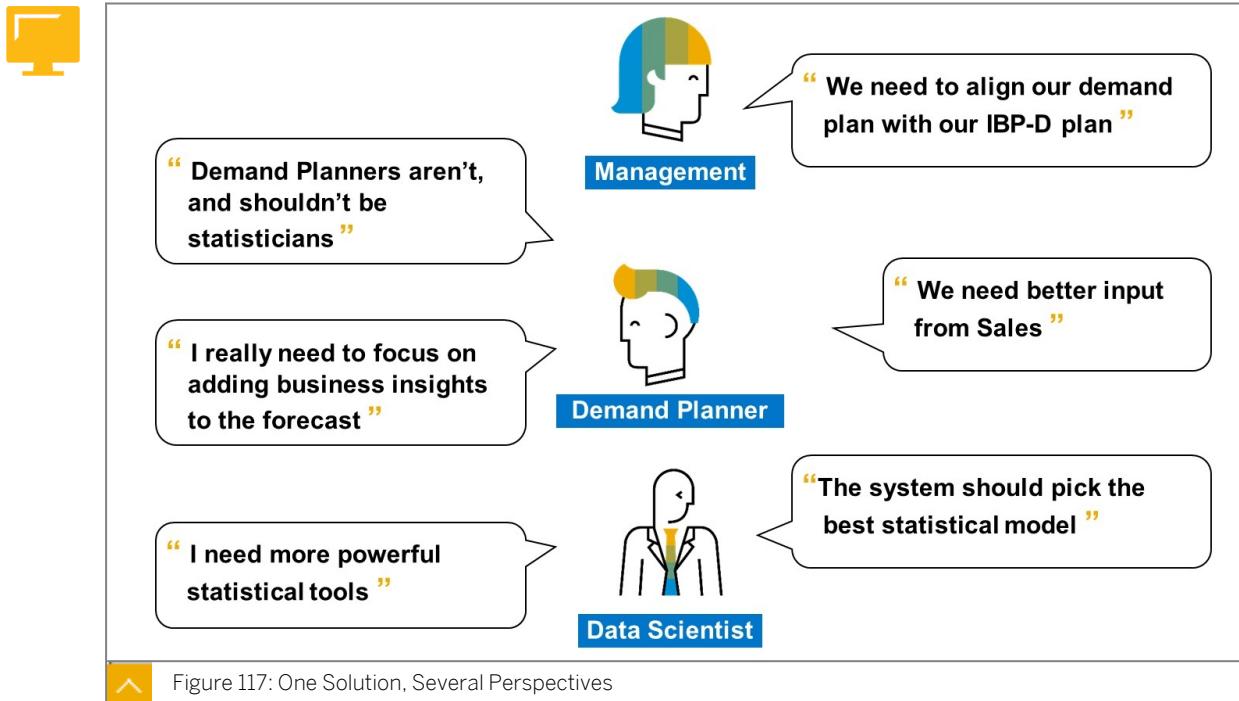


Figure 116: A Bridge - Planning and Execution Together

Demand Sensing is closer to execution. It is specific, disaggregated, and immediate.



Think about the different perspectives and statements. What would you expect? Can you identify with some of the statements? SAP IBP for demand addresses your concerns with all functionalities studied previously.



LESSON SUMMARY

You should now be able to:

- Address Demand Planning challenges using SAP IBP for Demand

Cleansing Sales data for Statistical forecast



LESSON OBJECTIVES

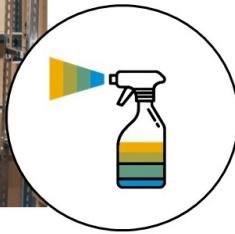
After completing this lesson, you will be able to:

- Cleanse sales history for a Statistical Forecast Calculation

Cleansing Sales data for Statistical forecast



The purpose of cleansing Sales history data is to get a solid data foundation for the statistical forecast calculation.



Therefore, we cleanse Sales history for outliers, for example, special events, stock out situations, and so on.



Figure 118: Sales History Cleansing



Pre-Processing Steps:	Time Series based forecasting methods:	Regression based forecasting methods:
<ul style="list-style-type: none"> • Substitute missing values • Outlier correction 	<ul style="list-style-type: none"> • Adaptive Response Rate Single Exponential Smoothing • Automated Exponential Smoothing • Croston Method • Double Exponential Smoothing • Simple Average • Simple Moving Average • Single Exponential Smoothing • Triple Exponential Smoothing • Weighted Average • Weighted Moving Average 	<ul style="list-style-type: none"> • Multiple Linear Regression (MLR)



Figure 119: Statistical Methods Available for Mid- and Long- Term Forecasting

Any statistical model could fit all data within an organization. As data will have different patterns of occurrence, it will need different models to forecast. For this reason, there are several forecasting algorithms available in SAP IBP for Time Series data.



Mid- or Long-Term Forecasting vs. Demand Sensing

Mid- or Long-Term Forecasting is a demand planning process that helps to cope with the uncertainty of the future, relying mainly on data from the past and on the analysis of trends

Demand Sensing is the science of making these mid- or long-term forecasts more accurate, more profitable in the short-term horizon, relying mainly on data from the present and recent past and on the analysis of patterns

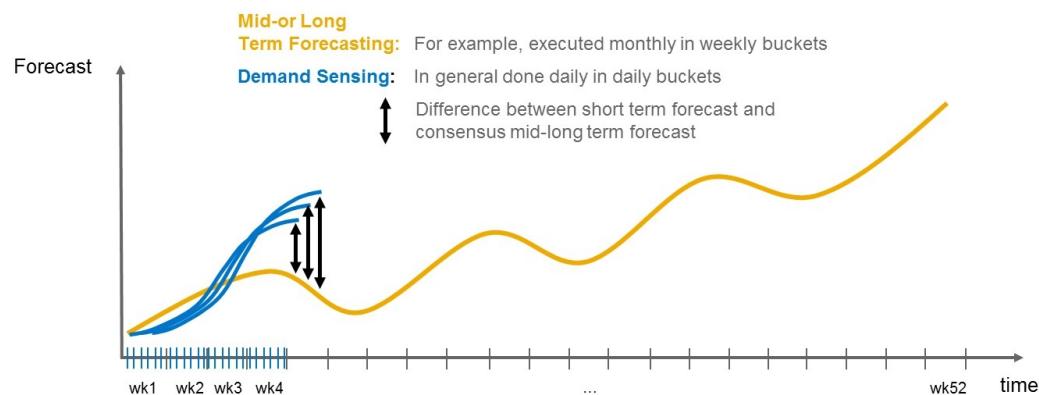


Figure 120: Cleansing and Statistical Forecast

This figure points out that while mid- or long-term forecasting using advanced algorithms to run traditional mathematical models and machine learning algorithms, it helps to cope with the uncertainty of future based on trends calculated from historical data. Demand Sensing tries to make these forecasts more accurate in the short-term horizon using machine learning.



This algorithm can be used for forecasting the demand for mature products with fairly stable sales numbers. The algorithm detects irrelevant fluctuations in the data and smooths them using

weights that are exponentially decreasing over time (that is, older data is given progressively less relative weight). The forecast calculated by this algorithm is a constant number based on weekly or monthly history.

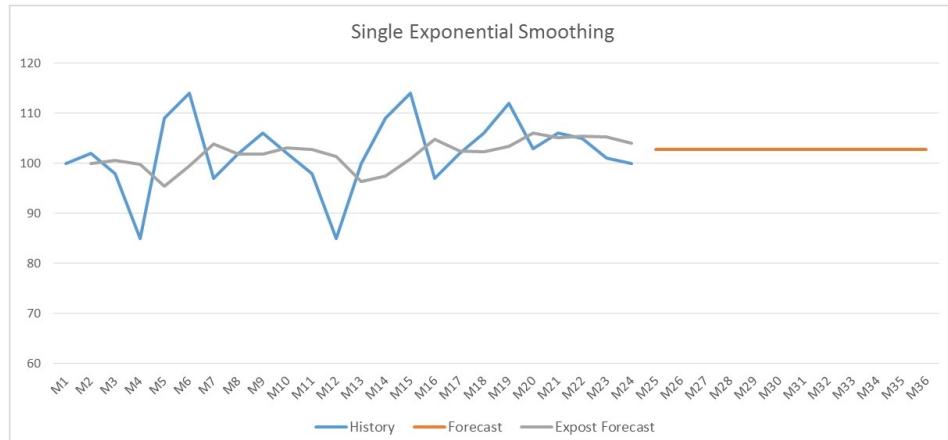


Figure 121: Single Exponential Smoothing

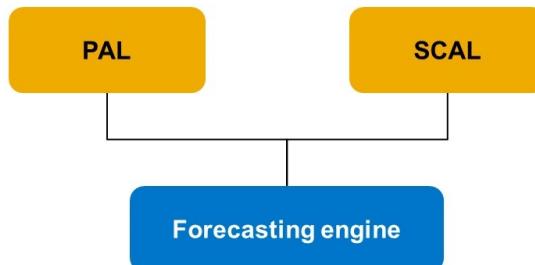
Single exponential smoothing is used for forecasting demand for mature products with fairly stable sales numbers. The predicted outcome is a constant number.



Forecasting algorithms leveraging PAL

(Predictive Analysis Library – part of SAP HANA)

- Pre-processing steps
- Regression based forecasting methods
- Time series based forecasting methods
- Forecast Accuracy calculation



Demand Sensing leveraging SCAL

(Supply Chain Algorithm Library)

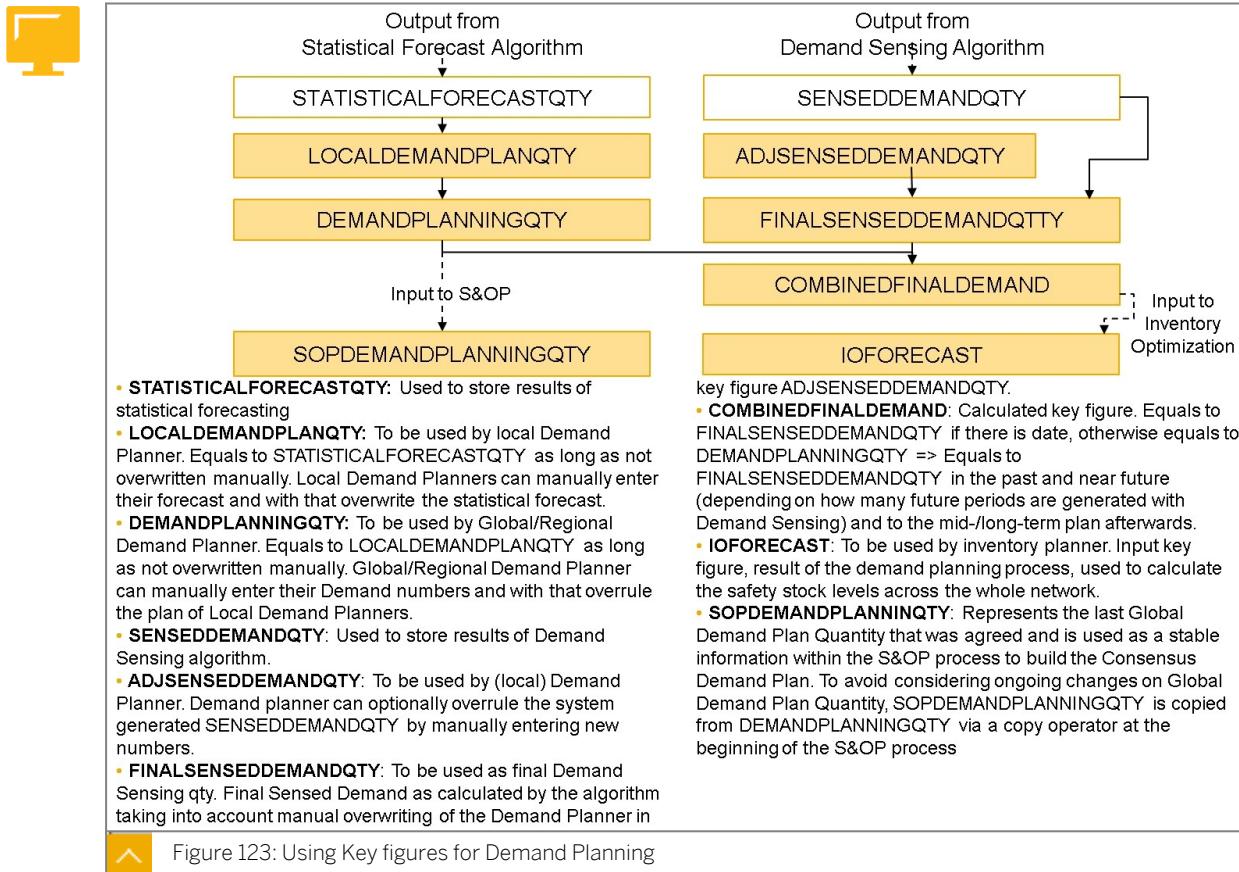
- Demand Sensing (Full and Update)
- Inventory Optimization algorithms

Forecasting Optimization/Automation

- Optimize level of where forecast is executed
- Select best model for metrics automatically (increase forecast accuracy by best model selection)

Figure 122: "Predictive" and SAP Integrated Business Planning for Demand

The forecasting engine can use both SAP HANA-based forecasting algorithms leveraging Predictive Analytics Library (PAL) and Demand Sensing leveraging Supply Chain Algorithm Library (SCAL).



Running demand planning processes implies flows of information and materials. To save the information in real time within the system, SAP IBP has created a technical container to store relevant numbers which have a business meaning. In the previous slide, we see some examples of these containers called *Key Figures*. As per SAP Best Practices for SAP IBP for Supply, a company can use these key figures with the predefined business meaning or adjusting them according to specific requirements.

A good example of key figures application is described as follow:

- Demand Planners and Sales Planners have information that has not been incorporated into the statistical forecast. The statistical forecast must be adjusted to include this information removing promotions and outliers. The adjustments can be due to a special event, promotions, and so on.

The preconfigured Key Figures on the slide can be used as the definition recommends on the image. As in the slide, Key Figures may represent hierarchies, aggregating or disaggregating data from one planning level to other. The usage of the predefined Key Figures are broadly described on the SAP Best Practices for SAP Integrated Business Planning (IBP) site.

As follow, you will find the logical evolution of the demand planning process considering the usage of key figures and SAP Engines:

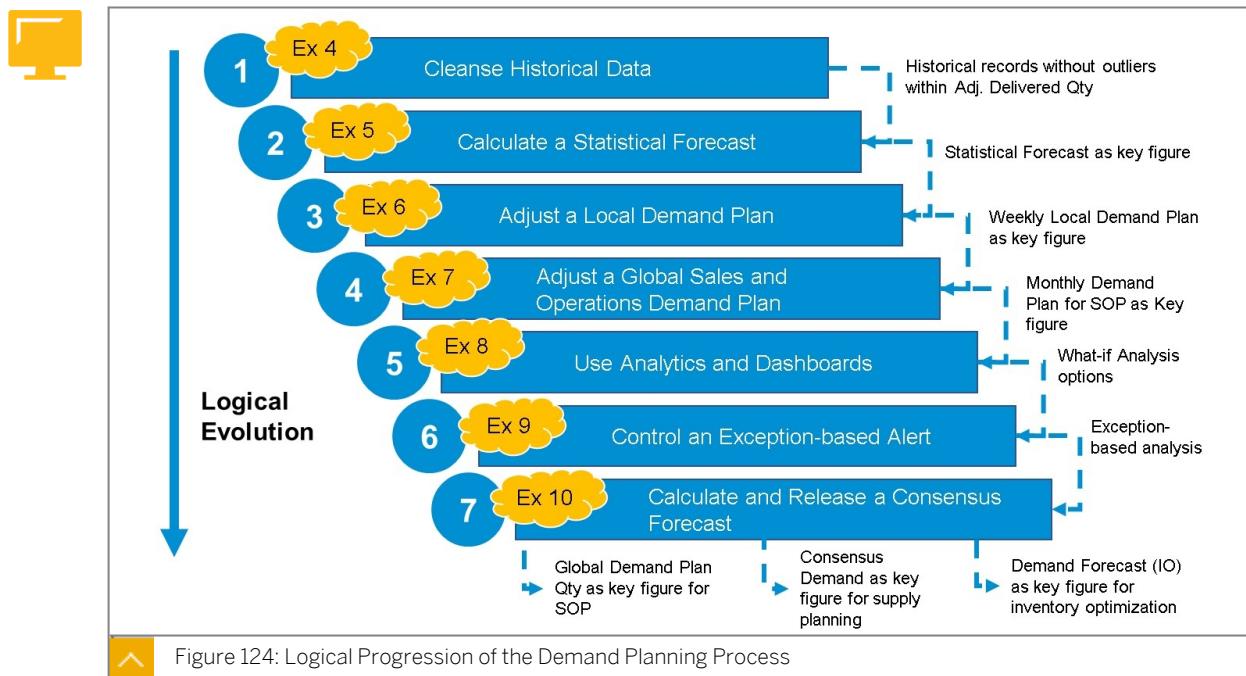


Figure 124: Logical Progression of the Demand Planning Process

Within the first step of the demand planning process and as part of the exercise 4, historical records will be cleaned to remove past promotions, outliers or extemporaneous events.

Within the exercise 5 and as the second step of this planning process, assuming that past events can be studied to recognize patterns for the long-, mid- and short-term, a statistical forecast model is used to create a prognosis for the future based on past cleaned historical records.

As next step, based on special information from sales and other functional areas, the statistical forecast is adjusted to match with the reality of the business. This local demand plan is adjusted and aggregated to be an input for higher planning levels, for instance, the global sales and operations demand plan, where all local demand plans are summed up to come to a regional or global demand plan.

To publish and to control this global plan, charts and pin boards are created to visualize real time data.

What is coming next? - What do we do if things don't go as planned? - We have to plan against exceptions and atypical occurrences. Therefore, within the exercise 9 (step 6) exception-based alerts are controlled to take proper correction actions.

As shown in the slide at the step 7, Demand Planning can be covered as stand-alone. However, This process can be integrated with other processes as well. For example, in this course demand planning triggers the next planning process as Inventory Planning and Optimization and Supply Planning. That is, demand plan values are saved as a consensus demand for supply planning. On the other hand, forecast values are delivered to Sales and Operations to make strategical and tactical decisions. Finally, considering a premise that all forecasts are wrong, a safety stock must be calculated to hedge against run out of stock optimizing costs and reaching target service levels.

Unit 4

Exercise 4

Cleanse Historical Data



Simulation: Cleanse Historical Data

For more information on *Cleanse Historical Data*, please view the simulation in the lesson *Cleansing Sales data for Statistical forecast* in your online course.

Business Example

To create forecasts for the future, you need data from the past, which usually means the sales history of a product from a certain time period. When the data is available, it can be checked for missing values to be updated and one-time or non-periodic incidents to be excluded. The Demand Planning Process Expert checks and corrects the history manually. During this exercise, you will assume the role of a Demand Planner who needs to correct the historical data.



Note:

In this exercise, when you see ##, replace the characters by your group number.

1. In the Excel UI, use the SAP template *DP 110 Historical Data Cleanse*. Ensure the *Delivery Qty Adjusted* key figure is ready to be used. Use the following data:

Attribute	Value
Product ID	IBP-FG1-##, IBP-FG2-##
Customer ID	10100001, 17100001, 18100001
Location ID	3710

2. Five weeks before today's date, change the figures in the *Delivered Qty Adj.* key figure to 500, for Product *IBP-FG1-##* and Customer *10100001*. Observe how it overwrites the value of *Delivered Qty Adjusted*.

Unit 4 Solution 4

Cleanse Historical Data



Simulation: Cleanse Historical Data

For more information on *Cleanse Historical Data*, please view the simulation in the lesson *Cleansing Sales data for Statistical forecast* in your online course.

Business Example

To create forecasts for the future, you need data from the past, which usually means the sales history of a product from a certain time period. When the data is available, it can be checked for missing values to be updated and one-time or non-periodic incidents to be excluded. The Demand Planning Process Expert checks and corrects the history manually. During this exercise, you will assume the role of a Demand Planner who needs to correct the historical data.



Note:

In this exercise, when you see ##, replace the characters by your group number.

1. In the Excel UI, use the SAP template *DP 110 Historical Data Cleanse*. Ensure the *Delivery Qty Adjusted* key figure is ready to be used. Use the following data:

Attribute	Value
Product ID	IBP-FG1-##, IBP-FG2-##
Customer ID	10100001, 17100001, 18100001
Location ID	3710

- a) Execute the Log-on in the WTS environment or via Live Access.



Note:

If you are in a SAP Classroom, you are already in a virtual environment

- b) Log on to the Excel UI using the log-on details provided by your instructor.
- c) Go to *New View → From Template*.
- d) Select *DP 110 Historical Data Cleanse*.
- e) Choose *Planning scope*.

- f) Choose your *Planning Unit-##*.
 - g) Confirm your Scenario is *Baseline* and the *Base Version* is selected.
 - h) Deselect all other Planning Units which do not match with your group number.
 - i) Choose *OK* to go back to *Create New Planning View from Template*.
 - j) Within the *Time* tab, confirm that the time period is *Week* and the horizon is 52 periods in the past, that is, 52 weeks in the past to the current week.
 - k) Within the *Attributes* tab, verify that *Product ID*, *Customer ID*, and *Location ID* are selected.
 - l) Within the *Key Figures* tab, verify that *Delivered Qty Adj.* and *Actuals Qty* are selected. There should be two Key Figures: *Actuals Qty* and *Delivered Qty Adj.*. In this way, the *Delivered Qty Adj.* key figure is ready to be used.
 - m) Verify that the Currency is *USD*.
 - n) Verify that the Unit of Measure is *EA*.
 - o) In the *Filter* tab, choose the *Product ID*, *Customer ID*, and *Location ID* attributes.
 - p) Select your specific combinations as provided in the table.
 - q) Select *Add Attribute* to add additional attributes.
 - r) To save the filter, choose *Add*.
 - s) A popup titled *Add Filter* will open.
 - t) Enter the name **cleaning ##**.
 - u) Choose *Add*.
 - v) To enter the view, choose *OK*.
 - w) (Optional) You can use + to filter the information displayed on the graph by given attributes on the worksheet.
2. Five weeks before today's date, change the figures in the *Delivered Qty Adj.* key figure to 500, for Product *IBP-FG1-##* and Customer *10100001*. Observe how it overwrites the value of *Delivered Qty Adjusted*.
- a) Five weeks before today's date, change the value in the *Delivered Qty Adj.* key figure to 500, for Product *IBP-FG1-##*, Customer *10100001* and Location *3710*. Choose *Enter*.



Note:

If the *Delivered Qty Adj* does not equal the *Actuals Qty* values in the other time buckets, remove the values in these fields. In case you do not see values there, delete the blank spaces (they are NULL spaces) as well. This will repopulate values within the *Actuals Qty* key figures after having simulated or having saved the data.

- b) In the *Data Input* group within the IBP Ribbon, choose *Save Data*.
- c) Select Reason Code *S&OP Demand Adj.*

- d) Enter your user name **Trainee ##** in the comments section.
- e) Choose Save.
- f) Select *Favorites* within the *Planning View* group.
- g) Choose Add
- h) Name your favorite as *DP110HistoricalDataCleanse##*
- i) Select Add.
- j) Close the *DP 110 Historical Data Cleanse* Planning View. When the Microsoft Excel popup opens, choose *Don't Save*.



Note:

The purpose of the *Delivered Qty Adj* Key Figure is to correct the *Actuals Qty* Key Figure and to remove one-time outliers. In configuration, the settings of the *Delivered Qty Adj* Key Figure are such that it defaults to the *Actuals Qty* Key Figure if there is no quantity in the *Delivered Qty Adj* Key Figure.

Unit 4 Exercise 5

Calculate a Statistical Forecast



Simulation: Calculate a Statistical Forecast

For more information on *Calculate a Statistical Forecast*, please view the simulation in the lesson *Cleansing Sales data for Statistical forecast* in your online course.

Business Example

The purpose of a statistical forecast is to create an estimate of future sales, based on historical patterns. The Single Exponential Smoothing algorithm is the subject of this exercise. Assuming that you are a Demand Planner you will run a statistical forecast model.



Note:

In this exercise, when you see ##, replace the characters with your group number.

1. In the Excel UI, create a favorite called *Statistical Forecast* using the SAP template *DP120 Statistical Forecast*.
2. Run the statistical model by choosing the preconfigured Single Exponential Smoothing profile, to populate the key figure *Statistical Forecast Qty*. Use the data in the table below.

Field	Value
Time period	Weekly
Planning Level	Product ID
Forecast model to be used	Single Exponential Smoothing
UoM to ID	EA
Filter	Product: IBP-FG1-##, IBP-FG2-##

3. Check the status of the job. When it is completed, view the results.

Unit 4 Solution 5

Calculate a Statistical Forecast



Simulation: Calculate a Statistical Forecast

For more information on *Calculate a Statistical Forecast*, please view the simulation in the lesson *Cleansing Sales data for Statistical forecast* in your online course.

Business Example

The purpose of a statistical forecast is to create an estimate of future sales, based on historical patterns. The Single Exponential Smoothing algorithm is the subject of this exercise. Assuming that you are a Demand Planner you will run a statistical forecast model.



Note:

In this exercise, when you see ##, replace the characters with your group number.

1. In the Excel UI, create a favorite called *Statistical Forecast* using the SAP template *DP120 Statistical Forecast*.
 - a) Working in the WTS or Live Access environment, log on to the Excel UI using the log-on details provided by your instructor.

Note:

If you are in a SAP Classroom, you are already in a virtual environment.
 - b) Go to New View → From Template.
 - c) Select *DP 120 Statistical Forecast*.
 - d) Choose *Planning scope* and choose your *Planning Unit ##*. Confirm your Scenario is *Baseline* and *Base Version* is selected. Choose OK.
 - e) Within the *Time* tab, confirm that the time period is *Week* and the horizon is 52 periods in the past and 52 weeks in the future, 104 periods in total.
 - f) Within the *Attributes* tab, add the *Product ID* attribute.
 - g) In the *Key Figures* tab, add the *Delivered Qty Adj* and *Statistical Fcst Qty* Key Figures. Remove all other key figures if needed.
 - h) Within the *Key Figures* tab, within the *Currency To ID* field, select *USD*. Within the *Unit of Measure To ID* field, select *EA (each)*.

- i) To filter your specific planning combinations, use the saved filter *Product ##* in the *Filter* tab.
- j) To enter the view, choose *OK*.
- k) Select *Delivered Qty Adj.* on the Planning View and then choose + next to *Series*.

**Note:**

Note that after having used the filters on the Planning View, the graph changes.

- l) On the worksheet, select the cells where the *IBP-FG1-##* and *IBP-FG2-##* are. Then choose + next to *Filter* on the worksheet.
 - m) In the IBP Ribbon, within the *Planning View* group, to save your Planning View as a favorite, choose *Favorites* → *Add*. Enter the Name **Trainee## Statistical Forecast**, and choose *Add*.
2. Run the statistical model by choosing the preconfigured Single Exponential Smoothing profile, to populate the key figure *Statistical Forecast Qty*. Use the data in the table below.
- | Field | Value |
|---------------------------|--|
| Time period | Weekly |
| Planning Level | Product ID |
| Forecast model to be used | Single Exponential Smoothing |
| UoM to ID | EA |
| Filter | Product: <i>IBP-FG1-##</i> , <i>IBP-FG2-##</i> |
- a) In the SAP IBP, add-in for Microsoft Excel, within the *Application Jobs* group, choose *Statistical Forecasting*.
 - b) In the *Run Statistical Forecast Once* dialog box, select the *Product ID* attribute. You may have to remove other attributes, under *Selected Attributes*.
 - c) For the *Time Period*, choose *Week*.
 - d) For the *Forecast Model to be used*, choose *Single Exponential Smoothing*.
 - e) For the *Unit of Measure to ID*, choose *EA*.
 - f) Confirm the *Base Version* is selected.
 - g) Choose the *Filter* tab and choose the saved filter *Product ##*.
 - h) Choose *Next*.
 - i) Select a *Reason Code*, *S&OP Demand adj.*, enter *Calculating a Statistical Forecast* as a comment, and choose *Run*.
 - j) An *SAP IBP: Information* popup will appear confirming that your job is scheduled; select *OK*.
3. Check the status of the job. When it is completed, view the results.

- a) In Microsoft Excel, in the IBP ribbon, on the *Application Jobs* group, in the *Statistical Forecasting* drop-down list accessed by selecting the down arrow next to *Statistical Forecasting*, choose *Status*.
- b) If needed, choose *Refresh* until the status shows *Finished*. When the status is *Finished*, close the dialog box.
- c) To update the values in the *Statistical Forecast Qty* Key Figure, in the *Data Input* screen area, choose *Refresh*.
- d) To view the results of the forecast in the *Statistical Fcst Qty* Key Figure, be sure to scroll to the right of the current period. This is because the forecast algorithm only forecasts future periods.
- e) Close the Planning View *Trainee## Statistical Forecast*. When the Microsoft Excel popup opens, choose *Don't Save* since you already have saved this Planning View as a favorite.



