# Intelligent Order Promising with SAP S/4HANA advanced Available-To-Promise (aATP)



## Content

Order Promising in Digital Supply Chain

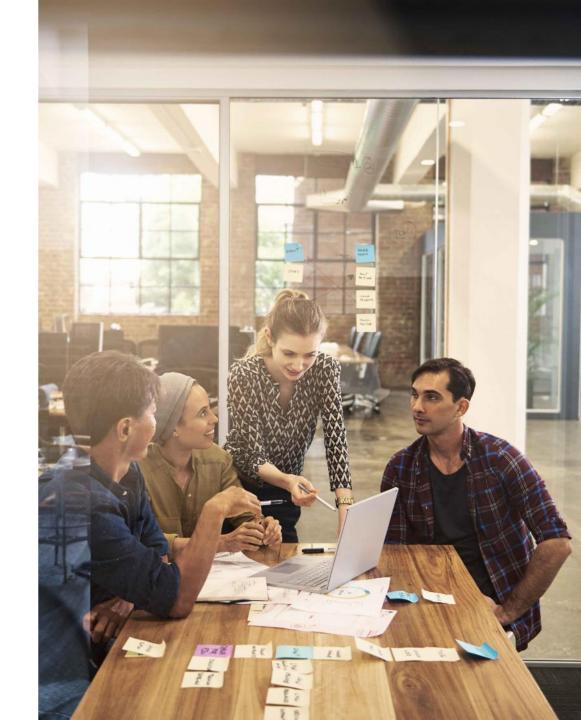
Solution Strategy and Value Proposition

SAP S/4HANA aATP Overview

Solution Positioning

**Customer Use Cases** 

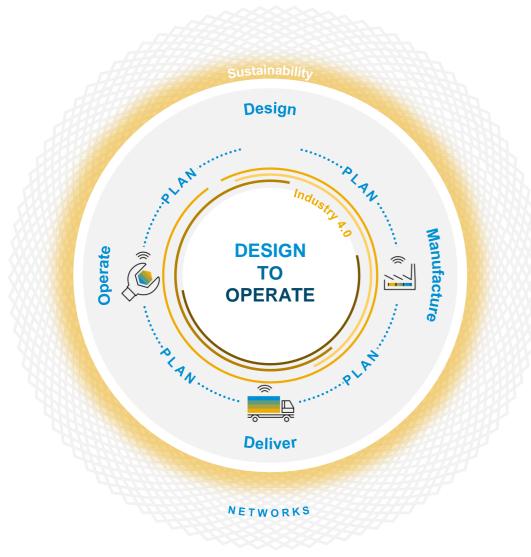
Roadmap



# Intelligent Order Promising in SAP Solution Strategy for Digital Supply Chain



# **Resilient Supply Chains – From Design to Operate**





### Design

- Make informed design choices with consistent product data
- Design anywhere/build anywhere with remote collaboration
- Visually communicate product design to a distributed ecosystem



#### Plan

- Run what-if scenarios and simulations for faster decisions
- Balance inventory buffers with cost constraints
- Gain total supply chain visibility and determine risk elements



#### Manufacture

- Adjust production schored changed demand and supply
- Improve collabora promising rs for reliable commitments
  Optimize your scarce available resources and labor



#### **Deliver**

- Closely monitor the progress of critical orders
- Increase resilience in warehouses by deploying robots
- Address lock-downs with optimized scheduling and routing



### **Operate**

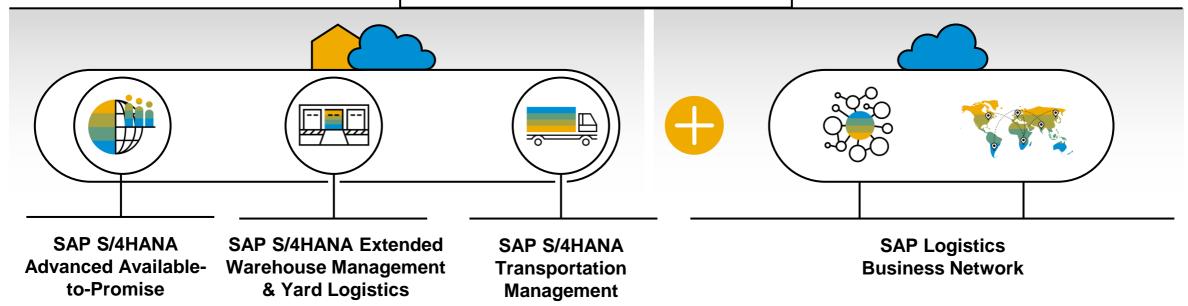
- Ensure critical assets are available to service customers
- Allocate constrained spare parts to critical jobs
- Switch from planned to condition based maintenance





Enables just-in-time consumption creating the product experience by making delivery part of the promise

### **Digital Logistics Real-time Data**

















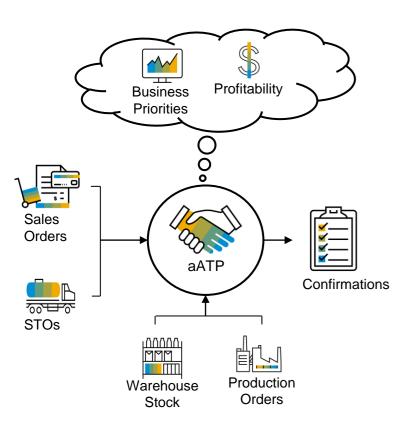




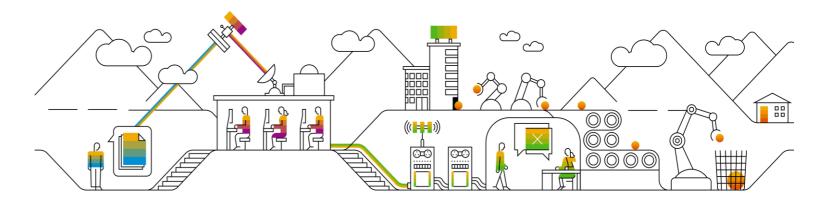
# Intelligent Order Promising Solution Strategy and Value Proposition



# The Intelligent Order Promising – S/4HANA advanced ATP



As an important and integral part of the order fulfillment process, SAP S/4HANA advanced Available-To-Promise provides accurate and reliable order promise dates considering the relevant stock in real-time, while protecting companies' business priorities and profitability goals.

