### Better Planning for a Risk-Resilient and Sustainable Supply Chain



### Disruption did more than empty the shelves. How do you reverse 20 years of globalization in 20 months?

Reactive responses won't fix foundational problems.

Narrowly focused improvements amplify silos and disconnections.

Historically focused data constricts decision making.

Internally focused strategies overlook critical collaboration.

A risk-resilient supply chain demands a different approach:

### Connect every process

within your supply chain and across your business.

### 2

### Contextualize every decision

linking real-time operational and business data together throughout the work process.

3

### **Collaborate with your ecosystem**

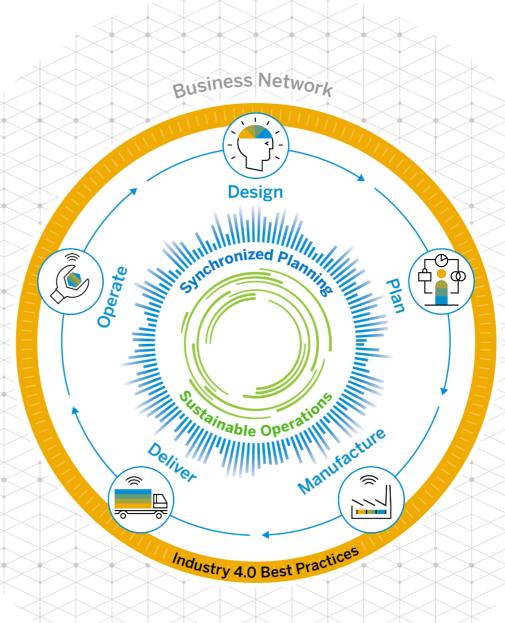
creating digital connections with all your partners.

# This is the unique value only SAP can offer:

Connect every process

2 Contextualize every decision

Collaborate with your ecosystem



3

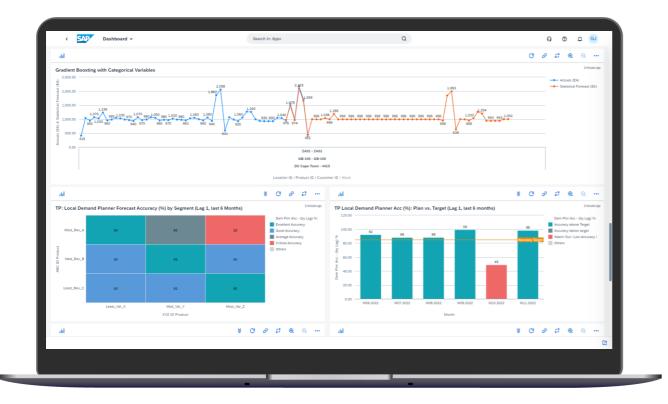




#### Imagine if you could:

- Connect demand, supply, and inventory planning to allocate resources, reduce downtime and disruptions, and increase customer satisfaction
- Connect financial and operational data to develop profitable and aligned plans that help hit your topline, protect your bottom line, and take better care of customers.
- Connect strategic and operational planning with real-time visibility and execution





#### Imagine if you could:

- See the future now using advanced analytics and machine learning to predict demand, plan your supply, and ensure production efficiency.
- Create continuity using embedded analytics to anticipate disruptions, analyze impacts and alternatives, and take action.
- Evaluate sustainability from every angle by ensuring reporting and tracking mechanisms include sustainability targets.



