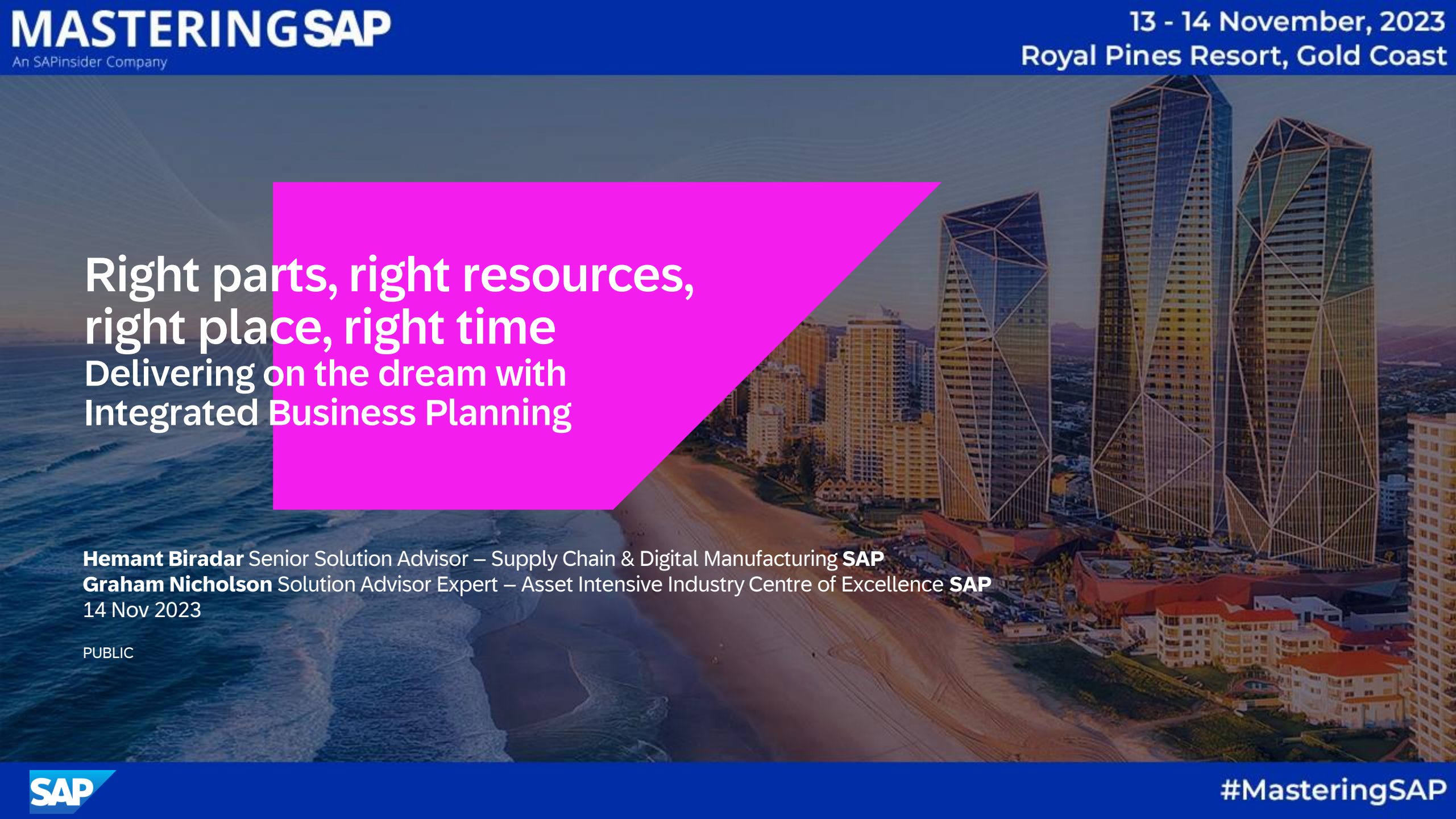


An aerial photograph of a coastal city at dusk. In the foreground, a wide, sandy beach meets the ocean with gentle waves. To the right, several tall, modern skyscrapers with glass facades and geometric patterns stand out against the twilight sky. The city lights are visible in the background.

Right parts, right resources, right place, right time Delivering on the dream with Integrated Business Planning

Hemant Biradar Senior Solution Advisor – Supply Chain & Digital Manufacturing **SAP**
Graham Nicholson Solution Advisor Expert – Asset Intensive Industry Centre of Excellence **SAP**
14 Nov 2023

PUBLIC



SAP acknowledges the First Peoples – the Traditional Owners of the lands on which we gather, the Kombumerri and Yugambeh.

We recognise their continuing connection to land, water and community. As an organisation, we pay respect to their Elders past, present and emerging.

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An Apology

Agenda:

1. MRO Challenges & The Dream of "Right" Everything

- *Why traditional MRP is NOT enough?*

2. SAP IBP for MRO: Bridging the Gap

- **From Paper to Practice:** Jon's Journey: Addressing 3 Key Challenges with IBP MRO

3. Peek into the Future: SAP's Roadmap for MRO

- Discuss upcoming innovations and the strategic direction for SAP IBP in the MRO sector.

Transforming MRO: The Future Of Maintenance And Repair Is Here



Beyond Guesswork:

Scientific Precision in Rail
MRO Inventory



It's Not Always Reduction

Integrated, Predictability,
and Proactivity



Harnessing Multi- Echelon:

Optimising MRO Across
Layers

Rail Ahead: **Unpacking MRO Use Cases** with SAP IBP

Day In The Life:

Jon **Juggles Multiple Tasks**,
Such As Monitoring
Inventory, Placing Orders,
Investigating
Discrepancies, And
Working With Stakeholders
To Ensure Parts Are
Available.

Jon Parker
Inventory Planner

Magic Recipe:

With The Right Tools, He
Could **Focus On More**
Strategic Tasks And
Collaborate More Effectively.

Jon's Journey: Addressing 3 Key Challenges with **IBP MRO**



Complex and Large Catalogue Leading to redundant orders and inefficient stock utilisation

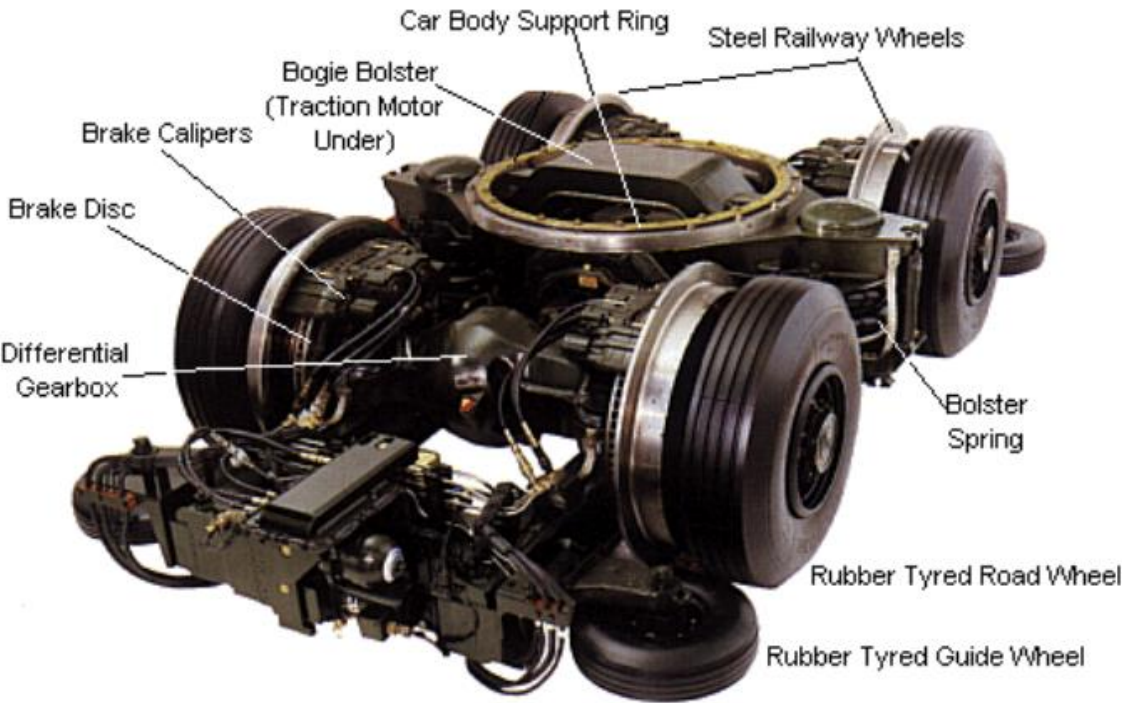


Guess how many parts are there in a high-speed passenger train MRO?