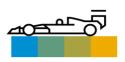


# **SAP S/4HANA advanced ATP Solution Strategy**





- Intuitive and user friendly interfaces
- Easy set-up and maintenance



### **Fast**

- Built natively in S/4HANA Enterprise.
- Uses the master and transaction data of the S/4HANA Core.
- Uses latest HANA technologies



### **Flexible**

 Available in all four deployment options

 On Premise,
 Public Cloud,
 Private Cloud and
 HEC



## Intelligent

- Next generation order promising functions
- Automated exception handling
- Dynamic selection of alternatives



## **Integrated**

- Integral part of End-to-End business processes
- Integration to Planning,
   Manufacturing,
   Procurement, Logistics\*

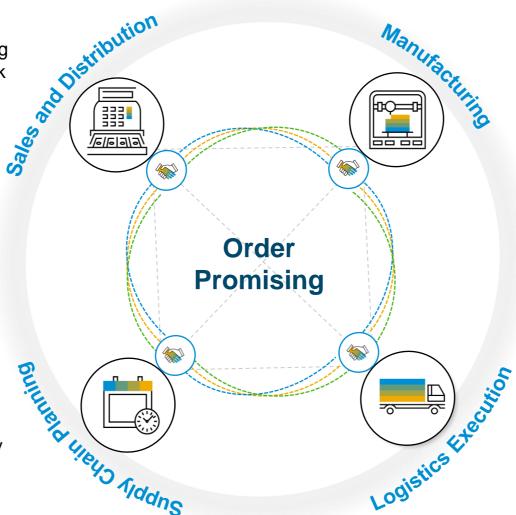
Simplified User Experience & Automation

Flexibility, Agility & Innovation

Efficient, Intelligent and Integrated

# **The Integrated Order Promising**

Accurate Order Promising considering real time sales, inventory and network constraints



Consideration of actual production constraints while providing confirmation dates in Make-To-Order scenario\*

Consideration of Demand and Supply Planning constraints during order confirmations

Consideration of Transportation Scheduling constraints to provide feasible delivery date commitments\*

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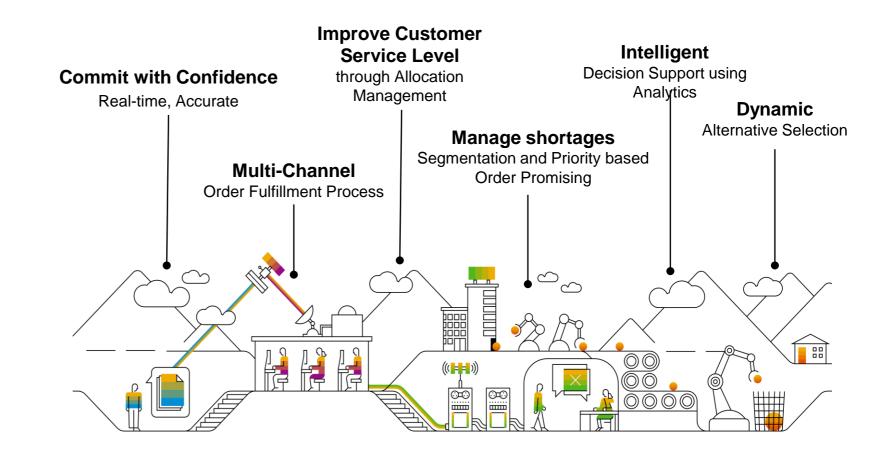
# **S/4HANA advanced ATP – Value Proposition**

38%

'Organizations where intelligent commitments can be made to accurately schedule delivery dates in real time, have on average 38% fewer orders back-ordered'

24%

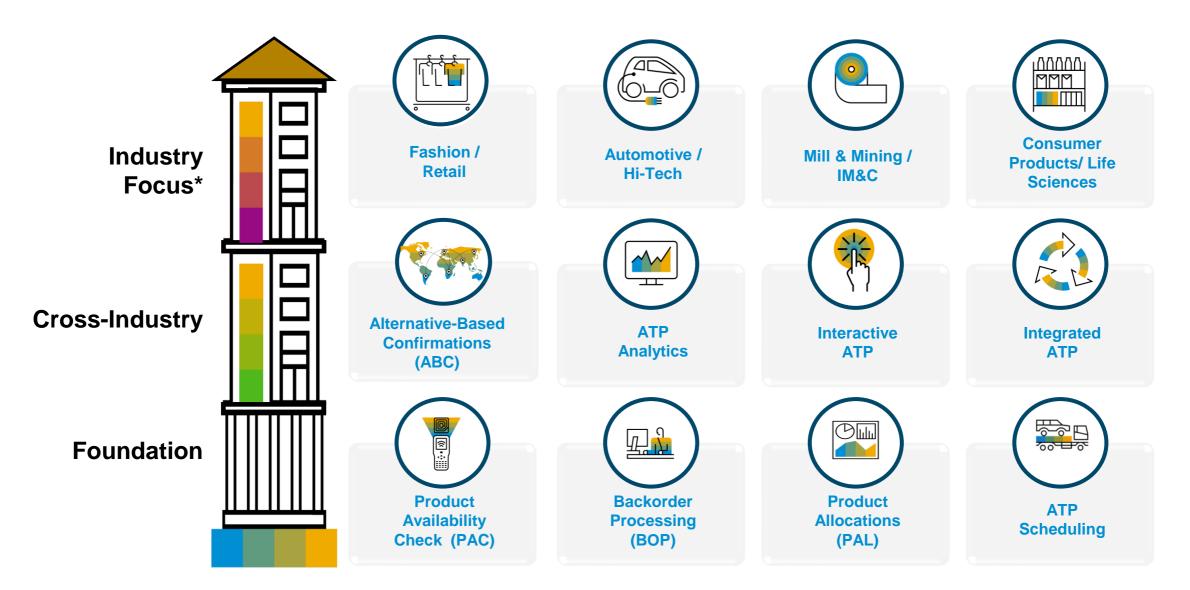
'In supply shortage situations, organizations using product allocations based commitment incur average 24% lower Expedited Transportation Spend'



# **Intelligent Order Promising Solution Overview**



## **S/4HANA aATP Functional Overview**





- Customer Service Manager needs to confirm the delivery dates and quantities for online-received sales orders based on the current and future stock information
- Queries for 'Available to Sell' from E-Commerce websites.

