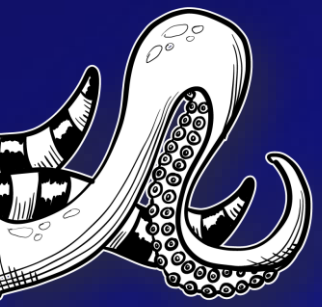
DYNAMICS MINDS

Microsoft Dynamics 365 and Power Platform Conference

Pre-Day: MAY 26, 2024

MAY 27 - 29, 2024

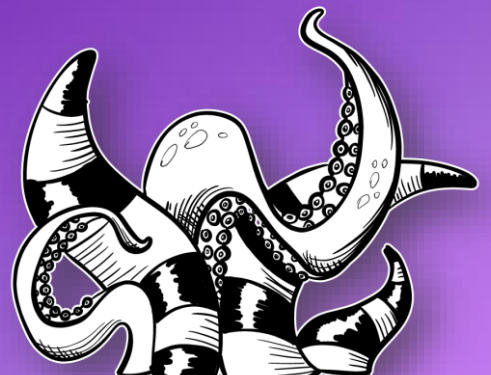
Portorož, Slovenia, Europe



Taking Demand Planning and MRP to the next level with Microsoft solutions

Angus Prior
Supply Chain Architect
HSO International

Chandru Shankar
Global MD, Manufacturing
HSO International



- Welcome & Introductions
  - Learning objectives for the session
- Microsoft Demand Planner Overview
  - Demand Planner Solution Showcase
- MRP & DDMRP with D365 SCM
  - DDMRP with D365 SCM Solution Showcase
- Summary & Go-Do's

Angus Prior
Supply Chain Architect
HSO International
aprior@hso.com

Career history:
February 2023 to current: HSO International
2015 to 2023: Blue Horseshoe Accenture
2010 to 2015: Sable37 (now DXC)
Earlier: Warehouse & Logistics manager

Chandru Shankar Intro

Chandru Shankar is a Digital Strategy and Industry Thought- Leader for Manufacturing and Automotive industries. Chandru is the Global MD for Manufacturing at HSO, a leading Global Microsoft Partner, responsible for driving growth and solution adoption in the manufacturing sector.

- At Microsoft, Chandru was the Industry Director for Microsoft EMEA Business Solutions group in his last role, leading Automotive, Manufacturing and Utilities industries
- Prior to that, Chandru was the Dynamics Solutions Director for Microsoft Services, responsible for Dynamics AX and CRM offerings for WW MCS.
- Chandru has 30+ years of Mfg industry and Business solutions experience.
- Chandru is the architect of the Microsoft Dynamics Sure Step methodology, and author of books on selling and delivering Microsoft Dynamics solutions. He has also performed as Adjunct Faculty in the MBA program of a major US university.

HSO, 2022 to Current: Global MD for Manufacturing Sector
EQM, 2020 to 2022: Chief Commercial Officer & Partner
Microsoft Corp., 2005 to 2019
- Industry Director & EMEA Business Solutions Lead – Manufacturing & Automotive
- Director, Dynamics Solutions – Microsoft Services

i2 Midwest, 1998 to 2005: Director of Consulting Services
Mfg Companies, USA, 1991 to 1998: Mfg Engineering roles

amics 365
atform Conference
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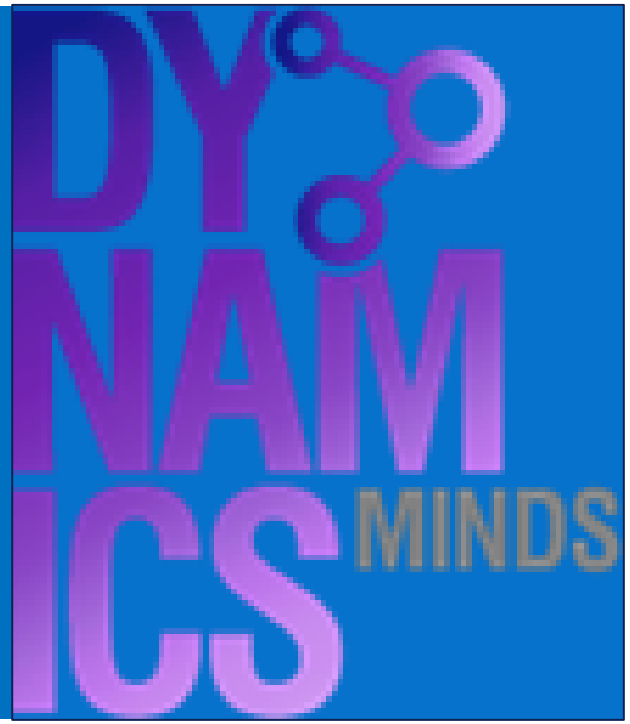
Learning objectives for today's session