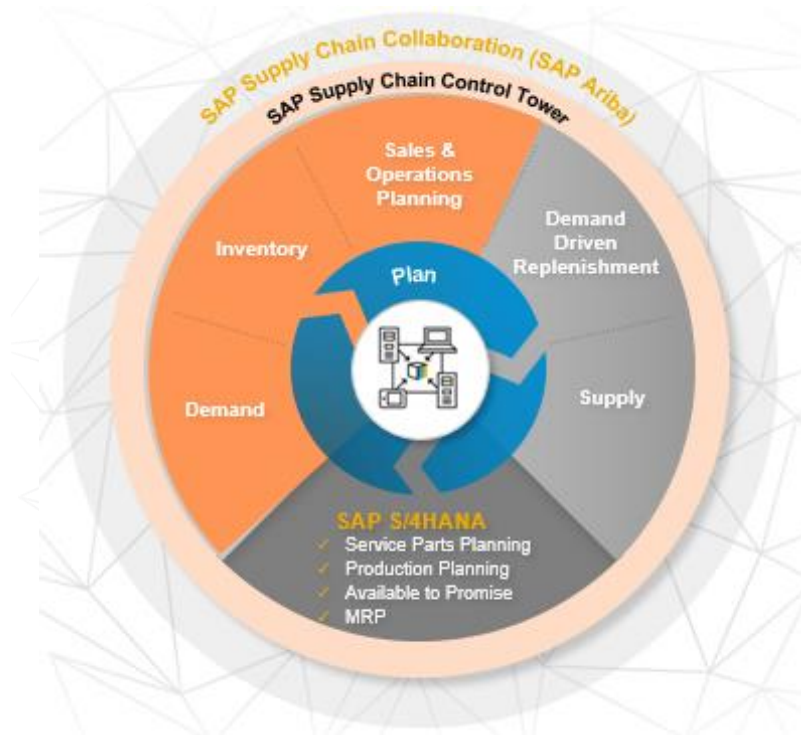


Complex and Large Catalogue Leading to redundant orders and inefficient stock utilisation

Segmentation	Volume (parts)
Criticality	5,000-10,000
Usage	25,000-50,000
Lead time	10,000-20,000
Cost	10,000-20,000
Commodity	10,000-20,000

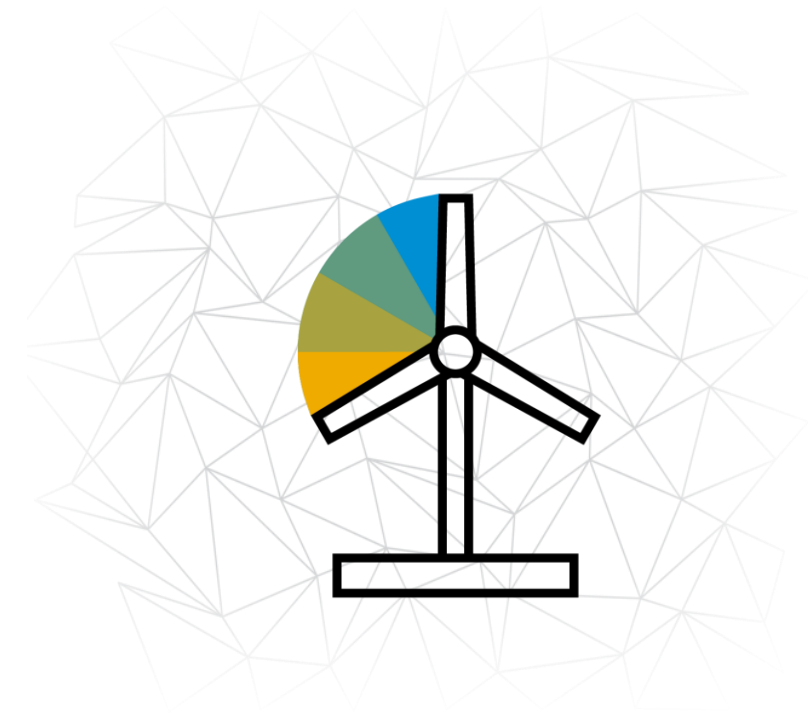


SAP Integrated Business Planning for MRO



SAP IBP MRO

Integrated end-to-end MRO (Maintenance, Repair & Operations) planning solution



- Allows to get the MRO parts & workforce in the right place at the right time **to optimize inventory levels & increase assets availability and reliability**



Results (43)

Manage ABC/XYZ Segmentation Rules

Manage Analytics Stories

Manage Ariba Network Credentials and End Points

Manage Cases

Manage Categories

Manage Data Sharing Plans

1.23 K



 1.23 K



Manage Forecast Models

Manage Models Demand Sensing

Manage Curve Clustering Profiles

Manage Forecast Automation Profiles

Manage Business Role Changes after Upgrade

Manage ILM Object Groups



Configuration



Manage ILM Business Rules

Manage Archiving Variants

Manage ILM File Conversion

Manage Attribute Permissions

Manage Editability Horizons for Key Figures

Manage Lag-Based Snapshots
Deprecated



Manage Master Data

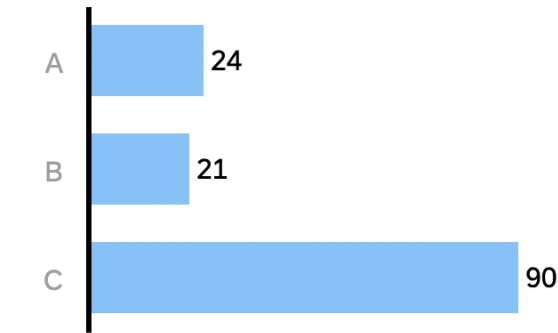
Manage Permission Filters



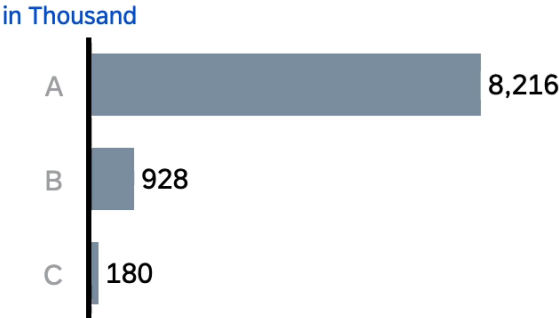
Segmentation Review

ABC Analysis - Total Forecasted Cost of Parts

Counter: Location-Parts per MRO ABC ID Proposed

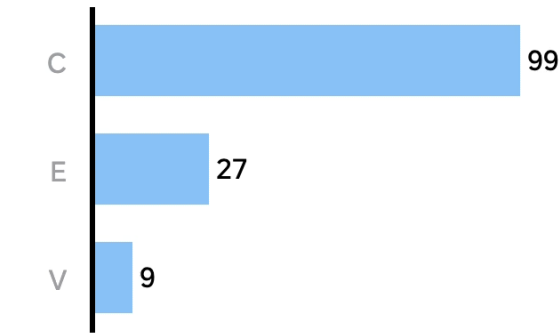


Total Part Usage Forecast Cost (Corr. & Prev. Maint.) per MRO ABC ID Proposed

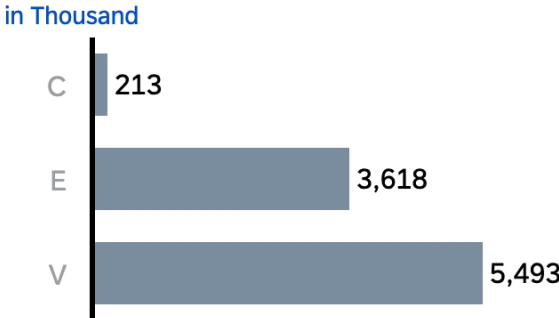


Cost Group Analysis

Counter: Location-Parts per MRO Cost Group ID Proposed



Total Part Usage Forecast Cost (Corr. & Prev. Maint.) per MRO Cost Group ID Proposed



ABC Segmentation

⚙️ 1 Filter {}

Location ID	Part ID	MRO ABC Group ID	MRO ABC ID Proposed	MRO ABC Ch
MetroEast Service Hub	9611034849	C	B	Y
	9614508055	C	B	Y
	9628204816	V	E	Y

Cost group Segmentation

⚙️ 1 Filter {}

Location ID	Part ID	MRO Cost Group ID	MRO Cost Group ID Proposed	MRO C
MetroEast Service Hub	9628204816	V	E	Expens
	9660684299	V	E	Expens
	9628204816	V	E	Expens

Jon's Journey: Addressing Rail Inventory Challenges with IBP MRO

1 Complex and Large Catalogue

Leading to redundant orders and inefficient stock utilisation.

1

2

3 Demand for spare parts isn't visible

until maintenance orders are created, making it hard to plan and procure in time.

3

Demand for Spare Parts isn't visible until maintenance orders are created, making it hard to plan and procure in time

Demand = Preventative Maintenance Plan (when the maintenance is scheduled)

MRP does not see this demand until the PM order is called.

Display Document: Data Entry View

General Ledger View

Display Currency

Data Entry View

Document Number: 5000000009

Document Date: 10.07.2016

Company Code: 1000

Posting Date: 10.07.2016

Fiscal Year: 2016

Period: 7

Cross-Comp.No.