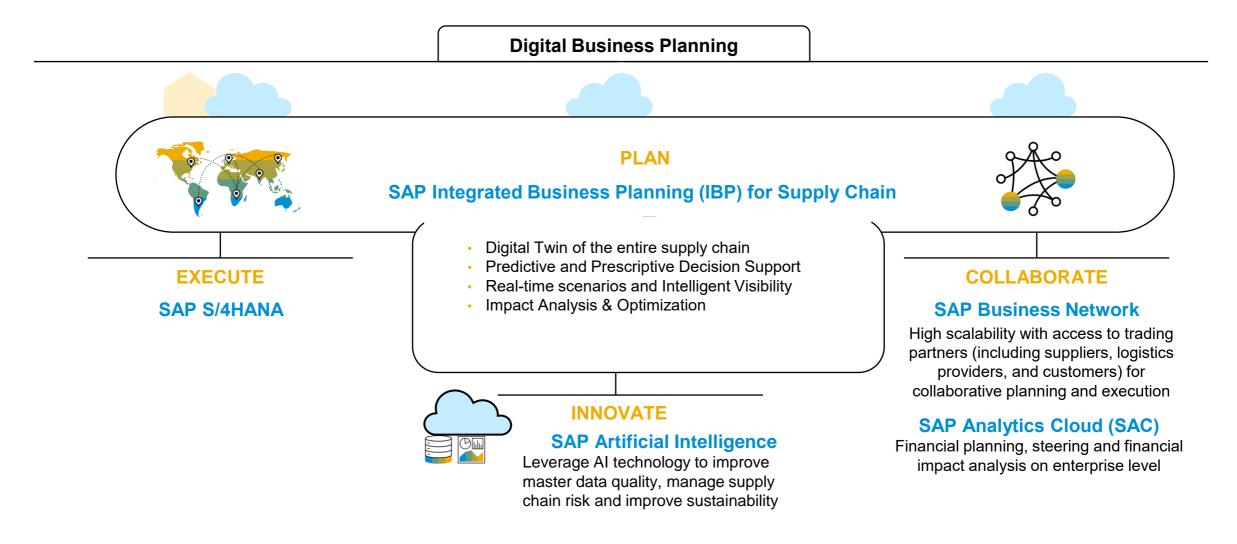


#### Imagine if you could:

- Plan beyond your four walls by proactively sharing your goals and suppliers' capacity and performance constraints.
- Improve sustainability by working with suppliers to balance inbound and outbound deliveries and reduce waste from obsolete and excess inventory.
- Leverage information about risk and uncertainty with your ecosystem to better evaluate potential disruptions and their impact.

### **SAP Supply Chain Planning Platform**

Connect strategic and operational planning with real-time visibility and execution





### Plan:

### **SAP Supply Chain Planning Solution Portfolio**

Synchronize supply chain planning decisions across lines of business to respond effectively to changes in supply, demand, and market conditions.

### Plan

Meet future demand profitably to stay ahead of change and improve responsiveness.

### **Collaborate Execute**

Gain visibility across all processes in your supply chain by collaborating with your trading partners.

Leverage proximity to core for transactional planning, scheduling, and order promising.

### Innovate

Leverage AI technology to improve master data quality, manage supply chain risk and improve sustainability.

### PLAN

Meet future demand profitably to stay ahead of change and improve responsiveness.

### Plan – Demand Planning and Forecasting Sense and Predict Demand

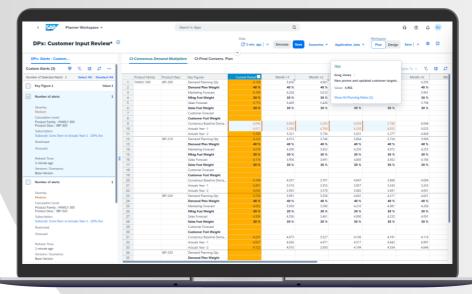
**Improve forecast accuracy** through machinelearning driven algorithms and collaborative adjustments to the forecast

**Improve planner productivity** through segmentation and automation of the forecasting process

**React faster** to short term demand changes with machine-learning based algorithms

**Increase visibility** with external data as part of the demand planning process





#### Plan – Inventory Optimization

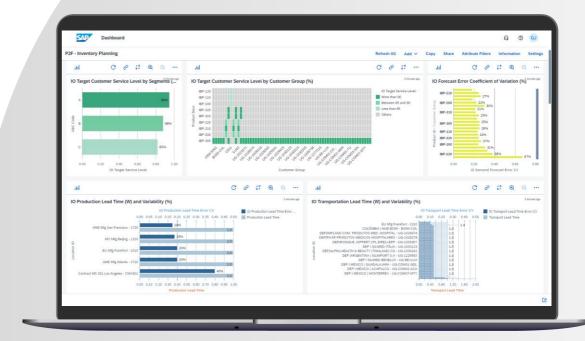
### **Optimize Inventory and Service Levels**

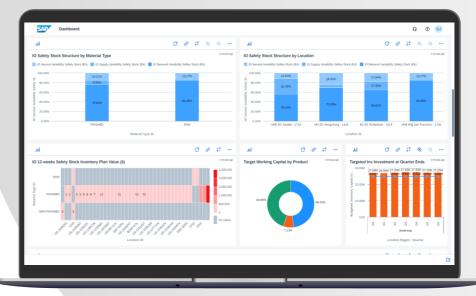
**Balance** inventory investment and customer service level according to business priorities and through a segmented approach.