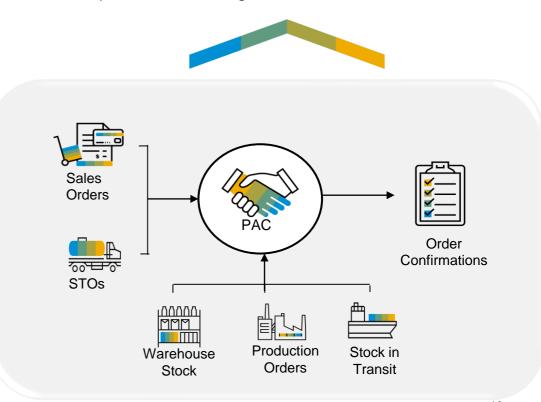


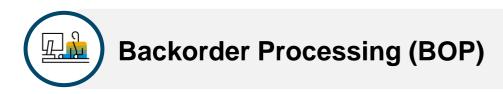
### **Solution Highlights**

- Time phased mass enabled check (parallelization)
- Supply consideration : Current and Future Supply elements
- Demand consideration : Sales Orders (SO) & Stock Transport Orders (STO)
- Checks on Plants, DCs, Sub-Locations and Batch Level
- Supports Product Allocations (PAL), Supply Protection (SuP) and Alternative Based Confirmations (ABC)
- 'Review Availability Check Results' display availability situation of all line items of the sales order
- oData APIs for Product Availability

### **Business Benefits**

- Promise what and when you can deliver accurately in real time
- Avoid over-confirmation and penalties
- Increase customer service level
- Fast response time during online check





- Orders received via EDI need to be confirmed en masse considering stock availability, business priorities, urgency, profitability, etc
- During mass processing of orders lower priority orders shouldn't get better confirmation results than higher priority ones.

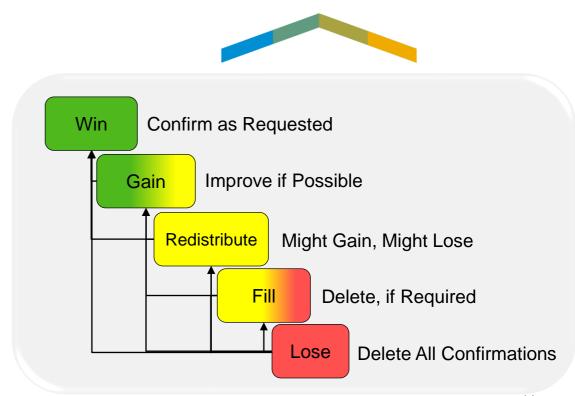


### **Solution Highlights**

- BOP Set Up Requirement segmentation and classification Win, Gain, Redistribute, Fill and Lose
- Easy to use 'select option tool' for configuring BOP segments
- Customizable filter and sorter for BOP segments
- Simulation capabilities for BOP segments and BOP Run
- Fiori based BOP Results Monitor
- Automated exception handling with BOP fallback variants
- Supports Product Allocations (PAL), Alternative-Based Confirmations(ABC), Supply Assignment Run (ARun), and Supply Protection (SuP)

### **Business Benefits**

- Manage business priorities and protect customer interest
- Manage multi-channel order fulfillment process
- Significantly faster than traditional rescheduling





- Prevent single customer from buying the entire available quantity and other requests not being satisfied
- Confirm orders against future notional production capacity
- Consider transportation and other delivery constraints while confirming orders

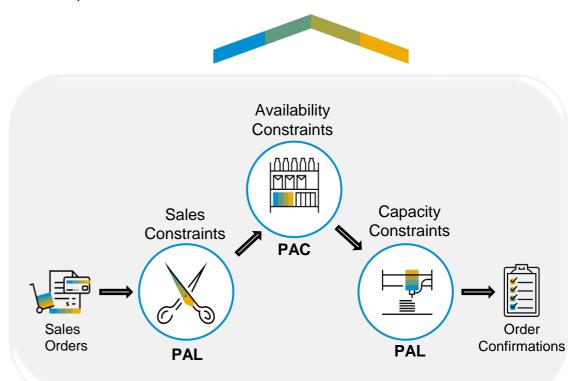


### **Solution Highlights**

- Simple and flexible Product Allocation set-up and maintenance with time dependent assignment to material / plant
- Hierarchical / Sequential allocations (Logical 'OR' for PAL constraints)
- Simultaneous multiple Allocation checks (Logical 'AND' between PAL constraints)
- Excel download and upload for mass maintenance
- Monitor and analyze Product Allocation situation
- Capacity based Product Allocations
- Support Variant Configuration characteristics and custom characteristics
- oDATA APIs for importing / exporting allocation quantities from external Systems
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### **Business Benefits**

- Manage shortage situations by maintaining sales constraints
- Commit based on capacity during stock unavailability
- Accurately confirm orders based on delivery constraints
- Protect key customers and products, avoid penalties
- Improve customer service levels



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# **Alternative-Based Confirmations (ABC)**

### **Business Needs**

- For stock unavailability in one plant, fulfill orders from the inventory in alternative plants
- Choose the best possible substitution based on the current situation than a fixed sequence of alternatives

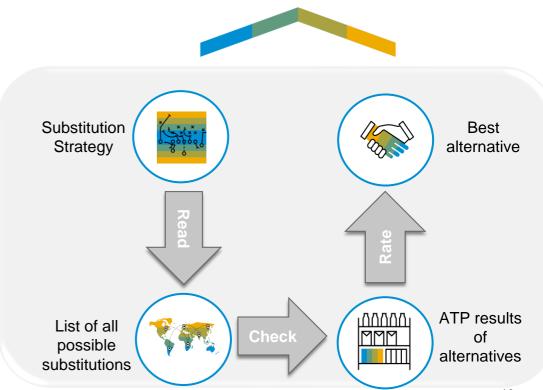


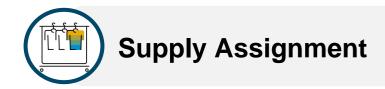
### **Solution Highlights**

- Easy to configure Alternative Control
- Decision to trigger during Sales Order Creation/Change and/or Backorder Processing (BOP)
- Dynamic selection of alternative : best fit (vs first fit)
- Supports Product Allocations (PAL), Supply Protection (SuP)
- Alternative Determination rules: Max-Earlier Confirmation, Full Confirmation, On-Time Confirmation
- Partial confirmations from multiple plants with subitems
- Tie-Breaker logic for equally placed alternatives
- ABC is only available for Sales Orders