Taking Demand Planning and MRP to the next level with Microsoft solutions

- Learn how Microsoft Demand Planner can help organizations shore-up their forecasting, leading to lesser plan deviations and better inventory management.
- Learn how Microsoft Demand Planner supports organizations to collaborate, align demand & supply forecasts, and achieve Increased agility through integrated planning and execution.
- Learn how Demand Driven MRP (DDMRP) in D365 SCM improves the Sales & Operations Planning (S&OP) and Supply and Production Planning functions of an organization.

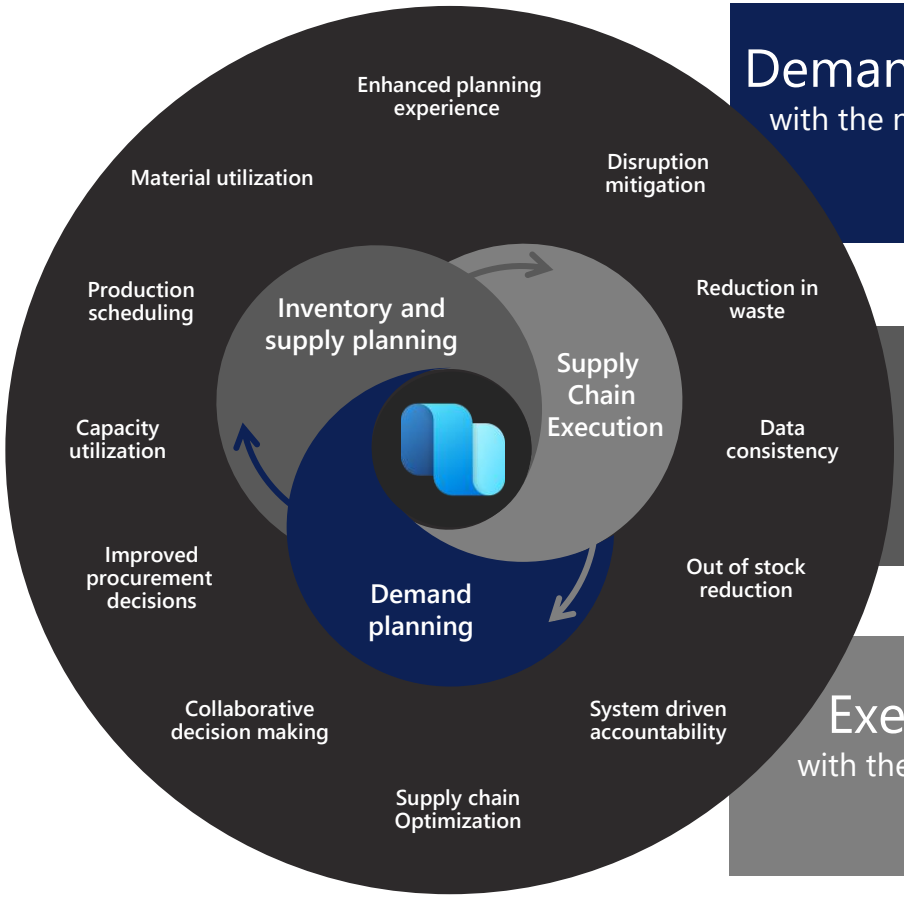


CHAPTER #1

D365 Demand Planning

Full planning and execution cycle with Demand Planning

Dynamics 365 Supply Chain Management



Demand Planning
with the new D365 SCM add-in

- Visual forecast designer
- Flexible planning modeling
- Collaborative planning
- Autonomous forecast
- AI based algorithms
- Seamless integration
- External signals support
- Product phase in/out
- E2E process management

Supply Planning
with Planning Optimization

- MRP
- Safety stock calculation
- Intercompany planning
- DDMRP
- Multi sourcing
- Priority based planning
- Production scheduling
- Finite capacity/material
- Order promising