LESSON SUMMARY

You should now be able to:

- Cleanse sales history for a Statistical Forecast Calculation

Demand Planning Adjustments and Consensus



LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Adjust the demand plan

Demand Planning Adjustments



Demand planners and Sales planners have information that has not been incorporated into the statistical forecast. The statistical forecast needs to be adjusted to include this information. The adjustments could be due to special events, promotions, and so on. The following diagrams illustrate the information flow from one key figure to other as per SAP Best practices for SAP IBP for Supply Chain

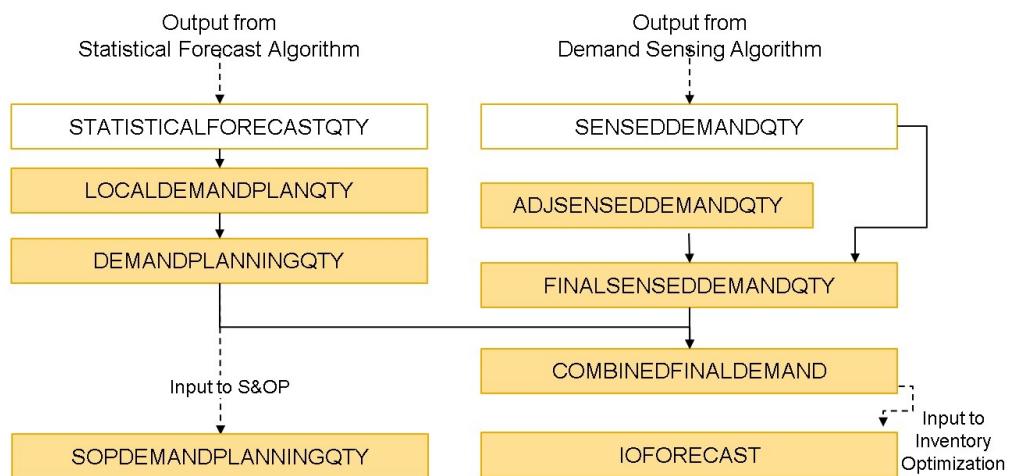
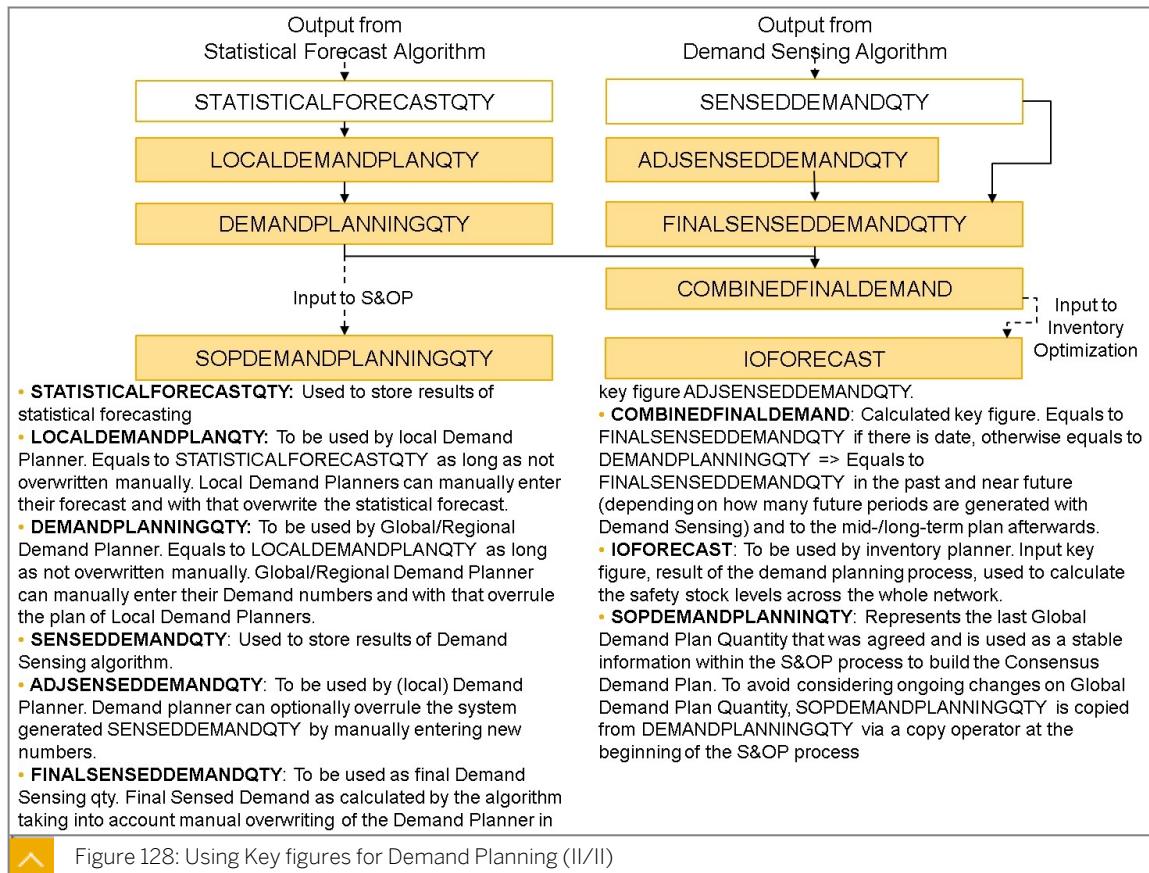
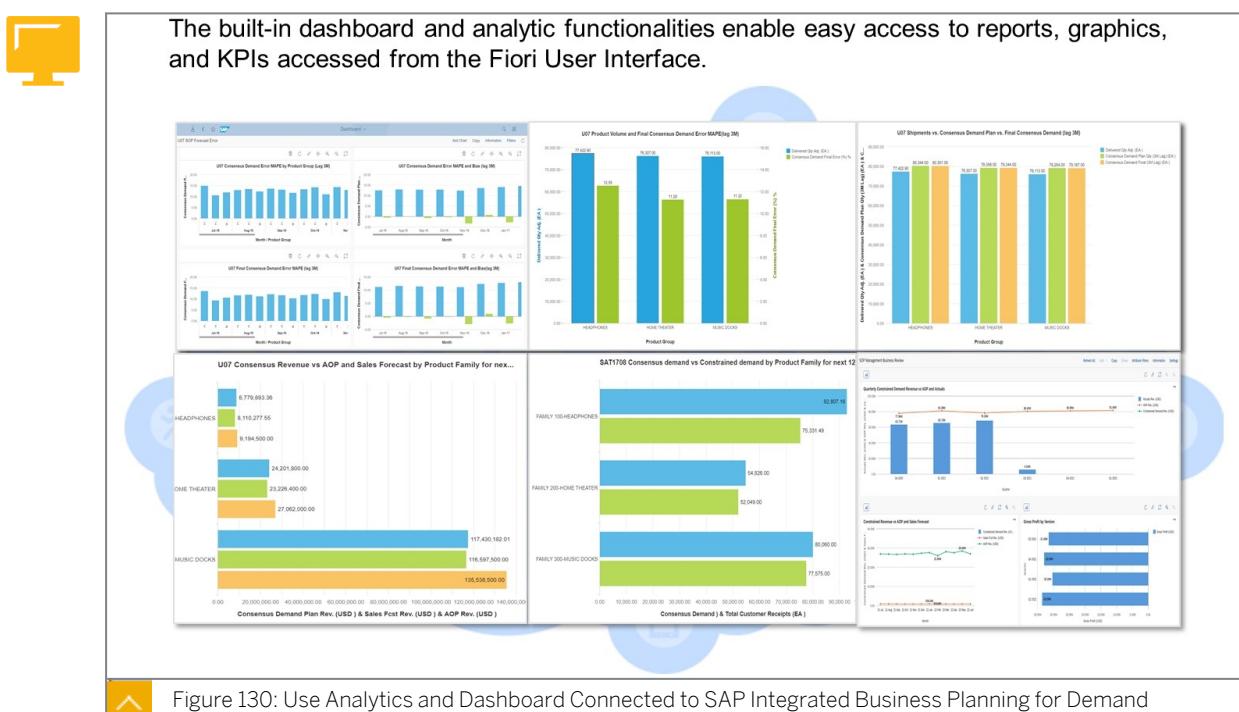
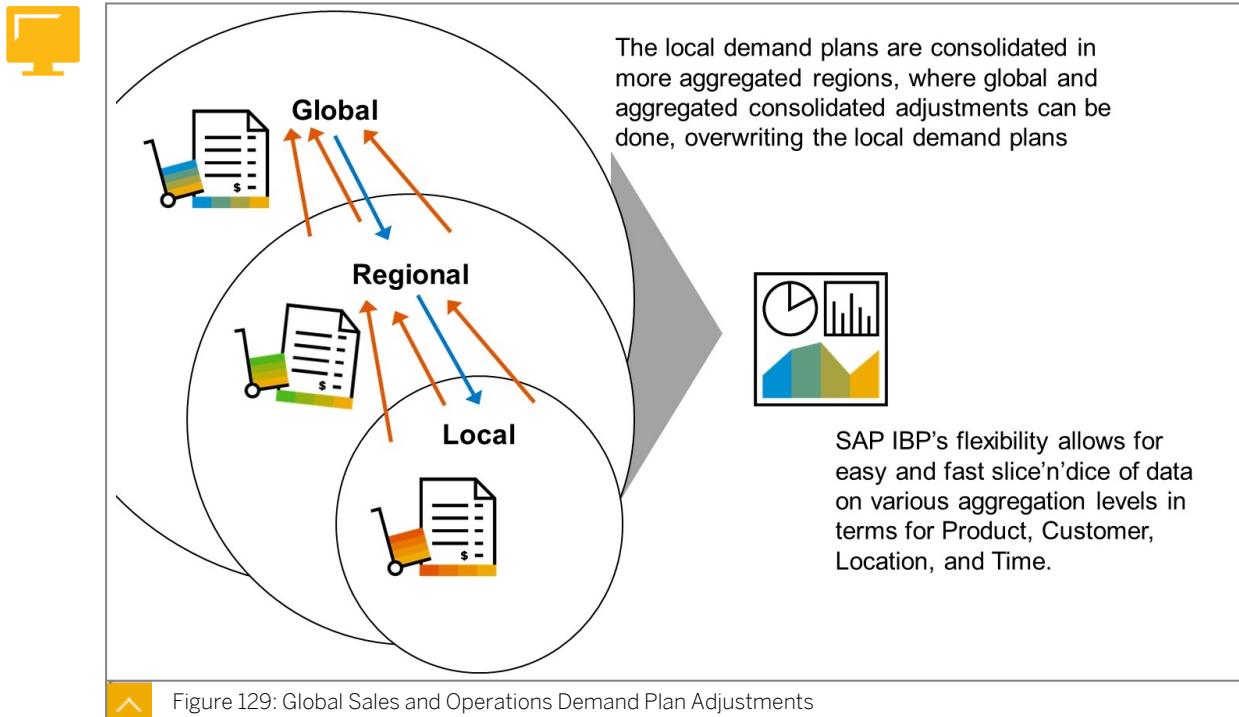


Figure 127: Demand Planning and its Business Flow (I/II)



Demand Planners and Sales Planners have information that has not been incorporated into the statistical forecast. The statistical forecast must be adjusted to include this information removing promotions and outliers. The adjustments can be due to a special event, promotions, and so on. The preconfigured Key Figures on the slide can be used as the definition recommends on the image. As in the slide, Key Figures can represent hierarchies, aggregating or disaggregating data from one Key Figure to other. The usage of the predefined Key Figures are broadly described on the SAP Best Practices for SAP Integrated Business Planning (IBP) site.





Create alert definitions and under which conditions (rules) they should be triggered.

The alert definition contains the metrics (key figures) that measure the impact of unexpected situations on your business.

You can create an alert for your own purposes, or you can share alert definitions with other users or roles.

You can perform the following tasks:

- Define alert rules
- Define alert metrics
- Select chart display options
- Share alert definitions with others users or roles

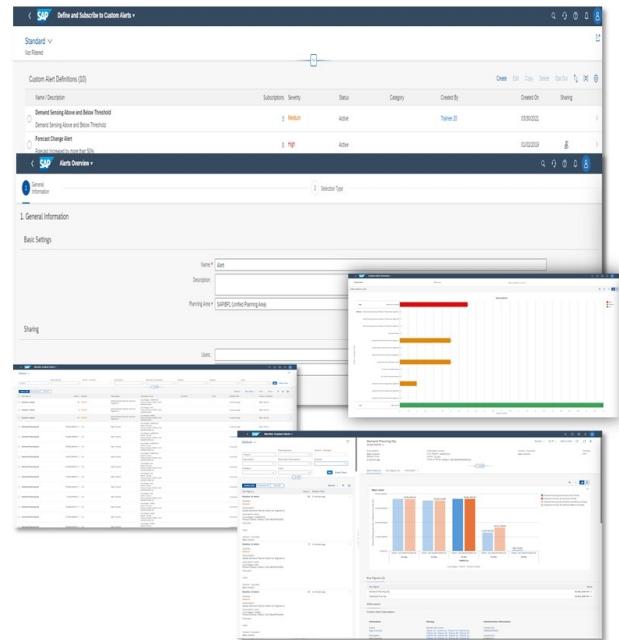


Figure 131: Alerts for Exception Based Planning

Exception-based Planning is possible based on predefined alerts. You can create alert definitions and the conditions why they should be triggered.

Review in Financial Figures



A strong aspect of SAP IBP running in the HANA database, is that calculations on, for example, financial figures are just as fast and reliable as any other unit of measures. No matter what level of aggregation we are reviewing, and what level the actual calculations needs to be done.

- Simulations can be done real-time directly from the Excel UI
- Price and cost figures can be loaded from SAP .csv files, or added manually
- Scenarios on price changes is fast and easy to calculate and share with other stakeholders

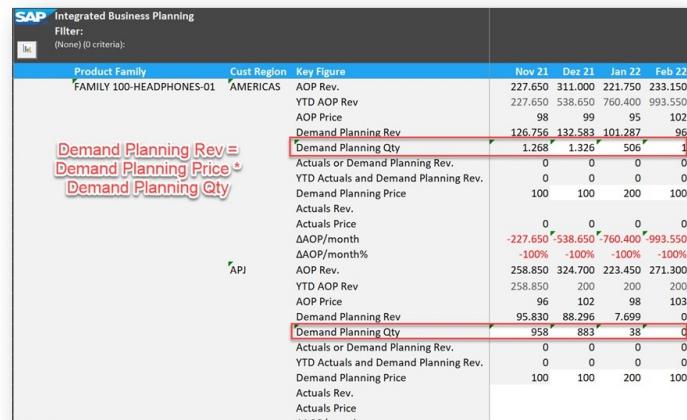


Figure 132: Financial Perspective

Calculating a Consensus Forecast



The key figures, *Statistical forecast*, *Local Demand Plan* and *Demand Planning Qty*. are calculated via the key figure calculation defined in the configuration, and are calculated real-time.

- This also means, that whenever a change has been done, it will cascade to the other key figures immediately
- This is not always desirable, since stability in the plan is a good thing, and we do not necessarily want to release all the changes immediately to supply planning every time small adjustments have been done

The Key figure *Demand Planning Qty*. are copied to the *Global Demand Plan Qty* key figure, when scheduled, and thus not immediately

- This is only done, when the demand plan is agreed upon, and consensus has been achieved

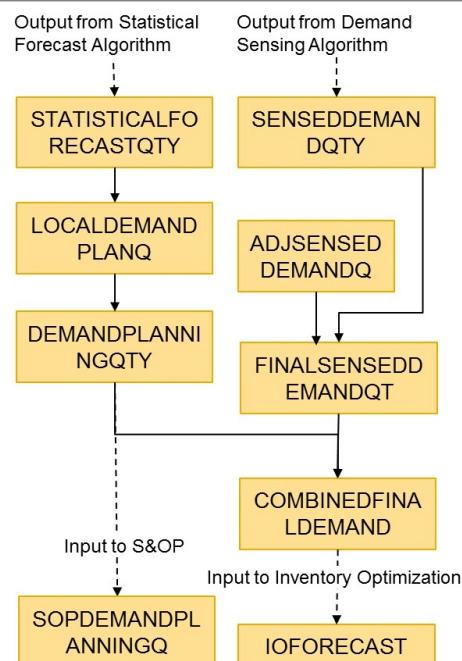


Figure 133: Consensus Forecast



The difference between the normal key figure calculation and the Copy Operator, has to do with timings of the releases

- The Copy operator can be triggered from the Excel UI and by scheduled jobs
- The copy jobs, can be run for specific scenarios and versions separately
- Additionally, the copy operator can be filtered, to only copy specific planning combinations

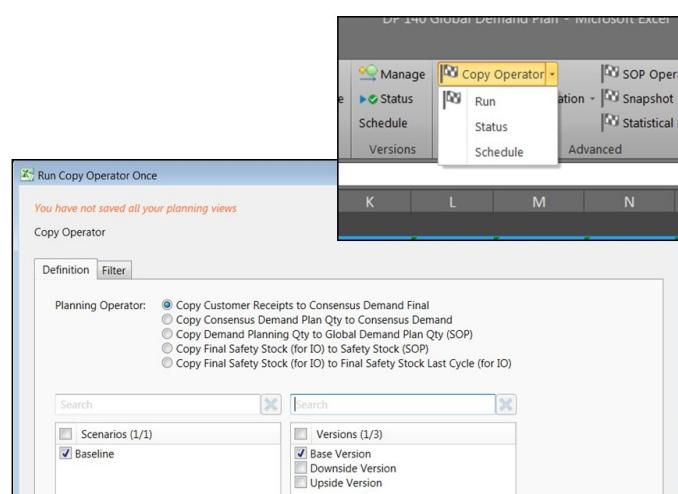


Figure 134: Publishing a Consensus Forecast

Unit 4 Exercise 6

Adjust a Local Demand Plan



Simulation: Adjust a Local Demand Plan

For more information on *Adjust a Local Demand Plan*, please view the simulation in the lesson *Demand Planning Adjustments and Consensus* in your online course.

Business Example

Demand Planners or Sales Planners have information that has not been incorporated into the statistical forecast. The statistical forecast needs to be adjusted. These adjustments can be due to special events, promotions, and so on. Within this exercise, these adjustments will be executed.



Note:

In this exercise, when you see ##, replace the characters by your group number.

Remember, if you are in a SAP Classroom, you are already in a virtual environment.

1. Create a Favorite called *Local Demand Plan* using the SAP template *DP 130 Local Demand Plan* and your Product ## filter.
2. For Product *IBP-FG1-##*, Customer *17100001*, Location *1710*, five weeks from today's date, change the value of the *Local Demand Plan* key figure to 400 and *Simulate* to see the result.

Unit 4 Solution 6

Adjust a Local Demand Plan



Simulation: Adjust a Local Demand Plan

For more information on *Adjust a Local Demand Plan*, please view the simulation in the lesson *Demand Planning Adjustments and Consensus* in your online course.

Business Example

Demand Planners or Sales Planners have information that has not been incorporated into the statistical forecast. The statistical forecast needs to be adjusted. These adjustments can be due to special events, promotions, and so on. Within this exercise, these adjustments will be executed.



Note:

In this exercise, when you see ##, replace the characters by your group number.

Remember, if you are in a SAP Classroom, you are already in a virtual environment.

1. Create a Favorite called *Local Demand Plan* using the SAP template *DP 130 Local Demand Plan* and your *Product ##* filter.
 - a) Working in the WTS or in Live Class environment; log on to the Excel UI using the log-on details provided by your instructor.
 - b) Go to *New View → From Template*.
 - c) Select *DP 130 Local Demand Plan*.
 - d) Choose *Planning scope* and choose your *Planning Unit ##*. Confirm that your Scenario is *Baseline* and the *Base Version* is selected.
 - e) Deselect all other Planning Units which do not match with your group number.
 - f) Choose the *Filter* tab and choose your saved filter *Product ##*.
 - g) To display your Planning View, choose *OK*.
 - h) Select *Product ID: IBP-FG1-##, Customer ID: 1700001* and *Location ID: 1710*.
 - i) Select + next to *Filter* in the worksheet to enable the graph.
 - j) To save the Planning View as *Local Demand Plan*, choose *Favorites → Add*.
 - k) Name the Favorite **Trainee## Local Demand Plan**.
 - l) Choose *Add*.

2. For Product *IBP-FG1-##*, Customer *17100001*, Location *1710*, five weeks from today's date, change the value of the *Local Demand Plan* key figure to *400* and *Simulate* to see the result.
 - a) For *Product ID: IBP-FG1-##, Customer ID: 17100001*, and *Location ID: 1710*, change the value five weeks in the future from now to *400* in the *Local Demand Plan Key Figure*.
 - b) Choose *Enter* and note that the color of the cell changes to blue to indicate that this value has been changed but not yet saved or simulated.



Note:

The *Demand Planning Qty Key Figure* must be blank before executing simulation to activate the calculation. If data is not saved – only simulated – we can go back to the starting point by refreshing the sheet.

- c) Before you simulate, remove all values of *Demand Planning Qty Key Figure* to populate values into this key figure.
- d) In the *Data Input* group in the ribbon, choose *Simulate* → *Simulate (Basic)*.
- e) Notice that the *Local Demand Plan* values are copied to *Demand Planning Qty*.
- f) In the *Data Input* group, choose *Save Data* and, in the dialog box, choose *S&OP Demand adj.* as the reason code and choose *Save*.
- g) Close the *DP 130 Local Demand Plan* Planning View. When the Microsoft Excel popup opens, choose *Don't Save* because you already have created a favorite out of this Planning View.

Unit 4

Exercise 7

Adjust a Global Sales and Operations Demand Plan



Simulation: Adjust a Global Sales and Operations Demand Plan

For more information on *Adjust a Global Sales and Operations Demand Plan*, please view the simulation in the lesson *Demand Planning Adjustments and Consensus* in your online course.

Business Example

When Demand Planners or Sales Planners hold information that has not been included into the statistical forecast, they need to be manually incorporated. These adjustments can be due to special events, promotions, and so on. During this exercise a planning view is created at monthly level; values are modified at weekly level; finally the effects of real-time aggregation and disaggregation are seeing through the planning view. In the course of these tasks you will assume the role of a Demand Planning expert executing these adjustments .



Note:

In this exercise, when you see ##, replace the characters with your group number.

1. Working in the properly virtual environment, in the Excel UI, use the SAP IBP Template *DP 140 Global Demand Plan*. Use the following data:

Field	Value
Attribute Product Family	FAMILY 100-HEADPHONES-XX
Filter Name	Prod Family ##
Favorite	Global Demand View

2. Verify that you are planning at more disaggregated level: Product Family/Customer Region/Weekly and that the *Demand Planning Qty* key figure is equal to the *Local Demand Plan* key figure.
3. For Product Family *FAMILY-100-HEADPHONES-##* and Customer Region *AMERICAS*, in the *Demand Planning Qty* key figure, change the value to **3000 EA** in the third week from now. Save it with Reason Code *S&OP Demand adj*. Note that this has not yet been released to the next key figure.

4. Update the favorite *Trainee ## Global Demand View* to verify financial figures in the *Revenues* tab. Simulate an increase in the price, resulting in an increased revenue. Save it with Reason Code *S&OP Pricing adj.*

Unit 4 Solution 7

Adjust a Global Sales and Operations Demand Plan



Simulation: Adjust a Global Sales and Operations Demand Plan

For more information on *Adjust a Global Sales and Operations Demand Plan*, please view the simulation in the lesson *Demand Planning Adjustments and Consensus* in your online course.

Business Example

When Demand Planners or Sales Planners hold information that has not been included into the statistical forecast, they need to be manually incorporated. These adjustments can be due to special events, promotions, and so on. During this exercise a planning view is created at monthly level; values are modified at weekly level; finally the effects of real-time aggregation and disaggregation are seeing through the planning view. In the course of these tasks you will assume the role of a Demand Planning expert executing these adjustments .



Note:

In this exercise, when you see ##, replace the characters with your group number.

1. Working in the properly virtual environment, in the Excel UI, use the SAP IBP Template *DP 140 Global Demand Plan*. Use the following data:

Field	Value
Attribute Product Family	FAMILY 100-HEADPHONES-XX
Filter Name	Prod Family ##
Favorite	Global Demand View

- a) In the virtual environment, log on to the Excel UI using the log-on details provided by your instructor.
- b) Go to *New View→ From Template*.
- c) Select *DP 140 Global Demand Plan*.
- d) Choose *Planning scope* and choose your *Planning Unit ##*. Confirm your scenario is *Baseline* and the *Base Version* is selected. Choose *OK*.

- e) Within the *Time* tab, change the time period to *Month* and make the horizon 12 months in the future from now.
 - f) Verify that the *Product Family* and *Cust Region* attributes are selected in the *Attributes* tab.
 - g) In the *Key Figures* tab, add the Key Figures: *Consensus Demand*, *Combined Final Demand*, *Global Demand Qty for SOP*, *Local Demand Plan* and *Demand Planning Qty*.
 - h) In the *Filter* tab, in the *Attribute* field drop-down list, choose *Product Family*.
 - i) Select the *Values* check-box and choose *FAMILY 100-HEADPHONES-##*.
 - j) Choose *Add* and name your filter **Prod Family ##**. Choose *Add*.
 - k) Choose *OK* to enter the Planning View.
 - l) To change the graph, choose + next to *Filter* to filter by *Product Family* and by *Cust Region*, selecting the cells where *FAMILY100-HEADPHONES-##* and *AMERICAS* are located.
 - m) In the *Planning View* screen area, choose *Favorites* → *Add*.
 - n) If you receive a warning message, choose *Yes*.
 - o) Name the favorite **Trainee## Global Demand View** and choose *Add*.
2. Verify that you are planning at more disaggregated level: Product Family/Customer Region/Weekly and that the *Demand Planning Qty* key figure is equal to the *Local Demand Plan* key figure.
- a) Verify that you are planning at more detailed level: Product Family/Customer Region/ Weekly.
 - b) To change the aggregated level, choose the option *Edit View*→ *Edit Planning View*.
 - c) Check in the *Time* and *Attributes* tabs whether time settings and selected attributes match with the planning level description: *Week*; *Product Family* and *Cust Region*.
 - d) Choose *OK* to enter the Planning View.
 - e) Verify that the *Demand Planning Qty* is equal to the *Local Demand Plan Qty* in each time bucket.



Note:

If the *Demand Planning Qty* Key Figure is not equal to the *Local Demand Plan*, remove the values from the *Demand Planning Qty* key figures and choose *Simulate* → *Simulate (Basic)*. If you see a Disclaimer, close it and continue. Note that values were populated.

3. For Product Family *FAMILY-100-HEADPHONES-##* and Customer Region *AMERICAS*, in the *Demand Planning Qty* key figure, change the value to **3000 EA** in the third week from now. Save it with Reason Code *S&OP Demand adj*. Note that this has not yet been released to the next key figure.

- a) For the Product Family **FAMILY100-HEADPHONES-##** and Customer Region **AMERICAS**, change a value to **3000 EA** in the *Demand Planning Qty.* key figure three weeks from now.
 - b) In the *Data Input* tab in the ribbon, choose *Save Data*.
 - c) From the drop-down list, choose the Reason Code **S&OP Demand adj.**, in the comment field, enter **Adjustments of demand for AMS Zone on Headphones** and choose *Save*.
 - d) Verify that the *Demand Planning Qty.* key figure is now different from the *Local Demand Plan Qty.* That means that a global input overwrites the local demand forecast.
 - e) Close the Planning View *Trainee ## Global Demand View*. When the Microsoft Excel popup opens, choose *Don't Save*.
4. Update the favorite *Trainee ## Global Demand View* to verify financial figures in the *Revenues* tab. Simulate an increase in the price, resulting in an increased revenue. Save it with Reason Code **S&OP Pricing adj.**
- a) Log into Microsoft Excel in the IBP Ribbon, and choose *Favorites* → *Trainee ## Global Demand View*. Switch to the *Revenues* tab.
 - b) Within the *Planning View* section of the ribbon, select *Planning View* → *Edit Planning View*. Choose *Planning scope* and confirm your *Planning Unit ##*. Confirm your *Scenario* is *Baseline* and the *Base Version* is selected. Choose *OK*.
 - c) Choose the *Time* tab and adjust the *From* field to the current month and the *To* field to 12 months in weeks (52 periods) into the future. Confirm the *Rolling* field is set to *Rolling*.
 - d) Choose *Key Figures* tab and add the *Demand Planning Price*.
 - e) Choose *OK*.
 - f) Filter on your specific planning combinations using the saved filter *Prod Family ##* using the option *Filter* in the *Planning View* group.



Note:
We now work with financial figures.

- g) Change the time level from *Month* to *Week* in the *Time* tab.
- h) To change the aggregated time level, choose the option *Edit View* → *Edit Planning View*.
- i) Select *Week*, and select *OK*, to enter the view.
If you see a warning message, read the information and select *OK*.
- j) On the worksheet verify that the *Demand Planning Rev.* key figure is calculated based on the *Demand Planning Qty.* multiplied by the *Demand Planning Price*.
- k) Now maintain the 120 price in every week in the *Demand Planning Price* key figure from the next month to the future for all periods and regions.
- l) In the *Data Input* tab in the ribbon, choose *Save Data*.

- m) From the drop-down list, choose the Reason Code S&OP Pricing adj., in the comment field, enter **Adjustments of Headphones price across all regions**, and choose Save.



Note:

Note that the *Demand Planning Revenue* key figure has changed. Note as well, that the value is not equal to the multiplication of Price by Quantity in each period, for instance, there are special prices for specific SKUs and these prices are not changeable in some countries for specific customers in this month.

Unit 4

Exercise 8

Use Analytics and Dashboards



Simulation: Use Analytics and Dashboards

For more information on *Use Analytics and Dashboards*, please view the simulation in the lesson *Demand Planning Adjustments and Consensus* in your online course.

Business Example

As Planner you need to control critical information daily. In this exercise a Demand Planner wants to control the *Demand Planning Qty* key figure using Analytics and Dashboards. The purpose of this exercise is to show how SAP IBP enables Analytics in the SAP Fiori UI.



Note:

In this exercise, when you see ##, replace the characters with your group number.

1. Create a line graph called ## Forecast Overview to view the *Demand Planning Qty* for each product in weeks, for the next 12 weeks.
2. Create a Dashboard called *DP Dashboard ##*, add your newly created Analytics chart, and save the dashboard.

Unit 4 Solution 8

Use Analytics and Dashboards



Simulation: Use Analytics and Dashboards

For more information on *Use Analytics and Dashboards*, please view the simulation in the lesson *Demand Planning Adjustments and Consensus* in your online course.

Business Example

As Planner you need to control critical information daily. In this exercise a Demand Planner wants to control the *Demand Planning Qty* key figure using Analytics and Dashboards. The purpose of this exercise is to show how SAP IBP enables Analytics in the SAP Fiori UI.



Note:

In this exercise, when you see ##, replace the characters with your group number.

1. Create a line graph called ## Forecast Overview to view the *Demand Planning Qty* for each product in weeks, for the next 12 weeks.
 - a) Working in the properly virtual environment, log on to the SAP Fiori UI in the web-browser with the log-on details provided by your instructor.
 - b) In the *My Home* screen area, choose the *Analytics Advanced* tile.



Note:

If you did not save the move to the *My Home* screen area in Exercise 1 then the tile will be under *General Planner*.

- c) In the upper right-hand side, in the toolbar, choose *Create → Analytics Chart*.
- d) For the name and the description, enter **## Forecast Overview**.
- e) If the Planning area *SAP/BP1* was not selected by default, select the drop-down next to the *Planning Area* field.
- f) Delete the current Planning area from the field and choose *SAP/BP1* from the list.
- g) In the dialog box, choose *OK*.
- h) Under *Key Figures*, choose the *Demand Planning Qty* key figure and choose *Select*.