**Reduce inventory levels** by leveraging multistage optimization and considering various influencing factors like lead times and lot sizes.

**Increase Customer Service Levels** while at the same time buffering against forecast error, demand risk & supply uncertainty.

Evaluate inputs, outputs and **create scenarios** with an easy-to-use interface and analytical dashboards.





### Plan – Demand-Driven Replenishment Automate Replenishment

Support all steps of Demand Driven Material Requirements Planning (**DDMRP**).

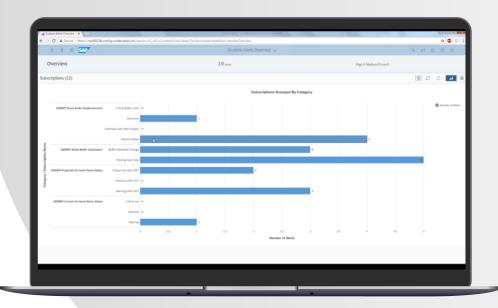
**Smooth material flow** through the supply chain and reduce supply chain (MRP) nervousness.

**Compress customer-facing lead times** and improve customer service levels.

**Reduce inventory levels** across the supply chain with strategic de-coupling point and buffer zone calculations.

**Simplify planning** with directed replenishment activities, simplified supply prioritization and active buffer zone monitoring.

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Lead Time Chi	ange 1											
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### Plan – Supply and Response Plan Supplies Responsively

**Create a feasible Rough Cut Capacity Plan** by using a set of planning algorithms, and share requirements with suppliers.

**Respond to short term demand changes** with fast matching of supply to demand based on desired logic and outcome.

**Leverage constrained based** optimization and priority rules-driven algorithms.

**Generate and provide allocations** to ATP for live promising or reconfirm sales orders during supply planning.

**Run different scenarios** and what-if analysis of actual or hypothetical changes to demand or supply.

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	<ul> <li>Stage 0 Project Proposal.</li> </ul>	•	Released	01.04.2019	02.05.2029					
	Portfolio Decision Preparation	•	Released	01.04.2019	17.04.2029	5.00 Tags				
	<ul> <li>Portfolio Pre-Approval</li> </ul>	•	Released	30.04.2019	02.05.2019	0.00 Tags				
	Investment Decision	•	Released	18.04.2019	02.05.2019	0.00 Tags				
	Proposal Approved	•	Released		02.05.2019				++	
	➤ Stage 1 Project initialization	•	Created	03.05.2019	08.05.2019				3	
	Project Preparation	•	Created	07.05.2019	08.05.2029	2.00 Tags				
	Team Staffing	•	Created	03.05.2019	08.05.2019	15.00 Tags				
	Define Requirements for Design	•	Created		08.05.2019	0.00 Tags				
	Goal Setting	•	Created		08.05.2019	5.00 Tags				
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	<ul> <li>Stage 2 Feasibility Study</li> </ul>	•	Created	09.05.2019	05.06.2029					
	Component Specification	•	Created	21.05.2019	05.06.2019	23.00 Tags				
	Draft Visual Design	•	Created	21.05.2019	01.06.2019	15.00 Tags				
	Risk Analysis	•	Created	09.05.2019	20.05.2029	35.00 Tags				
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	> Stage 5 Implementation, Handover	•	Created	06.09.2019	10.12.2019					
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#### Plan – Extended Service Parts Planning Plan Service Parts End-to-End

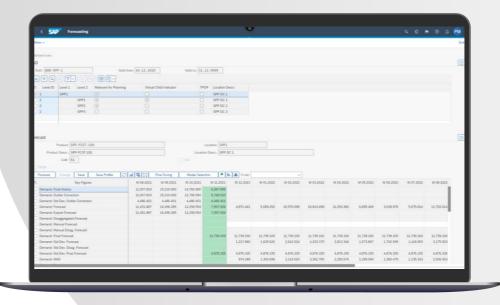
**Enable real-time and network-based** planning and end-to end visibility for aftermarket business units with complex and volume intense processes.

Leverage dedicated process support, from specific forecasting models, over EOQ & safety stock calculations, to distribution requirements planning and deployment (and more) in one single tool.

**Reduce inventory investment** while keeping or even increasing customer service levels.

**Streamline and automate processes** and increase planner productivity, e.g. through workflows, alerts, analytics and ML based forecasting.