Ledger Group

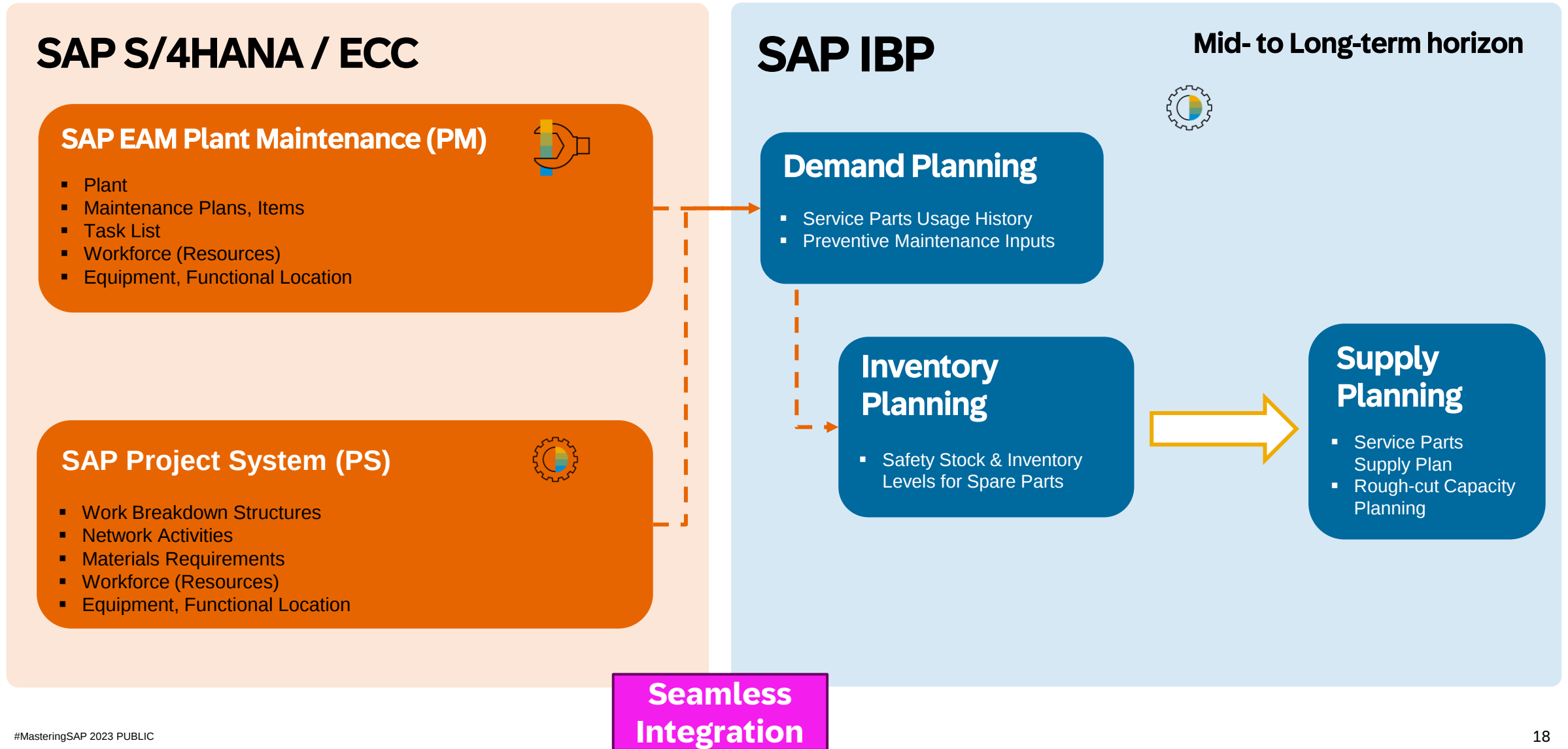
Texts exist

Reference

Currency: EUR

Item	PK	S	Account	Description	Amount	Curr.	Tx	Cost Center
000	1	89	304000	Spare Parts	0,10	EUR		
	2	96	191100	Goods Rcvd/Invoice R	9,00-	EUR		
	3	83	231000	Loss - price varianc	12,90	EUR		
	4	91	400020	Raw materials consum	13,00-	EUR		
	5	86	417001	Purchased services	9,00	EUR		1000
	6	99	304000	Spare Parts	4,00-	EUR		
				Raw materials consum	4,00	EUR		

MRO Parts & Resources Planning Process with SAP IBP



MRO_Total_Maint*

🕒

Versions / Scenarios

📄

Data



Simulate

Save

Scenarios

Jobs

Workspace

Plan

Design

Save



Workbooks

Alerts



Total Parts Requirements

Total Parts Requirements

Total Resource Requirements

Total Resource Requirements

Total Parts Requirements | Total Parts Requirements

▼

Load Planning Filter

Total Parts Requirements *

🔍

📄

⚙️

🔗

	Location ID	Part ID	Key Figures	W46 2023 11/13	W47 2023 11/20
1	MetroEast Service Hub	GASKET SEALER-01	Independent Demand	0	0
2			Dependent Demand		
3			Total Part Usage Forecast (Corr. & Prev. Maint.)	0	0
4			Receipts		
5			Supply		
6		SEAL-03	Independent Demand	0	2
7			Dependent Demand		
8			Total Part Usage Forecast (Corr. & Prev. Maint.)	0	2
9			Receipts	1	2

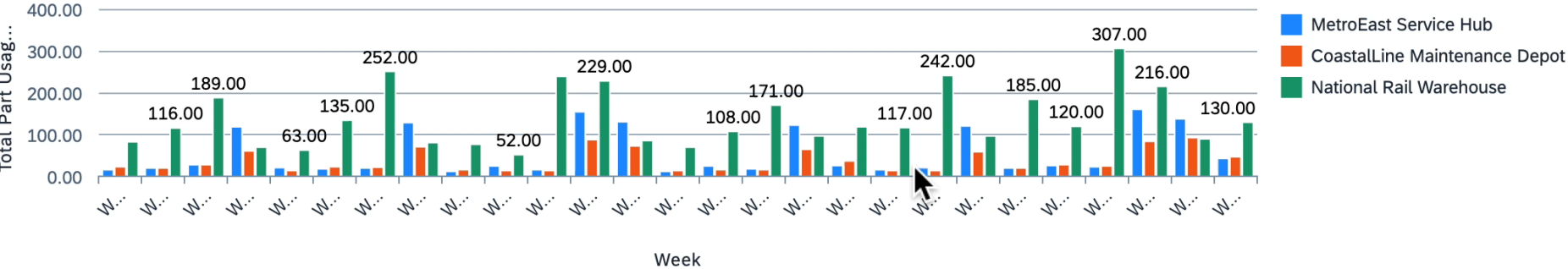
MRO: 10) Total Part Usage Forecast (Corr. & Prev. Maint.)

🔍

⚙️

🔗

⋮



MEIO:

BEYOND GUESSWORK



MRO_Inventory ▾

Versions / Scenarios



Data



Simulate

Save

Scenarios ▾

Jobs | ▾

Workspace

Plan

Design

Save | ▾



Workbooks

Alerts



Corr. Maint. Inventory Review

Corr. Maint. Inventory Review

SS Cost Delta Financial Review

SS Cost Delta Financial Review

Corr. Maint. Inventory Review | Corr. Maint. Inventory Review

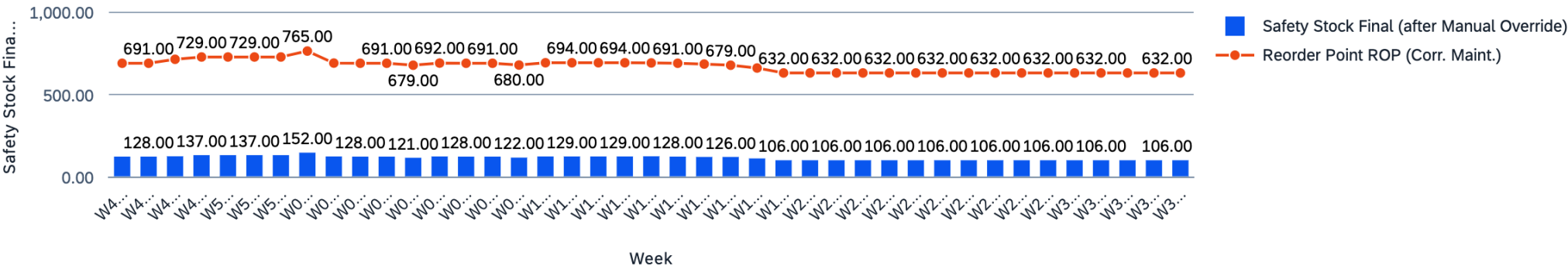
Load Planning Filter

Corr. Maint. Inventory Review



	Location ID ▾	Part ID ▾	Key Figures ▾	W46 2023 11/13 ▾	W47 2023 11/20 ▾	W48 2023 11/27 ▾
1	MetroEast Service Hub	GASKET SEALER-01	Part Replenishment Lead Time (Days)	7	7	
2			Part Replenishment Lead Time (Weeks)	1	1	
3			MRO Part Service Level (Risk Score Lookup)	90.00%	90.00%	
4			MRO Part Service Level (Manual Override)			
5			MRO Service Level Final (after Manual Override)	90%	90%	
6			Part Usage Avg Weekly Rate for Inv. Planning (Corr. Maint.)	0.91346	0.91346	
7			Safety Stock (Corr. Maint.)	1	1	
8			Safety Stock (Manual Override)			