- i) Group by: Week and Product ID. Use the *find functionality* to find the Week and Product ID.
 - j) Group by as Series and select Product ID by utilizing the drop-down.
 - k) Select USD in the *Currency To ID* field.
 - l) Select EA in the *Unit of Measure To ID* field.
 - m) For *Graph type*, choose *Line* (under *Trend*).
 - n) Choose *Auto-Refresh On*. If a warning appears choose *OK*.
 - o) On the top, in the *Planning Filter* field, from the drop-down list, select *Product Family ##* and choose *OK*.
 - p) Open the *Time Periods* field and in the *Time Period* field, select *Week*.
 - q) In the Selection Mode select *Week Range*.
 - r) In the *From/To* field, select the current week and the next 12 weeks and choose *OK*.
If you receive a warning, select *OK*.
 - s) In the lower right-hand screen area, choose *Save*.
 - t) To return to the SAP Fiori launchpad, choose *Analytics Details → Home*.
2. Create a Dashboard called *DP Dashboard ##*, add your newly created Analytics chart, and save the dashboard.
 - a) On the SAP Fiori home page, choose the *Dashboard Advanced* tile. Use the search feature in the upper right-hand corner to find the tile.
 - b) In the upper right-hand screen area, choose *New*.
 - c) For the name and description, enter **DP Dashboard ##**, select it as a favorite and choose *Save*.
 - d) In the upper right-hand screen area, choose *Add → Analytics Charts*. Select your *## Forecast Overview* chart from the list and choose *Add Chart*.
 - e) Select the chart, then select the *Resize Chart* from the ellipsis (the three points on the upper right-hand corner of the chart). Change the size to three columns across and one row down. Choose *Resize*.
 - f) As the dashboard is automatically saved, choose *Dashboard → Home*.

Unit 4

Exercise 9

Control an Exception-Based Alert



Simulation: Control an Exception-Based Alert

For more information on *Control an Exception-Based Alert*, please view the simulation in the lesson *Demand Planning Adjustments and Consensus* in your online course.

Business Example

As Supply Chain Planner, you would like to control exceptions identifying them through automatic alerts based on rules. The purpose of this exercise is to illustrate that SAP Integrated Business Planning enables exception-based management. An alert can be triggered only if an exception rule is activated. During this exercise an alert is ready to be used to control certain condition. You will assume the role a Supply Chain Planner using this alert.



Note:

In this exercise, when you see ##, replace the characters by your group number.

In this exercise an Alert looks for *Demand Planning Qty* values greater than 2900 in a monthly bucket over the next seven months, according to *Static Rules* defined in the Settings of the Alert.

1. Navigate to the SAP Fiori UI and verify that an alert is present directly on the Monitor Custom Alerts app. It is under the *Alerts* header or you can find it using the search function in the upper right-hand corner.
2. Enter the *Monitor Custom Alert* app and then verify that the alert relates to the same period as the one you increased to 3000 EA in the *Demand Planning Quantity* key figure in the *Adjust a Global SOP Demand Plan* exercise. (Alerts will be generated for all Demand Planning Quantities greater than 2900, according to the *Static Rules* defined in the Settings of the Alert.)
3. Navigate from the Alert monitor to MS Excel.

Control an Exception-Based Alert



Simulation: Control an Exception-Based Alert

For more information on *Control an Exception-Based Alert*, please view the simulation in the lesson *Demand Planning Adjustments and Consensus* in your online course.

Business Example

As Supply Chain Planner, you would like to control exceptions identifying them through automatic alerts based on rules. The purpose of this exercise is to illustrate that SAP Integrated Business Planning enables exception-based management. An alert can be triggered only if an exception rule is activated. During this exercise an alert is ready to be used to control certain condition. You will assume the role a Supply Chain Planner using this alert.



Note:

In this exercise, when you see ##, replace the characters by your group number.

In this exercise an Alert looks for *Demand Planning Qty* values greater than 2900 in a monthly bucket over the next seven months, according to *Static Rules* defined in the Settings of the Alert.

1. Navigate to the SAP Fiori UI and verify that an alert is present directly on the Monitor Custom Alerts app. It is under the *Alerts* header or you can find it using the search function in the upper right-hand corner.
 - a) Working in the properly virtual environment, log on to the SAP Fiori UI using the log-on details provided by your instructor.
 - b) Verify that there is at least one alert directly in the *Monitor Custom Alert* app. If you do not see any Alert in the app, either choose *Refresh → All*, or *Go*.
2. Enter the *Monitor Custom Alert* app and then verify that the alert relates to the same period as the one you increased to 3000 EA in the *Demand Planning Quantity* key figure in the *Adjust a Global SOP Demand Plan* exercise. (Alerts will be generated for all Demand Planning Quantities greater than 2900, according to the *Static Rules* defined in the Settings of the Alert.)
 - a) Enter the *Monitor Custom Alert* app. Look for the *FAMILY 100-HEADPHONES-##* product family.
 - b) Select the alert and display the data in graph and table form.
 - c) Stay in this view for the next step.
3. Navigate from the Alert monitor to MS Excel.

- a) Select Go to in the *Monitor Custom Alert* app. Then choose *Excel*.



Note:

- If you see an Alert.csv file downloaded at the bottom of the screen, open the file
- If you are still in the alert Graph and Table display, *Go To → Excel* will open the excel interface.

- b) If not automatically logged on, log on manually.
- c) Observe the data displayed.
- d) Change the time level from month to week to see changes applied in previous exercises.
- e) Optionally, you can also jump into the Web-based Planning Application and verify changes aggregated at weekly level. Change the Planning View settings if needed.
- f) Close the Planning View without saving it.

Unit 4

Exercise 10

Calculate and Release a Consensus Forecast



Simulation: Calculate and Release a Consensus Forecast

For more information on *Calculate and Release a Consensus Forecast*, please view the simulation in the lesson *Demand Planning Adjustments and Consensus* in your online course.

Business Example

When a forecast has been approved, the next step is to copy the value into the *Consensus Demand* key figure. This key figure is used for other Planning purposes, such as Sales and Operations Planning. During the exercise you will copy values of one key figure to another using the copy operator.



Note:

In this exercise, when you see ##, replace the characters by your group number.

1. Working in the properly virtual environment, in the Excel UI, use your *Trainee ## Global Demand View* favorite.
2. Run the Copy Operator for the *Copy Demand Planning Qty to Global Demand Plan Qty (SOP)-TW* key figure, which is used for S&OP planning.
3. Run the Copy Operator for the *Consensus Demand Plan Qty to Consensus Demand* key figure, which is used for Supply Planning.
4. Run the Copy Operator for the *Combined Final Demand to Demand Forecast (IO) - TW* key figure, which is used for Supply Planning.

Unit 4 Solution 10

Calculate and Release a Consensus Forecast



Simulation: Calculate and Release a Consensus Forecast

For more information on *Calculate and Release a Consensus Forecast*, please view the simulation in the lesson *Demand Planning Adjustments and Consensus* in your online course.

Business Example

When a forecast has been approved, the next step is to copy the value into the *Consensus Demand* key figure. This key figure is used for other Planning purposes, such as Sales and Operations Planning. During the exercise you will copy values of one key figure to another using the copy operator.



Note:

In this exercise, when you see ##, replace the characters by your group number.

1. Working in the properly virtual environment, in the Excel UI, use your *Trainee ## Global Demand View* favorite.
 - a) In the *Planning View* screen area, choose *Favorites* → *Trainee ## Global Demand View*.
2. Run the Copy Operator for the *Copy Demand Planning Qty to Global Demand Plan Qty (SOP)-TW* key figure, which is used for S&OP planning.
 - a) In the SAP IBP, add-in for Microsoft Excel, in the *Applications Jobs* tab, choose *Copy Operator* → *Run*. This is required if you choose the drop-down arrow. If you choose *Copy Operator*, you do not need the *Run* step.
 - b) Choose the *Copy Demand Planning Qty to Global Demand Plan Qty (SOP)-TW* Planning Operator. Scenarios should default to *Baseline* and *Base Version* and both should be checked.
 - c) Choose the *Filter* tab and choose the saved filter *Product ##*.
 - d) Choose *Next* and choose *Run*. You do not need to enter a reason code.
 - e) An IBP Information message displays stating the job was scheduled successfully. Choose *OK*.
 - f) To display the status, in the IBP ribbon, navigate to the *Applications Jobs* tab and choose *Copy operator*, choose the drop-down arrow and choose *Status*. Wait for completion. Choose *Refresh* until the status is set to *Finished*, then close the *Status* screen.

- g) In the *Data input* ribbon, refresh the view and verify that the values from *Demand Planning Qty* has been copied to the *Global Demand Plan Qty* for SOP key figure.
3. Run the Copy Operator for the *Consensus Demand Plan Qty* to *Consensus Demand* key figure, which is used for Supply Planning.
- In the SAP IBP, add-in for Microsoft Excel, in the *Applications Jobs* tab, choose *Copy Operator* → *Run*. Note, this is required if you choose the drop-down arrow. If you choose *Copy Operator*, you do not need the *Run* step.
 - Choose the *Copy Consensus Demand Plan Qty* to *Consensus Demand* Planning Operator. Scenarios should default to *Baseline* and *Base Version* and both should be checked.
 - Choose the *Filter* tab and choose the saved filter *Product ##*.
 - Choose *Next* and choose *Run*. You do not need to enter a reason code.
 - An IBP Information message displays stating the job was scheduled successfully. Choose *OK*.
 - To display the status, in the Excel ribbon, navigate to *Applications Jobs* tab and choose *Copy operator*, choose the drop-down arrow and select *Status*. Wait for completion. Choose *Refresh* until the status is set to *Finished*, then close the *Status* screen.
 - In the *Data Input* ribbon, refresh the view and verify that the values from *Demand Planning Qty* have been copied to the *Consensus Demand* key figure.



Note:

Note that the *Consensus Demand* key figure is aggregated at *Product ID* and *Customer ID* levels, while the *Consensus Demand Plan Qty* key figure is aggregated at *Production ID*, *Customer ID* and *Location ID* level. Therefore, according to rules of aggregation defined in the configuration, a key figure is aggregated into another as we see it in this exercise. If you want to display the results of having run the Copy Operator *Consensus Demand Plan Qty* to *Consensus Demand* you can edit the Planning levels (attributes) in the Planning View and add the *Consensus Demand Plan Qty* key figure to the Planning View.

4. Run the Copy Operator for the *Combined Final Demand* to *Demand Forecast (IO)* - *TW* key figure, which is used for Supply Planning.
- In the SAP IBP, add-in for Microsoft Excel, in the *Applications Jobstab*, choose *Copy Operator* → *Run*. Note, this is required if you choose the drop-down arrow. If you choose *Copy Operator*, you do not need the *Run* step.
 - Choose the *Copy Combined Final Demand* to *Demand Forecast (IO)* - *TW* Planning Operator. Scenarios should default *Baseline* and *Base Version* both checked.
 - Choose the *Filter* tab and choose the saved filter *Product ##*.
 - Choose *Next* and choose *Run*. You do not need to enter a reason code.
 - An IBP Information message stating the job was scheduled successfully, choose *OK*.

- f) To display the status, in the IBP ribbon, navigate to *Applications Jobs* tab and choose *Copy operator*, choose the drop-down arrow and select *Status*. Wait for completion. Choose *Refresh* until the status is set to *Finished*, then close the *Status* screen. Note that the *Demand Forecast* key figure (also called *Demand Forecast (IO) - TW*) aggregated at *Product ID; Location ID* and *Customer Group*, is used as Input for Inventory Optimization Processes. Results of Step 4 in this exercise, set up the next exercise *Validate Data Inputs*.



LESSON SUMMARY

You should now be able to:

- Adjust the demand plan

Introduction to Demand Sensing



LESSON OBJECTIVES

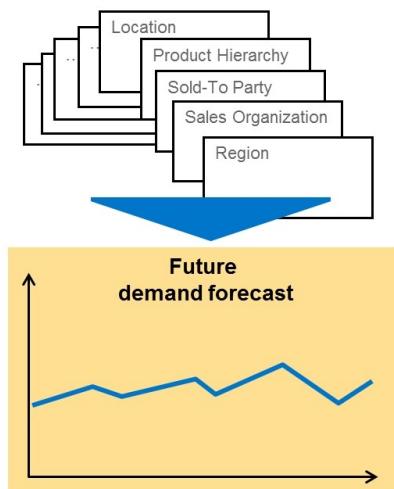
After completing this lesson, you will be able to:

- Highlight Demand Sensing Functionalities

Introduction to Demand Sensing



Demand Sensing helps you to sense your daily demand for a short term horizon such as 4-8 weeks. It is usually run weekly or daily (sometimes even sub-daily) to always incorporate the latest demand drivers such as new sales orders.



- Based on a more accurate, and a larger number of input factors, demand sensing can reach a much better forecast accuracy in the short term horizon, than the traditional demand plan.
- The more accurate sensed demand plan is, the better it can then be used to react to shifted priorities that are predicted for the near future already a little ahead of time to ensure constant, good customer service levels, minimize stock-outs and to avoid costly firedrills.

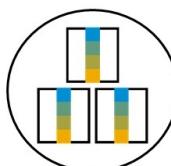


Figure 140: Definition of Demand Sensing

Key Learning Points and Benefits for a Supply Chain Planner



			
Improved short term forecast accuracy	Improved forecast bias	Improved safety stock calculations (if run in combination with IBP for inventory)	Improved visibility for required deployment changes, which leads to reduced stock out scenarios

Example 1: Learn about shipment patterns throughout the weeks and adapt your stock requirement level based on this information.

Example 2: Planned promotions often impact sales earlier than their planned periods. Demand Sensing can pick up such pattern and revise the short term forecast. As a result, the deployment plan will be able to stock for promotions earlier than their planned start date.

 Figure 141: Benefits and Examples



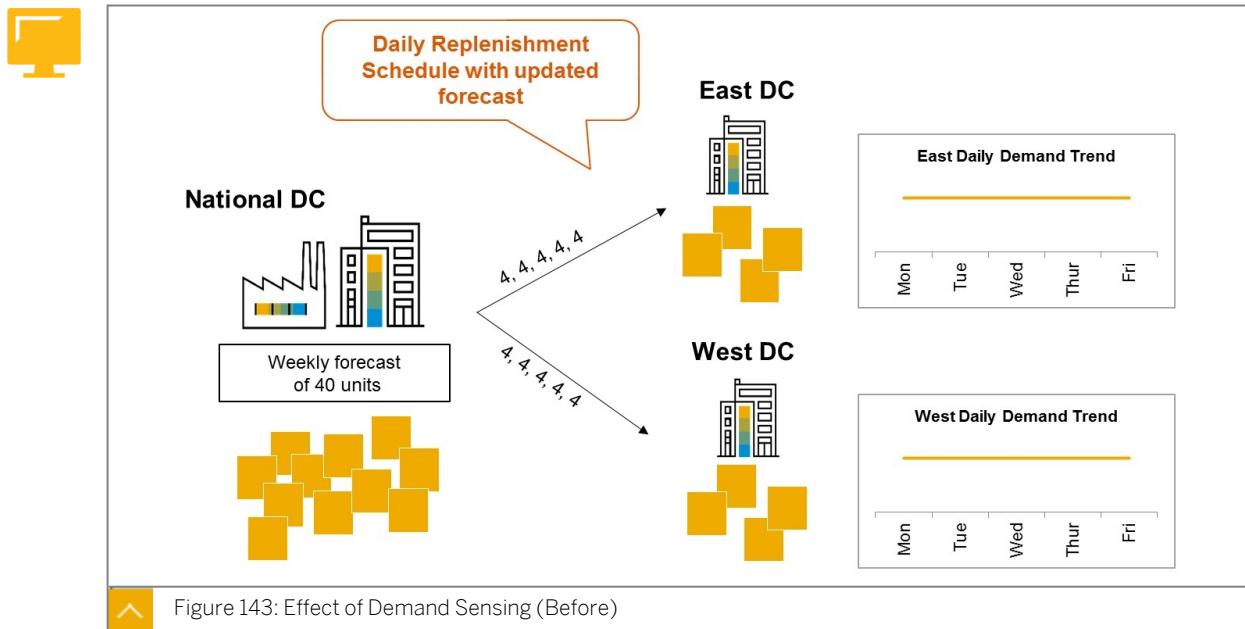


Basically every company that wants to achieve a more accurate short term demand plan can benefit from Demand Sensing. The use cases are wide spread.

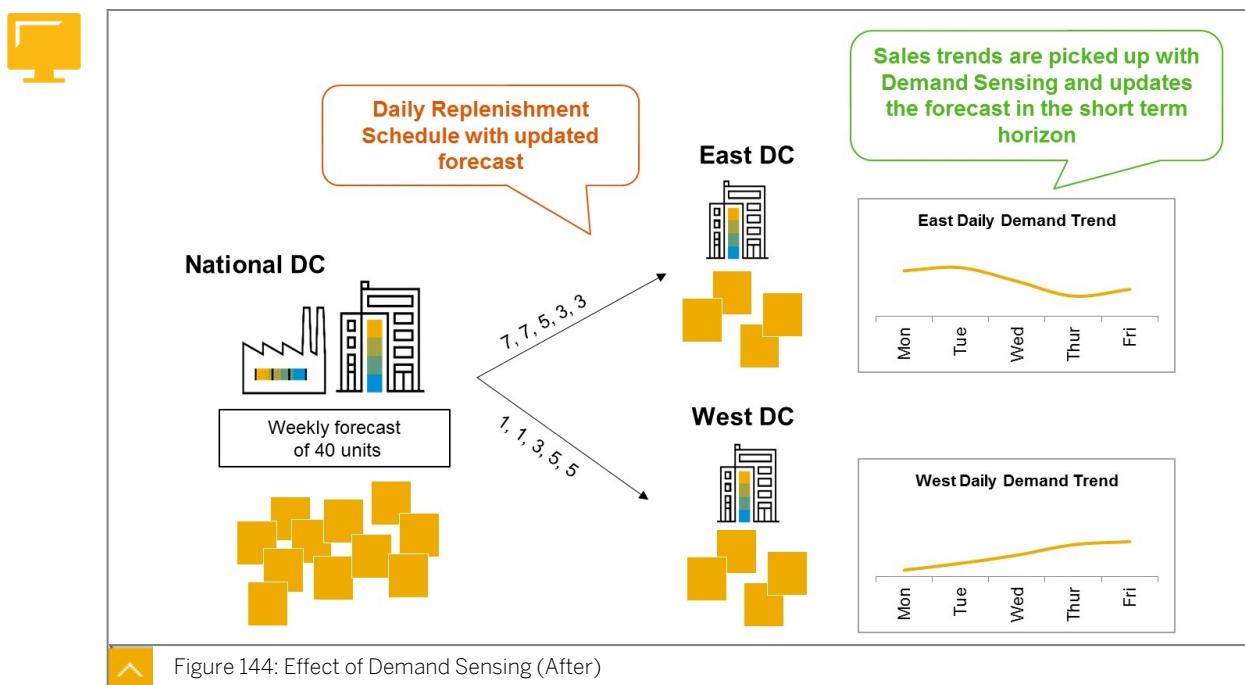
For example, Demand Sensing could benefit companies in the following scenarios:

- **The company struggles with volatile markets and demand shifts,** for example, Manufacturers of Consumer Products or Consumer Electronics
- The company receives **orders** from their customers and want to include them into the short term planning horizon.
- **The company has already applied demand driven business strategies** but want to further improve, for example, flexible and complex deployment planning
- The company is capable of **adjusting their production plan within a short term horizon** and want to further improve on this aspect
- The company is capable of **adjusting their transport plan within a short term horizon** and want to further improve on this aspect
- The company wants to **close the gap between a monthly demand planning cycle and daily or weekly demand requirements** for the short term horizon

 Figure 142: Key Beneficiary of a Sensed Demand Plan



Without demand sensing, the shipment quantities from national to local distribution centers may look like this - constant supply of four units each week.



Demand Sensing detects changes on the demand signal within the short-term and it adjusts replenishment accordingly. Short-term changes could be due to many reasons, such as unexpected increased customer demand.

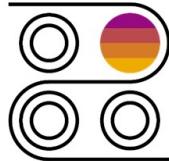


Illustration of the different planning horizons

Inventory Optimization



Deployment and transportation decisions



Production and packaging sequences



Material purchasing

Today

Short Term Planning Horizon

Figure 145: Planning Processes Impacted by Demand Sensing. Illustration of the Different Planning Horizons

Based on the different Planning horizons, the following cases need to be considered:

- Demand Sensing creates a short-term demand plan. The reaction to this plan is not part of the SAP IBP solution but is highly dependent on your industry, production boundaries, business strategy, and overall possibility to react in the short-term, as follows:
 - Adjust deployment or transportation decisions.
 - Decide on stock transfers (redistribution) from one Distribution Center (DC) to another for the finished goods in case you see short term regional shifts in demand.
 - Change your production sequence (if possible) in case you see high demand for specific products.
- In the wholesale/distribution business, material purchasing could also play a role when it comes to demand sensing, as follows:
 - Rework your purchases from external and internal suppliers to procure material easily.



- Demand Sensing does not replace the typical demand planning process or the statistical forecasting as companies still need mid-long term demand plan for tactical and strategic purposes. Instead, demand sensing uses the mid-long term Demand Plan as a key input factor and improves it in the short term horizon.
- Demand Sensing adjusts the mid-to long-term forecast based on certain patterns, brings additional demand signals into consideration, and break it down to the daily level.

	Statistical Forecasting	Demand Sensing
Basic Principle	Forecasting	Pattern Recognition
Planning Horizons	Computes a demand plan for the mid- to long term horizon (usually up to 1-2 years)	Computes a demand plan for the short term horizon (usually 6 weeks)
Demand Planning Cycles	Monthly or quarterly cycles. Sometimes weekly	Weekly and daily cycles
Historic Data Usage	Seasonalities and trends over a longer term horizon (for example, 2 years) are picked up.	Short term patterns over the last year. Seasonalities and trends are taken over from the consensus forecast

Figure 146: Demand Sensing and Classical Statistical Forecasting

Demand Sensing – Properties and Algorithms

Compared to classical statistical forecasting, Demand Sensing has the following properties:

- The demand sensing algorithm is primarily used for demand forecasts for a shorter period such as four to eight weeks, based on the consensus demand and the most recent demand signals retrieved from the ERP system, for example, the quantity in open sales orders. Typically, demand sensing is executed for multiple products in the background and results in automatic adjustment of the short-term demand.
- Two types of Demand Sensing algorithms exist:
 1. Demand Sensing (Full)
 2. Demand Sensing (Update)
- Demand sensing is typically run daily. It is executed at product-location-customer level, and the sensed demand is created at the daily time granularity for the time horizon defined in the forecast model.
- Since the optimization processes can take some time and the optimized weights do not change much from one day to the next within a week, it is recommended to set the system to run the demand sensing (full) algorithm weekly and the demand sensing (update) on a daily basis.



LESSON SUMMARY

You should now be able to:

- Highlight Demand Sensing Functionalities

Learning Assessment

1. Which of the following options are top business challenges faced by Supply Chains?

Choose the correct answers.

- A High market volatility
- B Poor forecast accuracy
- C Increasing variation in demand
- D Identifying increasing and decreasing customer demand

2. Which one of the following options tries to make these forecasts more accurate in the short-term horizon?

Choose the correct answer.

- A Demand sensing
- B Long-term forecasting
- C Mid-term forecasting
- D Multiple Linear Regression

3. Which of the following tasks can be performed in alerts for exception based Planning in SAP IBP?

Choose the correct answers.

- A Define alert rules
- B Define alert metrics
- C Select chart display options
- D Integrate chart in MS Excel

4. Which of the following are key learning points and benefits for a Supply Chain Planner using Demand Sensing?

Choose the correct answers.

- A Improved short term forecast accuracy
- B An improved forecast bias
- C Improved safety stock calculations
- D Improved visibility for required deployment changes

UNIT 5

Inventory Planning and Optimization

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UNIT OBJECTIVES

- Position Inventory Planning and Optimization within SAP IBP
- Address Inventory Planning and Optimization challenges using SAP IBP for Inventory
- Highlight critical factors within Inventory Planning and Optimization
- Validate Data Inputs
- Use SAP IBP to optimize target service level

Unit 5

Lesson 1

Introduction to Inventory Planning and Optimization



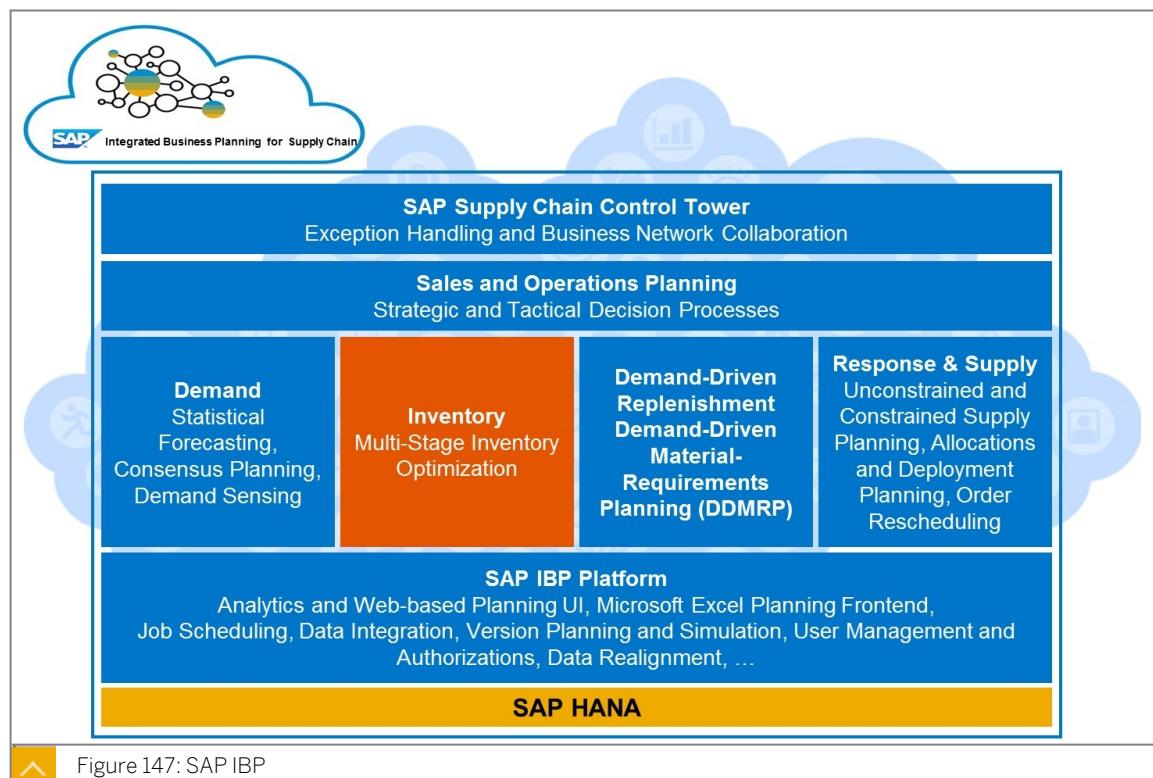
LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Position Inventory Planning and Optimization within SAP IBP

Inventory Planning and Optimization

In this unit we address Inventory Planning and Optimization as vital components of SAP IBP.



Inventory Planning and Optimization are critical parts of any supply chain. It will help put inventory where it is needed, optimize service level, reduce inventory holding costs, avoid stock out situations, and provide valuable input to a supply plan as a whole.

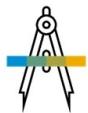
**Note:**

Some functionalities explained on this chapter might require additional licenses.
 The following link provides an overview of the available licenses for SAP IBP: [SAP Help → SAP Integrated Business Planning for Supply Chain → Applications and Features of SAP Integrated Business Planning for Supply Chain. → SAP IBP for Inventory](#)

Introduction to SAP Integrated Business Planning for Inventory



Management of your inventory with focus on transparency, Net Working Capital, and variability with SAP Integrated Business Planning for inventory



Inventory Optimization is the science of calculating inventory targets to:

- Meet desired service level agreements
- At lowest possible cost
- Across the supply chain



Figure 148: Introduction to SAP Integrated Business Planning for Inventory

SAP Integrated Business Planning for inventory considers the following parameters to generate an optimal safety stock recommendation:

- Demand variability, forecast error, and supply uncertainties
- Relative costs, timing, and inter-relationships across the supply chain
- Interdependency of inventory across warehouses and other important critical factors in inventory target setting



LESSON SUMMARY

You should now be able to:

- Position Inventory Planning and Optimization within SAP IBP

The Inventory Dilemma

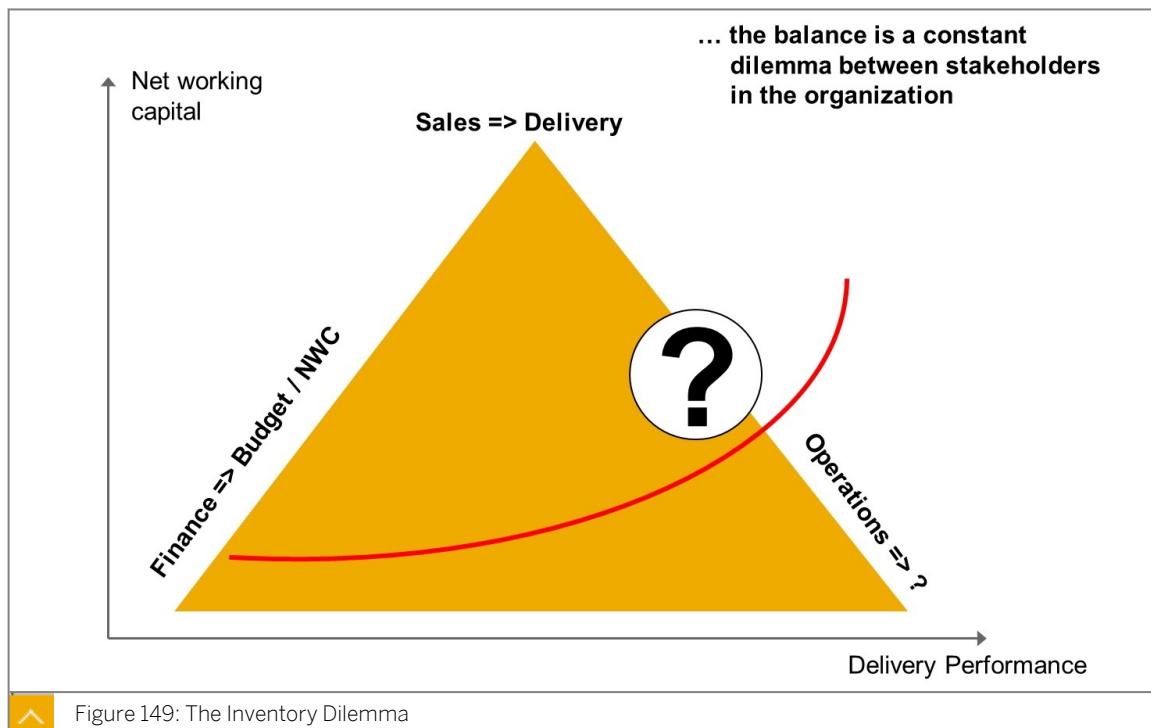


LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Address Inventory Planning and Optimization challenges using SAP IBP for Inventory

The Inventory Dilemma



Inventory Optimization

Inventory Optimization is striking a balance between the service levels an organization provides its customers, inventory levels and inventory holding costs. If service levels are high, the probability of a stock-out should be low, therefore more inventory should be held at a location. This may cause high inventory holding costs. Inventory Optimization is striking an optimal balance between all these variables.