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### COLLABORATE

Gain visibility across all processes in your supply chain by collaborating with your trading partners.

### Collaborate – Sales and Operations Planning S&OP as a Collaborative Process

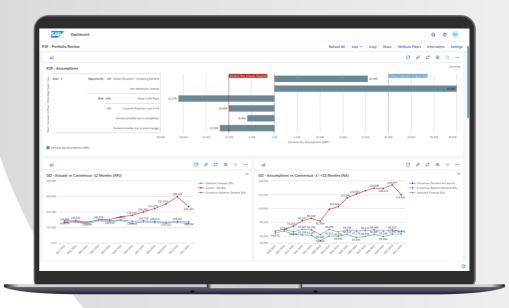
**Enable cross-functional process collaboration** and orchestration to increase speed and agility of planning.

**Create the optimal business plan** to drive revenue growth and increase market share.

**Effectively balance demand and supply** and attain financial targets.

Manage risks, assumptions and opportunities

S&OP Monthly	Process	Create Process 🥒 📋	۵		
Steps (5) Process Tin	reline		Demand Review		
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Portfolio Review	Greg Jones	DEMANDPLANNING			
Demand Review	Greg Jones	DEMANDPLANNING, MARKETING, SALES	User Groups: DEMANDPLANNING, MARKETING, SALES Reviewers:	Relative Start Day: 2 Duration (days):	
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Supply Review	Greg Jones	SUPPLY >	IBPhjfmkm/XWIoTWTVK6xh	8	
Executive Review	Greg Jones	DEMANDPLANNING, EXECUTIVE,INVENTO RY,MARKETING,SUP PLY	Step Settings		
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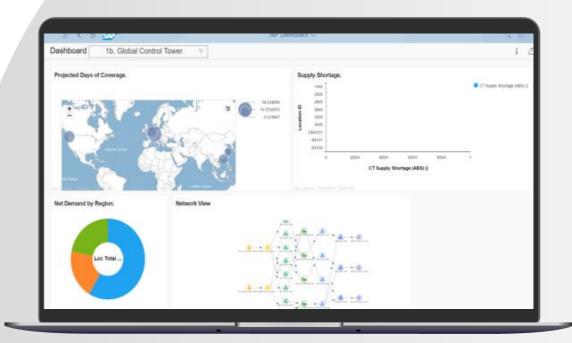
### Collaborate – Extended Planning and Analysis Synchronize Financial and Supply Chain Planning

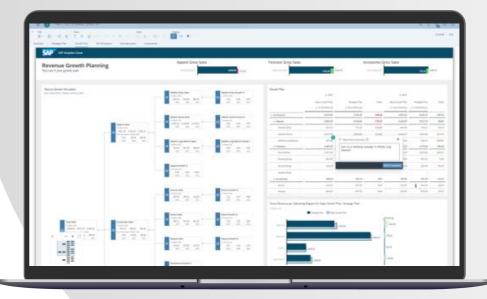
Foster collaboration across departments and provide "one source of truth" for data

**Experience a consistent user interface** across SAP applications, e.g. as in SAP S/4HANA, SuccessFactors

Define calculations on top of the IBP data model

Leverage best-in-class analysis and visualization capabilities





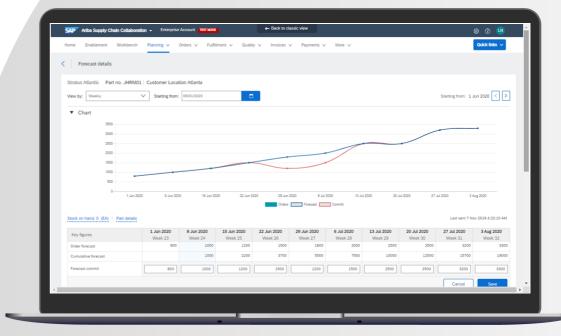
### Collaborate – Business Network Planning Align with your trading partners

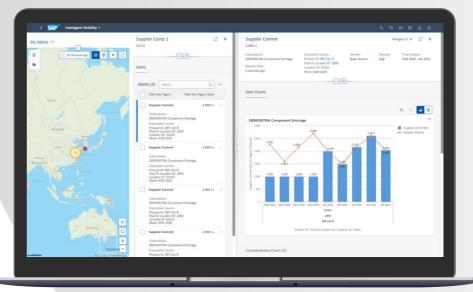
**Collaborate with all suppliers** in real time across and extend planning process beyond your organization.