### **Business Benefits**

- Improve order fill rate by intelligently selecting alternative locations.
- Reduce inventory carrying costs
- Reduce Backorders





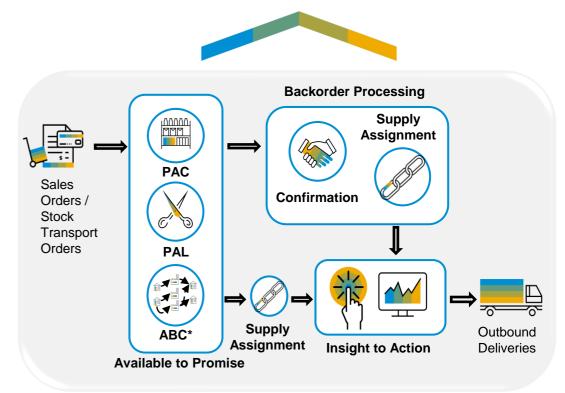
- Sort the demand (as well as the supplies) based on business rules to assign the right stock to the most important demand especially in supply shortage situations
- Ensure hard commitments for demands and assign the relevant supply to the appropriate orders from the point of order promising to final delivery.
- Need to monitor the supply demand situation and modify the assigned stocks easily.

### **Solution Highlights**

- Perform Supply Assignment Run for relevant materials in Backorder Processing (BOP) using all core functionalities of BOP Configuration, BOP Run and BOP monitor.
- Flexibility to consider future supplies within a specified horizon, rules to sort supplies, and option to retain or delete previous assignments.
- Proportional Distribution for Fair-Share distribution of stocks
- Insight to Action tool to evaluate the assignment situation and to enable the user to take manual actions like create/change existing assignments, create outbound deliveries
- In Supply Assignment Overview Apps do flexible and detailed analysis of supply and demand situation for different dimensions and KPIs, in both graphical and tabular formats

### **Business Benefits**

- Improve delivery performance for important customers
- Improve customer service levels by ensuring right stock to right demand in a supply shortage situation
- Take informed decisions by analyzing supply and demand situation for assigned orders





- During supply shortage situation certain customers or regions need minimum guarantee of supply.
- Orders from higher priority customers or channels should have better fulfillment than lower priority orders.

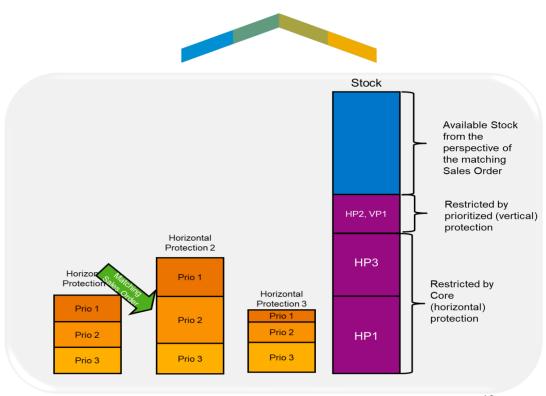


### **Solution Highlights**

- Order fulfillment manager can protect quantities of a material in a specific plant against other competing demands using "Manage Supply Protection" App.
- Supply protection can be done as core (horizontal) protection where complete groups are protected against each other or as prioritized (vertical) protection where the protection is prioritized, and every group is only protected against the demand of a lower priority.
- Core and prioritized protection can be combined.
- Protection can be defined based on characteristics assigned via 'manage characteristics catalog.'

### **Business Benefits**

- Protect interests of key customers / sales group
- Avoid escalations during stock-out situation
- Optimize profitability by providing better fulfillment to more lucrative orders





- Analyze and monitor Product Allocation data to understand the product allocation situation
- After Supply Assignment Run, analyze the Supply and Demand situation to take necessary actions.

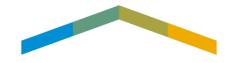


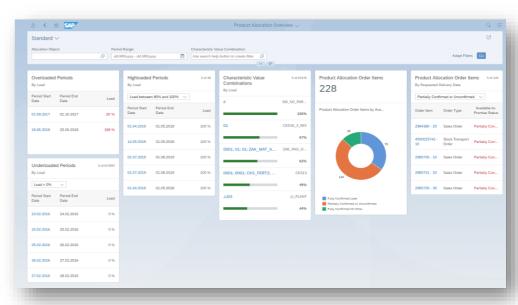
### **Solution Highlights**

- In the Product Allocations Overview App.
  - Drill down and analyze the product allocation situation for product allocation objects, characteristic value combinations in different periods.
  - Drill down into order items and identify all consumed product allocation quantities and the order in which the quantities have been consumed

### **Business Benefits**

 Better understanding and monitoring of overall and detailed Product Allocation situation







- Need to make last minute manual changes to confirmation quantities of orders in case of escalations from customers.
- Avoid over-confirmation situation during manual changes.
- Easy to find and manipulate orders that the Order Fulfillment Manager is responsible for.

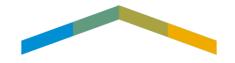


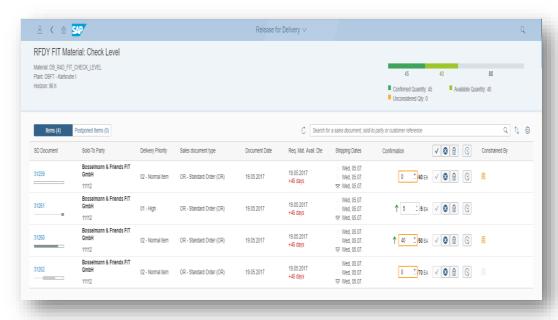
### **Solution Highlights**

- FIORI based interactive changes to sales order confirmations before releasing the orders to delivery
- Impact simulation of current ATP situation
- Direct navigation to Sales Order
- Display of Batch and Allocation restrictions. (Order with Product Allocations cannot be modified to avoid over confirmation situation)
- Visual representation of the stock situation of a material/plant
- Worklist refresh before releasing changes to accommodate background changes