The general problem we are dealing with is actually pretty simple. Reality is not consistent. Reality means we're dealing with variability.

But how can we model that?

Not to oversimplify, but you can only properly explore three alternatives for handling "reality" - meaning the constantly changing face of business.

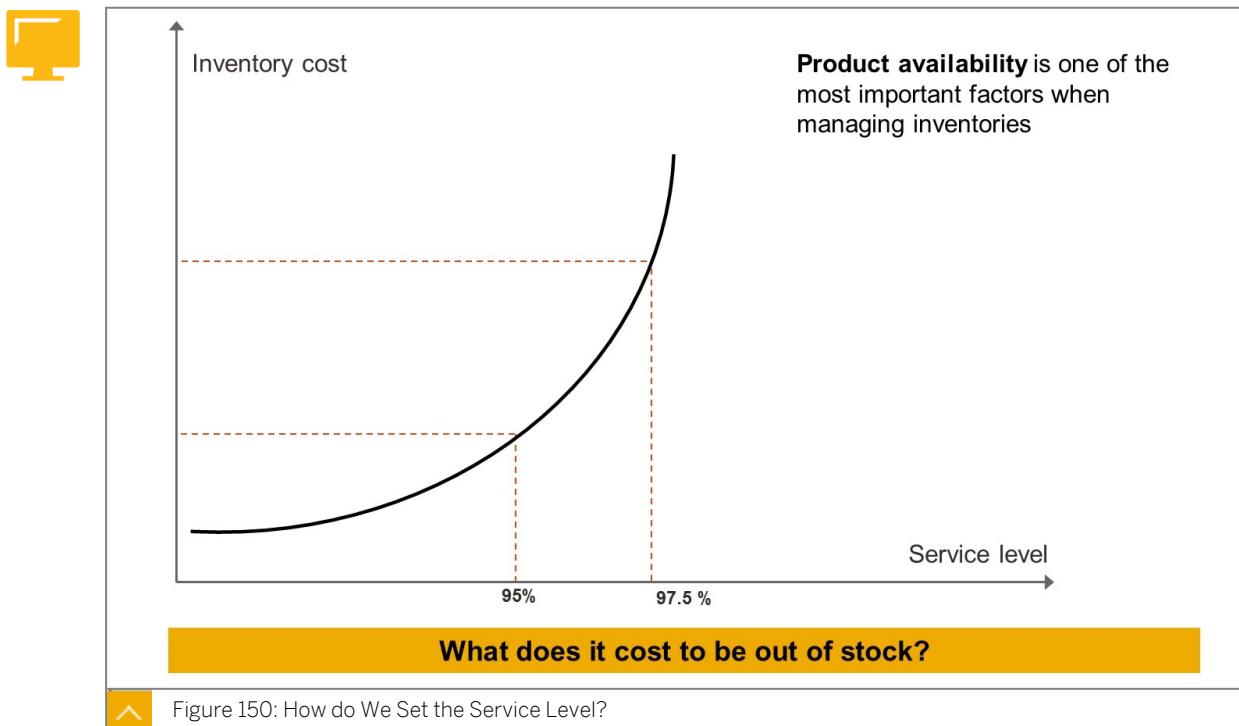
At the customer service level, this means variability. Handling this variability can be aided by having an accurate, consistent model of the network you're dealing with.

SAP IBP provides via SAP IBP for inventory the consistent, reliable, and optimal cost model so the right decisions can be made, regarding:

- Do we handle variability and uncertainty by simply having inventory in stock?
- Do we handle this through the flexibility in manufacturing or logistics, or expedites?
- Do we require customer flexibility in Service levels (or make them wait)?

The right answer is almost always a combination of the three - and only SAP IBP for inventory can provide the optimal calculation and information needed to decide on where that balance resides for your company.

How do We Set the Service Level? - The Optimal Level of Product Availability



Product availability, also referred to as the customer service level, is one of the most important factors when managing inventory. It is the indicator for the amount of customer demand satisfied from available inventory and it is measured by the cycle service level or the fill rate.



LESSON SUMMARY

You should now be able to:

- Address Inventory Planning and Optimization challenges using SAP IBP for Inventory

Demand and Supply Variability



LESSON OBJECTIVES

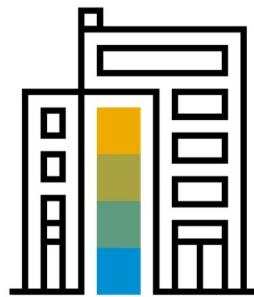
After completing this lesson, you will be able to:

- Highlight critical factors within Inventory Planning and Optimization

Demand and Supply Variability



So in spite of all this Planning...



Things do not always go quite as planned!



Figure 151: Planning and Reality

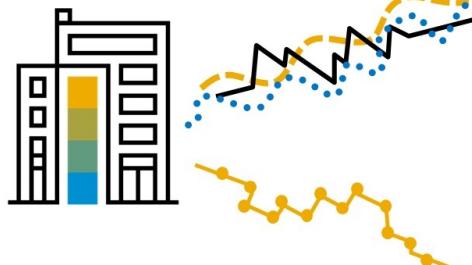
In spite of all planning activities, things usually don't always go quite as planned.



The demand side is not completely predictable...

Demand Factors

- Simultaneous internal and external demand
- Forecast error
- Seasonal, time-varying demand
- Multiple service levels and inventory thresholds
- Over- and under-forecasting
- Outliers



Customers



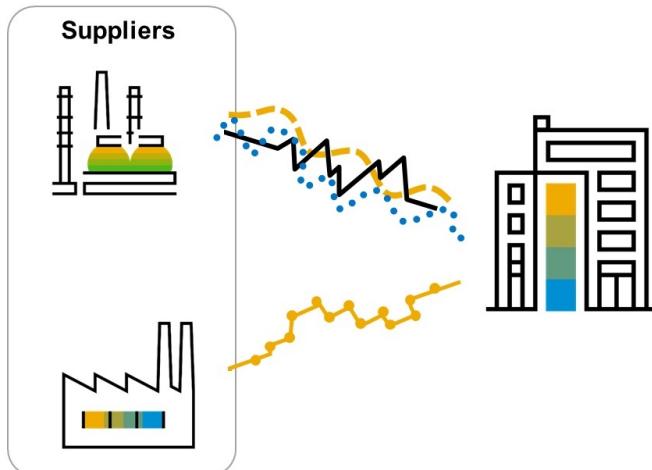
Inventory targets must consider variability and uncertainties in Demand

Figure 152: Unpredictable Demand

Organizations typically have service levels for internal location and external customers. Even with careful planning, disruptions occur in a supply chain due to the unpredictable nature of demand elements. Inventory Optimization within SAP Integrated Business Planning for inventory considers variations or errors in prediction of demand forecast and determines an optimal inventory levels within the Supply Chain.



... and suppliers are rarely perfect



Supply Factors

- Batch size requirements
- Late shipments
- Frozen planning windows
- Bills of Material
- Multiple supply sources
- Seasonal supply sources

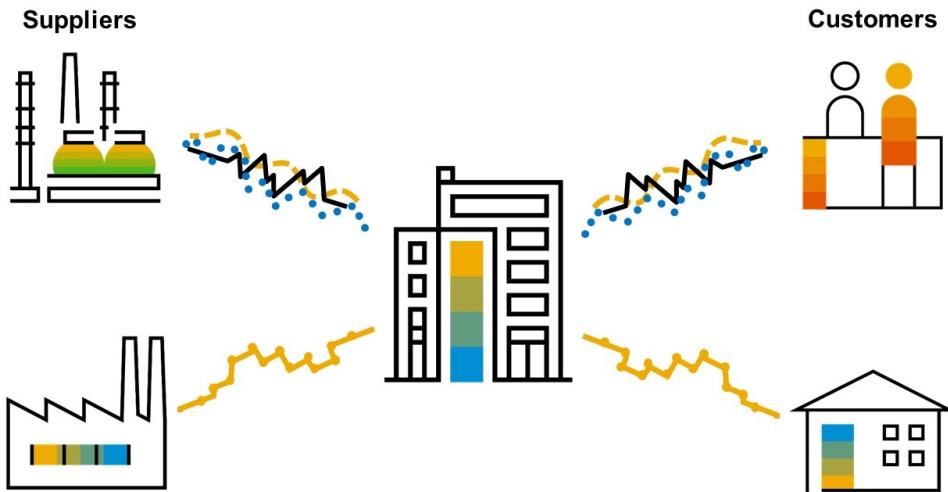
Inventory targets must also consider variability and uncertainties in Supply

Figure 153: Imperfect Suppliers

Neither is the demand side completely predictable, nor is the supplier side perfect. Any uncertainties and variability in both demand and supply has to be taken into consideration, see also the different influence factors given on the supply factors side.



Now take all those uncertainties...



All of this variability and uncertainty occurs at each individual location

Figure 154: Unpredictable Demand and Imperfect Suppliers

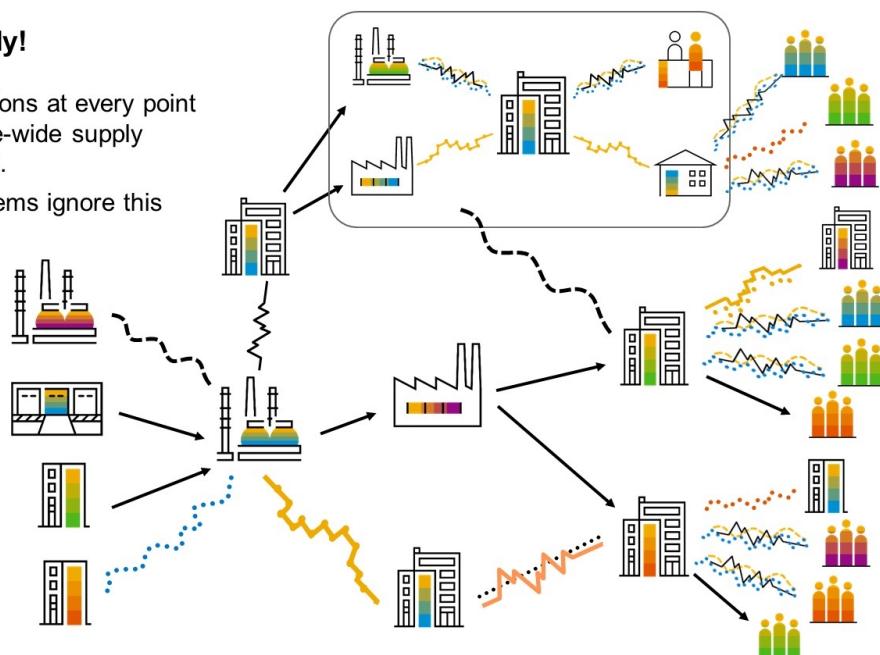
This Demand and Supply variability occurs within all aspects of the supply chain. All this variability must be taken into consideration before predicting optimal inventory levels so as to meet customer service levels and also keep costs to a minimum.



...and multiply!

Inventory decisions at every point in the enterprise-wide supply chain are linked.

Traditional systems ignore this complexity.



Variability and uncertainty has inter-dependency within the Network

Figure 155: Scaling

Inventory decisions at every point in the enterprise-wide supply chain are linked. Traditional systems usually ignore this complexity.



LESSON SUMMARY

You should now be able to:

- Highlight critical factors within Inventory Planning and Optimization

Inventory Components



LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Validate Data Inputs

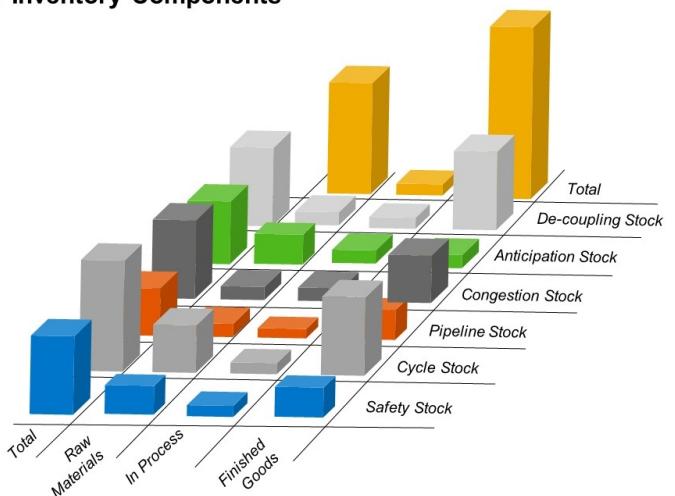
Inventory Components



Attributes are ‘Freely’ Defined in SAP Integrated Business Planning for Supply Chain

– Use this to “Slice and Dice” your Inventory Components

- In order to make informed decisions about the stock level situation and future actions, it is important to fully understand the inventory breakdown.
- When SAP Integrated Business Planning for inventory is used to create a complete view of the current inventory breakdown, more focused efforts can be implemented where they are most needed.



In the SAP Integrated Business Planning tools, there is no predefined master data structure as such, for example, Material Master, Work Center, or Plant. All attributes/fields are “freely” defined.

Figure 156: Inventory Components

Attributes are freely defined in SAP IBP, and you can make use of this to slice and dice your inventory components.

Unit 5 Exercise 11

Validate Data Inputs



Simulation: Validate Data Inputs

For more information on *Validate Data Inputs*, please view the simulation in the lesson *Inventory Components* in your online course.

Business Example

Inventory Planning requires a number of data inputs. Before running Inventory Optimization algorithms, it is important to ensure that the correct data inputs are in place and consistent. This exercise shows how to review some key data inputs.



Note:

In this exercise, when you see ##, replace the characters by your group number.

1. Working in the properly virtual environment, in the Excel UI, create a Favorite called *IO Inputs Data Review* using the SAP Integrated Business Planning Template *IO Input Data Review*.
2. In your favorite *IO Inputs Data Review*, on the *Demand Input* tab, verify that data exists for locations 1710 and 3710 in the *Demand Forecast*, *Demand Forecast Error CV* and *Target Service Level* key figures for the products and customers in your Planning unit.
3. Continue to utilize your Favorite called *IO Inputs Data Review*.
4. In your favorite *IO Inputs Data Review*, on the *Production Input* tab, verify that data exists for the production plant 1010 in *Production Lead Time*, *Production Lead Time Error CV*, *Production Minimum Lot Size* and *Production Incremental Lot Size* and is populated for all sources in your Planning unit.
5. Close your favorites *IO Inputs Data Review*.

Unit 5

Solution 11

Validate Data Inputs



Simulation: Validate Data Inputs

For more information on *Validate Data Inputs*, please view the simulation in the lesson *Inventory Components* in your online course.

Business Example

Inventory Planning requires a number of data inputs. Before running Inventory Optimization algorithms, it is important to ensure that the correct data inputs are in place and consistent. This exercise shows how to review some key data inputs.



Note:

In this exercise, when you see ##, replace the characters by your group number.

1. Working in the properly virtual environment, in the Excel UI, create a Favorite called *IO Inputs Data Review* using the SAP Integrated Business Planning Template *IO Input Data Review*.
 - a) Go to *New View* → *From Template*. Select *IO 210 Inputs Data Review*.
 - b) In the *Planning scope* field, confirm your Scenario is *Baseline* and the *Base Version* is selected. Choose *Planning Unit ##* and confirm no other Planning unit has been selected, and choose *OK*.
 - c) Assign your *Prod Family ##* filter.
 - d) To display the Planning View, choose *OK*.
 - e) To save your Planning View as *IO Inputs Data Review*, choose *Favorites* → *Add*. If you receive a warning, select *Yes*.

Keep your favorite open for the next exercise step.
2. In your favorite *IO Inputs Data Review*, on the *Demand Input* tab, verify that data exists for locations 1710 and 3710 in the *Demand Forecast*, *Demand Forecast Error CV* and *Target Service Level* key figures for the products and customers in your Planning unit.
 - a) Assign your *Product ##* filter.
 - b) Check that locations 1710 and 3710 have *Demand Forecast*, *Demand Forecast Error CV*, and *Target Service Level* populated for all products and customer groups.



Note:

If values are not populated, you can also return to the *Calculate and Release a Consensus Forecast* exercise and repeat Step 4.

3. Continue to utilize your Favorite called *IO Inputs Data Review*.
 - a) Select the *Production Input* tab.
 - b) In that tab, choose *Edit Planning View* and in the *Planning scope* field, confirm your Scenario is *Baseline* and the *Base Version* is selected. Choose *Planning Unit ##* and confirm no other Planning unit has been selected, and choose *OK*.
 - c) Assign your *Product ##* filter.
 - d) To display the Planning View, choose *OK*.
 - e) To save your Planning View, choose *Favorites → Update*. Close the warning and select the correspondent Planning View. Choose *Update*.
4. In your favorite *IO Inputs Data Review*, on the *Production Input* tab, verify that data exists for the production plant 1010 in *Production Lead Time*, *Production Lead Time Error CV*, *Production Minimum Lot Size* and *Production Incremental Lot Size* and is populated for all sources in your Planning unit.
 - a) Check that the production plant 1010 has values within the *Production Lead Time*, *Production Lead Time Error CV*, *Production Minimum Lot Size* and *Production Incremental Lot Size* key figures, populated for all sources. In case these key figures don't register any value, use the table below as reference to update values until the end of the Planning horizon
 - b) Type the values below and then select *Save Data*. Do not pick any reason code and select *OK* to continue.

Key Figure	Value
Production Lead Time	1
Production Lead Time CV	0.10
Production Minimum Lot Size	1
Production Incremental Lot Size	1

5. Close your favorites *IO Inputs Data Review*.
 - a) When you close your favorites, do not save a local copy because it is not necessary now that you have created a favorite.



LESSON SUMMARY

You should now be able to:

- Validate Data Inputs

Unit 5

Lesson 5

Inventory Planning and Optimization Process

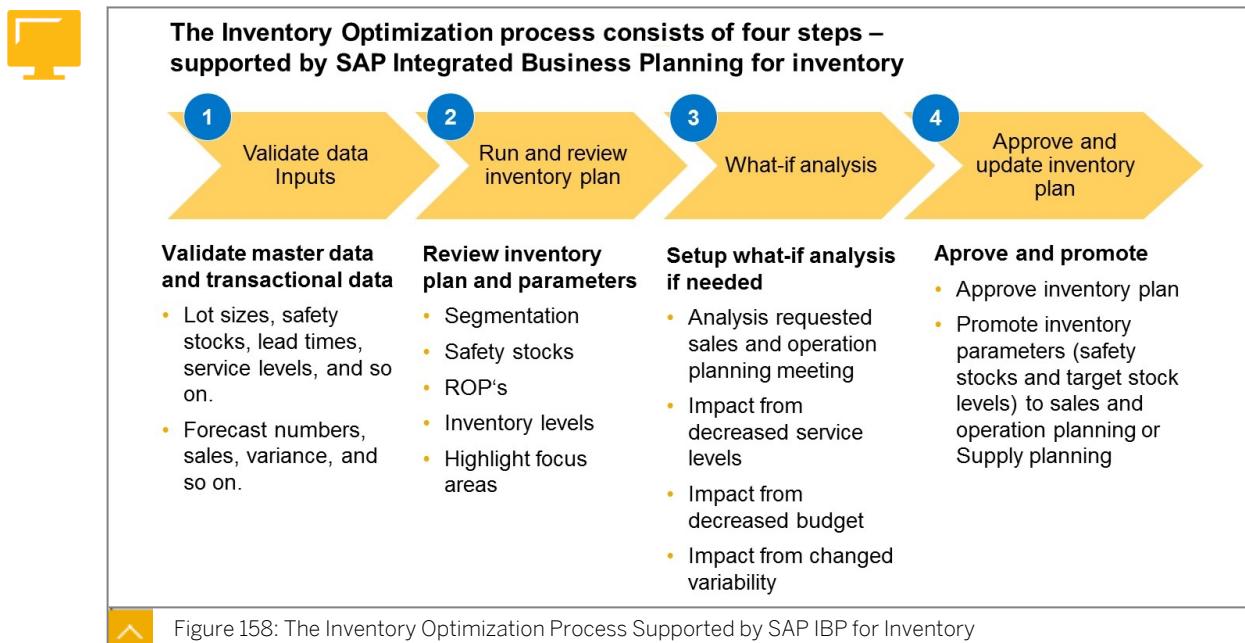


LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Use SAP IBP to optimize target service level

Inventory Planning and Optimization Process



The inventory planning process comprehends the following steps:

1. Validating data inputs
2. Running and reviewing the inventory plan
3. Analyzing what-if scenarios
4. Approving and updating the inventory plan



A process defining frequency responsibility is still very relevant and must be setup outside the system

One Planning Area / One set of numbers

SAP IBP sales and operations planning

SAP IBP for demand

SAP IBP for inventory

SAP IBP for sales and operations planning

SAP IBP for response and supply

Forecast

Forecast Error / CV

Calculate Inventory parameters

- Recommended safety stock
- Target Inventory Position
- Reorder Point
- Target Service Level

- Using Parameters for planning

- Provide Master Data for Inventory calculations (LT, LT variance, Lot size, and so on)

Figure 159: Inventory Optimization Process and its Frequency

The inventory optimization process relies on one set of inputs and outputs, that is, one common planning area for all SAP Integrated Business Planning components sales and operations planning, demand, inventory, and supply.



Known variability can be modelled as Key Figures or Master Data

IO 210 Input Data Review											
1	SAP	Integrated Business Planning	Filter:	2020 CW34	2020 CW35	2020 CW36	2020 CW37	2020 CW38			
2		(Ad Hoc Filter) (1 criteria):	ABC Code = A								
3	Product ID	Key Figure		2020	CW34	2020	CW35	2020	CW36	2020	CW38
4	IBP-FG1-02	Demand Forecast		400	400	400	400	400	400	400	400
5		Demand Forecast Error CV		0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
6		Target Service Level		0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
7		Transportation Lead Time		1	1	1	1	1	1	1	1
8		Transportation Lead Time Error CV		0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
9		Recommended Safety Stock		6,500	6,800	6,800	6,800	6,800	6,800	6,800	6,800
10											

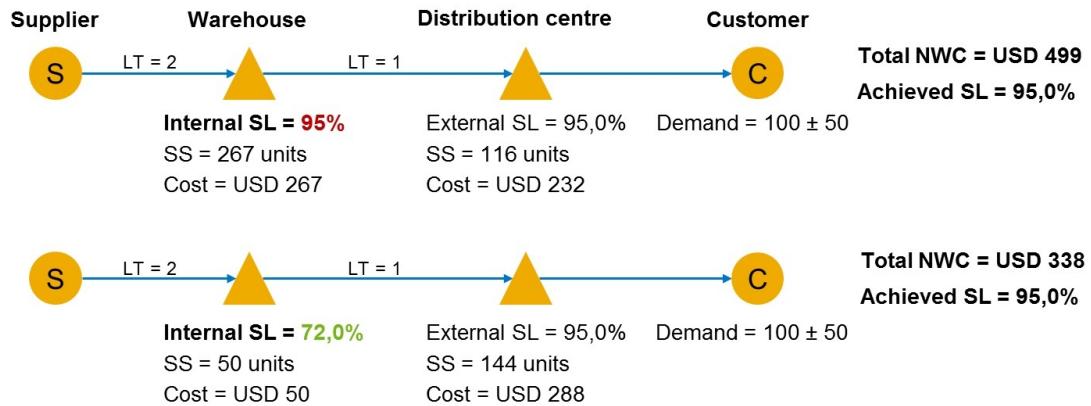
Location Source Receipts Balancing Scope						
	Ship-From Loc. ID*	Location ID*	Product ID*	Transportation Lead Time	Transportation Leadtime Error CV	Maximun
2	1010	1710	IBP-FG1-02			0.1
3	1710	3710	IBP-FG1-02			0.1
4				1		
5						

Figure 160: Modeling Variability

For the inventory optimization process, known variability can be modeled as key figures or master data as shown on the slide.



Multi-Echelon optimization makes it possible to have a “poor” internal service level, yet keeping external service level high



In above example, we allow the warehouse to have a “poor” service level while still covering the customer demand with a 95% service level!



Figure 161: Multiechelon Optimization

Do you think that a “poor” internal service level while achieving target external service levels is possible? Echelon optimization makes it possible; having a poor internal service level while keeping a high external service level fulfilling customer expectations.

Unit 5 Exercise 12

Optimize a Multi-Stage Inventory



Simulation: Optimize a Multi-Stage Inventory

For more information on *Optimize a Multi-Stage Inventory*, please view the simulation in the lesson *Inventory Planning and Optimization Process* in your online course.

Business Example

SAP IBP multi-stage inventory optimizer is an algorithm that calculates and recommends safety stock quantities for all the stocking nodes in the network. The difference with the traditional single-stage approach is that the algorithm considers the optimal allocation of stock among the connected nodes at the different network stages. This reduces the overall stock required in comparison with the isolated single-stage approach. Within this exercise you will activate this advanced planning algorithm.



Note:

In this exercise, when you see ##, replace the characters by your group number.

1. Working in the properly virtual environment, you may need to log on if you closed out your Excel session.
2. Create a planning view using Template *IO 220 Planning Result*.
3. Check the values of the *Recommended Safety Stock* key figure and enter the current values in the table below.

Location ID	Product ID	Current Week	Week + 1	Week + 2
1710	IBP-FG1-##			
	IBP-FG2-##			
3710	IBP-FG1-##			
	IBP-FG2-##			

4. Run the *Global (multi-stage) inventory optimization* in the *Base Version*.
5. Check the optimization run status until it is complete.
6. Refresh the view and review the updated values of the *Recommended Safety Stock* key figure by completing the table below.

Location ID	Product ID	Current Week	Week + 1	Week + 2
1710	IBP-FG1-##			
	IBP-FG2-##			
3710	IBP-FG1-##			
	IBP-FG2-##			

Optimize a Multi-Stage Inventory



Simulation: Optimize a Multi-Stage Inventory

For more information on *Optimize a Multi-Stage Inventory*, please view the simulation in the lesson *Inventory Planning and Optimization Process* in your online course.

Business Example

SAP IBP multi-stage inventory optimizer is an algorithm that calculates and recommends safety stock quantities for all the stocking nodes in the network. The difference with the traditional single-stage approach is that the algorithm considers the optimal allocation of stock among the connected nodes at the different network stages. This reduces the overall stock required in comparison with the isolated single-stage approach. Within this exercise you will activate this advanced planning algorithm.



Note:

In this exercise, when you see ##, replace the characters by your group number.

1. Working in the properly virtual environment, you may need to log on if you closed out your Excel session.
2. Create a planning view using Template *IO 220 Planning Result*.
 - a) Go to *New View* → *From Template*.
 - b) Select the *IO 220 Planning Result* file.
 - c) In the *Planning scope* field, confirm your scenario is *Baseline* and the *Base Version* is selected. Choose *Planning Unit ##*, confirm no other planning unit has been selected, and choose *OK*.
 - d) Choose *Key Figures* tab, and add the *Target Service Level* and *Safety Stock (SOP)* key figures. Keep as well all other preselected Key Figures.
 - e) On the *Filter* tab, choose *Product ##*.
 - f) To display the data, choose *OK*.
 - g) To save your planning view as *IO Planning Result* choose *Favorites* → *Add*. If you receive a warning, select *Yes*.
 - h) Stay in this view for the next exercise step.
3. Check the values of the *Recommended Safety Stock* key figure and enter the current values in the table below.

Location ID	Product ID	Current Week	Week + 1	Week + 2
1710	IBP-FG1-##			
	IBP-FG2-##			
3710	IBP-FG1-##			
	IBP-FG2-##			

- a) The values may be blank at this time but when you execute the operator in the next step these will be calculated.

4. Run the *Global (multi-stage) inventory optimization* in the *Base Version*.
 - a) From the SAP Integrated Business Planning ribbon in Excel, in the *Applications Jobs* group, choose *Inventory Planning* → *Run*.
 - b) Set the *Planning Operator* as *Global (multi-stage) inventory optimization*, set *Versions*: as *Base Version*, and ensure your *Planning Unit ##* is selected.
 - c) Choose *Next*.
 - d) Choose *Run*. You do not need to select a reason code nor enter a comment.
 - e) An IBP Information message pops up saying the job was scheduled successfully. Choose *OK*.
5. Check the optimization run status until it is complete.
 - a) Within *Applications Jobs*, choose *Inventory Planning* → *Status*. This opens a new window with the scheduled jobs.
 - b) Identify your job based on the *User* field and check the *Status*.
 - c) To update the status, choose *Refresh* until *Finished*. Close the *Status* screen.
6. Refresh the view and review the updated values of the *Recommended Safety Stock* key figure by completing the table below.

Location ID	Product ID	Current Week	Week + 1	Week + 2
1710	IBP-FG1-##			
	IBP-FG2-##			
3710	IBP-FG1-##			
	IBP-FG2-##			

- a) In the *Data Input* screen area, choose *Refresh*.
- b) Record the values for *Recommended Safety Stock* in the table.
- c) Compare the values to those recorded in Step 2.

Unit 5 Exercise 13

Run and Review an Inventory Plan



Simulation: Run and Review an Inventory Plan

For more information on *Run and Review an Inventory Plan*, please view the simulation in the lesson *Inventory Planning and Optimization Process* in your online course.

Business Example

After the executive meeting, when your inventory plan is approved, you still may need to make some adjustments to your safety stock. During this exercise you will execute these changes comparing the recommended safety stock value to what you need to plan.



Note:

In this exercise, when you see ##, replace the characters by your group number

1. At Location 3710 for Product ID: IBP-FG1-##, change the value in the *Safety Stock Adj. (from IO)* key figure three weeks from today's date to 350 and simulate the result.