**Get better visibility** to improve fill rates and decrease buffer stock.

**Collaborate on forecast data** and supplier commit and get visibility on supplier inventory data.

Reduce planning cycle time and **improve predictability of supply** by an extended planning beyond the four walls





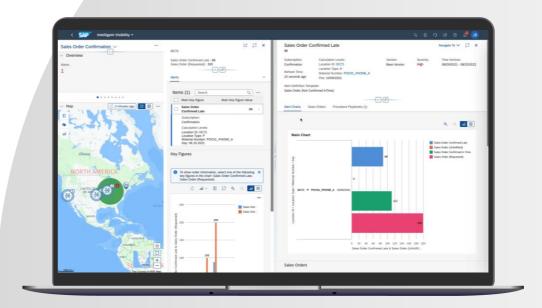
### Collaborate – Business Network for Logistics Track and Trace your Goods

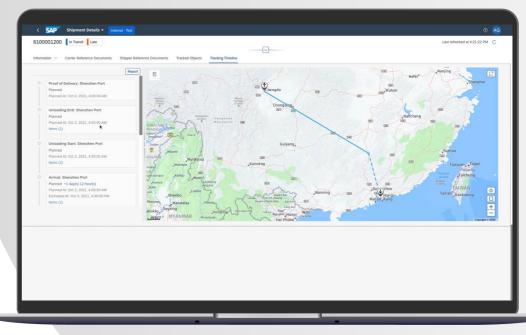
Achieve unparalleled visibility across all processes in your supply chain

Get faster response to supply chain disruptions

**Collaborate** with your third-party logistics providers to improve customer service.

**Gain early insights** into delayed shipments and consider impact and drive supply chain resiliency.





### EXECUTE

Leverage proximity to core for transactional planning, scheduling, and order promising.

### Execute – Manufacturing Planning and Scheduling Optimize Production Planning and Constraints Management

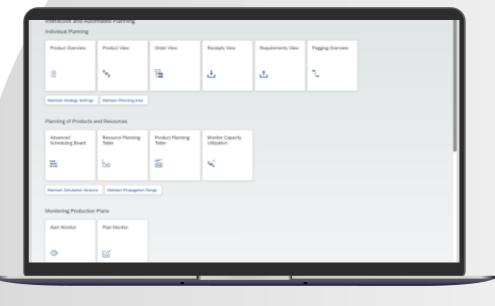
**Plan production resources finitely** beyond classic MRP functionality.

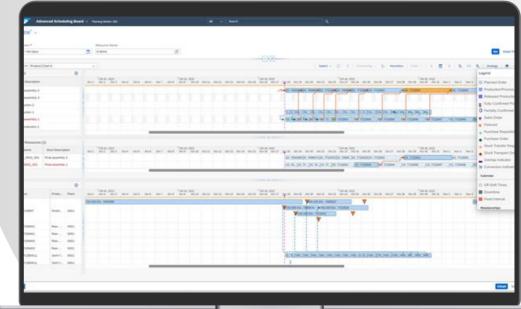
**Consider capacity and material availability** constraints in your planning model.

**Integrate manufacturing master data** to define the basis for production planning data structures.

**Streamline scheduling processes** throughout global production environments.

**Perform detailed scheduling** with a setup matrix, sequence constraints, and alternative modes.





### Execute – Advanced Available-to-Promise Manage Shortage Situations Quickly

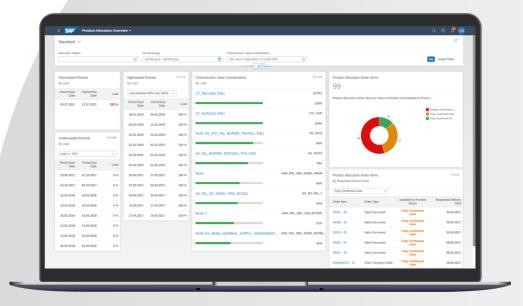
**Promise orders in real time** considering actual inventory across supply network, while protecting interests of key customers.