Execution
with the ERP capabilities

- Warehouse mgmt
- Inventory visibility
- Asset management
- Transportation mgmt
- Pricing
- Production control
- Operations mgmt
- Sales and procurement
- Product lifecycle mgmt

DYNAMICS MINDS

Full planning and execution cycle with Demand Planning

Dynamics 365 Supply Chain Management

Demand & Supply Planning

- Master data (product, locations, hierarchies,...)
- Long/Short term forecasts
- S&OE relevant data
- Actuals data

Input

Create transformation

Data pre-processing
- Outlier smoothening
- Complete missing data
- Adjustments for new product introductions and substitution

Create Forecast

Forecast Generation
- Qualitative or quantitative
- Peer review
- Consolidation
- What-if analysis

Review, adjust, aggregate

Adjust, validate & aggregate
- Compare and analyze
- Adjust with human input
- Aggregate (Bottom-up)
- Allocate (Top-down)
- Collaborate

Consensus Demand Plan (Output as Forecast model for MRP)

Consensus review, approve & publish
- Compare and align
- Demand review
- Adjust to align with business goals

Output

Firmed plans

Supply Planning with Planning Optimization

Net requirements

Planning input
- Inventory levels
- Sales orders & call offs
- Production material

Master planning (MRP)

Planning calculation
- Material coverage
- Production scheduling
- Capacity planning
- Capable to promise

Planned orders

Planning output
- Planned supply suggestions
- Actions
- Delays

Firmed supply orders

Execution - supply
- Production order
- Purchase order
- Transfer order
- Intercompany order
- Kanban