MRO: 07) Corr. Maint. Inventory Review

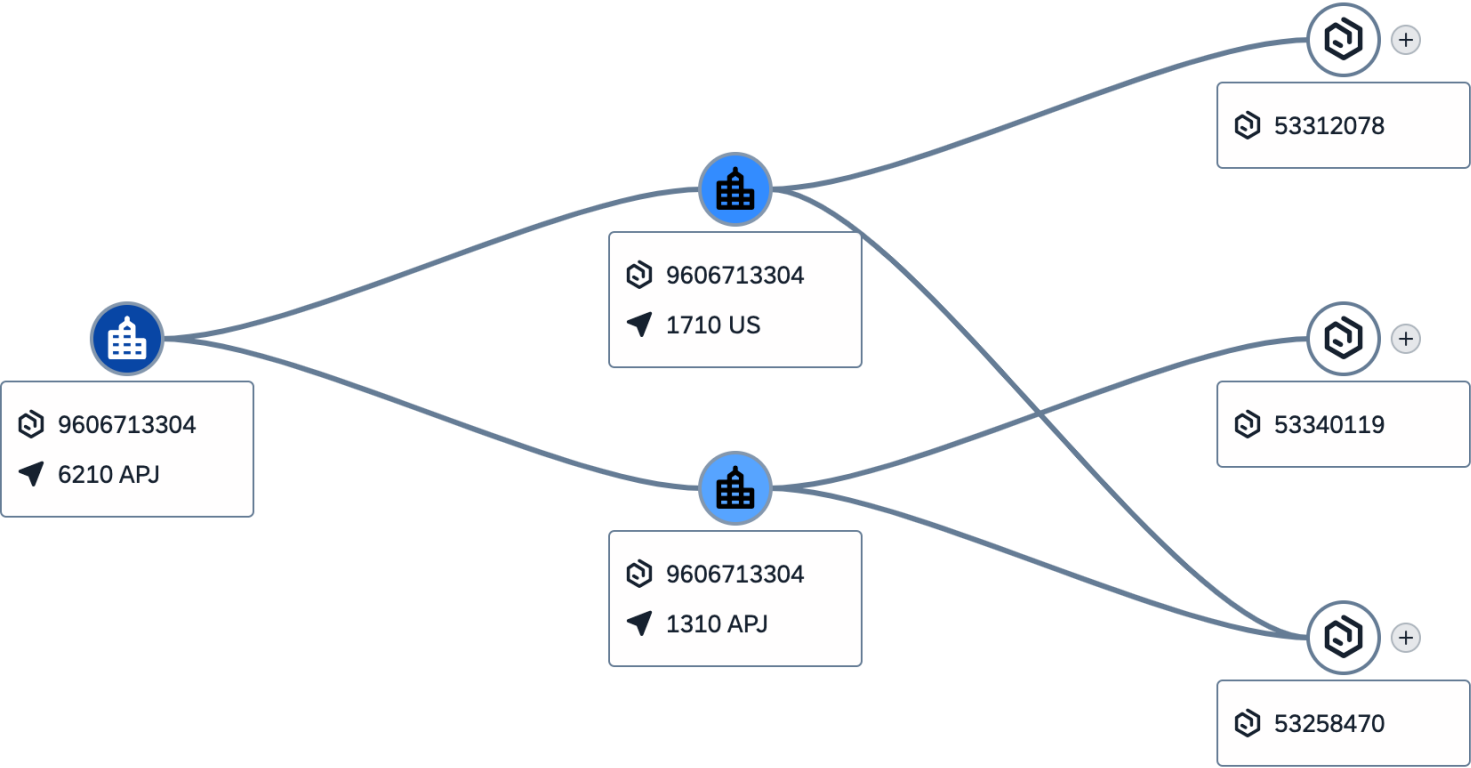


MRO Network

MRO Network
Planning Area: MRO2308 (MRO Sample Planning Area)

[Edit Header](#) [Go To...](#) [Show Side Panel](#)

Layout **Horizontal** ▾



Reorder Point ROP Final (after Manual Override)

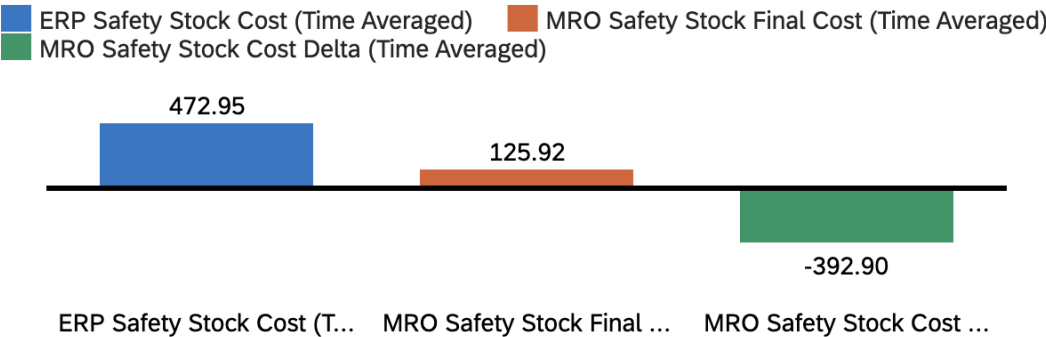
- 62.53
- 50.83
- 39.14
- 27.44
- 15.74
- 4.04