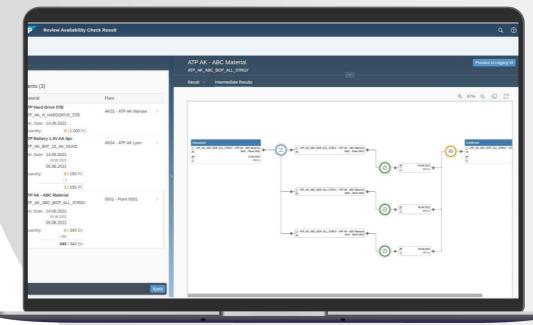
**Protect business priorities during supply shortage** 

by considering sales and delivery constraints during order commitment.

**Improve order fill rate and reduce inventory** by intelligently selecting alternative locations and/or substitutable products, during stock outage in requested delivery plant.

**Confirm orders based on real time production and scheduling constraints**, when the requested finished product is not available in full quantity





### INNOVATE

Leverage AI technology to improve master data quality and detect anomalies, manage supply chain risk, and improve supply chain visibility and sustainability.

### Innovate – Machine Learning and Artificial Intelligence Boost Planning with Al

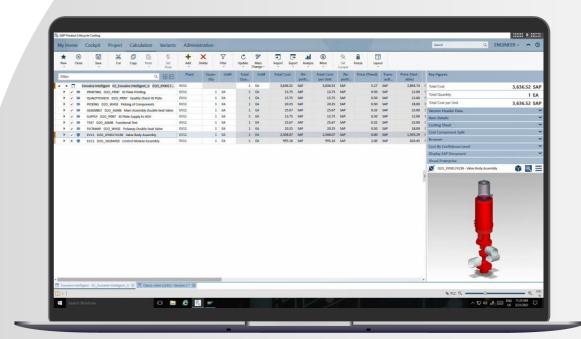
**Detect level shifts and trend changes** in sales history and use this information in forecasting

**Improve forecasting** with gradient boosting and nextgeneration demand sensing

**Detect master data anomalies** and get correction recommendations

**Streamline alerts** with machine learning based thresholds

**Extend SAP IBP** with SAP Business Technology Platform use cases and Missions in the SAP Discovery Center





### Innovate – Supply Chain Control Tower Gain Intelligent Visibility

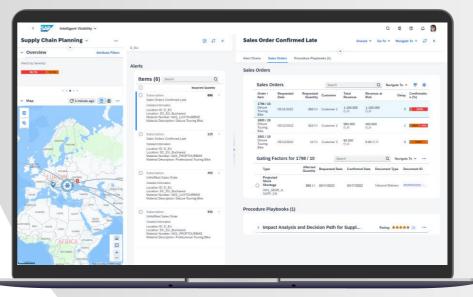
**Ability** to quickly **detecting supply chain disruptions** and effectively manage alerts

Intelligently analyze severe events and understand their impact on business

**Turn Intelligent Visibility into actions** by using guided procedures

**Increase supply chain agility and be resilient** with an exception-based planning





### Innovate – Risk

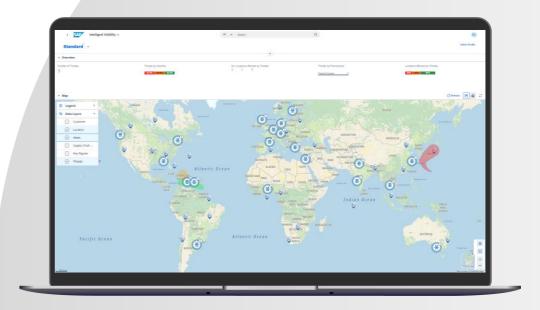
### Mitigate and Manage Risk

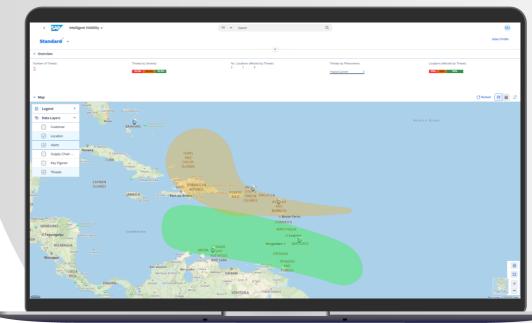
**Enabling a risk-aware supply chain planning** by combining the power of SAP and Everstream

Visualize external risk information in geographical map and dashboards together with planning data

Manage risks in Supply Chain via risk-based Alerting

**Mitigate and assess risks** by using guided procedures and impact analysis (e.g. value at risk)





#### Innovate – Sustainable Planning

### **Better Planning for More Sustainability**

Accurate forecasting and optimized inventory

positioning leads to products in the right place which reduces transportation emissions and resource consumption.