Fulfill demand orders

Execution - demand
- Call offs
- Sales orders

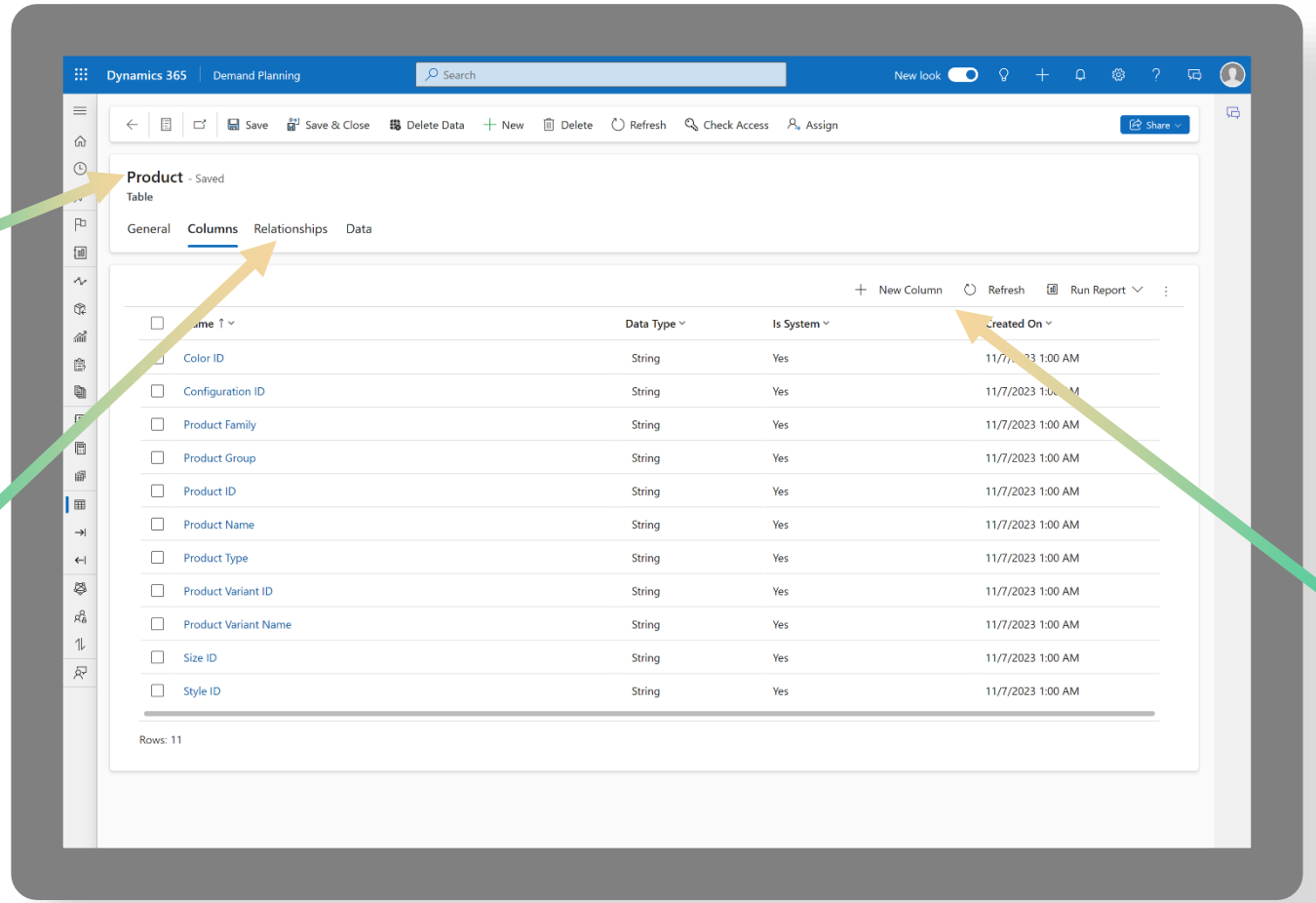
The Demand Planning process

Dynamics 365 Supply Chain Management

Import data

Create tables for each type of data: products, history, locations, etc.

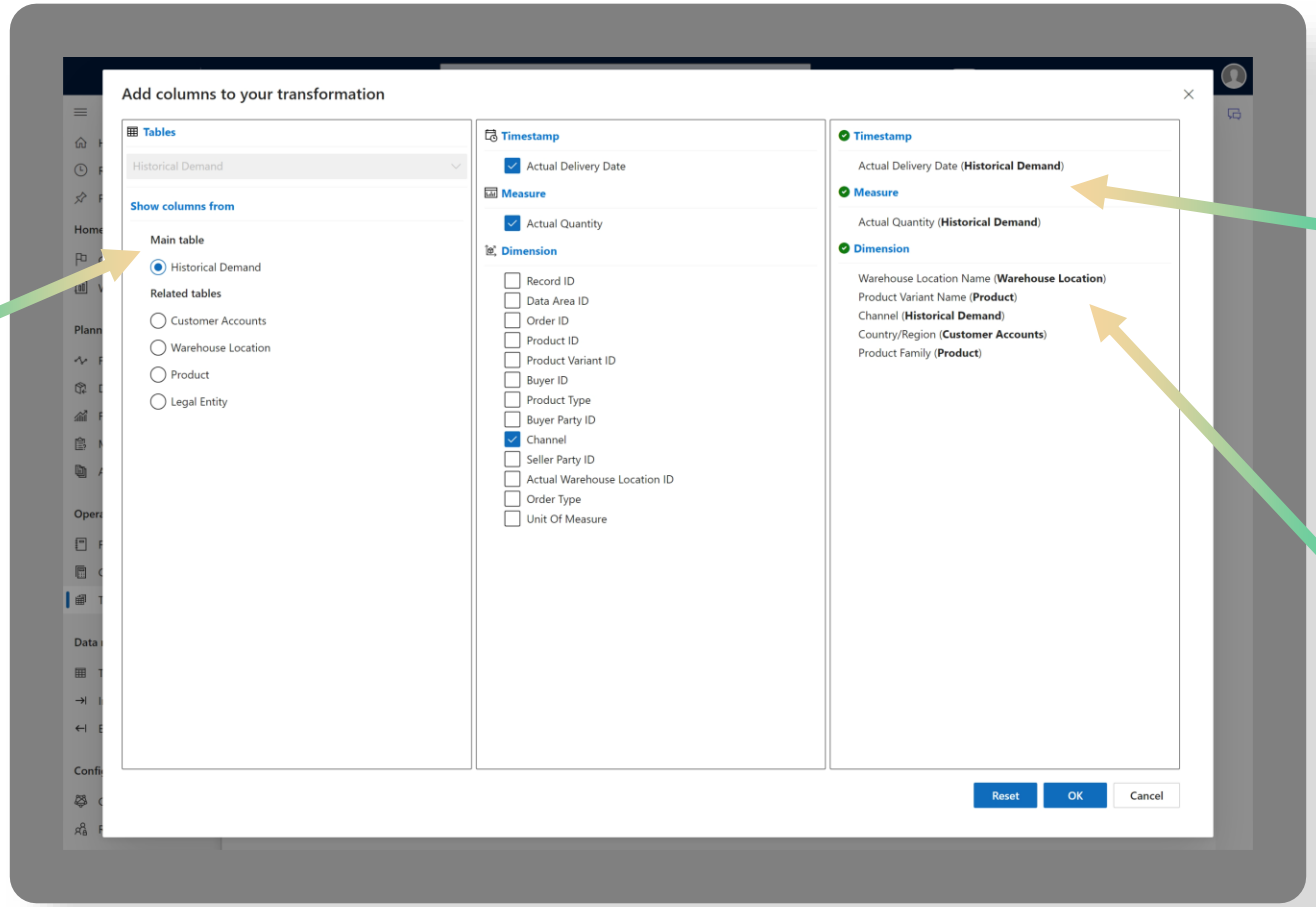
Map relationships between tables and fields