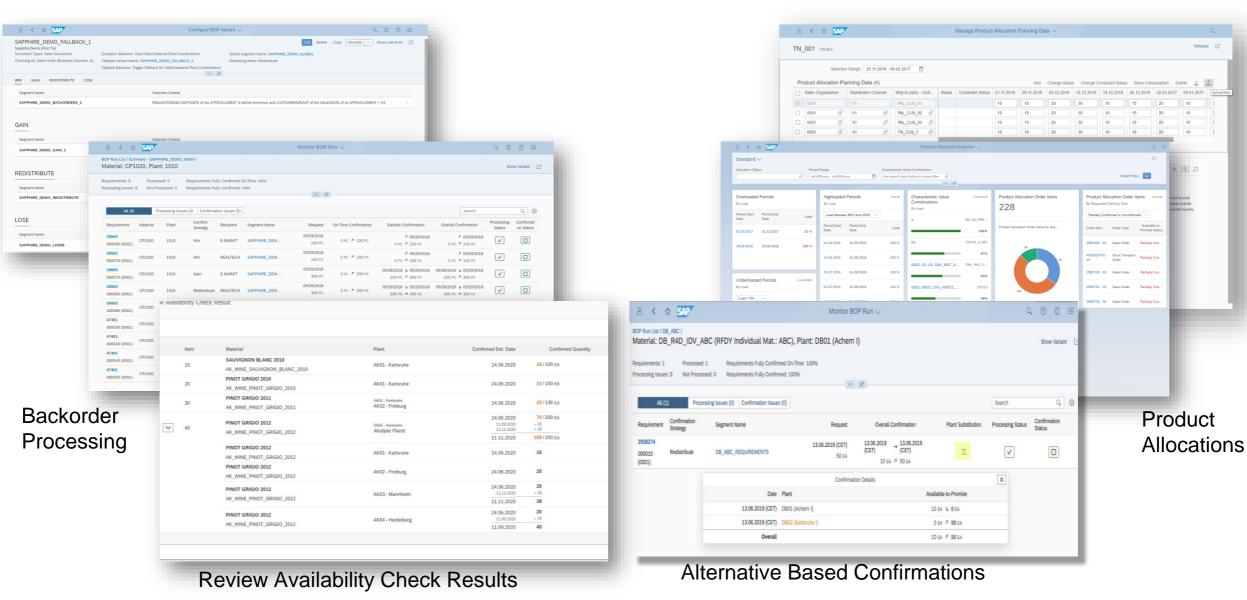
### **Business Benefits**

- Intuitive and fast reassignment of stocks
- Impact analysis while confirmation changes

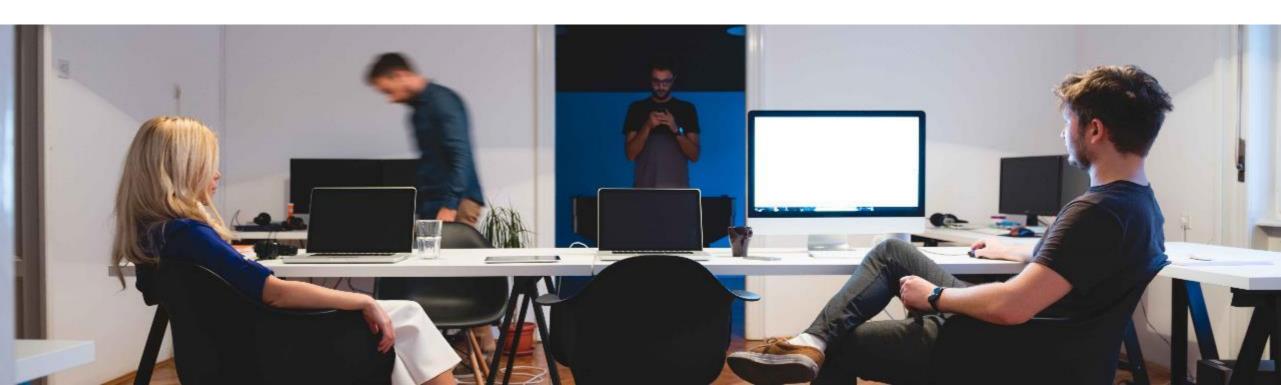




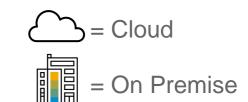
## S/4HANA advanced ATP – Screenshots

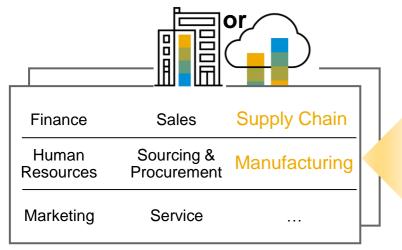


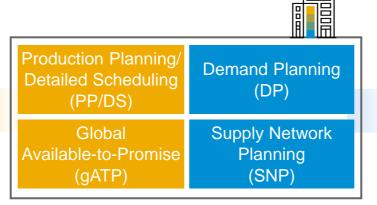
# SAP S/4HANA aATP Positioning



## APO Succession with S/4HANA and IBP









**SAP S/4HANA** 

SAP APO

**SAP IBP** 

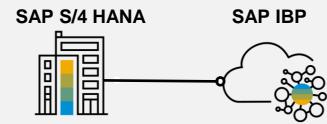
### **Execution**

Closer to execution, Orchestrating the network to find the right fulfillment

### **Plant-Centric Planning**

Unified Manufacturing Processes – Plan to Produce in ONE System

### **Promise to Market**



- Detailed Scheduling
- Production Execution
- Order Promising

- Response & Supply
- Deployment Planning
- Allocation Planning

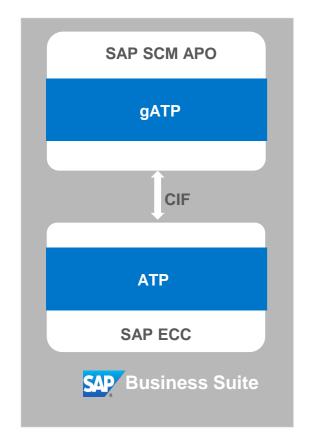
### **Planning**

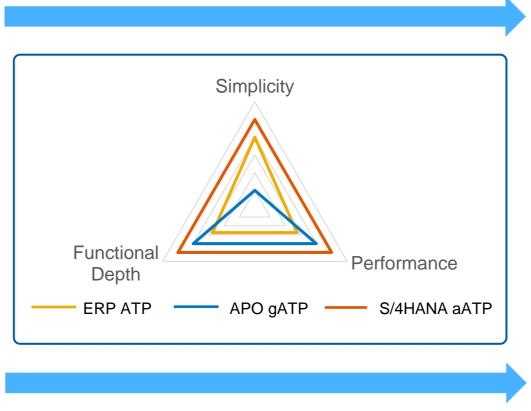
Strategic, Tactical and Operational Planning