Unit 5

Solution 13

Run and Review an Inventory Plan



Simulation: Run and Review an Inventory Plan

For more information on *Run and Review an Inventory Plan*, please view the simulation in the lesson *Inventory Planning and Optimization Process* in your online course.

Business Example

After the executive meeting, when your inventory plan is approved, you still may need to make some adjustments to your safety stock. During this exercise you will execute these changes comparing the recommended safety stock value to what you need to plan.



Note:

In this exercise, when you see ##, replace the characters by your group number

1. At Location 3710 for Product ID: IBP-FG1-##, change the value in the *Safety Stock Adj. (from IO)* key figure three weeks from today's date to 350 and simulate the result.
 - a) Choose *Favorites* → *IO Planning Result*.
 - b) For *IBP-FG1-##*, at Location 3710, in the cell that is the third week from the current week, in the *Safety Stock Adj. (from IO)* key figure, enter a value of **350**, choose *Enter*.
 - c) From the IBP ribbon in Excel, in the *Data Input* group, choose *Simulate* → *Simulate (Basic)*.
 - d) Verify that the *Final Safety Stock (from IO)* key figure matches the value you just entered.



Note:

Final Safety Stock (from IO) shows the values from Recommended Safety Stock if there are no manual adjustments within Safety Stock Adj. (from IO). In other case, manual adjustments will be prioritize over recommended values and they will be displayed within *Final Safety Stock (from IO)* as per exercise.

- e) From the IBP ribbon in Excel, in the *Data Input* group, choose *Save Data*.
- f) Choose Reason Code S&OP Safety stock adj, enter **Adjustments of safety stock** as a comment, and choose *Save*.
Your data is now saved after your simulation on *Adjusting Safety Stock* key figure.

- g) Do not close the *IO Planning Result* Excel file as it will be used in the next exercise.

Unit 5 Exercise 14

Approve and Update an Inventory Plan



Simulation: Approve and Update an Inventory Plan

For more information on *Approve and Update an Inventory Plan*, please view the simulation in the lesson *Inventory Planning and Optimization Process* in your online course.

Business Example

The last stage of the inventory review process is to approve the plan. This ensures that the safety stock quantities are made available for Supply Planning and for executive meeting to define mid-term and long-term inventory policies. During the exercise you will copy the values from one key figure to another to start upcoming Supply Planning processes.



Note:

In this exercise, when you see ##, replace the characters by your group number.

1. Use your *IO Planning Result* favorite and copy the *Final Safety Stock (for IO)* key figure to *Safety Stock (SOP)* key figure using the *Copy Operator*.
The safety stock is now available to develop the supply plan with your safety stock adjustment included.

Unit 5 Solution 14

Approve and Update an Inventory Plan



Simulation: Approve and Update an Inventory Plan

For more information on *Approve and Update an Inventory Plan*, please view the simulation in the lesson *Inventory Planning and Optimization Process* in your online course.

Business Example

The last stage of the inventory review process is to approve the plan. This ensures that the safety stock quantities are made available for Supply Planning and for executive meeting to define mid-term and long-term inventory policies. During the exercise you will copy the values from one key figure to another to start upcoming Supply Planning processes.



Note:

In this exercise, when you see ##, replace the characters by your group number.

1. Use your *IO Planning Result* favorite and copy the *Final Safety Stock (for IO)* key figure to *Safety Stock (SOP)* key figure using the *Copy Operator*.
 - a) In the *Planning View* screen area, choose *Favorites* → *IO Planning Result*.
 - b) From the IBP ribbon in Excel, in the *Application Jobs* tab, choose *Copy Operator* → *Copy Final Safety Stock (for IO) to Safety Stock (SOP) - TW*.
 - c) Select the second tab, *Filter* and select the *Product ##* filter.
 - d) Choose *Next*.
 - e) You do not have to select a reason code. Choose *Run*.
 - f) An IBP Information message pops up telling you the job was scheduled successfully. Choose *OK*.
 - g) To check the copy status, from the *Application Jobs* tab, choose *Copy Operator* → *Status*. This opens a new window with the scheduled jobs. Identify your job based on the *User* field *Trainee ##* and check the *Status*. Choose *Refresh* to update the status until it is *Finished*. When the status is set to *Finished*, close the screen.
 - h) From the *Data Input* ribbon, select *Refresh*. Now, the *Safety Stock (SOP)* key figure should be populated with the values from *Final Safety Stock (for IO)*.

The safety stock is now available to develop the supply plan with your safety stock adjustment included.



LESSON SUMMARY

You should now be able to:

- Use SAP IBP to optimize target service level

Learning Assessment

1. Which one of the following SAP IBP components is used for allocations planning and order rescheduling?

Choose the correct answer.

- A SAP Integrated Business Planning for demand
- B SAP Integrated Business Planning for inventory
- C SAP Integrated Business Planning for Supply Chain Control Tower
- D SAP Integrated Business Planning for response and supply

2. Which of the following option strikes a balance between the service levels an organization provides its customers, inventory levels, inventory holding costs?

Choose the correct answer.

- A Inventory Optimization
- B Demand Sensing
- C Inventory Management
- D Delivery performance

3. Which of the following are supply factors uncertainties that can impact inventory targets?

Choose the correct answers.

- A Batch size requirements
- B Forecast error
- C Late shipments
- D Multiple service levels and inventory thresholds

4. How are attributes defined in SAP IBP?

Choose the correct answer.

- A They are freely defined
- B There is a predefined data structure for attributes

5. Which of the following options makes it possible to have a “poor” internal service level, while still keeping external service level high?

Choose the correct answer.

- A Demand Variability
- B Multi-Echelon Optimization
- C Inventory Optimization
- D Demand Optimization

UNIT 6

Supply Planning

Lesson 1

Introduction to SAP Integrated Business Planning for Response and Supply

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Lesson 5

Order-based Planning with SAP Integrated Business Planning for Response and Supply

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UNIT OBJECTIVES

- Highlight main functionalities within SAP Integrated Business Planning for Response and Supply
- Describe Unconstrained Planning with the Sales and Operations heuristic
- Outline capacity and scenario management
- Outline Constrained Planning with the Supply Optimizer
- Understand the concepts of Order-based Planning with SAP Integrated Business Planning for Response and Supply

Unit 6

Lesson 1

Introduction to SAP Integrated Business Planning for Response and Supply



LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Highlight main functionalities within SAP Integrated Business Planning for Response and Supply

Introduction to SAP Integrated Business Planning for Response and Supply

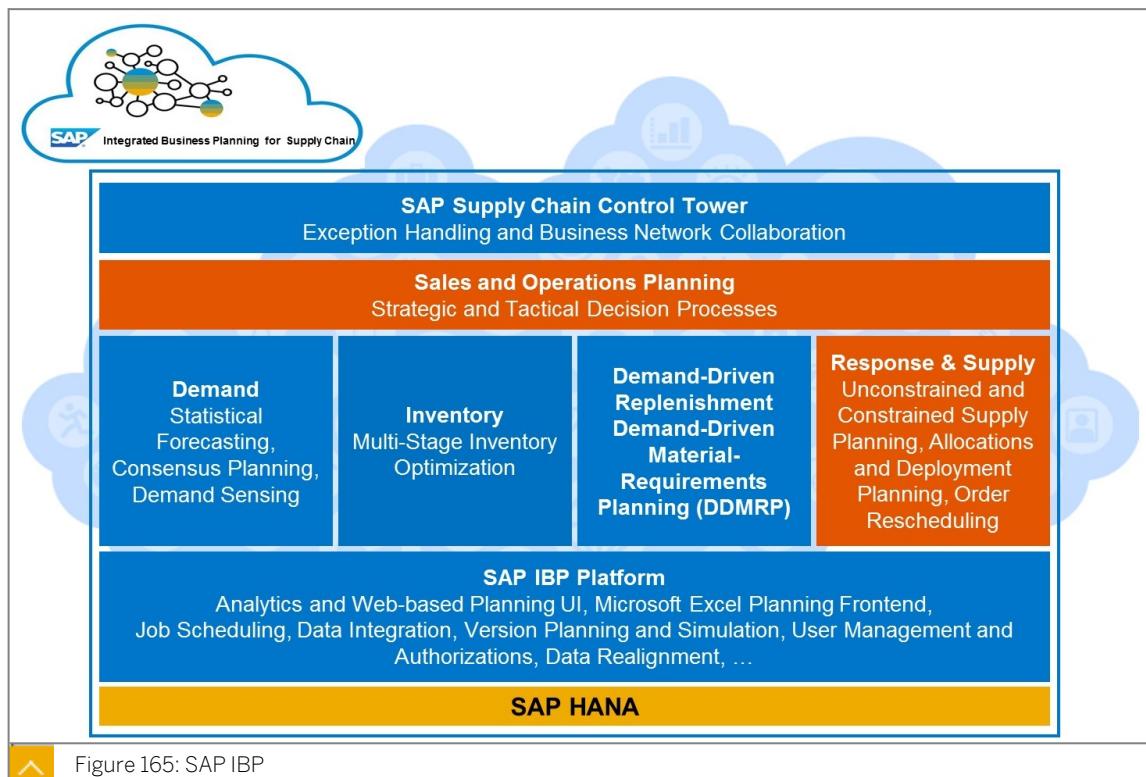


Figure 165: SAP IBP

SAP IBP includes different integrated components under one roof powered by SAP HANA and supported by a technological platform to tackle different planning tasks.

**Note:**

Some functionalities explained in this chapter might require additional licenses. The following link provides an overview of the available licenses for SAP IBP: [SAP Help → SAP Integrated Business Planning for Supply Chain → Applications and Features of SAP Integrated Business Planning for Supply Chain. → SAP IBP for Response and Supply](#)

SAP Integrated Business Planning for Response and Supply

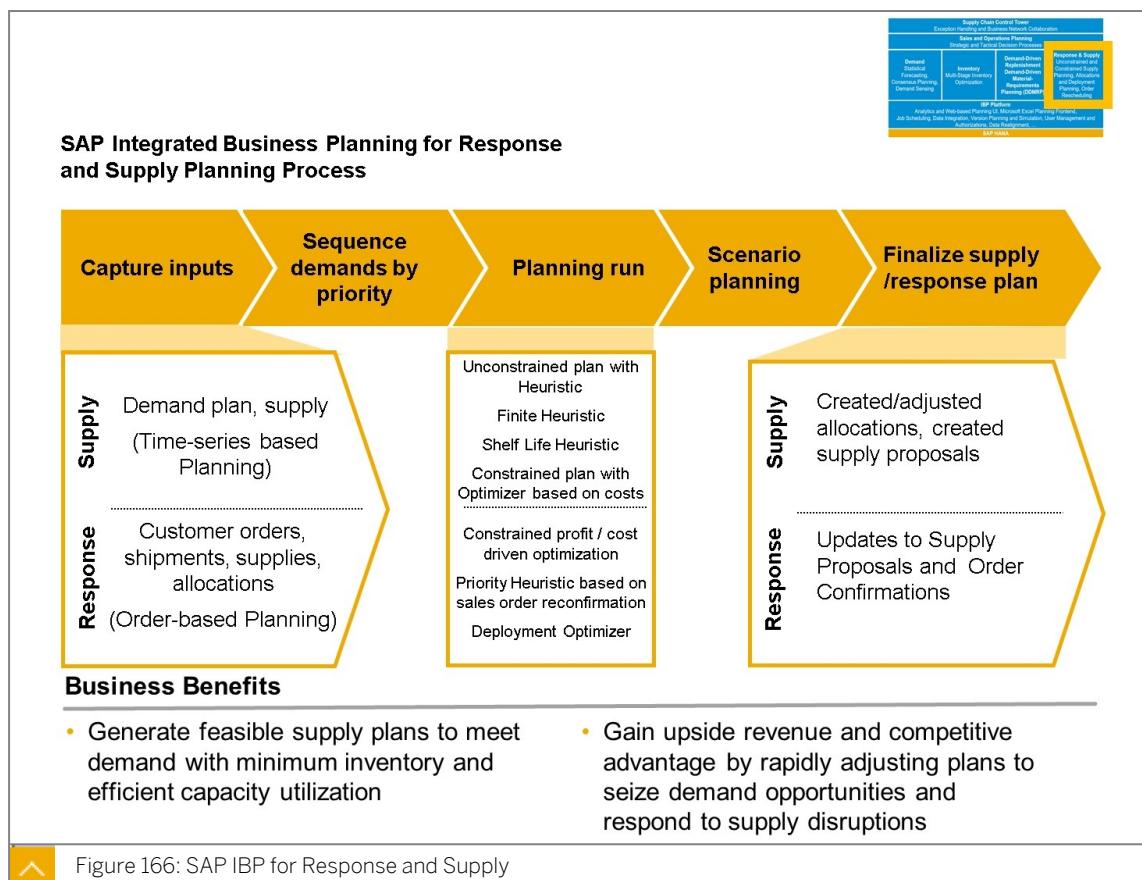


Figure 166: SAP IBP for Response and Supply

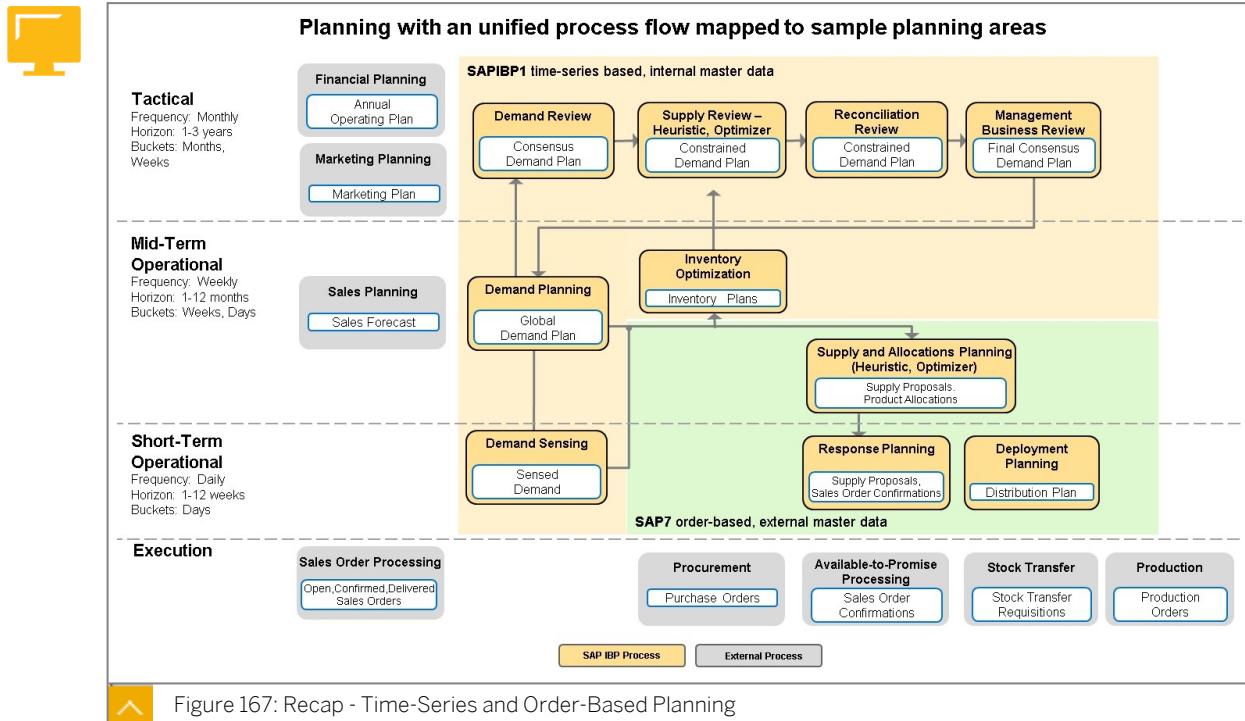
As displayed in the previous slide, Time-Series-Based Supply Planning as part of SAP IBP for Response and Supply allows a demand and supply plan creation using following supply planning algorithms:

- Supply planning heuristic to create an infinite supply plan without shortages in which all demands are fulfilled regardless of available supply.
- Supply planning finite heuristic to create a priority-based finite supply plan in which demands are fulfilled depending on available supply.
- Supply propagation heuristic to create an infinite supply plan in which only the available supply is propagated downstream through the supply chain.
- Shelf life planning heuristic that takes the shelf life of products into account when creating a supply plan (infinite without shortages).
- Supply planning optimizer to create a finite cost-optimized supply plan.

On the other hand, Order-Based Planning helps you to create a supply plan using operational data and react to short-term changes.

This approach enables supply planning from an operational perspective: It uses detailed data from external systems, and takes into account, for example, planned orders, production orders, sales orders, and purchase orders. Compared to the time-series-based planning functions of SAP Integrated Business Planning for Supply Chain (SAP IBP), the order-based approach takes a shorter-term view.

You can use the resulting supply plan, for example, to adapt your stock levels as required, and to quickly respond to changes that might arise at short notice.



As displayed in the previous figure, Supply and Allocations Planning includes the following process:

- Create allocations and a supply plan based on prioritized forecast demands and Supply Chain constraints.

Response Planning includes the following processes:

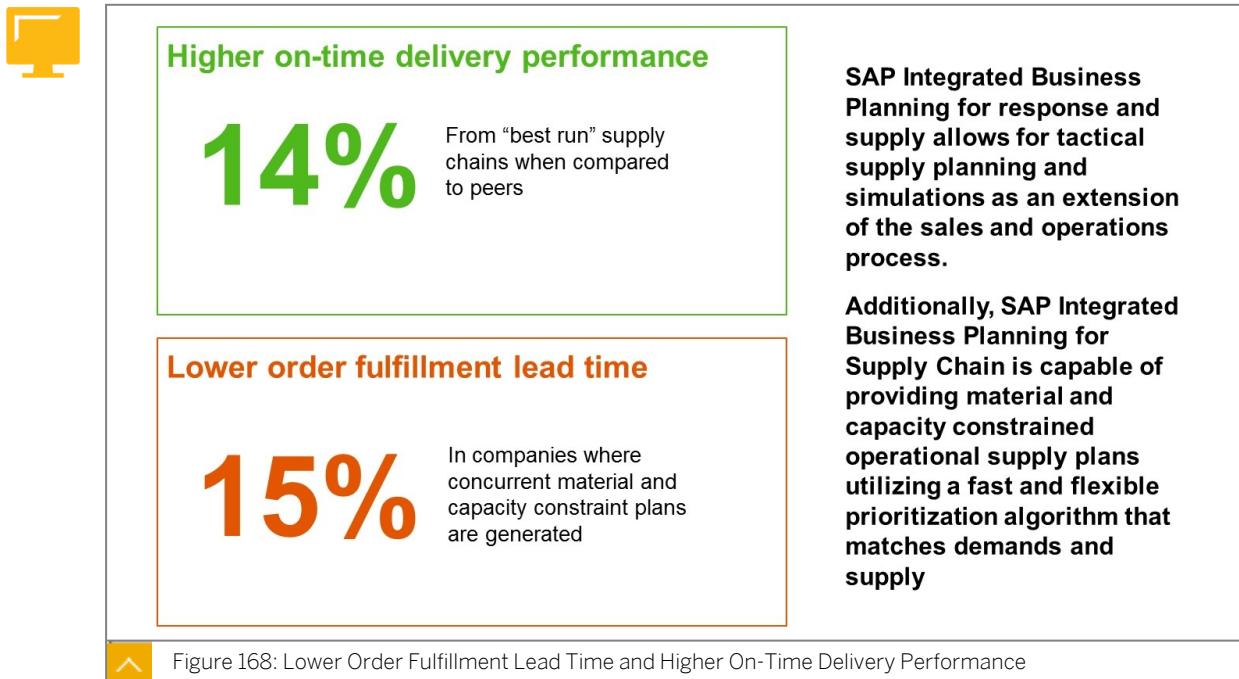
- Create order confirmations and an adopted supply plan based prioritized demands, allocations and Supply Chain constraints.
- Both processes work on tightly integrated information from SAP ERP and allow for root-cause analysis and simulation of full and delta plans.

Deployment Planning is a process in order-based planning, which is performed to distribute available supply to demand. A supply plan is never final. There can always be last-minute sales orders coming in or supply is, against all expectations, delivered late or not at all.

However, you can't wait forever - at some point, you have to start the execution of the supply plan. To be able to do so, you have to work out a reliable short-term distribution plan to distribute available supply to demand from central to downstream supply chain stocking points.

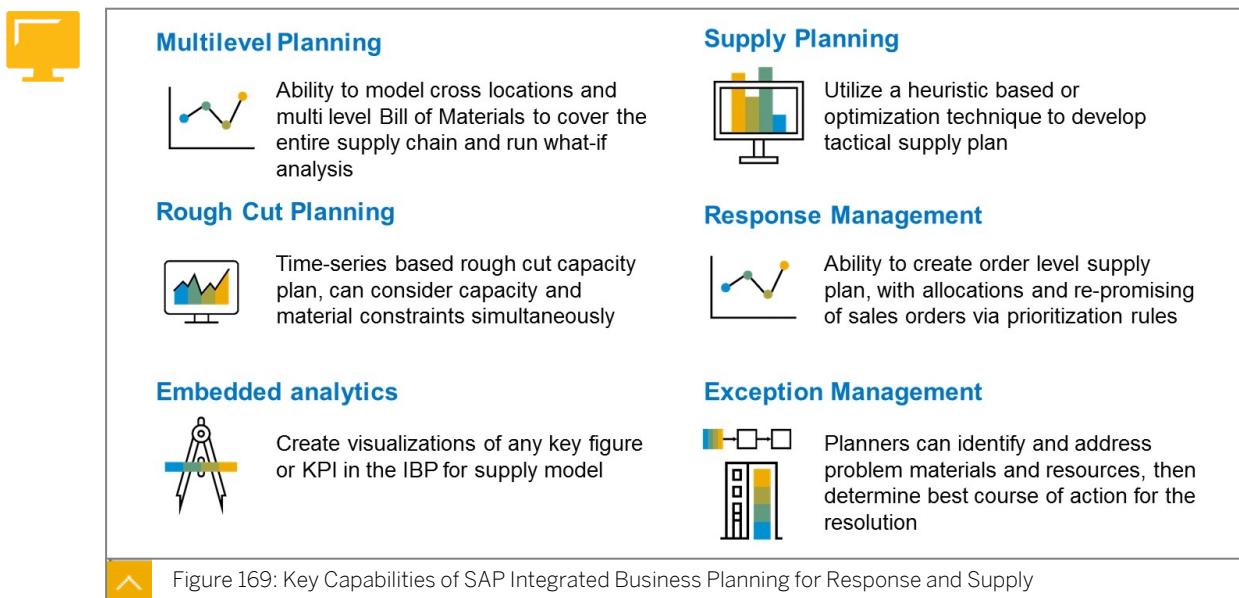
You can create such a distribution plan with the help of deployment planning in order-based planning

How can SAP IBP for Response and Supply enable you to Change the Game?



SAP Integrated Business Planning for response and supply allows tactical Supply Planning and simulations. Moreover, it is capable of providing material and capacity constrained operational supply plans to match demands and supply. The previous slide presents results of a study conducted by SAP to measure the positive impact of SAP IBP over the delivery performance and the order fulfillment lead time.

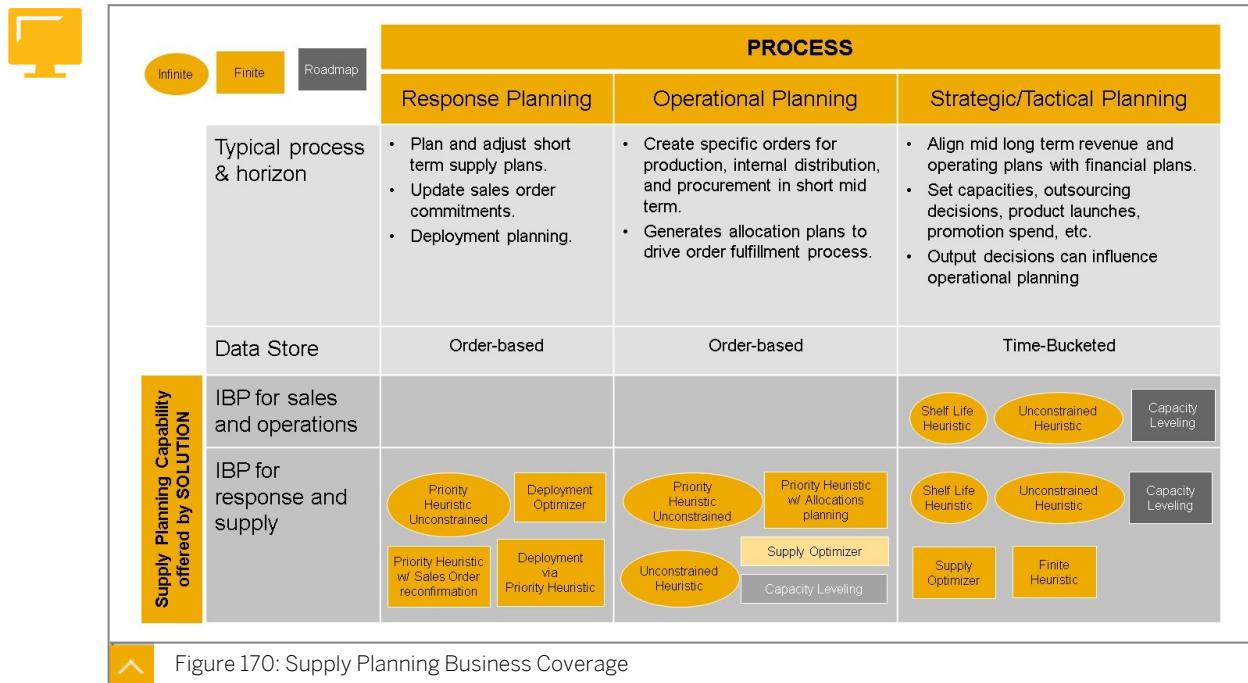
Keep your Supply Management under Control with the Help of these Key Capabilities



These six key capabilities within SAP IBP for response and supply help you keep your supply management under control:

- Multilevel Planning
- Supply Planning
- Rough Cut Planning
- Response Management
- Embedded Analytics
- Exception Management

Overview of the SAP Integrated Business Planning Supply Planning Engines



As explained in the previous slide, there are different solvers within SAP IBP solution: infinite and finite. These planning engines address different planning levels such as response, operational and strategic/tactical planning. Depending on how the data is stored, the engines can be classified in order-based or time-series oriented.



Sales and Operation Heuristic (Multilevel)

Perform infinite capacity multilevel demand and supply planning to identify capacity bottlenecks and issues with supply.

Supply Optimizer (Cost driven)

Perform finite multilevel demand and supply planning to generate a cost-optimized plan.
Profit vs Delivery optimization

Constrained (Priority driven)

Perform a rules-based demand prioritization algorithm for planning and simulating finite multilevel planning.

Figure 171: Example of Planning Engines

Within this course, as shown in the previous slide, three Supply Planning engines are explained as examples of different solvers to help you tackle planning challenges:

1. The multilevel Sales and Operations heuristic
2. The cost driven supply optimize
3. The priority driven constrained demand



LESSON SUMMARY

You should now be able to:

- Highlight main functionalities within SAP Integrated Business Planning for Response and Supply

Unit 6

Lesson 2

Unconstrained Planning with Sales and Operations Heuristic

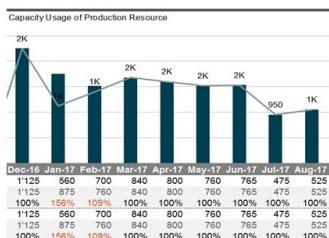


LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Describe Unconstrained Planning with the Sales and Operations heuristic

Unconstrained Planning with the Sales and Operations Heuristic



Module: Sales and Operation

Model: Time series based

Constraints considered

- Infinite multilevel planning
- Manual adjustments of Supply and capacities to constrain the plan
- Lead times for transportation
- Quota arrangements
- Minimum lot size and rounding values
- Safety and target stock

Constraints not considered

- Finite resource capacities
- Maximum stock, maximum production receipts

Figure 172: Planning Engine - Sales and Operations Heuristic

Constraints considered:

- Lead times for transportation
- Manual adjustments to the values of certain output key figures (adjusted key figures)
- Sub-networks and key figures related to sub-network planning
- Co-production
- Minimum lot size and rounding values
- Lot-size procedures
- Quota arrangements (that is, demand is propagated to the sources of supply according to the quotas defined in the corresponding sources of supply)

- Inventory corrections and target stock
- Minimum values defined using minimum key figures (for example, minimum customer receipts and minimum transport receipts)

Constraints not considered:

- Finite resource capacities: supply is calculated based on the assumption that all resource capacities are infinite.
- Projected stock equal to or greater than zero: because the heuristic ignores this constraint, the stock of any location product can be negative at the end of a period.
- Maximum values: maximum values are defined in the corresponding key figures (for example, maximum stock level or maximum production receipts). However, the heuristic might calculate values above the defined maximum.

Unit 6 Exercise 15

Prepare your Supply Plan



Simulation: Prepare your Supply Plan

For more information on *Prepare your Supply Plan*, please view the simulation in the lesson *Unconstrained Planning with Sales and Operations Heuristic* in your online course.

Business Example

You create the unconstrained plan with the help of the Sales and Operations Heuristic to propagate the requirements across your Supply Chain network. During this exercise you will run the Sales and Operations (SOP) Heuristic as Supply Planner to create an unconstrained supply plan.



Note:

In this exercise, when you see ##, replace the characters by your group number.

1. Create a Planning View using the *SOP 050 Supply Plan Heuristic* template.
2. Record the values for the *Production Receipts*, *Projected Stock*, and *Inventory Target* key figures.

Product ID/ Location ID	Key Figures	Current Week	Week + 1	Week + 2
IBP-FG1-##/ 1010	Production Re- ceipts			
	Projected Stock			
	Inventory Tar- get			

3. Create an unconstrained plan using the *S&OP Heuristic* planning operator.
4. Verify the status of the *S&OP Heuristic W2M* planning run.
5. Validate the results of the *S&OP Heuristic W2M* Planning run and record the values for the *Production Receipts*, *Projected Stock*, and *Inventory Target* key figures.