- Stocking
- Product

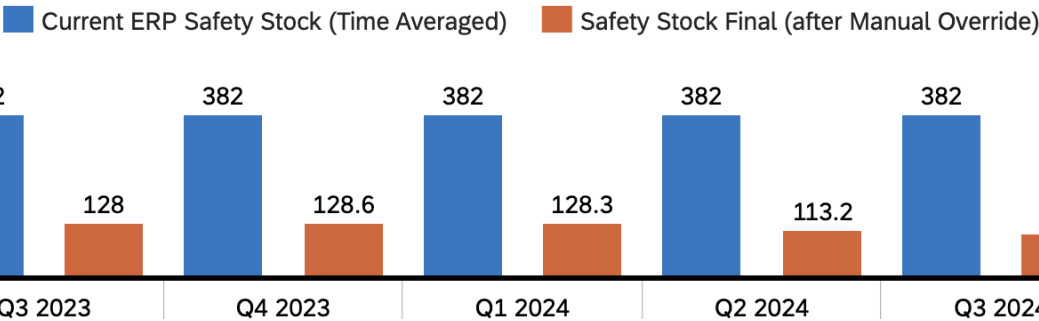
Inventory Review

Safety Stock Savings

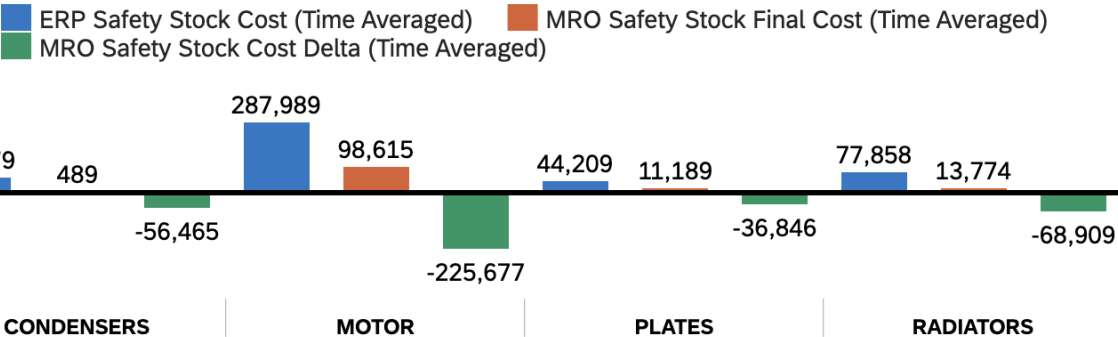
in Thousand



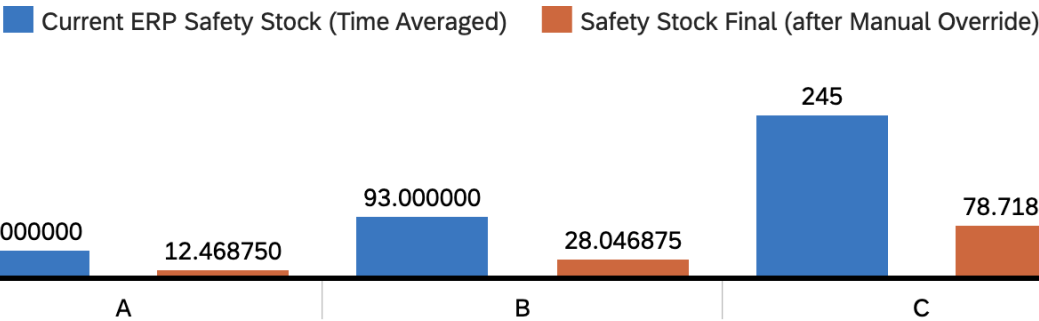
Safety Stock Investment by Quarter



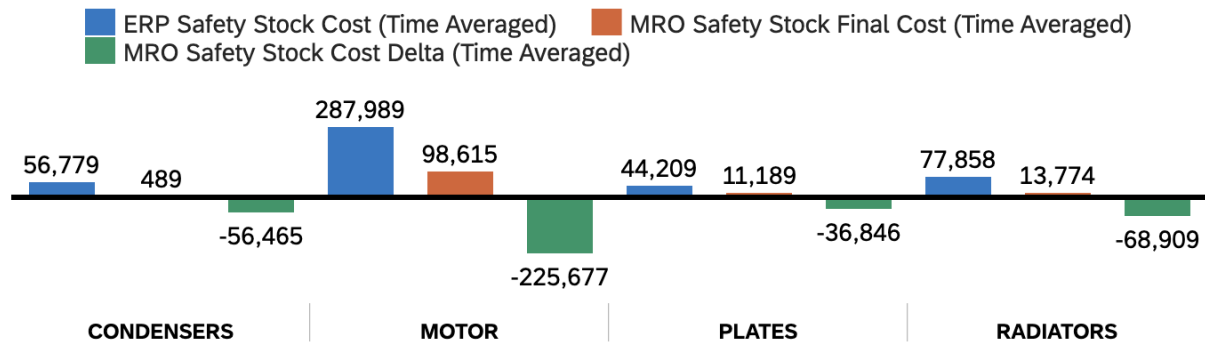
Safety Stock Savings by Product Family



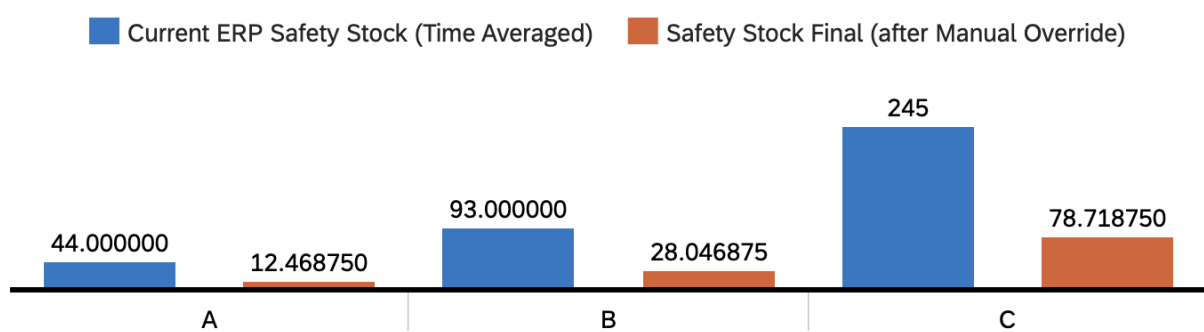
Safety Stock Investment by ABC



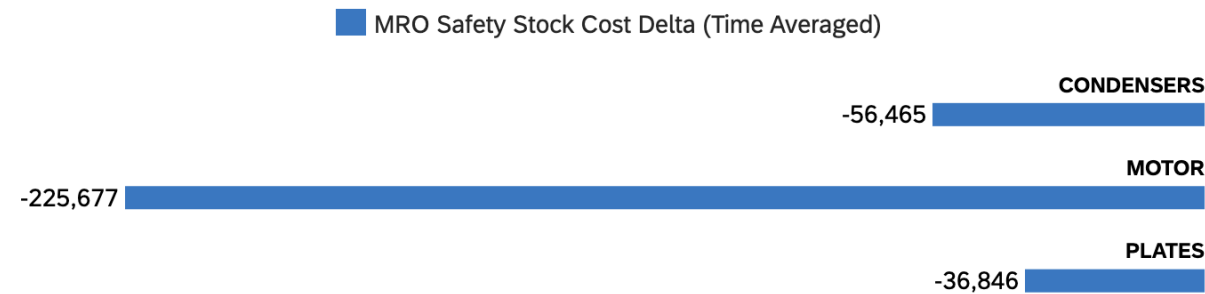
Safety Stock Savings by Product Family



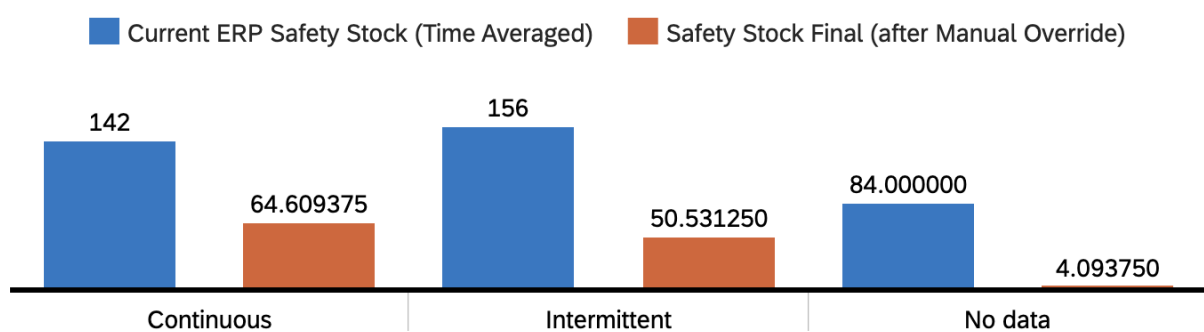
Safety Stock Investment by ABC



Safety Stock Savings by Product Family



Safety Stock Investment by Demand Type



3. Keeping Track Of Multiple Suppliers

1

Complex and Large Catalogue

Leading to redundant orders and inefficient stock utilisation.

2

Demand for spare parts isn't visible

until maintenance orders are created, making it hard to plan and procure in time.

Keeping track of multiple suppliers

for each part is tedious, leading to potential redundant orders from different vendors.

3



SAP Business Network Solutions with SAP Business Technology Platform

1

Integrate and Automate

Achieve resilience by connecting the supply chain with prebuilt integrations and automations to improve efficiency with fewer errors

2

Build and Extend

Extend built-in asset management and supplier network capabilities to support unique business needs

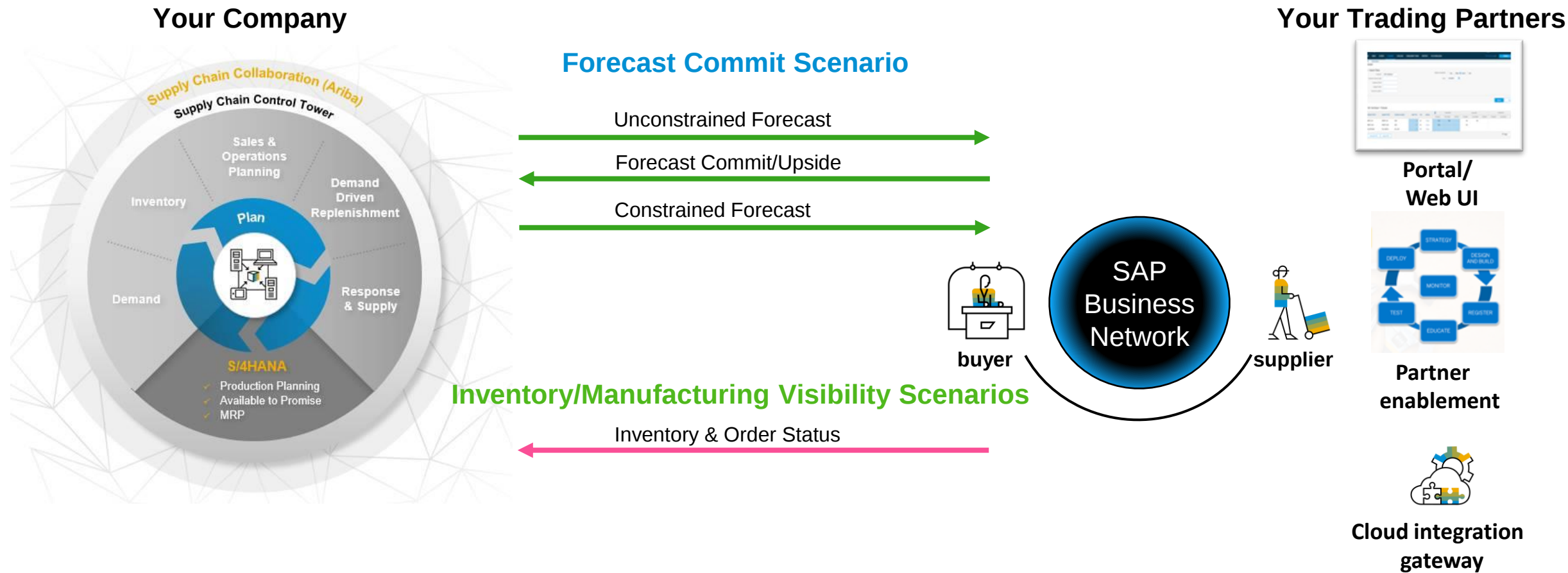
3

Plan and Analyze

Gain transparency and plan for change with real-time insights and planning data from across the enterprise

SAP Business Network for Supply Chain

Integration with SAP Integrated Business Planning – Supply Side



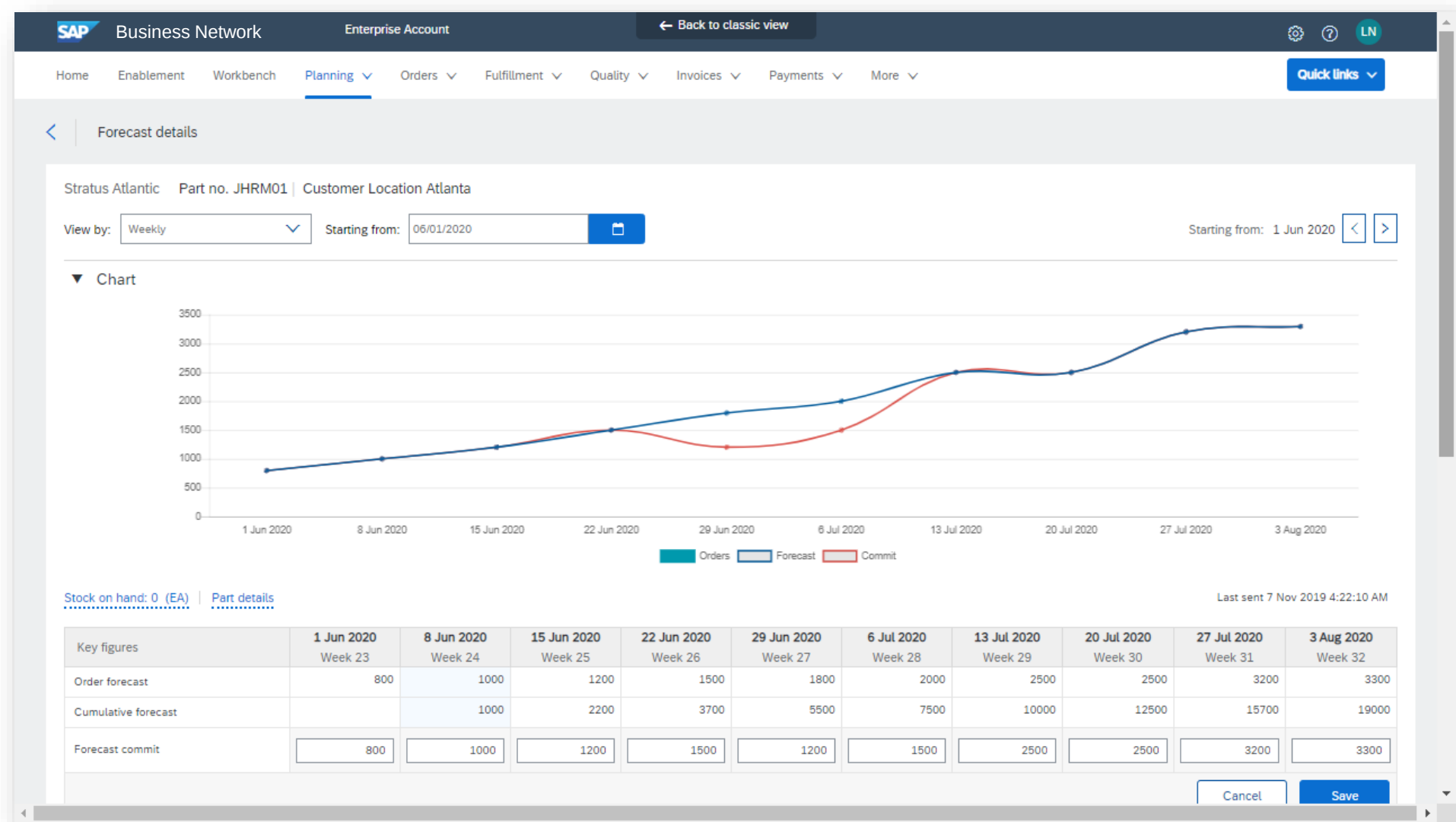
Companies with enterprise-wide collaboration with trading partners have