### **Network-Centric Planning**

Innovative & Re-architected Supply Chain Planning Processes

### The SAP ATP Evolution

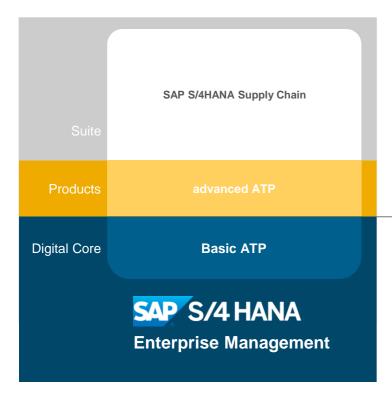






- > S/4HANA advanced ATP is developed natively in S/4HANA Enterprise
- No technical migrations available from APO gATP to S/4HANA aATP. Licenses can be converted using standard conversion policy
- ▶ In S/4HANA On Premise, ATP in digital core is same as the SAP ECC ATP
- In S/4HANA Cloud, ATP in digital core has only Product Availability Check (PAC) and Backorder Processing (BOP)

# S/4HANA (basic) ATP and SAP S/4HANA advanced ATP



### advanced Available to Promise (aATP)

- Mass enabled fast availability check\*\*
- Backorder processing with intuitive requirement classification\*\*
- Use-case-driven product allocation check
- FIORI App for Release for Delivery
- Intelligent and automated selection of best confirmation considering alternative plants and substitutable materials
- Review Availability Check Results
- Supply Assignment to ensure guaranteed delivery
- Supply Protection for key customers during short-supply
- Advanced transportation scheduling (integration with SAP TM)\*
- Capable to Promise functionalities (integration with Production)\*



### **Available to Promise (ATP)**

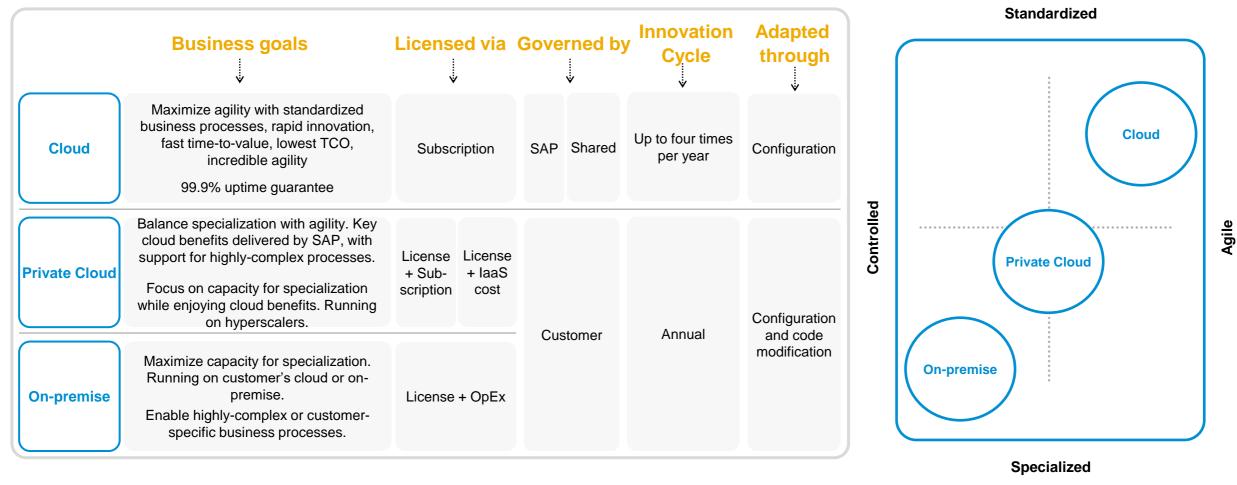
- Product availability check
- Basic allocation check
- Manual material determination
- Semi-manual plant substitution
- Material-/plant-based Backorder processing for sales orders (rescheduling)
- Simple transportation and shipment scheduling based on days (and hours)



<sup>\*</sup> Roadmap items

<sup>\*\*</sup> available with basic ATP in S/4HANA MTE

# SAP S/4HANA aATP available in all Deployment Options

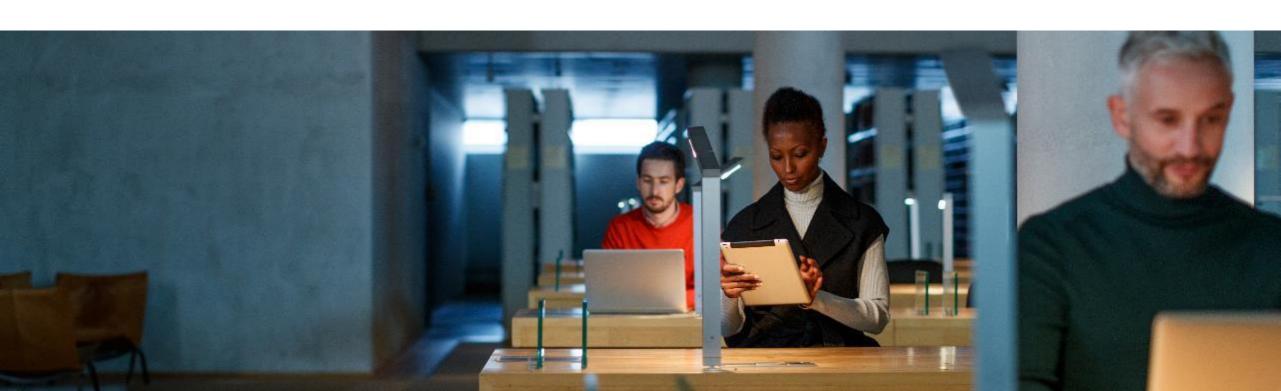


SAP S/4HANA advanced ATP operates in the digital core of SAP S/4HANA Enterprise and uses its master and transaction data.

SAP S/4HANA doesn't consider master and transaction data residing in other S/4HANA or ECC instances.