Product ID/ Location ID	Key Figures	Current Week	Week + 1	Week + 2
IBP-FG1-##/ 1010	Production Re- ceipts			

Product ID/ Location ID	Key Figures	Current Week	Week + 1	Week + 2
	Projected Stock			
	Inventory Tar- get			

Unit 6

Solution 15

Prepare your Supply Plan



Simulation: Prepare your Supply Plan

For more information on *Prepare your Supply Plan*, please view the simulation in the lesson *Unconstrained Planning with Sales and Operations Heuristic* in your online course.

Business Example

You create the unconstrained plan with the help of the Sales and Operations Heuristic to propagate the requirements across your Supply Chain network. During this exercise you will run the Sales and Operations (SOP) Heuristic as Supply Planner to create an unconstrained supply plan.



Note:

In this exercise, when you see ##, replace the characters by your group number.

1. Create a Planning View using the *SOP 050 Supply Plan Heuristic* template.
 - a) Go to *New View* → *From Template*. Select *SOP 050 Supply Plan Heuristic*.
 - b) In the *Planning scope* field, confirm your Scenario is *Baseline* and the *Base Version* is selected. Choose *Planning Unit ##*, confirm no other planning unit has been selected, and choose *OK*.
 - c) Choose the *Attributes* tab, confirm that only Attributes *Location ID* and *Product ID* have been selected. Deselect any other attributes.
 - d) Choose *Key Figures* tab, add the following key figures: *Production Receipts*, *Projected Stock*, and *Inventory Target*.
 - e) On the *Filter* tab, choose the *Product ##*.
 - f) Select the *Customer Demand* tab.
 - g) Choose *OK*.
2. Record the values for the *Production Receipts*, *Projected Stock*, and *Inventory Target* key figures.

Product ID/ Location ID	Key Figures	Current Week	Week + 1	Week + 2
IBP-FG1-##/ 1010	Production Re- ceipts			

Product ID/ Location ID	Key Figures	Current Week	Week + 1	Week + 2
	Projected Stock			
	Inventory Target			

3. Create an unconstrained plan using the *S&OP Heuristic* planning operator.
 - a) On the SAP IBP tab, choose *Application Jobs* → *SOP Operator* → *Run*.
 - b) Choose the *S&OP Heuristic W2M* planning operator.
 - c) Choose *Versions (Base Version)* and, to limit the planning scope, choose *Planning Unit ##*.
 - d) Choose *Next*.
 - e) There is no need to select a Reason Code or enter a comment. Choose *Run*.
 - f) An IBP Information message pops up saying the job was scheduled successfully. Choose *OK*.
4. Verify the status of the *S&OP Heuristic W2M* planning run.
 - a) On the SAP IBP tab, choose *Application Jobs* → *SOP Operator* → *Status*.
 - b) Verify that the value in the *Status* column is *Finished*. If not, choose *Refresh* until the status is *Finished*.
 - c) Choose *Close*.
5. Validate the results of the *S&OP Heuristic W2M* Planning run and record the values for the *Production Receipts*, *Projected Stock*, and *Inventory Target* key figures.

Product ID/ Location ID	Key Figures	Current Week	Week + 1	Week + 2
IBP-FG1-##/1010	Production Receipts			
	Projected Stock			
	Inventory Target			

- a) To refresh the data in the spreadsheet, choose *Data Input* → *Refresh*.
- b) To verify that the unconstrained plan has been generated, compare the *Production Receipts*, *Projected Stock*, and *Inventory Target* key figures and record the data in the table.
- c) Verify that the *Projected Stock* and *Inventory Target* key figures match (for the second week and beyond) because no capacity constraints have been considered.
- d) To save your Planning View as *Supply Planning Heuristic*, choose *Favorites* → *Add*.
- e) Choose *Add*. Keep your favorite open for the next exercise.



LESSON SUMMARY

You should now be able to:

- Describe Unconstrained Planning with the Sales and Operations heuristic

Unit 6

Lesson 3

Capacity and Scenario Management



LESSON OBJECTIVES

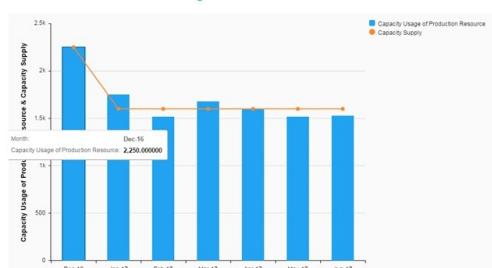
After completing this lesson, you will be able to:

- Outline capacity and scenario management

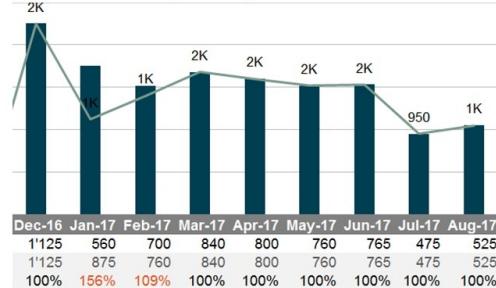
Capacity and Scenario Management



Dashboard analytics



Excel visibility at any level



Dashboard Alerts / Excel

Active (2)	Snoozed (0)
Capacity Utilization	
Capacity Utilization	17.66 %
1010 Assembly	Medium
Capacity Utilization	17.66 %
1010 Pack	Medium

Quickly identify your capacity issues

Figure 174: Analytics to Identify Issues in the Supply Chain

Resource capacity or bottle neck situations can quickly be identified via Analytics, alerts, or in the Excel UI.



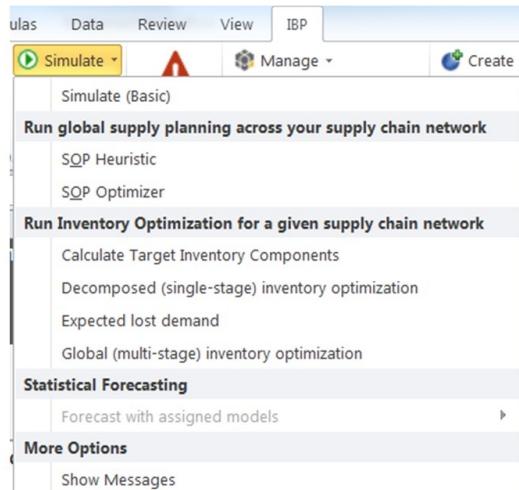
Note:

Analytics and Dashboards are SAP IBP Applications within all SAP IBP modules.
For more information see SAP Help → SAP IBP → Applications and Features of SAP IBP for Supply Chain

Live What-if/Simulation



You have been informed by your sales team of a potential increase in demand and you would like to simulate the impact on your downstream supply chain.



With the help of the Simulation option in Excel, you can simulate as much as you need to without having to save any data.

Usage example

- Run a heuristic and see impact on capacities
- Define a new customer prioritization and simulate the optimization run

Figure 175: Live What-if/Simulation

Management of Scenario



What-if scenario capabilities allow you to explore various business options at the level of granularity needed and to share with a colleague for review or save for later review. This scenario can subsequently be promoted, reset or deleted in the active version.

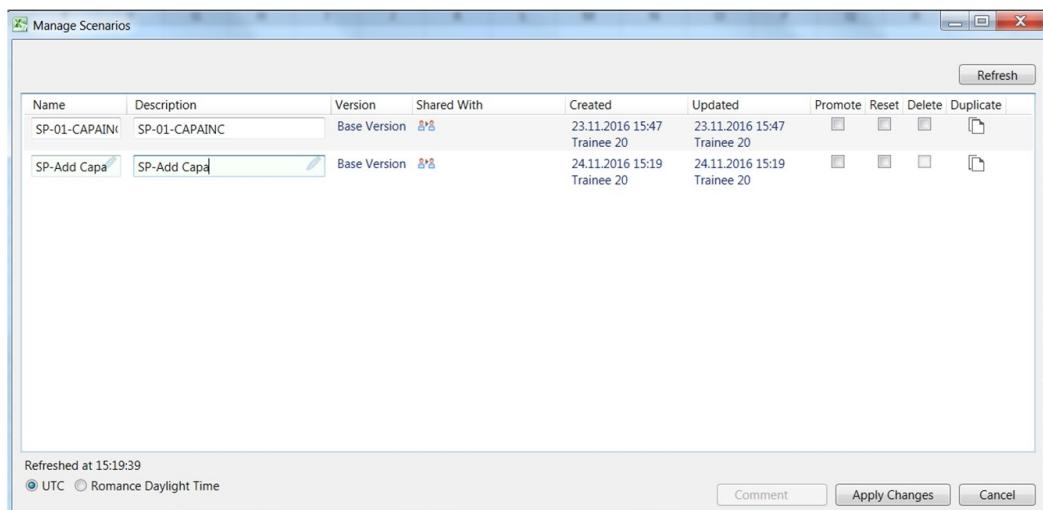


Figure 176: Managing a scenario



Note:

Scenario creation, Simulation and Versions Management are part of all SAP IBP modules. For more information see SAP Help → SAP IBP → Applications and Features of SAP IBP for Supply Chain

Unit 6 Exercise 16

Analyze the Capacity Utilization



Simulation: Analyze the Capacity Utilization

For more information on *Analyze the Capacity Utilization*, please view the simulation in the lesson *Capacity and Scenario Management* in your online course.

Business Example

You have just activated the *S&OP Heuristic* to generate the unconstrained plan. In this exercise, you analyze the capacity situation for your assembly resources.



Note:

In this exercise, when you see ##, replace the characters by your group number.

1. Continue to utilize your Favorite called *Supply Planning Heuristic*.
2. Analyze the capacity situation and adjust or enter any missing *Capacity Supply* values.
3. In the fourth time bucket from now, maintain a *Capacity Supply* creating 25% over capacity compared to *Capacity Usage of Production Resources* for the same period. Do this for both your resources, 1010 Assembly ## and 1010 Pack ##.
4. Simulate the effect of your capacity changes.

Unit 6

Solution 16

Analyze the Capacity Utilization



Simulation: Analyze the Capacity Utilization

For more information on *Analyze the Capacity Utilization*, please view the simulation in the lesson *Capacity and Scenario Management* in your online course.

Business Example

You have just activated the *S&OP Heuristic* to generate the unconstrained plan. In this exercise, you analyze the capacity situation for your assembly resources.



Note:

In this exercise, when you see ##, replace the characters by your group number.

1. Continue to utilize your Favorite called *Supply Planning Heuristic*.
 - a) Choose *Favorites* → *Supply Plan Heuristic* and choose the *Capacity* tab.
 - b) Staying in that tab, choose *Edit Planning View* and in the *Planning scope* field, confirm your scenario as *Baseline* and the Version as *Base Version*. Choose *Planning Unit ##*, confirm no other Planning unit has been selected, and choose *OK*.
 - c) On the *Filter* tab, in the *Attribute* field drop-down list, choose *Resource ID*.
 - d) Select the selection box for *Values* and choose the *1010-Assembly ##* and *1010-Pack ##* resource IDs.
 - e) Choose *OK*.
 - f) Choose *Add* and name your filter **Resource ##**.
 - g) Choose *Add*.
 - h) To display the Planning View, choose *OK*.



Note:

You can filter by *Resource ID* and *Location ID* using the functionalities on the worksheet next to *Filter*, choosing +. Once you filter by these attributes, note how the graph changes.

- i) To save your Planning View choose *Favorites* → *Update*.
- j) Choose *Update*.

2. Analyze the capacity situation and adjust or enter any missing *Capacity Supply* values.
 - a) If there are any capacity overloads, the *Capacity Utilization* key figure values are highlighted in red.
3. In the fourth time bucket from now, maintain a *Capacity Supply* creating 25% over capacity compared to *Capacity Usage of Production Resources* for the same period. Do this for both your resources, 1010 Assembly ## and 1010 Pack ##.
 - a) Maintain the *Capacity Supply* key figure in the fourth time bucket with capacity values ending up with a usage of about 125%. You can divide the values of the *Capacity Usage* key figure by 1.25 to get a *Capacity Utilization* of 125% in bucket 4.
4. Simulate the effect of your capacity changes.
 - a) On the SAP IBP tab, choose *Data Input* → *Simulate* → *Simulate (Basic)*.
 - b) Verify that the *Capacity Utilization* key figure reflects the new capacity.
 - c) Keep your Planning View opened. It will be used in the next exercise.

Unit 6

Exercise 17

Manage a Scenario



Simulation: Manage a Scenario

For more information on *Manage a Scenario*, please view the simulation in the lesson *Capacity and Scenario Management* in your online course.

Business Example

This exercise uses capacities updated in the *Analyze the Capacity Utilization* exercise.

In this exercise, you create a scenario so that another person in the organization can review the proposed amendments and promote them in the active version. These scenarios only store the changed objects and are only available to the colleagues we shared it with.



Note:

In this exercise, when you see ##, replace the characters by your group number.

1. Create a scenario to capture the results of your simulation.
2. Compare the scenario to the original situation and return to the scenario.
3. You have a subcontractor that can cover any capacity overload you might have. In each period except the 4th, maintain a *Capacity Supply* equal to *Capacity Usage of Production Resources* for that same period. Do this for both your resources 1010 Assembly ## and 1010 Pack ##.
4. Now that you have a feasible plan, promote the scenario to the Baseline.

Unit 6

Solution 17

Manage a Scenario



Simulation: Manage a Scenario

For more information on *Manage a Scenario*, please view the simulation in the lesson *Capacity and Scenario Management* in your online course.

Business Example

This exercise uses capacities updated in the *Analyze the Capacity Utilization* exercise.

In this exercise, you create a scenario so that another person in the organization can review the proposed amendments and promote them in the active version. These scenarios only store the changed objects and are only available to the colleagues we shared it with.



Note:

In this exercise, when you see ##, replace the characters by your group number.

1. Create a scenario to capture the results of your simulation.
 - a) On the IBP ribbon, in the *Scenario* screen area, choose *Create*.
 - b) In the *Name* and *Description* fields, enter **SP-##-CAPAADJ**.

Note:

For the purposes of this exercise we will not share the scenario with anyone.

 - c) Choose *OK*.
2. Compare the scenario to the original situation and return to the scenario.
 - a) In the *Planning View* screen area, choose *Edit View* → *Edit Planning View*.
 - b) Choose the button next to *Scenarios*.
 - c) Select both the *Baseline* and **SP-##-CAPAADJ** scenarios.
 - d) Choose *OK*.
 - e) On the *Alerts* tab, select *Add Alerts* and enter the newly created scenario and name for the alert as **Alert for Capacity Overload ##**. Confirm that an alert had been created for both the *Baseline* and **SP-##-CAPAADJ** scenarios.
 - f) Choose *OK*.

- g) Compare the selected scenarios *Baseline* and *SP-##-CAPAADJ* and verify that the *Capacity Utilization* key figure differs where you made the amendment from the above exercise, Analyze the *Capacity Utilization*.
- h) In the *Planning View* screen area, choose *Edit View* → *Edit Planning View*.
 - i) Choose the button next to *Scenarios*.
 - j) Deselect the *Baseline* scenario.
 - k) On the *Alerts* tab, select the name of your *Scenario* under the *Scenario* option.
 - l) If necessary remove any other alert which corresponds to the *Baseline* scenario.
 - m) To return to the *Planning View* with only the *SP-##-CAPAADJ* scenario data visible, choose *OK*.
- 3. You have a subcontractor that can cover any capacity overload you might have. In each period except the 4th, maintain a *Capacity Supply* equal to *Capacity Usage of Production Resources* for that same period. Do this for both your resources 1010 Assembly ## and 1010 Pack ##.
 - a) Maintain *Capacity Supply* key figure in each period except the 4th with a capacity utilization ending up with a usage of 100%.

You now have no overloads except for the one intentionally created in bucket 4. Leave that overload for the Optimizer to resolve.

 - b) Choose *Save Data*.
 - c) If a IBP Warning appears, choose *Yes*.
 - d) Do not enter a reason code. Choose *Save*.
- 4. Now that you have a feasible plan, promote the scenario to the *Baseline*.
 - a) In the *Scenarios* screen area, choose *Manage*.
 - b) In the *SP-##-CAPAADJ* scenario row, select the *Promote* check-box.
 - c) Choose *Apply Changes*.
 - d) In the *Planning View* screen area, choose *Edit View* → *Edit Planning View*.
 - e) Select the *Baseline* scenario.
 - f) Choose *OK*.
 - g) On the *Alerts* tab, select *Baseline* under the *Scenario* option and verify that you have created an alert for both the *Baseline* and *SP-##-CAPAADJ* scenarios.
 - h) Choose *OK*.
 - i) To read the data stored in the database, in the *Data Input* screen area, choose *Refresh*.
 - j) Verify that the *Capacity Utilization* key figure for both scenarios *Baseline* and *SP-##-CAPAADJ* matches.



Note:

If you do not enable the alert for the *Baseline* scenario the over capacity will not show red. If the system shows an error, confirm that you picked the correct scenario in the *Scenario* option on the *Alerts* tab in the *Planning View Settings*.

- k) Close the *Supply Planning Heuristic* planning view. Do not save a local version.



LESSON SUMMARY

You should now be able to:

- Outline capacity and scenario management

Unit 6

Lesson 4

Constrained Planning with the Supply Optimizer



LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Outline Constrained Planning with the Supply Optimizer

Constrained Planning with the Supply Optimizer



Constraints considered

- Finite multilevel capacity planning
- Priorities managed by costs
- Profit or delivery maximization
- Lot sizes and lead-times
- Safety / Maximum Inventory
- Manually adjusted plan

Module: Supply & Response
Model: Time series based

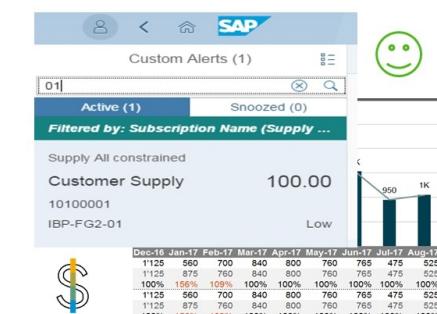


Figure 179: Planning Engine - Supply Optimizer

The aim of optimization is to minimize the total cost of the supply plan. The Sales and Operations optimizer achieves this by minimizing costs, such as:

- Production, procurement, and transportation.
- Non-delivery or late delivery of products to satisfy demands.
- Falling below the target inventory level or going over the maximum inventory level.
- Violation of manually adjusted values (for example, adjusted customer demand) or minimum values (for example, minimum production receipts).
- Inventory holding.
- Optimization is performed by transforming the supply planning problem into a mathematical model (a mixed integer linear program (MILP)). The output is a feasible,

cost-optimized production, distribution, and procurement plan for the entire supply chain network taking into account constraints.

The optimizer can create plans that are optimized according to the following criteria:

- Profit maximization
- Delivery maximization

Optimizer: Delivery vs. Profit

	Profit Maximization		Delivery Maximization	
	<p>Customer demand for unprofitable product remains unsatisfied.</p> <p>You can get an overview by comparing the customer demand for the product with the total customer receipts with the help of an alert or an aggregated planning view / analytics.</p>		<p>The aim is to determine the proportion of all customer demands that can be satisfied without taking into account the profitability of each product, but respecting all constraints in the supply chain.</p> <p>As a result, the only reason why a customer demand cannot be fulfilled up to 100% is a limiting constraint, for example, the finite capacity of resources.</p>	
	Figure 180: Profit or Delivery Maximization			

The following details are relevant for Profit Maximization:

- The optimizer maximizes profit, where profit is the difference between total revenue and overall cost. Total revenue is calculated as the sum of the revenue of all products sold to market. The revenue of each product is calculated by multiplying its sales price (that is, non-delivery costs) by the quantity shipped to the customer.
- If the total cost of a finished product (comprising production, inventory holding, and transportation costs, and the cost of all components) is higher than its sales price, the optimizer chooses not to deliver and therefore not to produce or transport this product.

Unit 6 Exercise 18

Constrain and Analyze a Plan



Simulation: Constrain and Analyze a Plan

For more information on *Constrain and Analyze a Plan*, please view the simulation in the lesson *Constrained Planning with the Supply Optimizer* in your online course.

Business Example

This exercise uses data created in the *Analyze the Capacity Utilization* and *Manage a Scenario* exercises.

In this exercise, you constrain the plan by respecting capacities using the Optimizer and by respecting product prioritization.



Note:

In this exercise, when you see ##, replace the characters by your group number.

1. Create a Planning View using the *SOP 051 Supply Plan Optimizer*.
2. In the Planning View, check the cost model and verify that products *IBP-FG1-##* have priority when constraining the plan because the non-delivery cost rate is higher. Verify against the following data:

Customer ID	Product ID	Non-delivery Cost Rate for Customer Demand
10100001	IBP-FG1-##	100
10100001	IBP-FG2-##	80
17100001	IBP-FG1-##	100
17100001	IBP-FG2-##	80
18100001	IBP-FG1-##	100
18100001	IBP-FG2-##	80

3. Run the multilevel constrained optimizer starting from current Week + 3 for the *Base Version* and *Planning Unit ##*.
4. Check the status of the run and review the log to understand the demand fulfillment rate.
5. Verify that the capacity is respected using your *Supply Planning Heuristic* favorite.
6. Update your *Supply Plan Optimizer* favorite.

7. Based on the maintenance of the priority for the *IBP-FG1-##* product, open the *Agg Customer Receipts* tab in your *Supply Plan Optimizer* favorite Planning View to verify that the shortage in demand was indeed favored for the *IBP-FG2-##* product by comparing the unconstrained *Consensus Demand* key figure against the *Total Customer Receipts* key figure.
8. Access the Global Plan combining all your product families you created during exercises *Analyze the Capacity Utilization* and *Manage a Scenario* in Dashboard *IBP100 - ##* and explore the plan.

You have now been through the main Integrated Business Planning processes and how SAP IBP can support them.

Unit 6 Solution 18

Constrain and Analyze a Plan



Simulation: Constrain and Analyze a Plan

For more information on *Constrain and Analyze a Plan*, please view the simulation in the lesson *Constrained Planning with the Supply Optimizer* in your online course.

Business Example

This exercise uses data created in the *Analyze the Capacity Utilization* and *Manage a Scenario* exercises.

In this exercise, you constrain the plan by respecting capacities using the Optimizer and by respecting product prioritization.



Note:

In this exercise, when you see ##, replace the characters by your group number.

1. Create a Planning View using the *SOP 051 Supply Plan Optimizer*.
 - a) Go to *New View* → *From Template*, and select *SOP 051 Supply Plan Optimizer*.
 - b) In the *Planning scope* field, confirm your scenario is *Baseline* and the *Base Version* is selected. Choose *Planning Unit ##*, confirm no other planning unit has been selected and choose *OK*.
 - c) Navigate to the *Filter* tab.
 - d) Select the *Product ##* filter to show the data set of the key figures of the *Product ID*: *IBP-FG1-##* and *IBP-FG2-##* in the Planning View.
 - e) Choose *OK* to enter the Planning View.
2. In the Planning View, check the cost model and verify that products *IBP-FG1-##* have priority when constraining the plan because the non-delivery cost rate is higher. Verify against the following data:

Customer ID	Product ID	Non-delivery Cost Rate for Customer Demand
10100001	IBP-FG1-##	100
10100001	IBP-FG2-##	80
17100001	IBP-FG1-##	100
17100001	IBP-FG2-##	80

Customer ID	Product ID	Non-delivery Cost Rate for Customer Demand
18100001	IBP-FG1-##	100
18100001	IBP-FG2-##	80

- a) If the values in the system do not match the values in the table, enter the costs for the entire horizon to match the table.
 - b) If you made any changes, in the *Data Input* screen area, choose *Save Data*.
 - c) To save your Planning View as *Supply Plan Optimizer*, choose *Favorites* → *Add*.
3. Run the multilevel constrained optimizer starting from current Week + 3 for the *Base Version* and *Planning Unit ##*.
- a) On the IBP Ribbon, in the *Applications Jobs* screen area, choose *SOP Operator* → *Run*.
 - b) Choose the *S&OP Optimizer W2M* planning operator.
 - c) Limit the time horizon from *Current week +3* to *the last available week*.
 - d) Choose/confirm Scenarios (*Baseline Version (Base Version)*) and, to limit our planning scope, choose *Planning Unit ##*.
 - e) Choose *Next*.
 - f) Do not select a Reason Code. Choose *Run*.
 - g) On the IBP Information popup, choose *OK*.
4. Check the status of the run and review the log to understand the demand fulfillment rate.
- a) On the IBP ribbon, choose *Advanced* → *SOP Operator* → *Status*.
 - b) Verify that the *Status* column says *Finished*.
 - c) Choose *Show Business Log*.
 - d) On the filter popup, choose *OK*.
 - e) Find the column titled *Message ID* and filter by *Message 9130*.
Demand fulfillment rate in Excel is not 100% because the optimizer has considered the restriction in capacities we have defined.
 - f) Close the Excel sheet but do not save a local copy.
5. Verify that the capacity is respected using your *Supply Planning Heuristic* favorite.
- a) In the *Planning View* screen area, choose *Favorite* → *Supply Planning Heuristic*.
 - b) Select the *Capacity* tab.
Alternatively, if the sheet is already open, choose *Refresh*.
 - c) Verify the *Capacity Utilization* and the load has been leveled based on the capacity maintenance carried out in exercise *Manage a Scenario*.
 - d) Close your *Supply Planning Heuristic* favorite but do not save a local copy.
6. Update your *Supply Plan Optimizer* favorite.

- a) Choose Favorites → *Supply Plan Optimizer* and select the *Agg Customer Receipts* tab.
 - b) Under the *Planning View* section of the IBP ribbon, choose *Planning View* → *Edit Planning View*.
 - c) In the *Planning scope* field, confirm your scenario is *Baseline* and the *Base Version* is selected. Choose *Planning Unit ##*, confirm no other planning unit has been selected, and choose *OK*.
 - d) On the *Filter* tab, choose your *Product ##* filter.
 - e) To display the *Planning View*, choose *OK*.
7. Based on the maintenance of the priority for the *IBP-FG1-##* product, open the *Agg Customer Receipts* tab in your *Supply Plan Optimizer* favorite *Planning View* to verify that the shortage in demand was indeed favored for the *IBP-FG2-##* product by comparing the unconstrained *Consensus Demand* key figure against the *Total Customer Receipts* key figure.
- a) Compare the *Consensus Demand* key figure against the *Total Customer Receipts* key figure.
 - b) Add the *Product ID* attribute if needed. Verify that the *IBP-FG2-##* product has higher priority than *IBP-FG1-##*. A higher priority is identified when values in *Total Customer Receipts* for a product are higher than the other product.
8. Access the Global Plan combining all your product families you created during exercises *Analyze the Capacity Utilization* and *Manage a Scenario* in Dashboard *IBP100 - ##* and explore the plan.
- a) On the IBP ribbon, under *About* drill down on *Web Apps* and choose *Home*.
 - b) Your default web browser will start.
 - c) Log on if required.
 - d) Choose the *Analytics* app.
 - e) Choose *Create* → *Analytics Chart*.
 - f) Add **Consensus Demand vs. Customer Supply ##** in the *Name* and *Description* fields.
 - g) Select the **SAPIBP1** Planning Area.
 - h) Select *Consensus Demand and Customer Supply* under *Key Figures*.
 - i) Group by *Product Family*.
 - j) Group by *Versions/Scenarios* as *Series*.
 - k) Select *EA* under *Unit of Measure*.
 - l) Select *USD* under *Currency*.
 - m) Select *Column* under *Comparison* to pick the type of chart.
 - n) Choose *Save*.
 - o) Go to the *Dashboard* app and create a *Dashboard* with the name **IBP100 - ##**.

- p) Add your chart *Consensus Demand vs. Customer Supply ##* into the *IBP100 - ##* Dashboard.
- q) Resize the Chart on the Dashboard.

You have now been through the main Integrated Business Planning processes and how SAP IBP can support them.



LESSON SUMMARY

You should now be able to:

- Outline Constrained Planning with the Supply Optimizer

Unit 6

Lesson 5

Order-based Planning with SAP Integrated Business Planning for Response and Supply

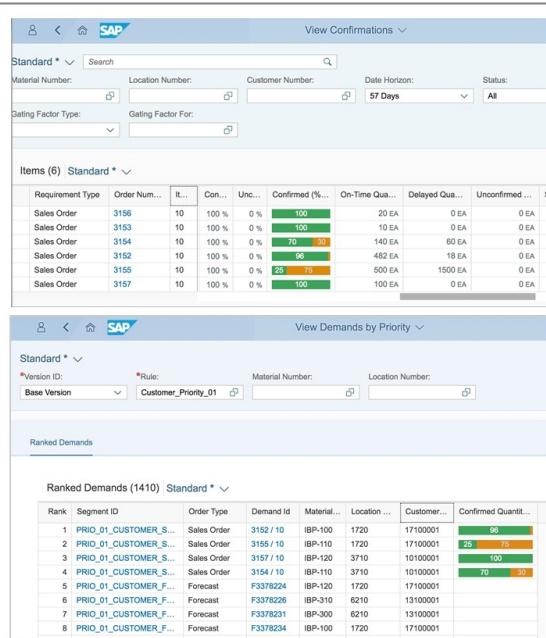


LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Understand the concepts of Order-based Planning with SAP Integrated Business Planning for Response and Supply

Order-based Planning with SAP Integrated Business Planning for Response and Supply



- Support of operational (order based) supply planning.
- Generates supply orders (production, procurement, distribution).
- Unconstrained planning, constrained priority rules-driven heuristic planning, optimization-based planning.
- What-if analysis of actual or hypothetical changes to demand and/or supply, with **pegging and gating-factor** analysis.
- Optionally generate and provide allocations to Available-to-Promise (ATP) and reschedule sales orders.
- New order data model and near-real-time replication from SAP ERP.

Figure 182: Overview of Order-based Planning with SAP Integrated Business Planning for Response and Supply

Response Management to Meet Quick Changes Coming from Supply and Demand Signals

You use response management to plan your company's supply and demand. This means ensuring that you always have enough stock available, and that you can respond quickly to any changes that might arise on short notice.