Define each column in a table based on your business needs

Data pre-processing

Map from each data table what should be included

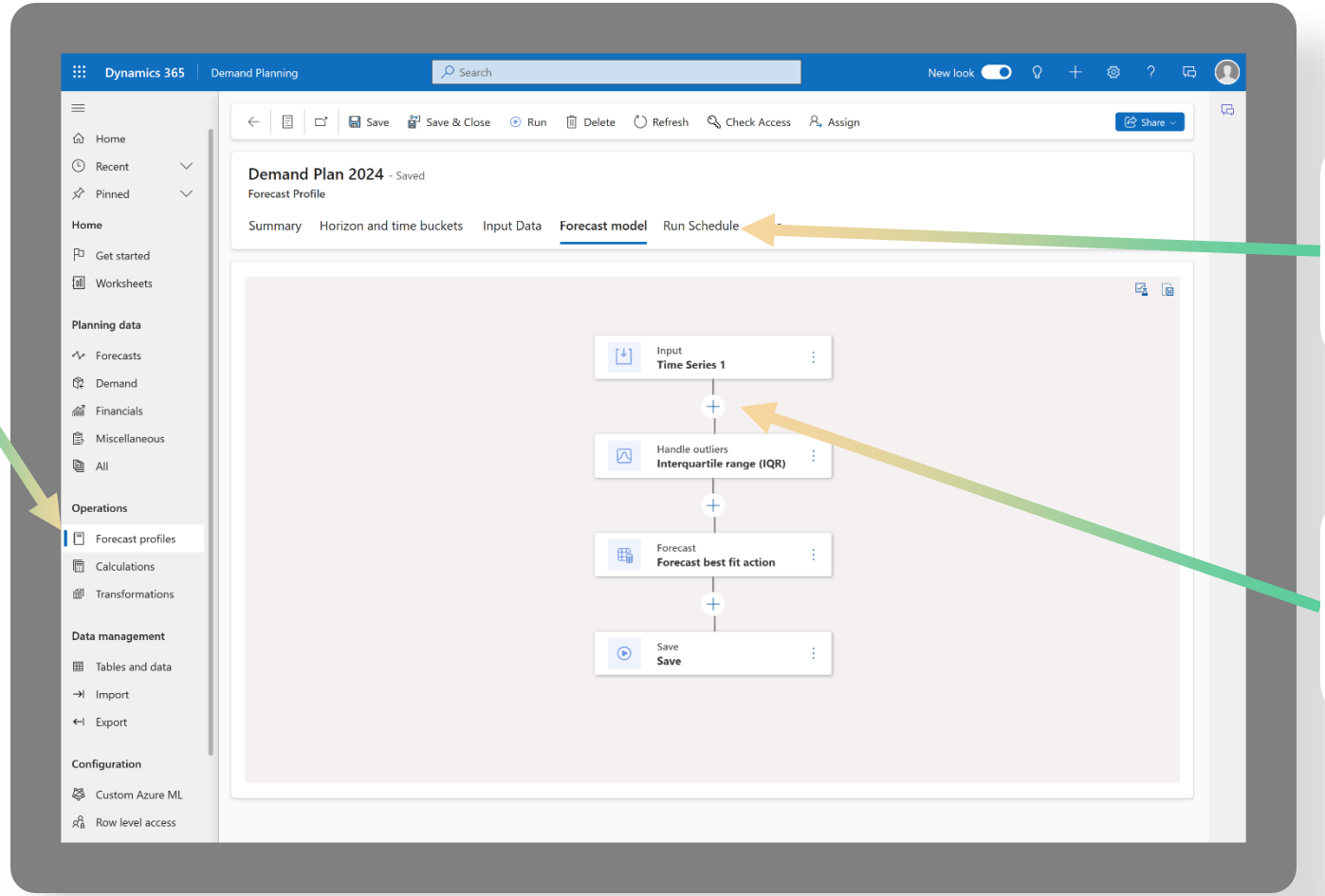


Choose what field represents demand timestamp and quantity

Select applicable dimensions for the forecast

Forecast generation

Create forecast profiles for any scenario