OData APIs\* need to be used to access ATP information in other S/4HANA instance

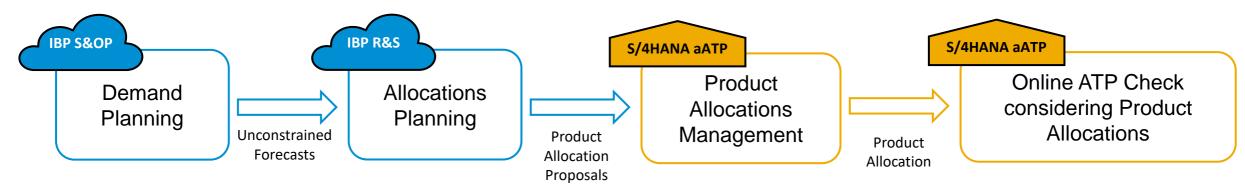
# **Customer Use Cases / Success Stories**



# **Customer Adoption Highlights**

- 250+ customers licensed in On Premise, Private Cloud and Public Cloud
- 100+ customers using aATP productively
- Customers from all industry segments Hi Tech, Consumer Products, Life Sciences, Retail, Wholesale, Fashion, Chemicals, Automotive, Mill Products and Mining, Industrial Machinery and Components, et al
- Customer Segment : Large, Mid and Small
- Customer Region : All geographies

# A leading Medical Equipment Devices Manufacturer uses an integrated scenario of SAP IBP and S/4HANA advanced ATP to effectively Allocate Supplies to Sales Orders improving profitability and service levels

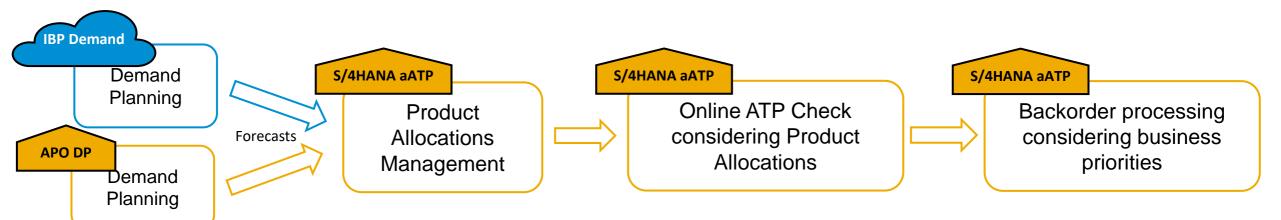


## **Solution Highlights**

- Statistical and Consensus Forecasting using IBP Sales & Operation Planning
- Supply Planning using IBP- Response and Supply
- Constrained Forecast Run using IBP- Response and Supply restricting regional distribution of stocks
- Product Allocation Proposals are imported to S/4HANA aATP using oData APIs
- Product Allocation Management in S/4HANA aATP (changes are minimal)
- Sales Orders undergo Product Allocations (PAL) and Product Availability(PAC) checks during sales order creation and change.

Nightly batch job to reschedule the orders using Backorder Processing

# A large Computer Hardware and Accessories Manufacturer uses S/4HANA advanced ATP to promise orders according to set business rules and priorities.



## **Solution Highlights**

- Transition from APO gATP to S/4HANA advanced ATP
- Forecasts from APO DP and IBP Demand are imported to S/4HANA and subsequently used as Allocations in S/4HANA
- Product Allocations are based on standard and custom fields, and uses both forward and backward consumptions
- Master data and transactional data coming from external system via EDIs
- Sales Order created in S/4HANA undergoes online ATP checks.
- Nightly BOP run considering all orders in system sorted by requested delivery date using different BOP segments
- Subsequent BOP runs are triggered on need basis

# Intelligent Order Promising Roadmap

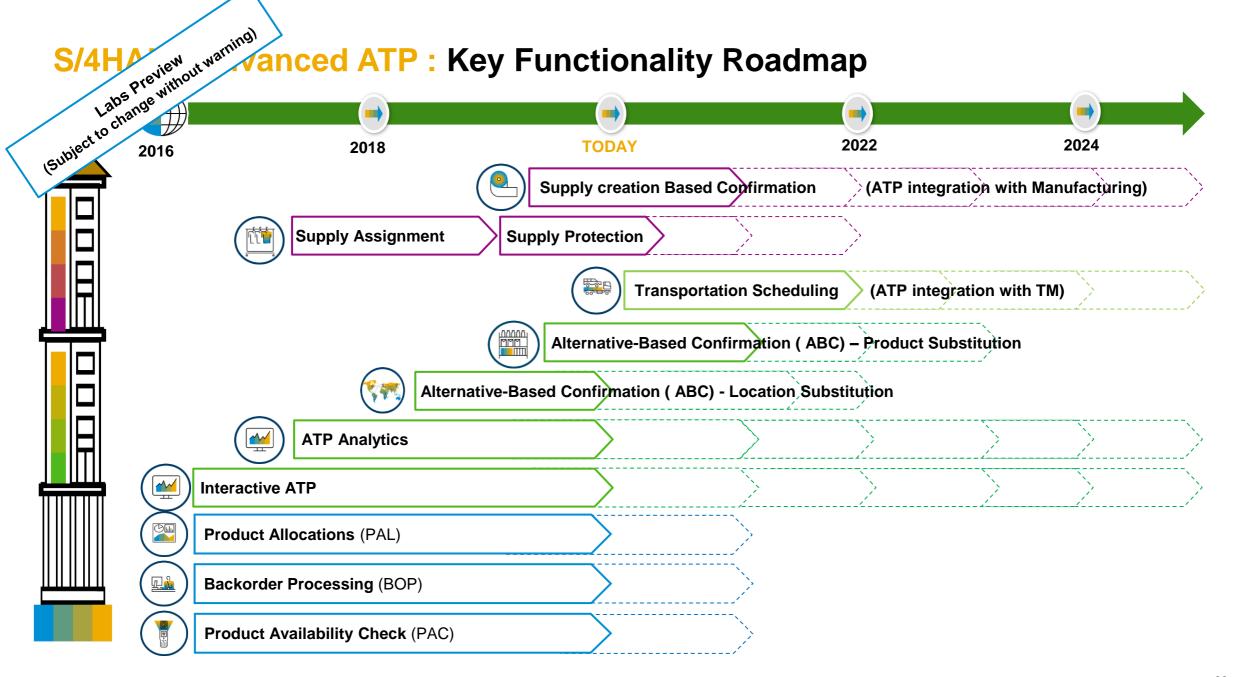


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Planned: 2 to 8 Quarters 8 to 16 Quarters **Beyond 16 Quarters** 