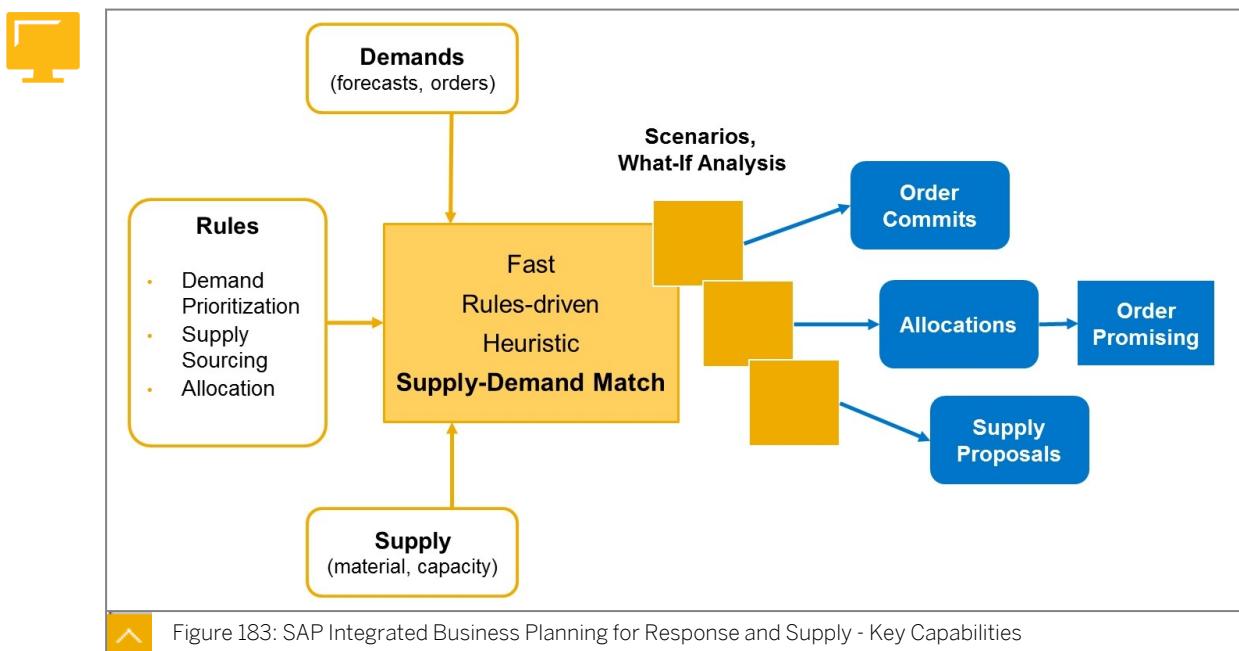
With response management, you can take care of the entire process as follows:

- Create a supply plan, which can be tailored to your individual customer requirements based on master, transactional, and configuration data imported from any systems, as well as forecast information.

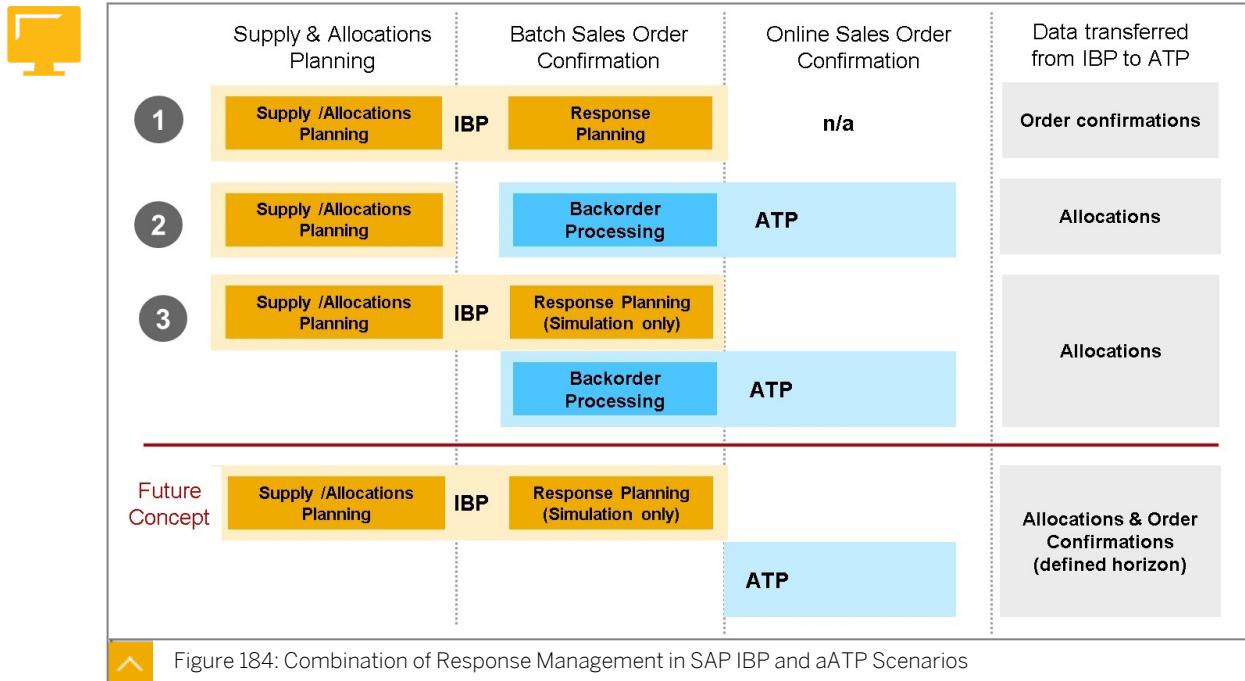
- Control which orders will be processed first. You do this by creating rules to rank customer orders by priority.
- React quickly to any unforeseen supply and demand changes, using simulations (what-if analysis) to try out potential solutions, and then update your live plan accordingly.
- Analyze gating factors to better overcome them in future.

Response management requires master data (especially locations and materials), transactional data (especially order information), and proper configuration to work.

Order-based Planning with SAP Integrated Business Planning Response and Supply - Key Capabilities



SAP Integrated Business Planning for response and supply is very similar to APO GATP (Global Available to Promise) in that it considers Demand Prioritization (based on customizable rules), allocations and sequence of back-order processing.



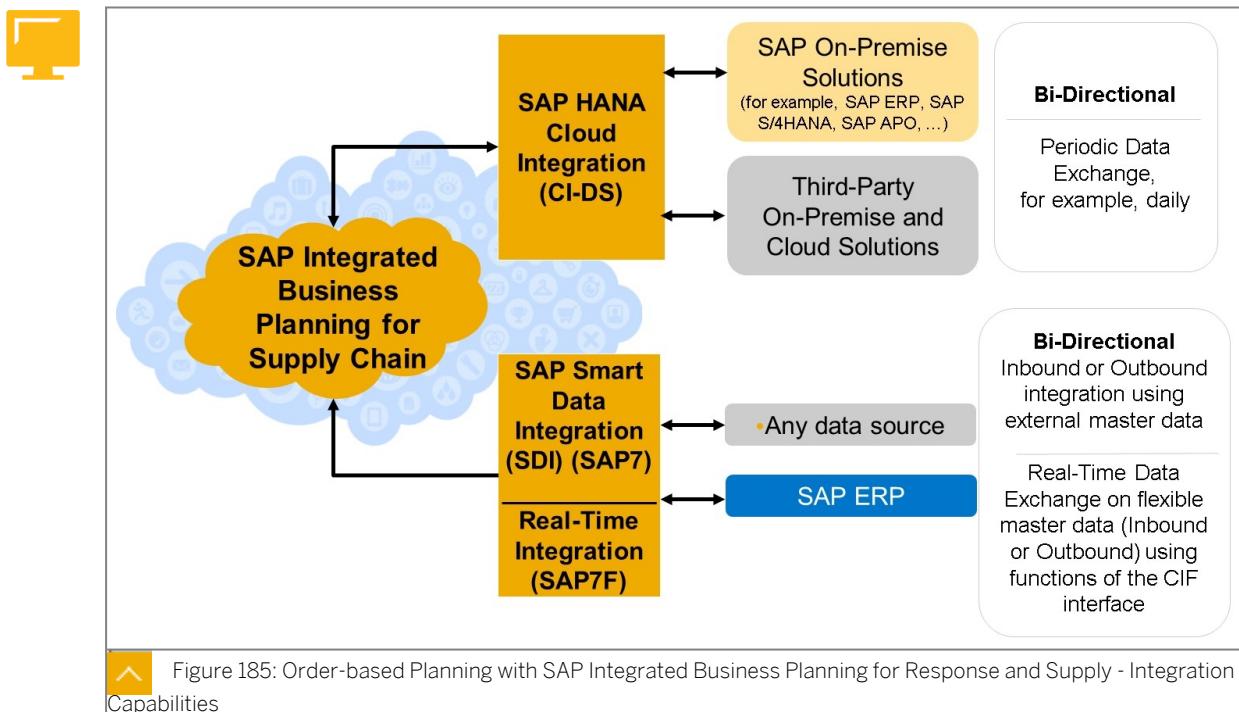
Note:

ATP is now called aATP (Advanced Available-to-Promise) which is a business function in SAP S/4HANA that provides a response to order fulfillment enquiries in Sales and Distribution (SD) and Production Planning (PP). For further information about aATP, see SAP Help Portal → Advanced Available-to-Promise (aATP).

Planning Processes

The following Planning processes are supported by order-based Planning:

- Demand-drive replenishment and Order-based Planning: With demand-driven replenishment, you can generate supply elements as part of the DDMRP process in SAP IBP.
- Response management: You can create a supply and allocations plan and react to supply and demand changes in response management.
- Production Planning integration: You can do detailed Planning and scheduling in an SAP S/4HANA system that is connected to your SAP IBP system with production Planning integration.
- Deployment Plan: You can distribute available supply to demand with deployment Planning.



Integration for order-based Planning takes place between the order taking system and SAP Integrated Business Planning for Supply Chain. This planning task is done via SDI (SAP Smart Data Integration) and RTI (Real-Time Integration). For Time-Series Planning, CI-DS works as Middleware transferring information back and forth (bi-directional integration) between a third-party (on-premise or cloud) solution or a SAP (On-premise or cloud) solution, and SAP IBP for Supply Chain.



LESSON SUMMARY

You should now be able to:

- Understand the concepts of Order-based Planning with SAP Integrated Business Planning for Response and Supply

Learning Assessment

1. Which of the following SAP Integrated Business Planning Supply Planning Engines perform a rules-based demand prioritization algorithm for Planning and simulating finite multilevel Planning?

Choose the correct answer.

- A Sales and Operations Heuristic (Multilevel)
- B Supply Optimizer (Cost driven)
- C Constrained (Priority driven)

2. Which of the following constraints should be considered for unconstrained Planning with Sales and Operations Heuristic?

Choose the correct answers.

- A Finite resource capacities
- B Lead times for transportation
- C Quota arrangements
- D Safety and target stock

3. Which of the following capabilities allow you to explore various business options at the level of granularity needed and to share with a colleague for review or to save for later review ?

Choose the correct answer.

- A Statistical Forecasting
- B Dashboard Analytics
- C What-if scenario

4. Which of the following constraints are considered for Constrained Planning with the supply optimizer?

Choose the correct answers.

- A Profit or delivery maximization
- B Lot sizes and lead-times
- C Infinite multilevel Planning
- D Quota arrangements

5. Which of the following options can be used to react quickly to any unforeseen supply and demand changes during response management to plan your company's supply and demand?

Choose the correct answer.

- A Master, transactional, and configuration data imported from any systems, as well as forecast information.
- B Using simulations (what-if analysis) to try out potential solutions, and then update your live plan accordingly.
- C Creating rules with which to rank customer orders by priority.

Lesson 1

Introduction to SAP Supply Chain Control Tower

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Lesson 2

Custom Alerts

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Lesson 3

Case Management

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Lesson 4

Intelligent Visibility

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Lesson 5

Business Network Collaboration

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UNIT OBJECTIVES

- Address challenges within the supply chain network
- Identify custom alerts functionalities using SAP Supply Chain Control Tower
- Highlight case management through SAP Supply Chain Control Tower
- Identify Intelligent Visibility as part of SAP Supply Chain Control Tower
- Summarize SAP Supply Chain Control Tower benefits

Unit 7

Lesson 1

Introduction to SAP Supply Chain Control Tower



LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Address challenges within the supply chain network

Introduction to SAP Supply Chain Control Tower



Plan and Respond with SAP IBP

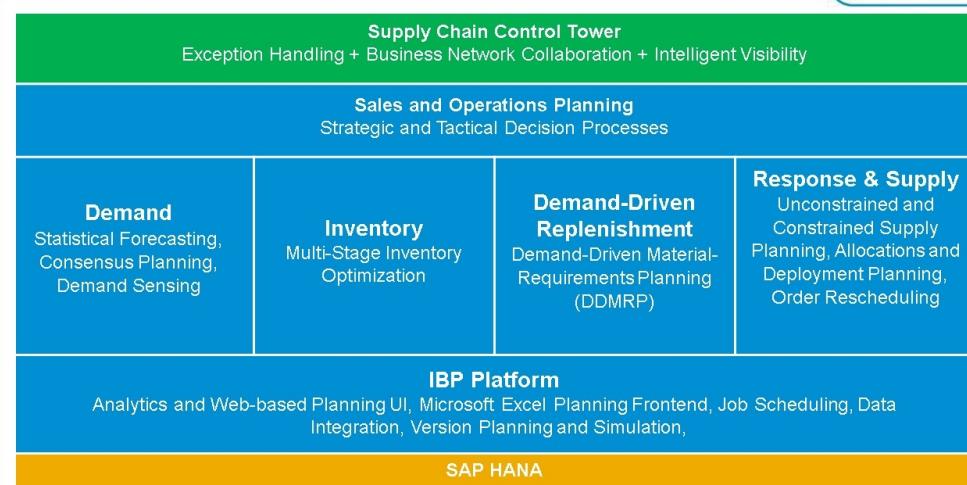


Figure 186: SAP Supply Chain Control Tower within SAP IBP

Considering the entire SAP IBP solution, the SAP Supply Chain Control Tower supports end-to-end visibility, as well as monitoring, customer alerts and intelligent visibility in the Supply Chain.



Note:

The following link provides an overview of SAP Supply Chain Control Tower Features and processes covered by its license: [SAP Help → SAP Integrated Business Planning for Supply Chain → Applications and Features of SAP Integrated Business Planning for Supply Chain. → SAP Supply Chain Control Tower](#)



The need for a resilient supply chain

Uncertain supply of critical materials

Demand volatility for goods and services

Constrained capacity in manufacturing & logistics

Human risk of balancing labor shortages and health and safety of employees

Oversteering Intensifies the bullwhip effect

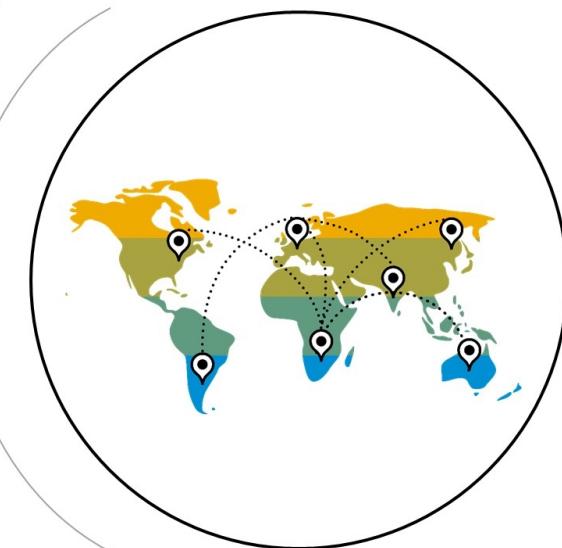


Figure 187: Why Do We Need a SAP Supply Chain Control Tower? (I/II)



Resilience

* Set up **Control Tower with tactical/strategic** decision processes to plan against different **demand and supply scenarios** and other disruptions for coming **weeks/months**.

- Plan/scenarios updated on a weekly/beweekly basis
- Implementation of strategic decision.
E.g. production continues, focus SKUs

*An integrated supply chain control tower creates transparency to make decisions across supply and demand in a crisis response



*McKinsey & Company - Operational and Supply Chain Impact, an Executive Briefing - 2020

Figure 188: Why Do We Need a SAP Supply Chain Control Tower? (II/II)

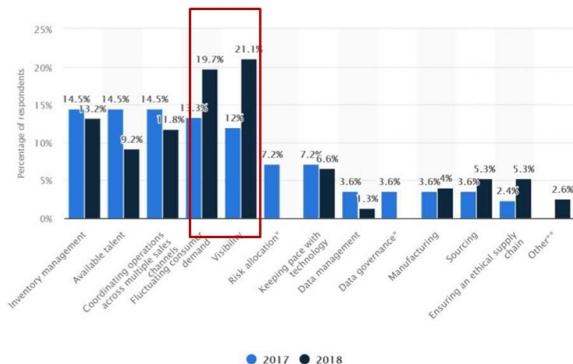
These statements represent very real and reasonable issues posed by business leaders daily and throughout their respective Planning cycles. In a traditional scenario, operational and financial decisions are scattered, uncoordinated, and are often made using a gut feeling or without the use of all available facts. The decision making process is slow and often based on outdated information, introducing two sources of error into the Planning process. Reaction time to major events is also compromised, often driving organizations to panic into error. This results in a higher risk in terms of errors and omissions insurances, published financial results that include surprises or missed expectations, loss of market share and possibly key customers.



What is the biggest challenge you are facing in your supply chain?

21% of supply chain professionals say that **visibility** is their biggest organizational challenge.

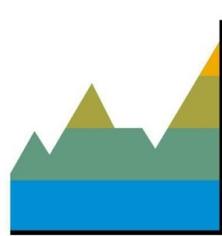
That number increased dramatically from 2017, when only 12% suggested visibility was a big



<https://www.statista.com/statistics/829634/biggest-challenges-supply-chain/>

© Statista 2019 Source: eft Supply Chain & Logistics Business Intelligence [Show source details](#)

Figure 189: What is the challenge? (I/II)



- How can I manage what I can not see?
- How do I project what my KPI levels will be by the end of the year?
- What are the fundamental drivers or causes of my performance?
- Where in my supply chain am I likely to face future problems?

Figure 190: What is the challenge? (II/II)

SAP Supply Chain Control Tower, as a Big Data application, can connect data from different systems, whether in-house- or external, SAP or third party, Supply Chain Execution, or Planning systems.

Integration to those systems is done via Middleware "Cloud Integration". There are templates available to integrate the most common objects from SAP into Supply Chain Control Tower, for example Master data load for Location or Product from SAP ERP, when SAP IBP is purchased.

Existing Key Capabilities



- Supply Chain Planning Visibility**
 - via using time series based data
 - near real-time data
- Business Network Collaboration**
 - Supply side planning collaboration
 - Integration to Ariba SCC
- Sophisticated alert management**
 - flexible Custom alerts with ML for outlier detection
 - dynamic navigation to other systems or analytics
- Case management**
 - to collect unstructured information
 - and track the issue
- Intelligent Visibility app**
 - Geographic view of product networks
 - with search and alert visibility

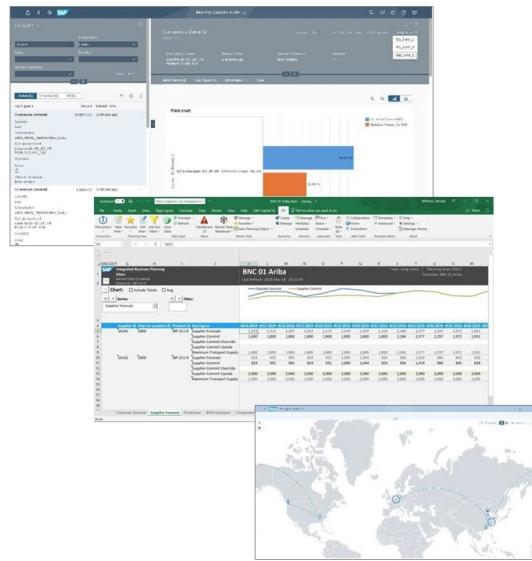


Figure 191: SAP Supply Chain Control Tower (I/II)



The Supply Chain Control Tower provides you with extended visibility of your supply chain, decision support and fast corrective action for achieving a better Supply Chain Planning

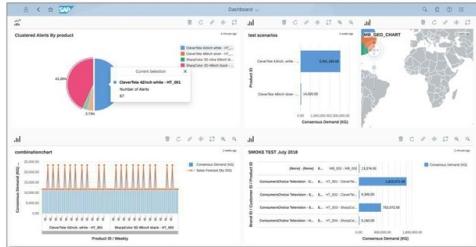
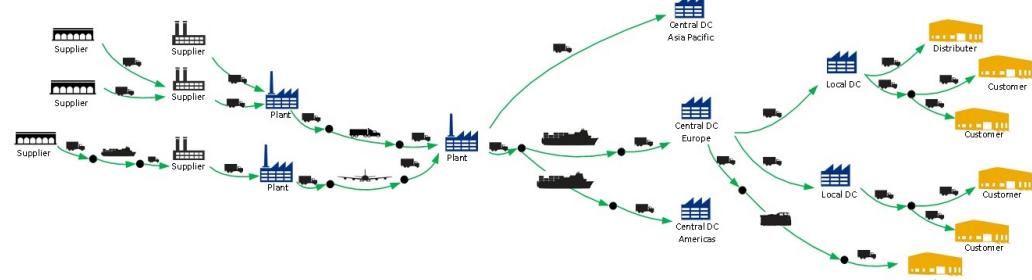



Figure 192: SAP Supply Chain Control Tower (II/II)

Have a look at the example Supply Chain picture and observe the following:

- Unlike in a Supply Chain Planning system you do not only see what happens within your company (LOCATIONS in BLUE COLOR).
- On the one Upstream side there are Tier 1, Tier 2, Tier 3, and so on. All of the suppliers are contributing to your value chain.
- On the Downstream side there are direct customers, whether retailing, wholesaling (or Original Equipment Manufacturers) with their distribution center and stores.
- Unlike a transactional system, you would not only look at the individual plants or locations to see what is the current inventory level but also track down where shipments (Stock) are currently

- Imagine there is an extreme weather situation and you would like to find out if your shipment is on the sea or somewhere else. You could just see it right from there.
- Therefore, we imagine to have total visibility on the shipment level to answer these questions.
- In short, with SAP Supply Chain Control Tower, you enable your Supply Chain Professionals to navigate, analyze and profitably manage the end-to-end Supply Chain in real-time.

What can you do with that?

- With better visibility, you always know about the impact on the "real" customer. Make decisions in context and put the customer in center. This will result in increased on-time delivery performance to customer.
- If you have better information about what happens in your Supply Chain and you could identify fundamental drivers, you can also reduce risk in your Supply Chain. This will result in decreased overall inventory levels while reducing risk.
- Reduce Supply Chain cost. This will result in better and on-time information to handle exceptions, allowing you to reduce associated costs, for example, for transport and production.
- Increase Supply Chain agility. This will result in being more agile and productive by having one source of truth.



LESSON SUMMARY

You should now be able to:

- Address challenges within the supply chain network

Unit 7

Lesson 2

Custom Alerts



LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Identify custom alerts functionalities using SAP Supply Chain Control Tower

Custom Alerts

You can use the new Define Custom Alerts Overview app to define and customize your alerts overview and add them to a dashboard.

A custom alerts overview can be defined with a subset of your alerts subscriptions or with some other criteria such as category, severity or key figure.

The number of alerts can be viewed in a chart and can be grouped by subscription, category, severity or attribute. For example, you're able to visualize the number of alerts by *Product ID*. Additionally, you can now filter on alerts that have cases in the Monitor Custom Alerts app.



- Define Custom Alerts Overview allows clustering of alerts
- Alerts can be viewed by subscription, priority, category or by any attribute of the alert
- Alert overviews can be added to dashboards

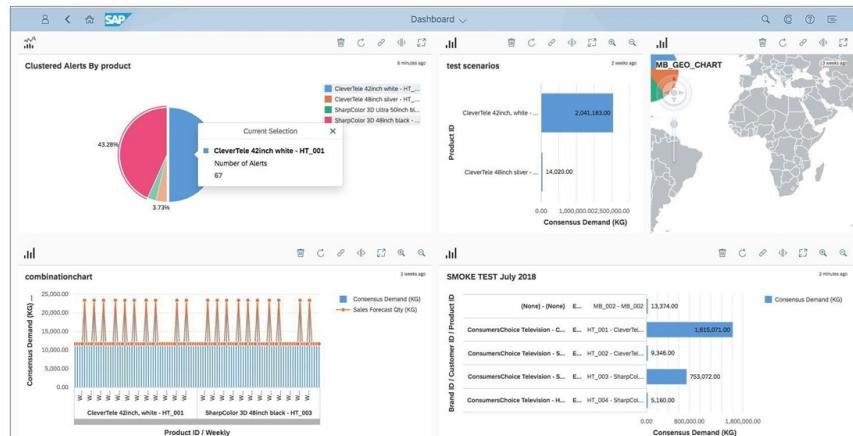


Figure 193: Custom Alerts Overview

With alert-based Planning, you first identify the situation and the issue. Based on the specific exceptions and given information on a Planning problem, you can take appropriate Planning actions to remove the alerts and therefore to resolve the issue.



Providing Context and Priority

Understand the situation, impact on customers and analyze end-to-end materials and flow in the context of the alert

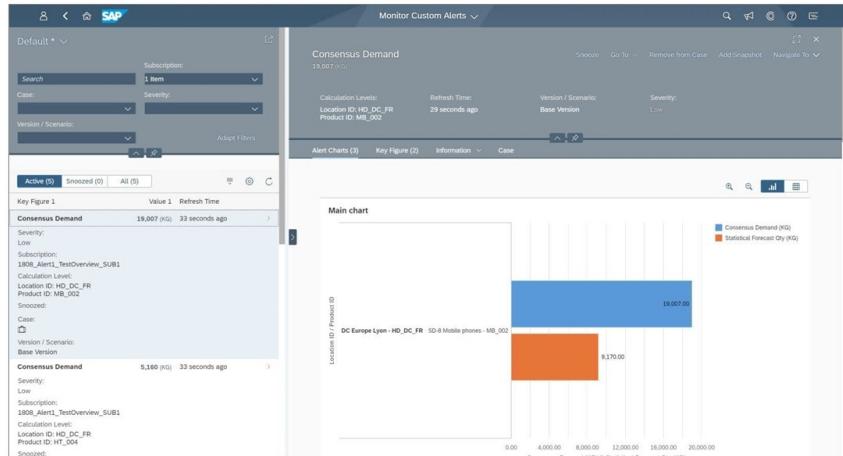


Figure 194: Quickly Identify Issues with Customer Alerts

In the figure, you can see how the Monitor Customer Alerts App is. In the App, you can select the Planning area, versions, subscriptions, severity, category, and case. You filter the alert using these criteria or you can adapt the filters if needed.

When you open the Monitor Custom Alerts app, the custom alerts for which you have a subscription or which have been shared with you, are now displayed automatically. You can enter filter criteria, such as subscription, severity, and planning area, for the custom alerts you would like to view and click Go. You can also choose not to enter any filter criteria and click Go , then all custom alerts for which you have a subscription or which have been shared with you will be displayed.



You can now navigate to the Web-Based Planning app from the Monitor Custom Alerts allowing the alert to be solved by changing data

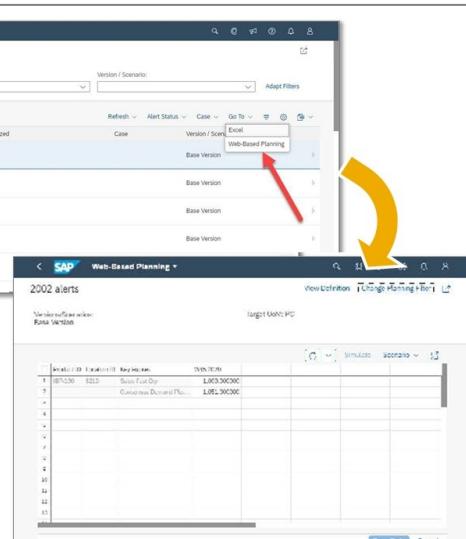
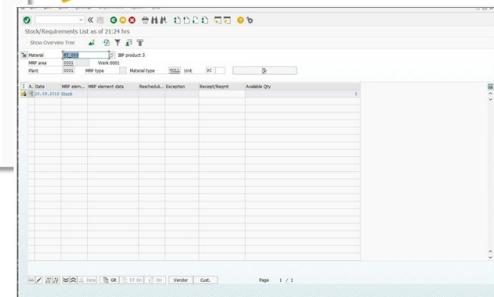
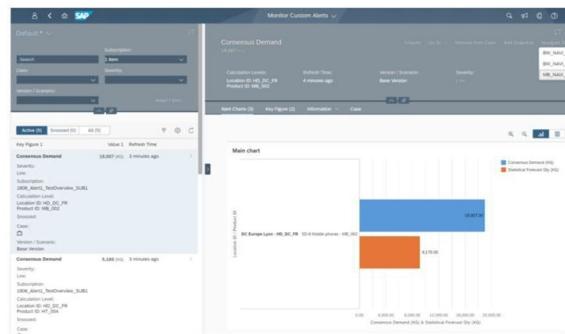


Figure 195: Navigation to Web-based Planning from the Alert Monitor



Depending on the data points, the Navigate To button will display the appropriate system where to navigate to.



Depending on the data points, the appropriate system will open with the transaction and the screen fields will be pre-filled depending on the mapping that has been maintained.

Figure 196: Dynamic Navigation from SAP IBP to other systems

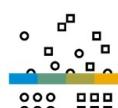
Use case: Outlier Detection in Custom Alerts



IBP Custom Alerts are based on **static rules**. This works fine if the threshold for the exception condition is known and the data is generally consistent.

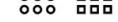


If the data is variable and changes to the pattern occur, the static rules may lead to **too many or too few alerts** which either keeps planners busy or leaves them clueless.



Parameters can be set to get "**healthy**" amount of alerts

Machine Learning **adjusts with changing data patterns**



Users can either use ML alert definitions on their own or put them on top of existing alerts

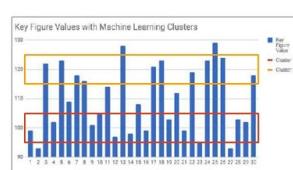
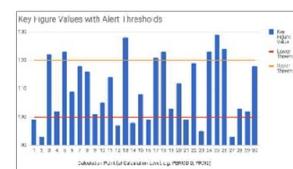


Figure 197: Machine Learning algorithms for Custom Alerts

Machine Learning can be applied when data is variable and changes may occur. Under these described conditions, static rules are not suitable anymore. Variable conditions combined with static rules within custom alerts may cause a huge amount of messages or too less entries. ML is a suitable solution to adjust to changing data patterns.