4–12% lower DIO

2–5% higher on-time delivery

SAP Business Network for Supply Chain

Forecast visibility for suppliers



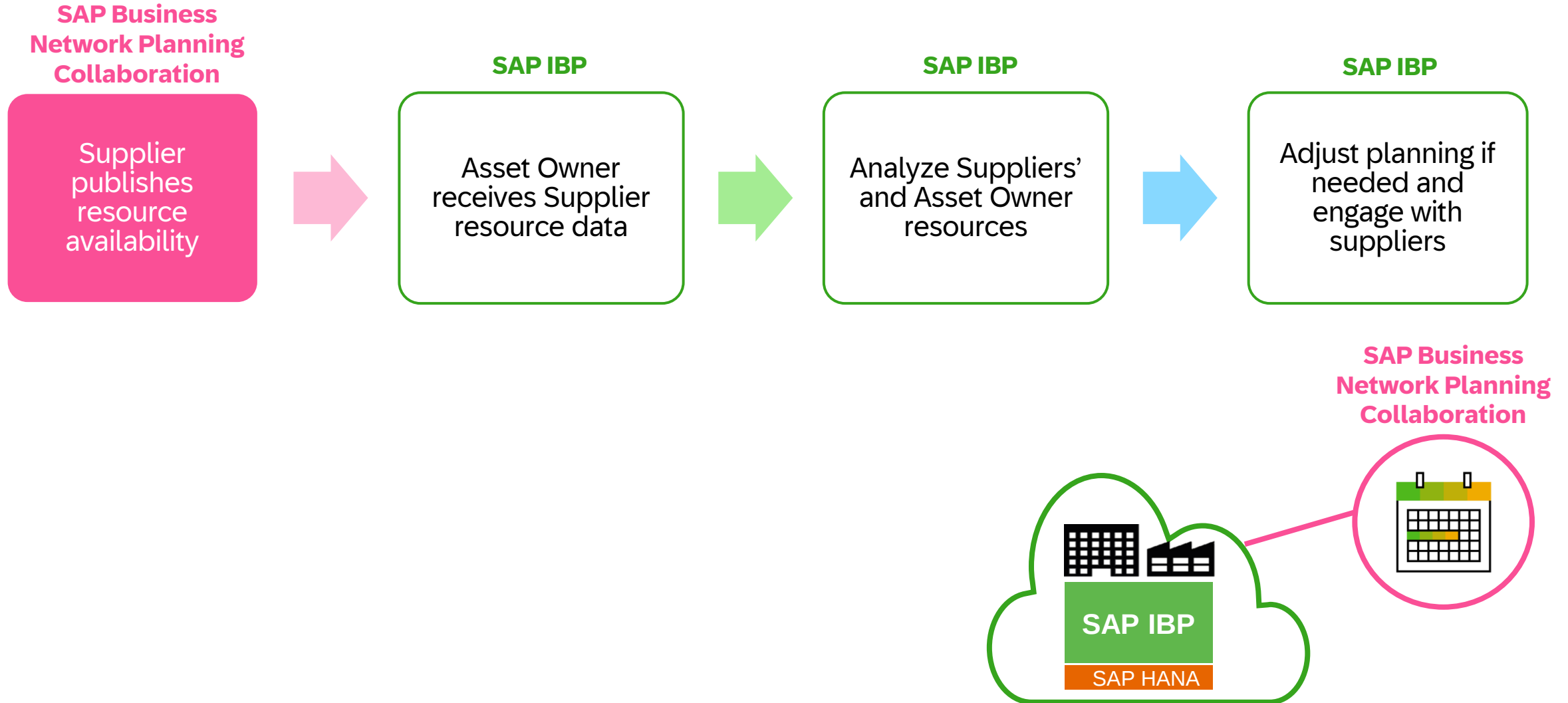
Provides time series view of forecast for suppliers

Flexible UI supports

- Search filtering
- Configurable views
- Flexible time bucket views
- Showing related firm orders
- Excel download and upload

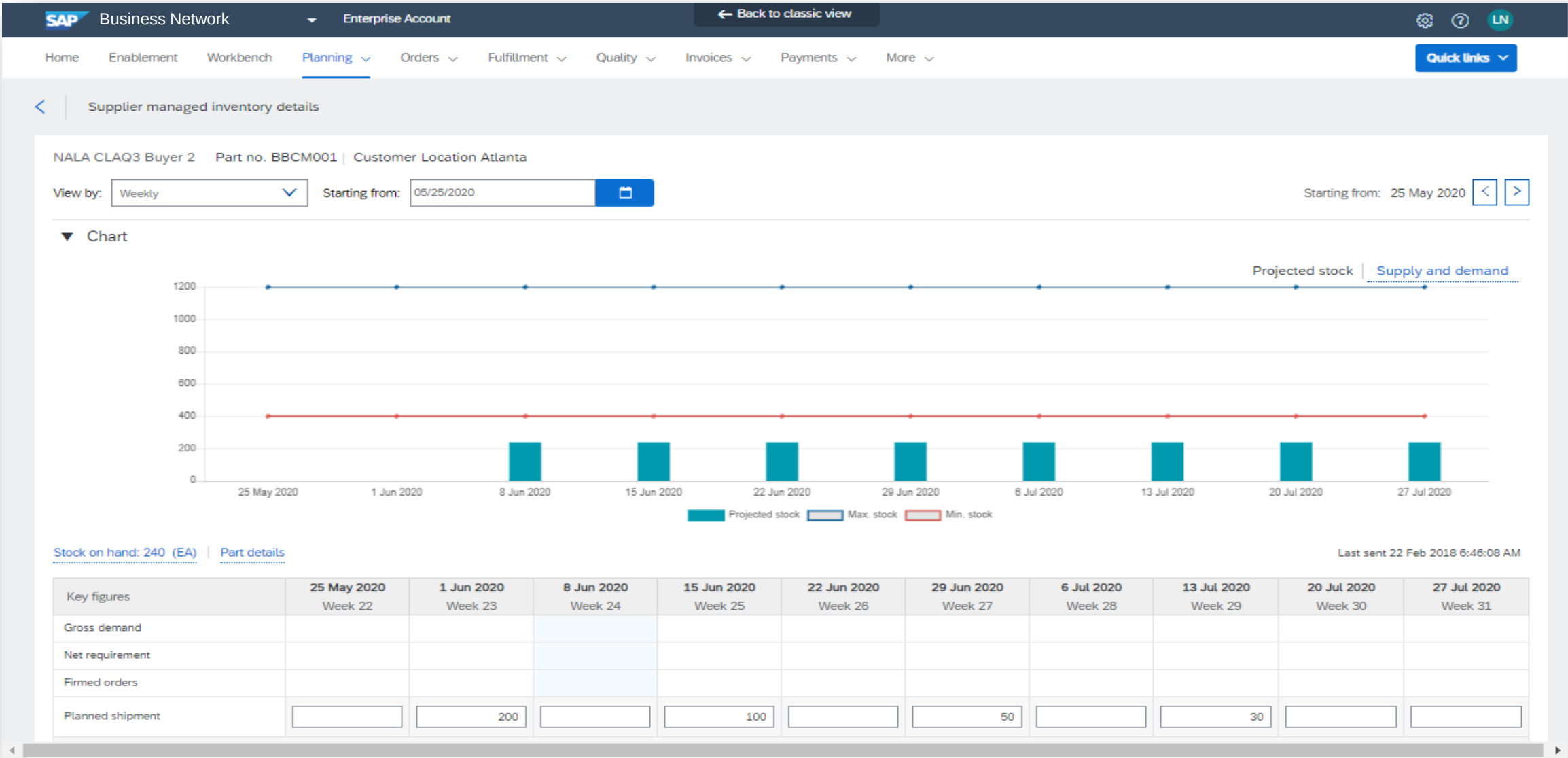
SAP Business Network for Supply Chain

Integration with SAP Integrated Business Planning – Supply Side

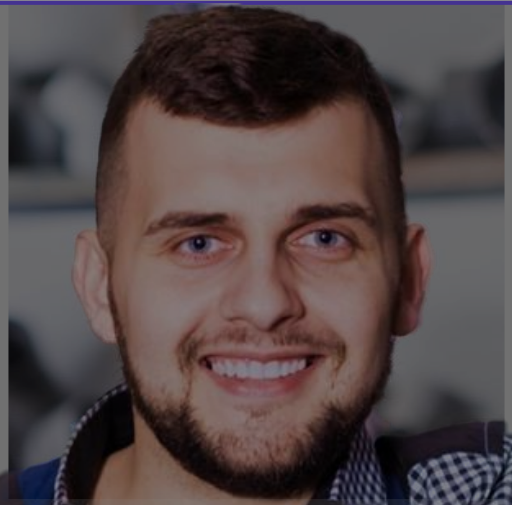


SAP Business Network for Supply Chain

Supplier Managed Inventory Process – Detailed Planning View



Jon's Journey: Addressing Rail Inventory Challenges with IBP MRO



1 **Complex and Large Catalogue**

Leading to redundant orders and inefficient stock utilisation.

3 **Network** of suppliers for Materials and Services is considered in my planning and they are our Partners

2 **Demand for spare parts isn't visible** until

maintenance orders are created, making it hard to plan and procure in time.