# **Vanced ATP:** Current State and Roadmap\*

(Subject to change without warning)

### **Available**



### **Planned**



### **Future**



**Vision** 

# Availability Check (PAC)

- Mass enabled product availability check in daily bucket.
- Checks on Plant, Sub-Location and Batch Level.
- Confirmation Distribution to manage intermittent availability of supply
- oData APIs for Product Availability Check

# Back Order Processing (BOP)

- BOP Set Up Requirement segmentation and classification
- · Filter and Sorter for BOP segments
- **BOP Results Monitor**
- Automated exception handling with BOP fallback variants
- Select Option Tool for BOP segments
- Simulation for BOP segments

- PAC Check in sub-daily / custom time bucket / cut-off times
- Flexible confirmation customization (e.g. zero confirmation after certain time horizon)
- Further customizable Scope of Check (ATP categories)
- Bow-Wave / Quarantine / Maturation processes
- Parameter dependent safety stock

### Fair Share Distribution

- Net Change Filter (EDQA)
- · Flexible monitoring via custom aggregations
- Configurable confirmation strategy

Usability improvements

Performance enhancements

# Product Allocations Foundation

**Functionalities** 

- Product Allocation Set Up
  - Product Allocation Checks during PAC and BOP
  - Excel upload/download for mass maintenance
  - PAL Sequence (Logical 'OR')
  - Simultaneous multiple PAL checks (Logical 'AND')
  - Capacity based Allocations
  - oData APIs for Product Allocation
  - Quick Edit for maintaining Product Allocation data
  - Support of Variant Configuration characteristics
- oData API for simulative ATP check (PAC & PAL)
- Support of Scheduling Agreements w/o call off

- oData API for ATP quantity reservation
  - Support of Scheduling Agreements with call off

# Cross Topics

- Field catalogue to manage influencing characteristics
- Granular Authorization for characteristics catalogue
- STO Support for PAC, BOP and PAL

• Support and integrate with new / future scenarios and processes

(Subject to change without warning) **Nanced ATP:** Current State and Roadmap\* Available: As of 2020 OP Release

Planned: 2 to 8 Quarters 8 to 16 Quarters **Beyond 16 Quarters** 

### **Available**



### **Planned**



### **Future**



**Vision** 

Based is (ABC) Alternative Ba Confirmations (

ABC set-up and control.

- Location substitution during order creation, change and Back Order Processing.
- Partial plant substitution with subitems.
- Support Product Allocations.
- New substitution master data for Product Substitution

- Product substitution during order creation, change and Back **Order Processing**
- Enhancement of substitution master data to include locations. sub-locations, etc
- Additional standard and customizable, determinations to define best alternative
- Simultaneous product and location substitution
- Manual selection of alternatives
- Change of confirmations in **RACR**

- Consolidation of locations
- Selection of best alternative for multiple order line items (aka: MISL)
- 3<sup>rd</sup> party direct shipment

Interactive ATP

Release for Delivery App

Review Availability Check Results (RACR)

**Analytics** 

Miscellaneous

Product Allocation Overview and Monitor

- Further explanations in RACR
- Interactive Mass Processing of Orders\*\*

Availability Overview

ATP Results Overview and Monitoring

**Cross Industry Functionalities** 

- Supply Protection Set-up and maintenance
- Consideration of Horizontal and Vertical supply protection during ATP check

- · Usability enhancements to Supply Protection
- Consideration of transportation constraints during ATP check Transportation Shipment Scheduling using SAP TM & OVD for calendar and durations
- ATP integration with other S/4HANA modules (Service Order, Material Reservation)
- Qualtrix integration (Starting with ABC)
- Cross-S/4HANA ATP / central S/4HANA aATP
- Machine learning capabilities

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<sup>\*</sup>Functionalities would follow Quarterly release cycle of SAP. For more recent updates, please refer www.sap.com/roadmaps

(Subject to change without warning) **Vanced ATP:** Current State and Roadmap\* Available: As of 2020 OP Release

Planned: 2 to 8 Quarters 8 to 16 Quarters **Beyond 16 Quarters** 

**Available** 



**Planned** 



**Future** 

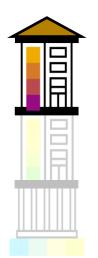


**Vision** 

Fashion

- Supply Assignment Run
- Insight to Action to manage assignments
- Supply Assignment Analytics
- Proportional distribution during supply assignment
- ATP support of Segmentation\*\*

- ATP Support of N:M Segmentation
- Granular control of Supply Assignment during BOP run



Mill / IM&C

Capacity based Allocations

Considerations of Variant Configuration characteristics in **Product Allocations** 

Supply creation Based Confirmation (simple scenarios) (ATP integration with embedded PP/DS to enable Capable-to-Promise)

- Supply-creation based confirmation from multiple sources (complex scenarios)
- Multi-level ATP (production and procurement)
- Characteristic Substitution based ATP

Automotive / Hi Tech

Retail

Sciences

Life

Industry **Specific Functionalities**  Product Substitution master data for extended Service Parts Planning

Product substitutions for real alternatives (logical OR)

Product substitution for KITs (logical AND)

Consideration of batches during ATP check

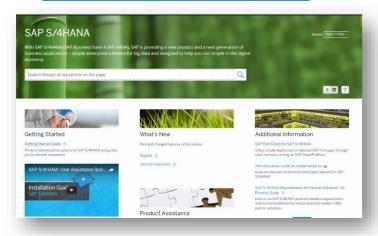
- Distributed Order Management
- Consideration of Batch Characteristics [Shelf Life]
- Consideration of Stocks in Transit warehouses / vehicles

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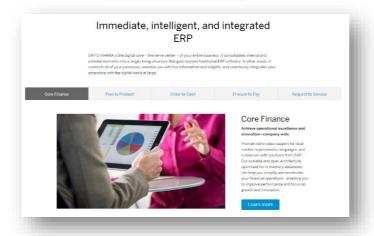
<sup>\*</sup>Functionalities would follow Quarterly release cycle of SAP. For more recent updates, please refer www.sap.com/roadmaps

### Further information ...

#### **Discover SAP S/4HANA Help Portal**



#### **Discover S/4HANA**



#### **Discover SAP HANA Cloud Platform**



### **SAP S/4HANA Roadmap**



### **SAP Customer/Partner Community for ATP** (by invitation only)



# Thank you.