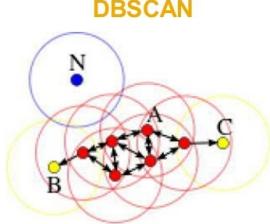
Target Business Role: Supply Chain Planner

Business Value

- **Frees up planner's capacity** as excessive number of alerts can be avoided
- Planners can set up alerts without a need to know the **exact thresholds** in advance
- **Changing data** will change the alert detection without a need for the planner to adjust the alert definition
- Define very **tailored and target-oriented alerts** by combining Machine Learning based dynamic rule with static rules

Machine Learning Approach

- Leverages out of the box available standard algorithms within the SAP HANA PAL Library: **K-means & DBSCAN**
- Machine Learning adjusts with changing data patterns
- Alert rules can use a combination of ML-based determination and finite thresholds



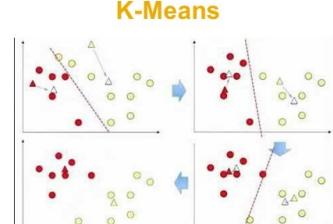




Figure 198: Detection in Custom Alerts

In the previous slide, we see the business value of the machine learning approach to plan against exceptions via custom alerts.



- Planner Workspace now includes an alert component
- Selected alerts are highlighted so that adjustments can be simulated and saved to resolve the exception condition

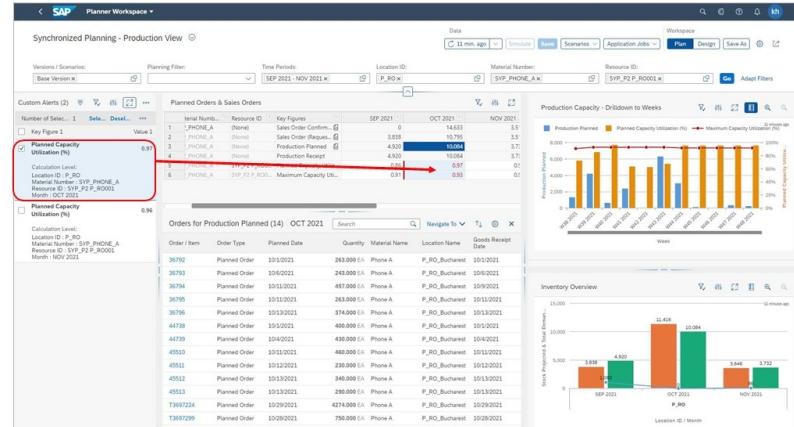




Figure 199: Planner Workspace and Custom Alerts (I/VIII)

Planner Workspace App supports now custom alerts as displayed in the slide.



It is now possible to use attribute values in the alert rules of a custom alert definition. This allows the generation of alerts with a single definition with variations of the threshold conditions.

- **Attribute example:**

KF1 > 8 WHEN ABC = "A"

OR

KF1 > 15 WHEN ABC = "B"

OR

KF1 > 30 WHEN ABC = "C"

- **Date attribute example:**

KF1 > 8 WHEN week = current week

OR

KF1 > 15 WHEN week between current week+1 and current week+12

OR

KF1 > 30 WHEN week greater than current week+12

Figure 200: Planner Workspace and Custom Alerts (II/VIII)

Custom alerts now supports attribute values to better define thresholds within the static rules as displayed in the slide.



You can choose to apply the key figure rules to:

- Certain calculation level attributes, for example, specific locations or products
- Specific time period within the selected time horizon

The new functionality gives the possibility to centralize your custom alert definition with different rules applied to different attributes and periods instead of having to create multiple separate definitions

Figure 201: Planner Workspace and Custom Alerts (III/VIII)

Custom alerts now supports multiple rules with different attributes and periods as displayed in the slide.



Determine alerts for sales order quantity where:

- Value is < 20, or
- Value is > 80, or
- Value is outside a cluster

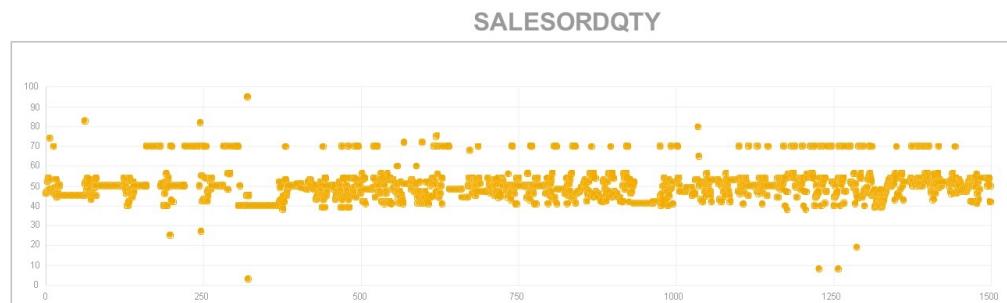


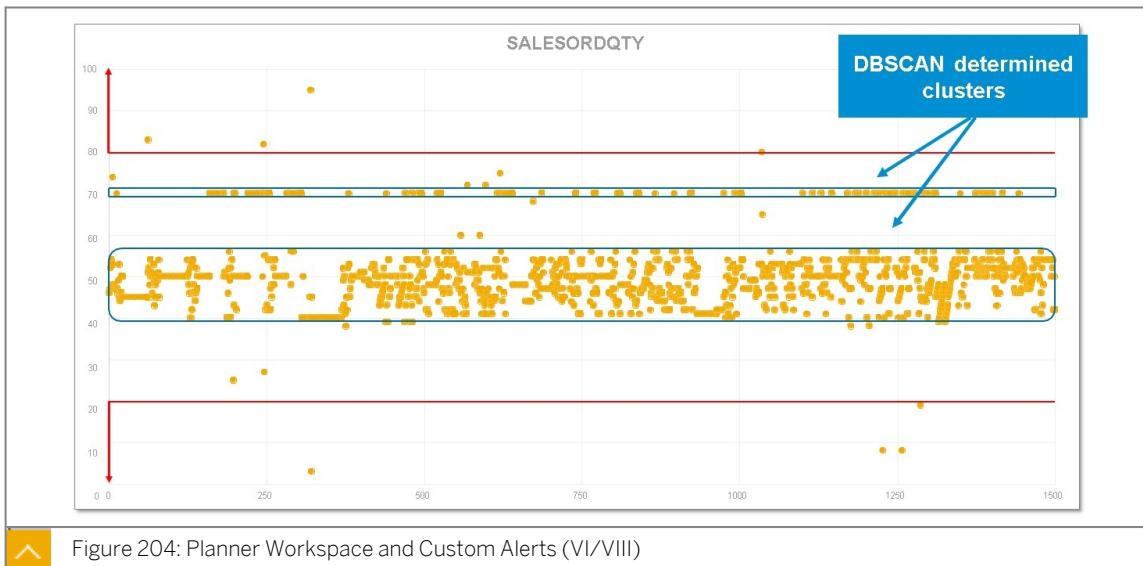
Figure 202: Planner Workspace and Custom Alerts (IV/VIII)

As displayed in the slide, using the planner workspace app, outliers can be identified.



Figure 203: Planner Workspace and Custom Alerts (V/VIII)

As displayed in the slide, using the planner workspace app and machine learning, outliers can be separated from the main clusters.



As displayed in the slide, using machine learning, these outliers can be removed from the historical records.



As displayed in the slide, using the machine learning approach, outliers will be removed from the historical records based on custom alerts.



Threshold comparison	Order based alerts
<ul style="list-style-type: none"> Projected Stock > Maximum Stock Level Consensus Demand > 110% Sales Plan 	<ul style="list-style-type: none"> Sales Order Confirmed Late
Threshold comparison with offsets	Machine Learning alerts
<ul style="list-style-type: none"> Sales Plan (current period) > Sales Plan (12 months ago) Consensus Demand (current period) < 50% Consensus Demand (1 month ago) 	<ul style="list-style-type: none"> Clustering algorithms to detect alerts using DBSCAN or k-means
Threshold comparison with attributes	Complex combinations of types
<ul style="list-style-type: none"> Days of Supply > 8 when ABC = "A" OR Days of Supply > 15 when ABC = "B" OR Days of Supply > 30 when ABC = "C" 	<ul style="list-style-type: none"> Projected Stock < Minimum Stock Level AND Consensus Demand (current period) > 125% Consensus Demand (last week) OR Days of Supply < 8 when TYPE = "FERT" OR DBSCAN @ PRDID

Figure 206: Planner Workspace and Custom Alerts (VIII/VIII)

As displayed in the slide, several rules within the custom alerts can be applied, for instance, to clean historical records or to detect levels of inventory.



LESSON SUMMARY

You should now be able to:

- Identify custom alerts functionalities using SAP Supply Chain Control Tower

Unit 7

Lesson 3

Case Management



LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Highlight case management through SAP Supply Chain Control Tower

Case Management



Collect information and track the issue

- Create cases to collect information around a specific situation
- Attach comments Assign colleagues
- Add alerts to cases to quickly and efficiently resolve the issue

Figure 207: Tracking Issues

Case management enables exception tracking for complex supply chain problems by providing cause and effect information, as well as collaboration.

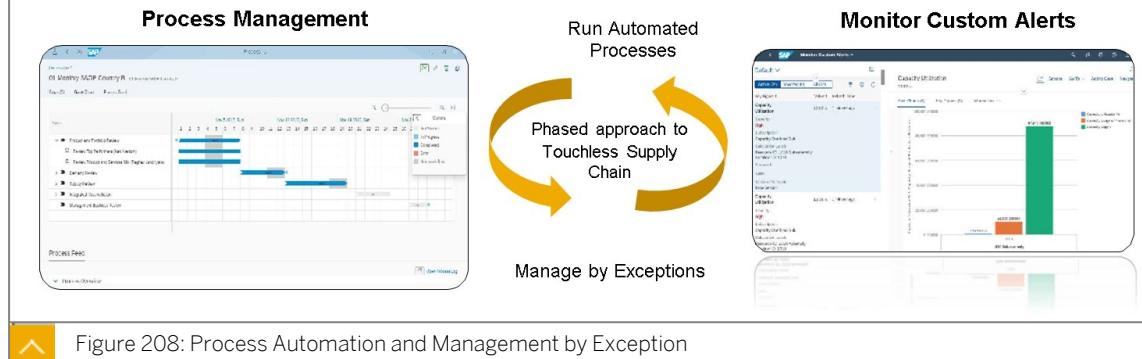


Assign Custom Alert Subscriptions to Process Step enabling process to run automated and intervene on exceptions in planning results.

e.g. Demand Planning should not start if the Actuals Qty has Null value Alerts

Supply Planning should start only if Demand Plan Accuracy > 85%

Supply Planning process should not finish if there are Capacity Overload Alerts



This example shows an alert that is used to monitor the performance of a process step.. Process steps can be created within a process instance to track status of important tasks.

The custom alert can be monitored from a dashboard.

Example: Management by Exception



Define Alerts and Manage Resolution



Forecast Bias on product level above threshold



Forecast Accuracy on product group level below target

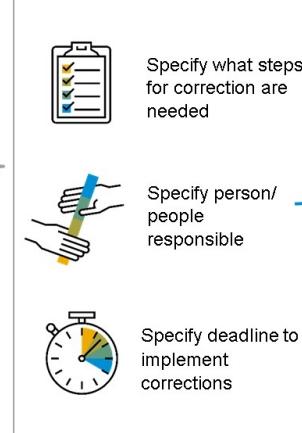


Planned Promotion Uplift is bigger than 50% of baseline demand



... Figure 209: Managing Exceptions

Case Management



Additional licensing may apply



Using alerts, IBP can make you aware of situations that you consider to be critical, according to conditions that you defined upfront. For example, you can detect situations where the customer demand exceeds 5000 pieces or the projected stock falls below 500 pieces.

LESSON SUMMARY

You should now be able to:

- Highlight case management through SAP Supply Chain Control Tower

Unit 7

Lesson 4

Intelligent Visibility



LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Identify Intelligent Visibility as part of SAP Supply Chain Control Tower

Intelligent Visibility

Intelligent visibility is an app that can be used to view and monitor internal and external supply chain processes and exceptions on a geographic map or in a table.

The Intelligent Visibility app captures and uses data from different sources to provide real-time visibility. The app allows business users to react quickly and to make decisions to solve supply chain issues.



Intelligent Visibility

- You can display your supply chain network on a map and view how locations are connected and how products are moving between locations
- Select a planning area and version
- Select Supply Chain Network layer
- Enter one or more products whose supply chain network you want to view and click Go



Figure 210: Supply chain network layer

With this app you can view:

- customers by location on a geographic map.
- supply chain network on a geographic map.
- key figures on a geographic map.



Intelligent Visibility

- By selecting a location, the list of alerts is displayed in the right side panel
- You can select one or multiple alerts and navigate to the **Monitor Custom Alerts** app to analyse further those alerts or take any action that's available here to resolve the issue

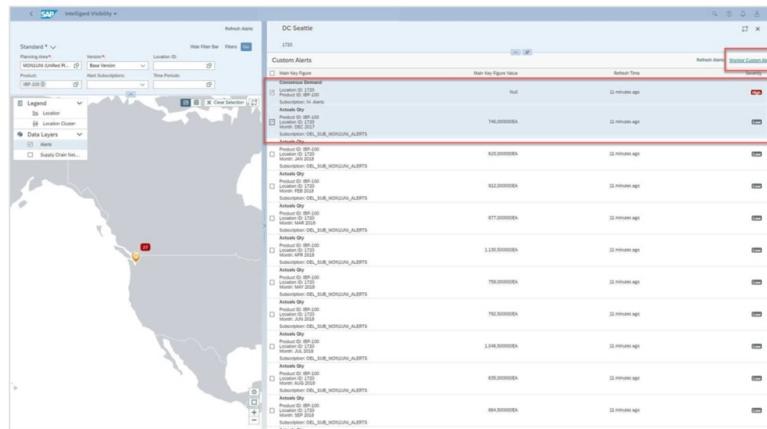


Figure 211: Alerts layer

With this app you can view custom alerts, view custom alerts details, and navigate to other apps or external S4/HANA systems.

Playbooks



- Customers have identified a need to standardize responses to situations
- The **Procedure Playbooks** app is now able to provide these best practices, for example, by adding them to Custom Alerts
- A playbook can contain a detailed description of the issues, the reasons for the issues, and activities and actions to be taken to resolve them

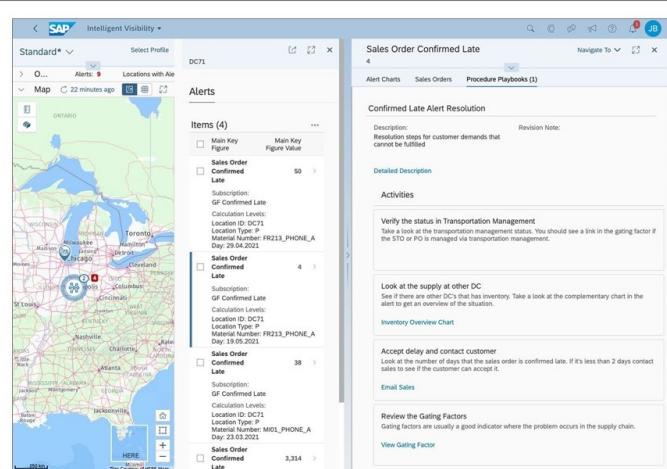


Figure 212: Alert resolution with Procedure Playbooks (I/II)

You can use this new app to define standardized procedures for solving supply chain planning issues and share them with other users or user groups. A procedure playbook can provide an overview of the issues that it helps resolve, the reasons for the issues, and the activities and actions that can be taken to resolve them. When an issue is detected, for example, in a custom alert, users with whom a procedure playbook has been shared can use the playbook while trying to resolve the issue.

You can click one of the actions to open the configured link

Gating Factor Type	Gating Factor For	Affected Quantity	Gat
Insufficient Lead Time	POC01_CASE_A_FA71	24 EA	
Insufficient Lead Time	POC01_CASE_A_FA71	47 EA	
Insufficient Lead Time	POC01_CPU_A_FA71	24 EA	
Insufficient Lead Time	POC01_CPU_A_FA71	47 EA	
Insufficient Lead Time	POC01_PACKAGIN_A_FA71	89 EA	
Insufficient Lead Time	POC01_PACKAGIN_A_FA71	47 EA	
Insufficient Lead Time	POC01_PHONE_A_DC71	24 EA	
Insufficient Lead Time	POC01_PHONE_A_DC71	35 EA	
Insufficient Lead Time	POC01_PHONE_A_DC71	50 EA	
Insufficient Lead Time	POC01_PHONE_A_DC71	40 EA	
Insufficient Lead Time	POC01_PHONE_A_DC71	80 EA	
Insufficient Lead Time	POC01_PHONE_A_DC71	120 EA	
Insufficient Lead Time	POC01_PHONE_A_DC71	15 EA	

Figure 213: Alert resolution with Procedure Playbooks (II/II)

You can create a procedure playbook in the Procedure Playbooks app. You create it for a planning area and an app area where it can be used, for example, custom alerts. You can include a detailed description with an overview of the issues that the procedure playbook helps resolve and the possible reasons for the issues. You can also define activities and actions that can be taken to resolve the issues. You share a procedure playbook with other users or user groups.

When you create, copy, or edit a custom alert definition in the Define and Subscribe to Custom Alerts app, you can now add one or more procedure playbooks to your definition in a new step of the wizard. You can add procedure playbooks to your custom alert definition only if you've created them or if they've been shared with you in the Procedure Playbooks app. In addition, the planning area of a procedure playbook must be the same as the planning area of a custom alert definition.

When a custom alert is calculated and displayed in the Monitor Custom Alerts or Intelligent Visibility app, users with whom the procedure playbook has been shared can view it along with the alert and use it while trying to resolve the issue.

Rating and Comments

Multiple enhancements have been made to procedure playbooks that provide you with more insight into their usage and usefulness and allow you to manage them better.



Monitor Custom Alerts and Intelligent Visibility

- Users can offer feedback on the value or quality of the procedure playbook and its activities
- Users can rate and add comments, see the average rating and the total number of ratings. The distribution of the ratings, the rating details, and comments made by other users are also displayed.

Sales Order Confirmed Late

Confirmed Late Alert Resolution

Rating: ★★★★ (2)

Description: Resolution steps for customer demands that cannot be fulfilled

Detailed Description:

Rating and Comments on Procedure Playbook - Confirmed Late Alert Resolution

Rating	Comment	Created By	Created On
★★★★★ (5 out of 5)	I like how this playbook is presented. The steps are perfectly explained and gives enough background and actions to solve the alert. Less	Jun 25, 2021, 4:05:42 pm	
★★★★★ (3 out of 5)	This is a nice playbook version	Example Inventor...	May 31, 2021, 9:09:07 am

Figure 214: Rating and Comments (I/IV)



Monitor Custom Alerts and Intelligent Visibility

- Users can like, dislike, or give a neutral rating to activities

Sales Order Confirmed Late

Activities

- Verify the status in Transportation Management
- Review the Gating Factors
- Look at the supply at other DC
- Review in Planner Workspace
- Accept delay and contact customer service team

Figure 215: Rating and Comments (II/IV)



Procedure Playbook - General

- You can view the average rating as well as the individual ratings and comments that users provided for a procedure playbook while using it to resolve supply chain planning issues
- You can view the number of times a procedure playbook has been used while trying to resolve issues

Confirmed Late Alert Resolution

Average Rating: ★★★★ (2) **Usage:** 20

Rating	Comment	Created By	Created On
★★★★★ (5 of 5)	I like how this playbook is presented. The steps are perfectly explained and gives enough background and actions to solve the alert. Less	Jun 25, 2021, 4:05:42 pm	
★★★★★ (3 of 5)	This is a nice playbook version	Example Inventor...	May 31, 2021, 9:09:07 am

Figure 216: Rating and Comments (III/IV)



Procedure Playbook - Activities

- You can view the number of times an activity has been liked, disliked, or has been given a neutral rating
- You can view the number of times an activity with an action has been used while trying to resolve issues

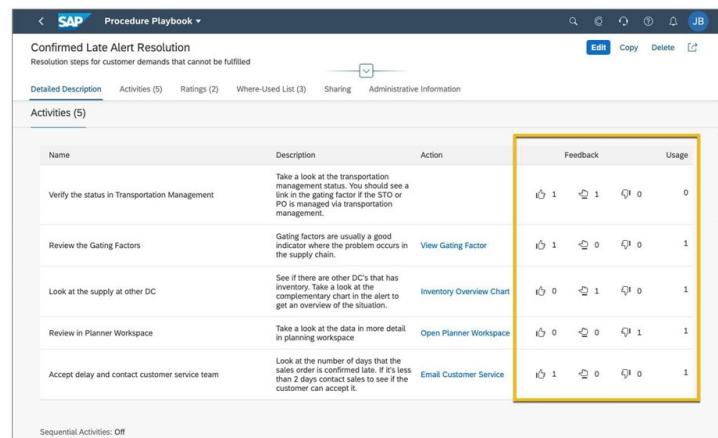


Figure 217: Rating and Comments (IV/IV)

Latest Innovations of Intelligent Visibility



- You can now connect to the SAP Enterprise Product Development to show your products and locations in an embedded 3D viewer when the model exists on that system
- The 3D visualization is an excellent way to see where the product fits into the finished good and evaluate how important is that if something goes wrong with the planning
- This feature will also improve the quality of internal and external communication

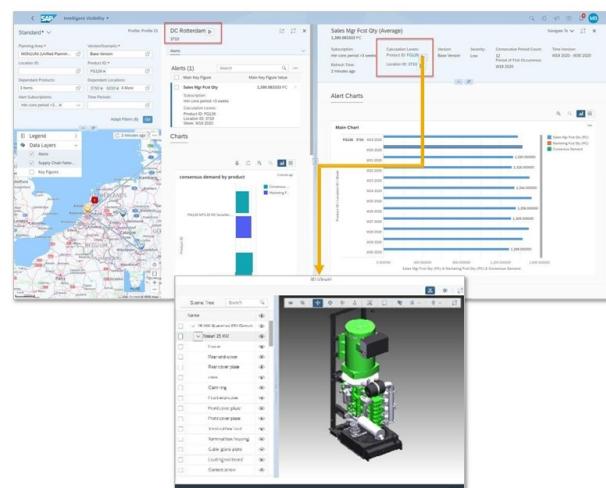


Figure 218: Product visualization with SAP Enterprise Product Development Integration

You can now:

- View product network dependencies with where-used/where-made filtering
- Manage Exceptions using attribute specific alert rules



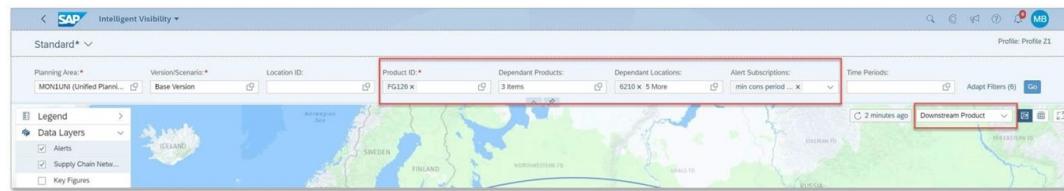


Figure 219: Order execution visibility with SAP Logistics Business Network

You can now:

- Map content integration with SAP HANA Spatial Services
- Manage Exceptions using attribute specific alert rules
- Display of orders and details independent of alerts
- Share changes of alerts and procedure playbooks



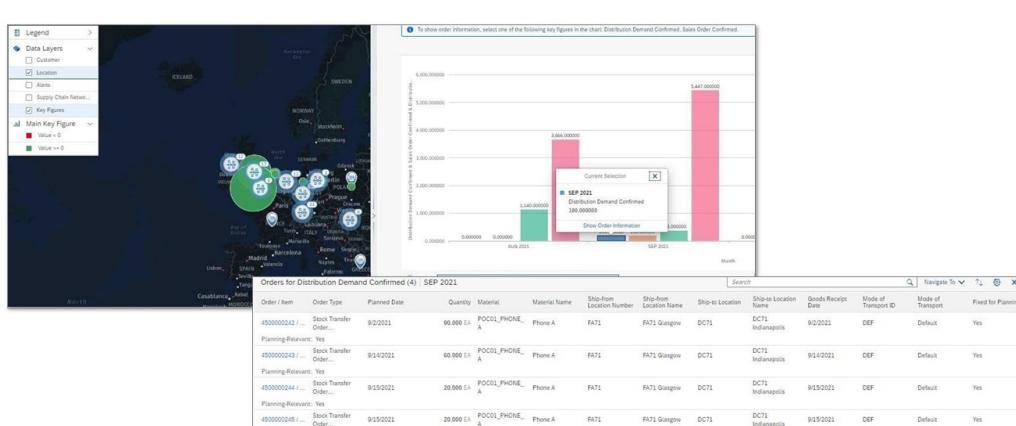


Figure 220: Visibility to Transportation Management

You can now:

- Use Alert resolution recommendations with procedure playbooks
- Map content integration from external provider ESRI
- Use Summary of alerts and selected products and locations



- The Intelligent Visibility overview can be enriched with micro charts to view a summary of important KPIs. The charts are optimized to use a small space and give users about the supply chain situation



Figure 221: Visibility to main KPIs Impacting performance

You can now:

- Use statistics and user ratings for procedure playbooks
- Manage alert notifications with user level controls



LESSON SUMMARY

You should now be able to:

- Identify Intelligent Visibility as part of SAP Supply Chain Control Tower

Business Network Collaboration



LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Summarize SAP Supply Chain Control Tower benefits

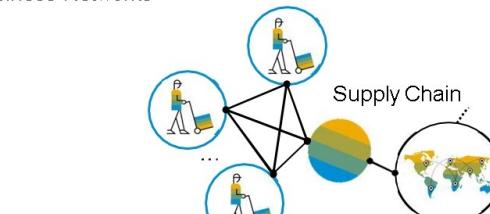
Business Network Collaboration

SAP Supply Chain Control Tower enables Business Network Collaboration.



Beyond organizational boundaries

Business Networks



Key enabler for more frequent and integrated planning cycles on all levels and across all areas

Sales /
Marketing

Executives

Finance



Figure 222: Integrated business processes and value chain

SAP Integrated Business Planning allows you to synchronize and optimize your supply chains across company boundaries. By sharing information with your business partners in a controlled manner, you are better placed to react to changes in supply and demand quickly and efficiently.



For a comprehensive planning view is reporting the component requirements the supplier, who evaluates the supplier forecast.

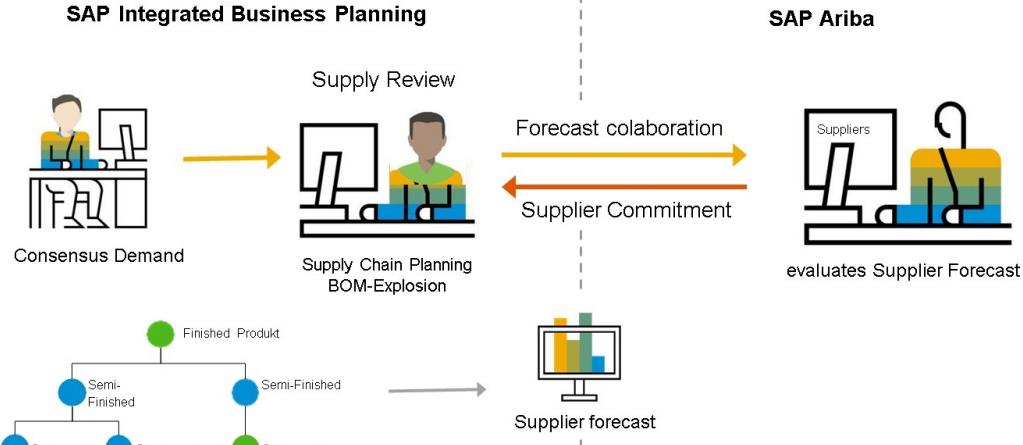


Figure 223: Supply Planning and Collaboration with Supplier

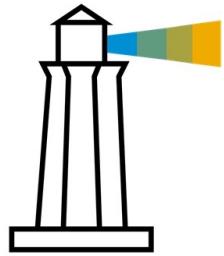
With business network collaboration, you can easily share your key figure data with your business partners. For example, you can calculate the demand for finished goods as part of an unconstrained supply planning run. When you have the unconstrained demand, you can share this key figure with your suppliers who then commit the confirmed quantities. You receive the committed quantities from each of your suppliers, and you can then use this data for scenario planning. After analyzing the alerts and reports for any variances and resolving any issues that may have arisen, you can then publish your constrained forecast.

Integrating SAP Integrated Business Planning with the forecast add-on for SAP Ariba Supply Chain Collaboration for Buyers enables you to exchange product activity messages and product replenishment messages.



Note:
The forecast add-on for SAP Ariba Supply Chain Collaboration for Buyers is licensed separately.

Wrapping Up



SAP Supply Chain Control Tower

Delivers supply chain performance by monitoring, measuring, and responding to supply chain alerts and metrics in real time

Business Benefits

- Prevent supply chain disruptions
- Increase on-time delivery performance to customer
- Decrease overall inventory levels while reducing risk
- Reduce supply chain cost
- Increase supply chain agility



Figure 224: Added value of SAP Supply Chain Control Tower

As explained in the previous slide, SAP Supply Chain Control Tower provides concrete benefits delivering a higher supply chain performance by monitoring, measuring and responding to supply chain alerts and metrics in real time.



LESSON SUMMARY

You should now be able to:

- Summarize SAP Supply Chain Control Tower benefits

Learning Assessment

1. Which of the following options is used for integrating performance data from multiple systems, whether in-house or external, SAP or third party, Supply Chain Execution, or Planning systems, with SAP Supply Chain Control Tower ?

Choose the correct answer.

- A TTP
- B Middleware "Cloud Integration"
- C BW

2. What is the application of custom alerts ?

Choose the correct answer.

- A aATP Planning
- B Exception Management
- C Smart Data Integration Planning

3. Which of the following options collects cause and effect information based on alerts or other identified data elements within SAP Supply Chain Control Tower?

Choose the correct answer.

- A Cases
- B Tasks
- C Audit trails
- D Dashboards

4. What is Intelligent Visibility?

Choose the correct answer.

- A A solution to view and monitor internal and external supply chain processes and exceptions on a geographic map or in a table.
- B An app to open new applications within SAP BW.
- C An app to navigate from place to other.

5. Does SAP Supply Chain Control Tower support Business Network Collaboration?

Choose the correct answer.

- A Yes.
- B Maybe
- C It is not correct

6. In summary, what is the main purpose of SAP Supply Chain Control Tower?

Choose the correct answer.

- A SAP Supply Chain Control Tower provides concrete benefits delivering a higher supply chain performance by monitoring, measuring and responding to supply chain alerts and metrics in real time
- B Financial Planning
- C Order-based execution
- D Dashboard and Analytics