Plan resources, inventories and capacities to reduce emissions and company's overall environmental impact.

Better Demand-Supply matching **reduces cost, waste and emissions** by eliminating unnecessary storage and transportation

**Monitor and analyze emissions** and work on targeted resolutions with product footprint integration.

**End-to-end Visibility** into entire supply chain ecosystem to provide insights into risk and constraining factors to ensure regulatory & responsibility compliance.

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### **SAP Supply Chain Planning – Wrap-Up**



Command Center and Digital Twin Real-time Analytics & Dashboards



Sales & Operations Execution

Demand Management, Forecasting & Sensing

Segmentation, Promotion Management, New Product Introduction



Multi-echelon Inventory Optimization & Simulation

Demand-Driven MRP

#### **Open and Extensible Platform**

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#### Scalable | Real-Time | Al-driven



Response & Supply Network Planning and Optimization

Shelf-Life Planning

**Distribution Planning** 

Transport Load Building & Optimization

Production Planning & Detailed Scheduling

Availability to Promise Checks



Collaboration with the Business Network

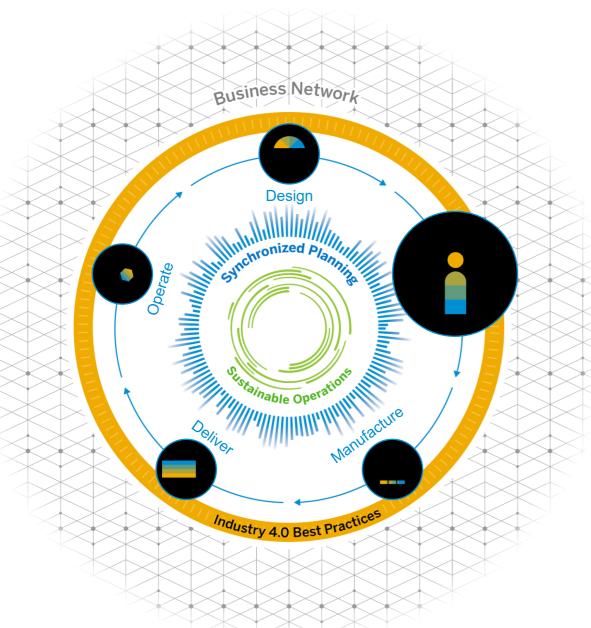
External Data, Risks and Disruptions

Sustainability

#### Manage Risk & Uncertainty

#### **Automate Decisions**

#### Synchronize Planning



### Plan

16% shorter order rummens..... constraint-based supply planning process is run at regular intervals shorter order fulfillment lead time where

36% lower revenue loss due to stock-outs where forecasts are run for combinations of SKUs and inventory locations

SAP Performance Benchmarking insights pertain to year 2017 and run on overall data collected in the last 5 years. Number of data points analyzed for every insight is provided above. The insight states average performance difference between organizations with high and low maturity on the following best practice.

#### CASE STUDY

### How Can You Take Demand and Supply Planning to the Next Level to Accelerate Growth

- More-transparent demand and supply planning with an enhanced ability to forecast demand
- Less human error aided by increased automation
- Time savings and greater efficiencies, such as with streamlined sales processes and financial closing
- Better access to data and an enhanced ability to analyze data

"By integrating SAP S/4HANA, SAP IBP for Supply Chain, and SAP Analytics Cloud, we have created the perfect conditions for an intelligent, data-driven co-operative that provides the best value for our growers." Steve Birgfeld, Vice President Information Technology and Services, Blue Diamond Growers





#### CASE STUDY

## How can you optimize planning processes across 50 sites in almost 30 countries?

Unified and simplified supply chain planning processes across lines of business, integrated with Viessmann Group's core SAP S/4HANA® suite
Integrated demand planning, sales forecasting, and production planning processes

- Established a single set of numbers for planning sales volumes, revenues, and margins
- Enhanced forecasting accuracy with superior statistical forecasting methods and improved collaboration
- Empowered teams to predict and fulfill future demand more profitably

"SAP IBP is the key solution for our journey to end-to-end supply chain planning. The implementation has significantly improved our planning processes and helps us to make the right decisions more quickly." Pascal Wölk, Project Manager – E2E Supply Chain Management, Viessmann Climate Solutions SE







### Don't invite risk. Prevent it.

# Thank you.

Contact information:

Name name@sap.com



### Appendix