Roadmap IBP for MRO

Current and Future

[SAP Roadmap Viewer](#)


Now

- Integration content for ECC and S/4HANA Enterprise Asset Management
- Integration content for Project System
- MRO-specific Sample Planning area covers Demand, Inventory and Supply Planning
- Criticality based Target Service Level data model extension that accounts for qualitative and quantitative factors
- MRO Inventory Planning operator which calculates Reorder Point and Safety Stock using a Poisson Distribution
- MTBF extension for Inventory Planning Operator
- Best Practice content for MRO process in SAP IBP



Planned in 2311

- IO results integration from IBP to ECC / S/4HANA
- Planned Independent Requirements for MRO Spare Parts integration from IBP to ECC / S/4HANA
- Enhance MRO Inventory Planning operator using a Gamma and Normal Distribution
- Extension of integration content with ECC PM & S/4HANA EAM: new Key Figure data extraction for Preventative Maintenance completed orders costs



Future Direction

- IBP/SAC content for Maintenance Budgeting, Re-supply and Total Maintenance Cost
- CI-DS templates updated to integrate Re-order point
- Rotables Planning (repair, re-introduction, refurbish or scrap material)
- Alerts on Maintenance Activities and navigation to ECC / S/4HANA Maintenance Plans
- Attribute-based criticality segmentation operator
- Low-level code / echelon operator for Criticality based Target Service Level

Swiss Federal Railway

“Working with SAP, we were able to gain a better understanding of how our parts planning approach can be developed further,” said Christian Faltus, Swiss Federal Railways SBB head of Procurement and Spare Parts Dispatching. “Maintenance planning and parts planning have been two separate processes so far. With the initiative, we hope to bring both worlds together and ensure that supply chain profits from maintenance optimizations such as condition and predictive maintenance. We’re looking forward to innovations from SAP to reduce asset downtime from missing parts.”

<https://www.youtube.com/watch?v=heRIVNzL1A8>



SAP and Customers Innovate New Ways for Industry-Specific Parts Planning

Newsbyte by SAP News
September 10, 2019



CHICAGO — **SAP SE** (NYSE: SAP) today announced new use cases to help optimize spare part replenishment, procurement and distribution within supply chains of service and maintenance-intensive companies.



PUBLIC

How Do You **Predict Spare Parts Needs** with Digital Asset, Inventory, and Demand Management?

Maximizing on reserves of roughly **2.4 billion metric tons** through innovations in operations management

A world-class integrated iron ore mining, rail, and port operation, Roy Hill is set to become one of the largest mining projects in Australia. Currently shipping 55 million metric tons per annum, the company aims to maximize the return for each metric ton of ore produced. One area of focus has been transforming the way assets are managed and maintained. Roy Hill set out to **increase asset and spare parts availability, optimize inventory, and improve supply chain collaboration** by transitioning from a replenishment model to a demand-driven model for maintenance, repair, and overhaul.

BRISTLECONE

#MasteringSAP 2023 PUBLIC

THE BEST RUN 



Picture Credit | Roy Hill, Perth, Australia. Used with permission.

Roy Hill: Mining Like a Factory - Transforming Asset Management with SAP® Integrated Business Planning

24-60 months

Visibility into the demand for spare parts inventory

Reduced

Working capital

Optimized

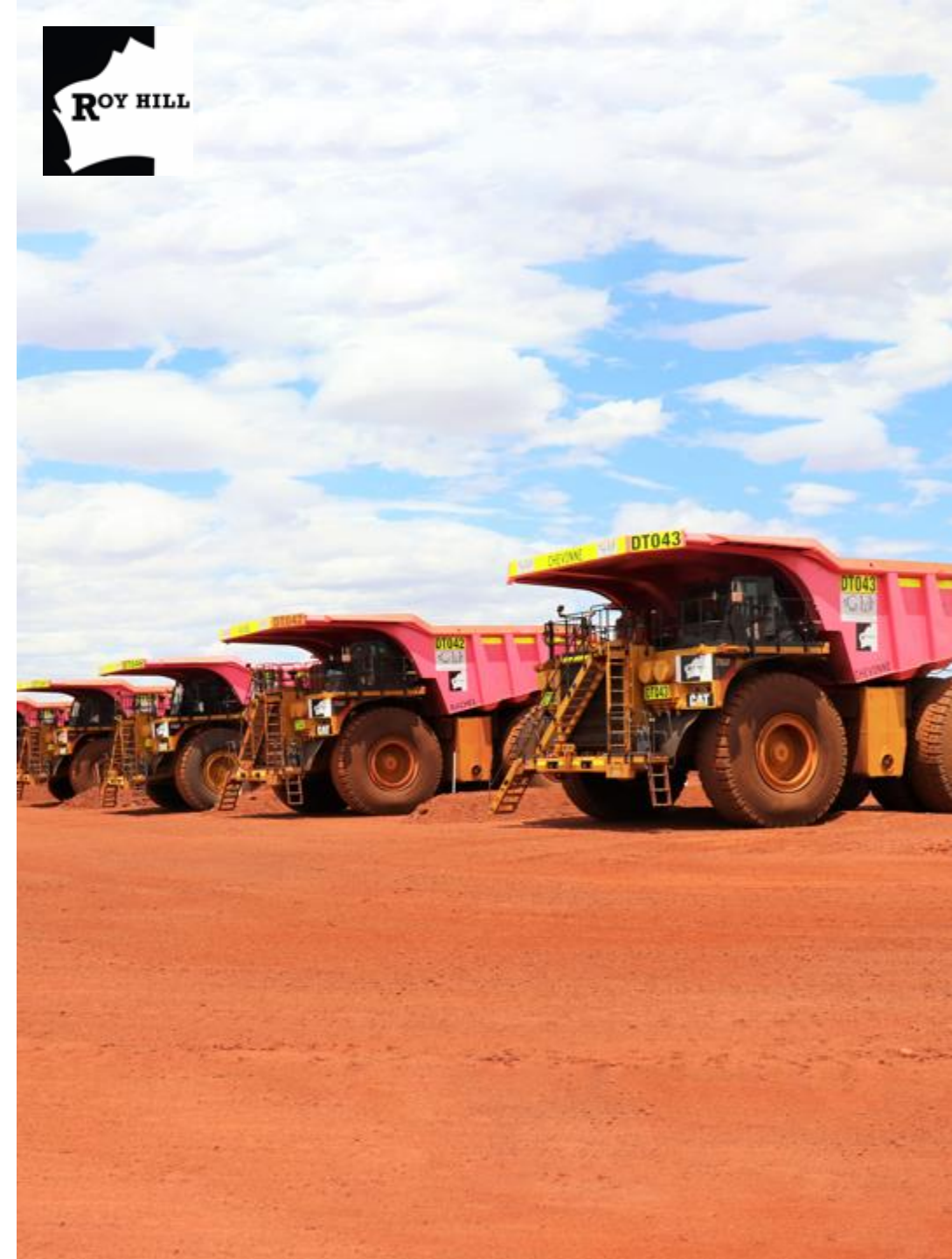
Production availability in line with demand chain requirements

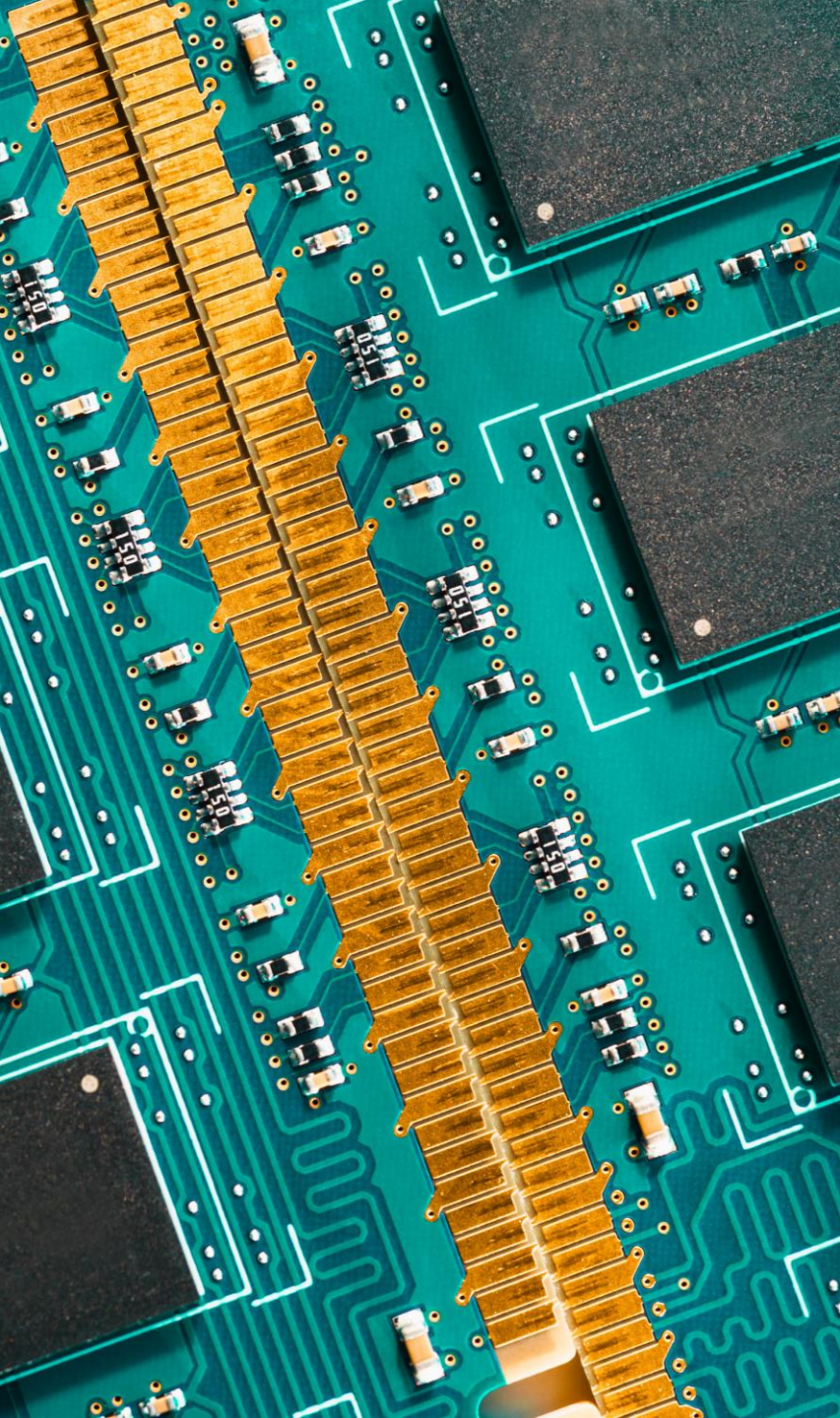
10-20%

Reduction in inventory levels for critical asset components such as tires

“We are working with SAP to create an integrated core of applications to support industry-leading business innovation. SAP Integrated Business Planning was a critical first step to **improving asset and spare parts availability, visibility, and supplier collaboration.**”