Set schedule for when forecasts should be run

Use low-code experience to define steps for the forecast

Import

Data

Forecast

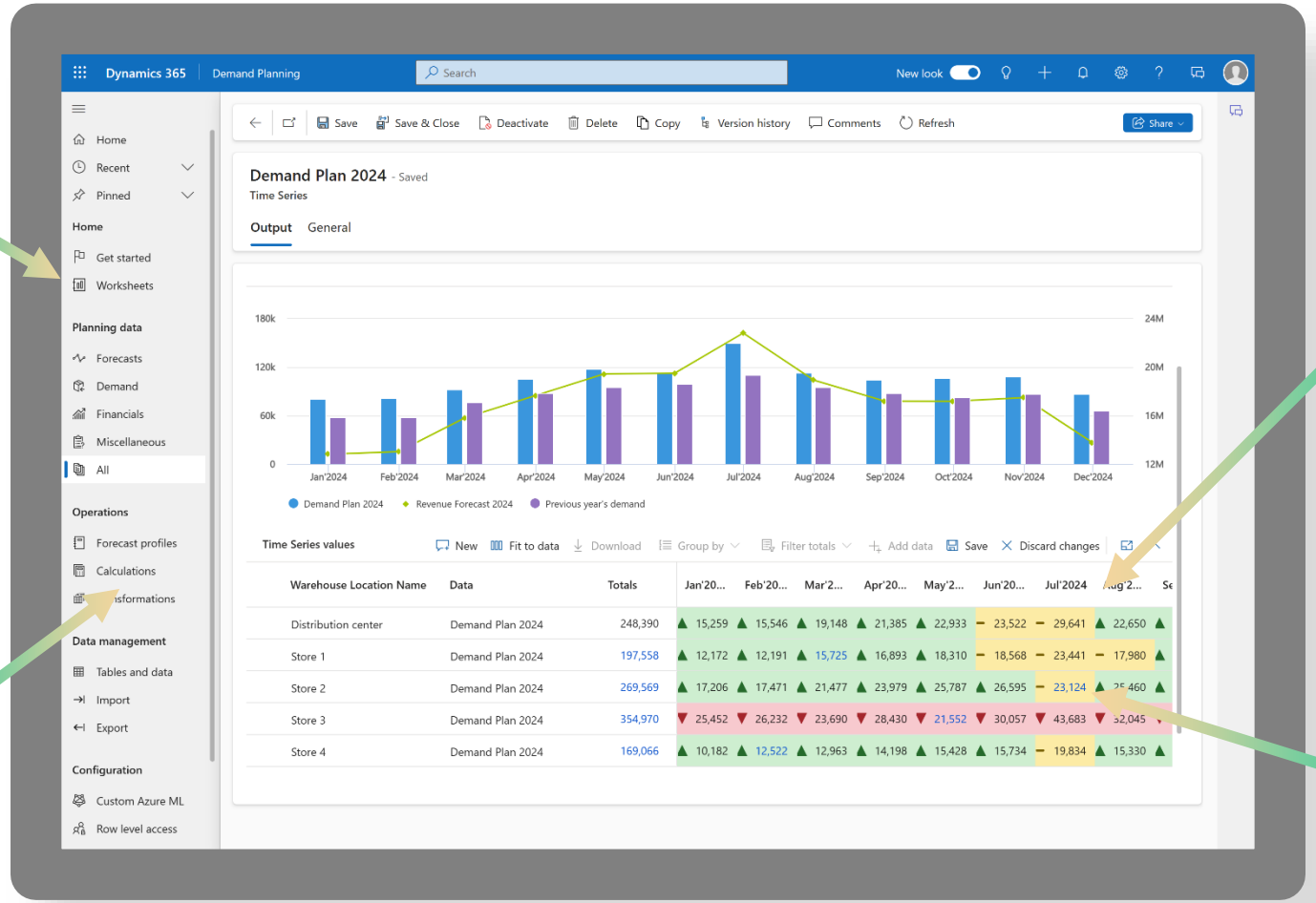
Validate

Publish

Adjust, validate, & aggregate

Create and publish views on the fly, comparing multiple datasets, grouping on different levels