Mike Lomman, General Manager Demand Chain, Roy Hill





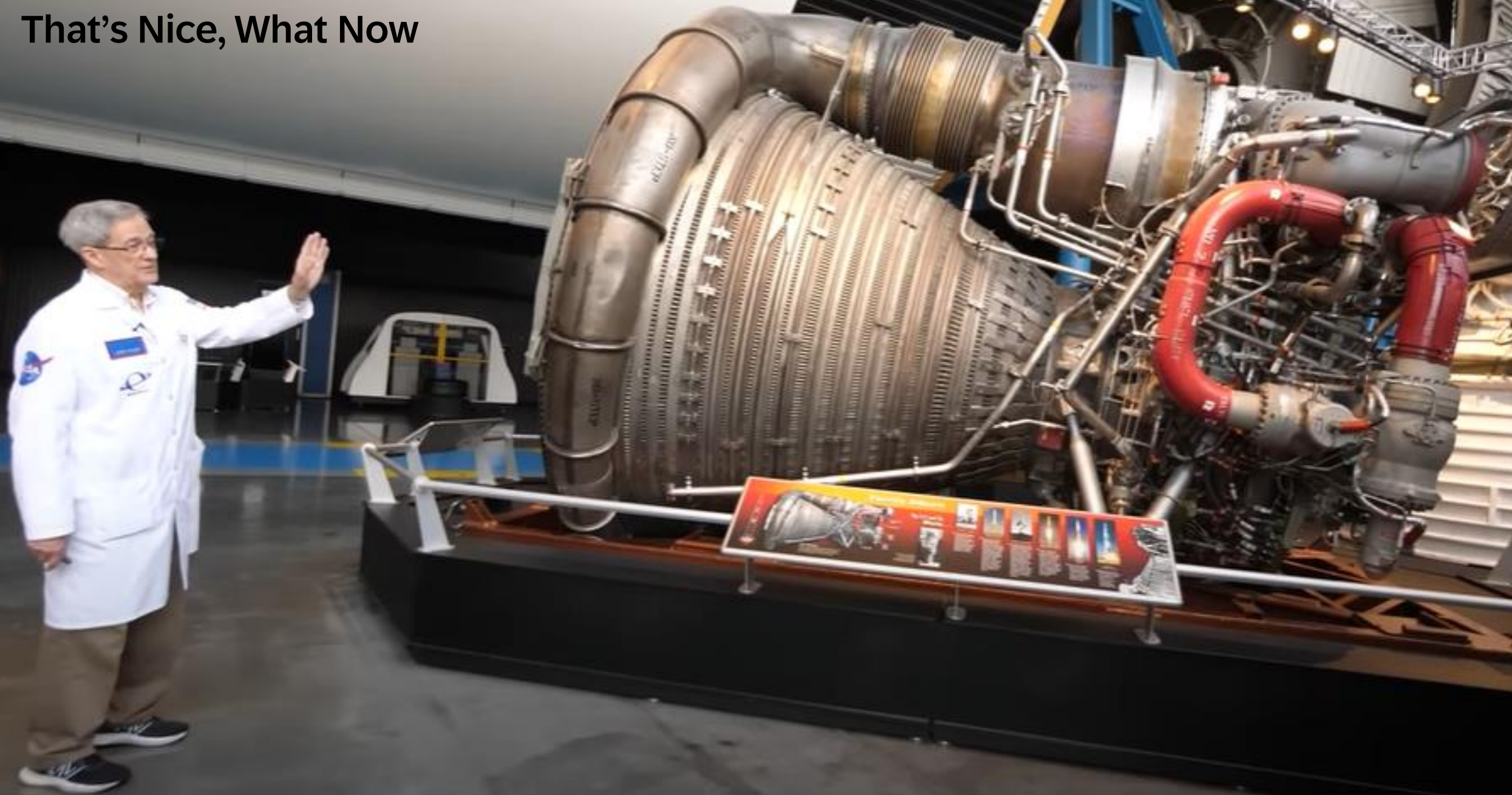
Case Study

World-Wide High-Tech Company

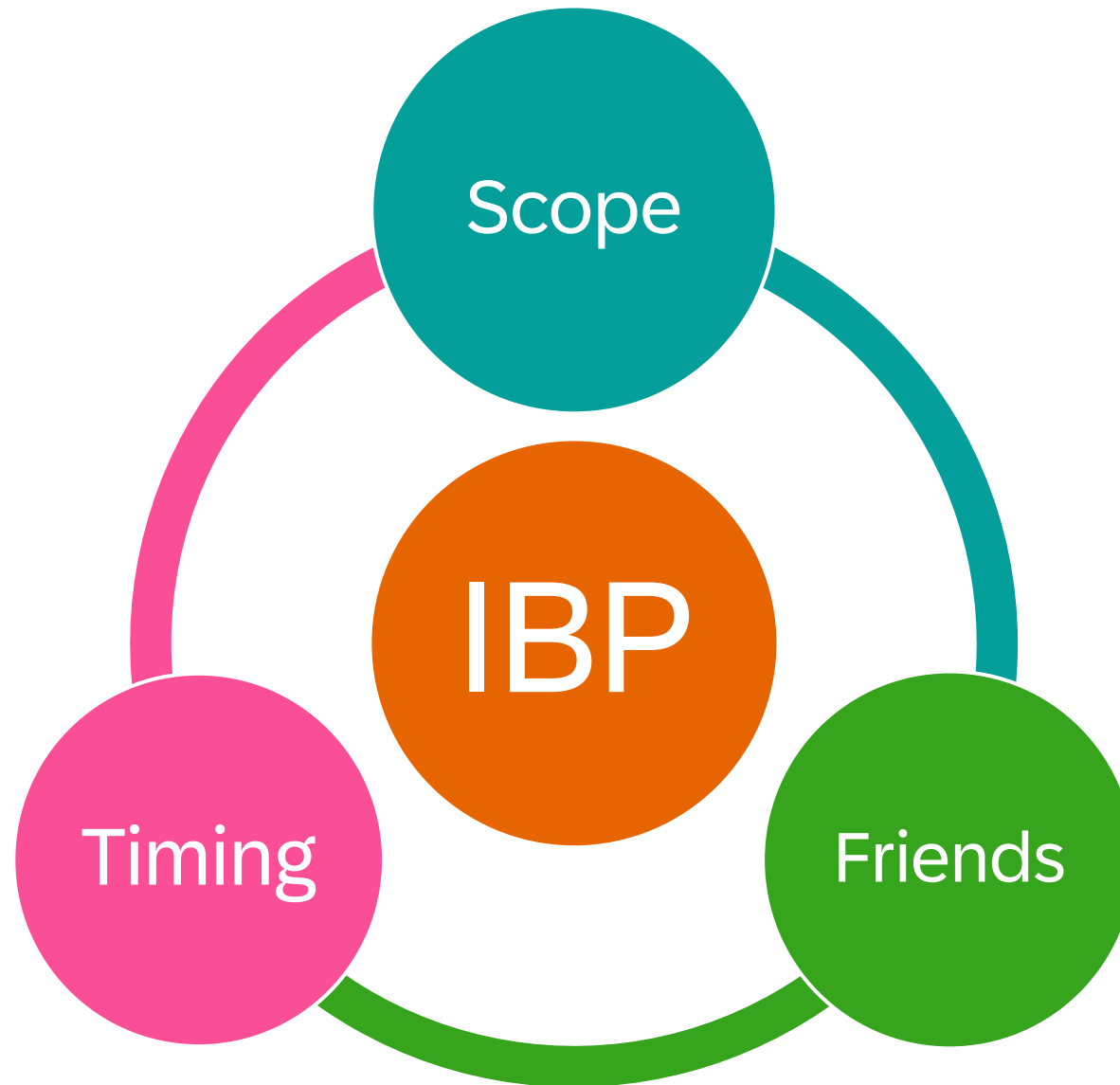
A renovation of the Plan-to-Procure value stream for the devices supply chain yielded the following benefits in less than 2 years:

- 87% reduction in planning/execution cycle time
- \$200M annual inventory savings
- 65% reduction of obsolete and excess inventory
- 75% improvement in supplier onboarding time

That's Nice, What Now



That's Nice, What now



Questions



Thank you.

**Hemant Biradar**

Senior Solution Advisor
Supply Chain & Digital Manufacturing

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Phone: +61 439 645 000

Email: hemant.biradar@sap.com

LinkedIn: [hbiradar](https://www.linkedin.com/in/hbiradar)

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LinkedIn: [happygraham](https://www.linkedin.com/in/happygraham)