Do calculations on top of the demand forecast like revenue forecast, YoY growth %



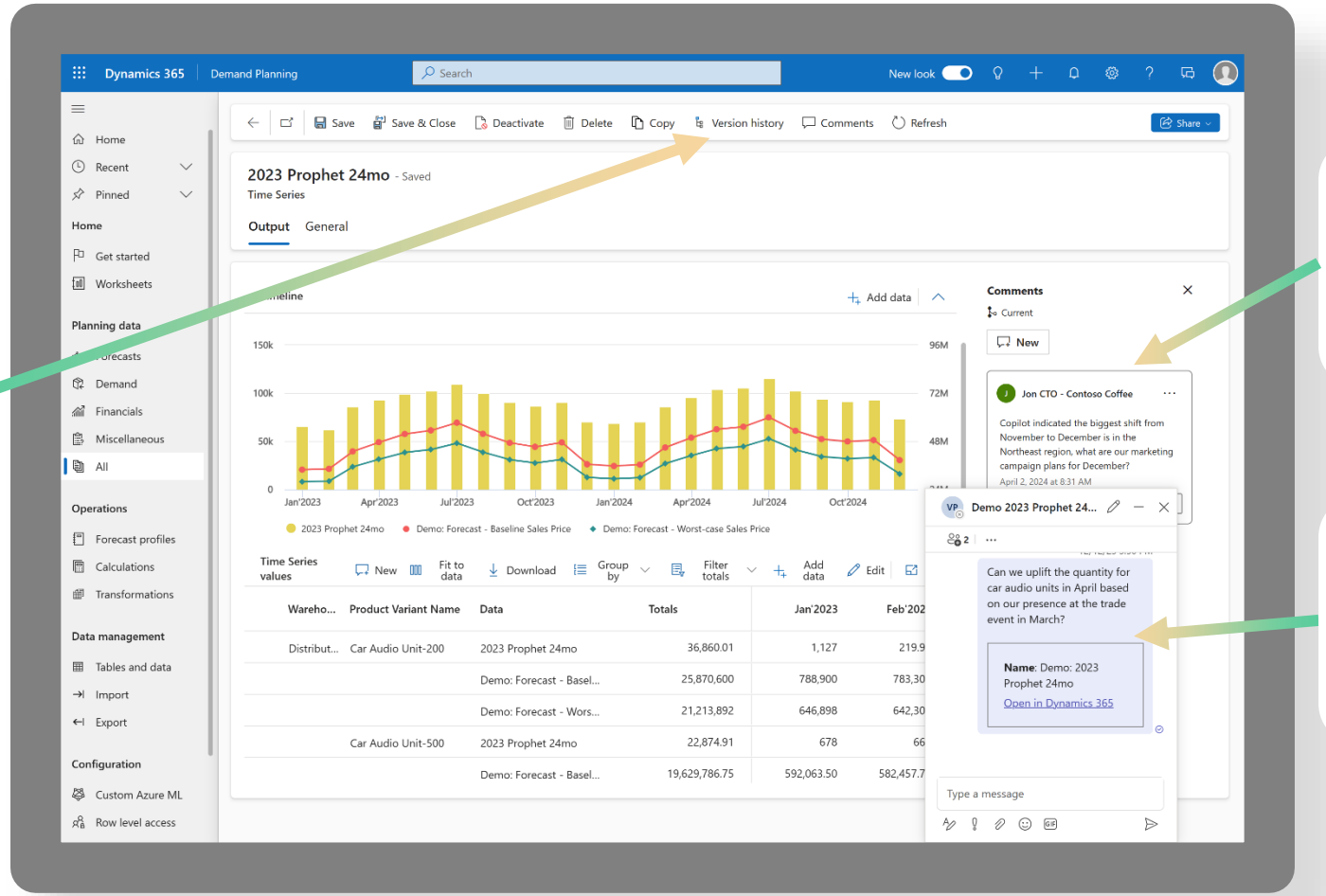
Use conditional formatting rules to highlight important data

Changes at an aggregate level are cascaded down to the most granular level

Import → Data → Forecast → Validate → Publish

Consensus review, approve & publish

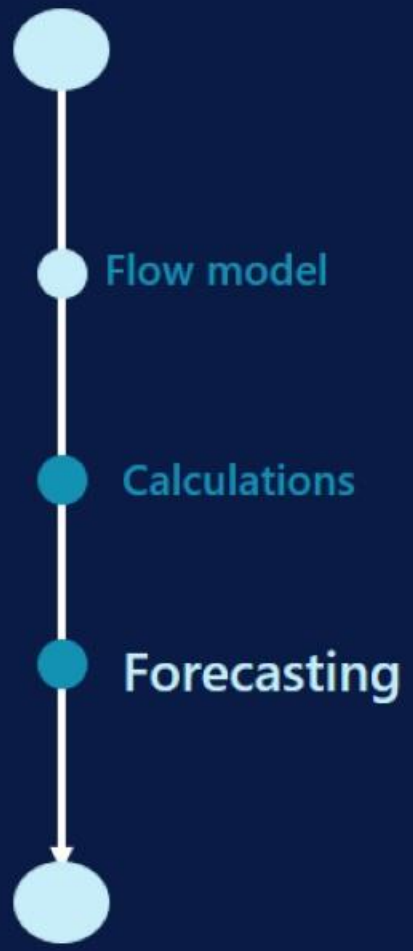
Review previous versions of the plan, seeing who made what changes and following the plan evolution over time



Make comments on the plan and cell level to track communication

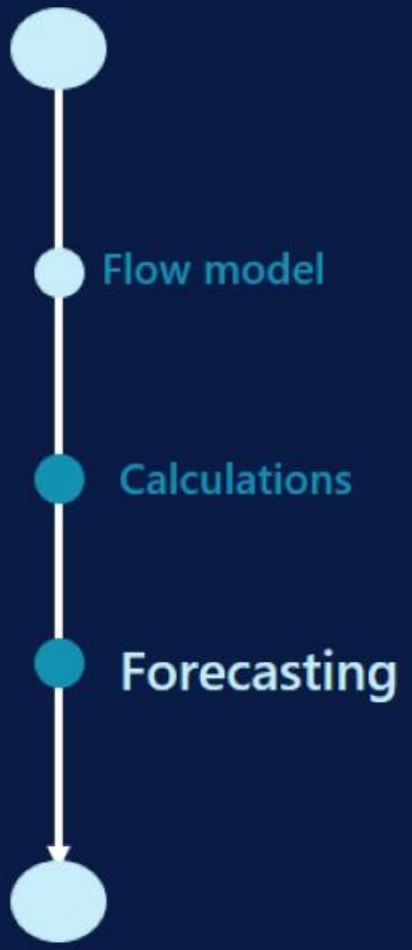
Collaborate with stakeholders in Teams without leaving the browser

Import → Data → Forecast → Validate → Publish



Out-of-box forecasting and outlier algorithms

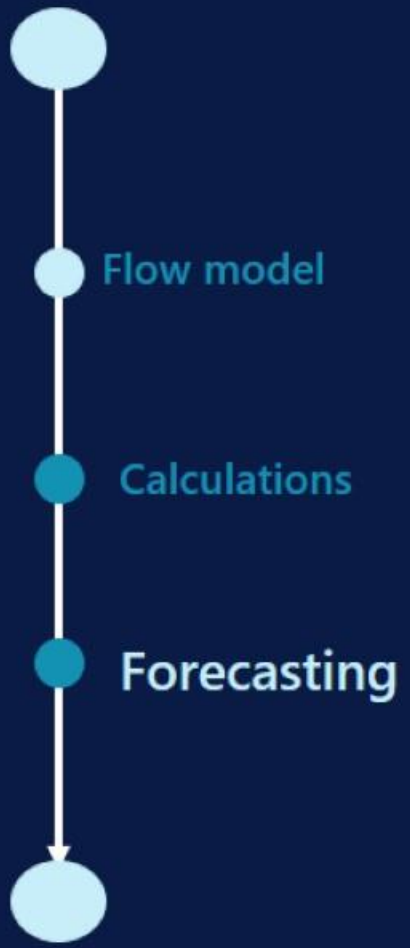
- **STL** (Seasonal-Trend decomposition using LOESS)
  - Versatile and robust method for decomposing time series into 3 parts:
    - Trend
    - Seasonality
    - Remainder
  - The seasonal component is allowed to change over time, and it can be controlled by the user.
  - After calculating mean and standard deviation, outliers are smoothed.



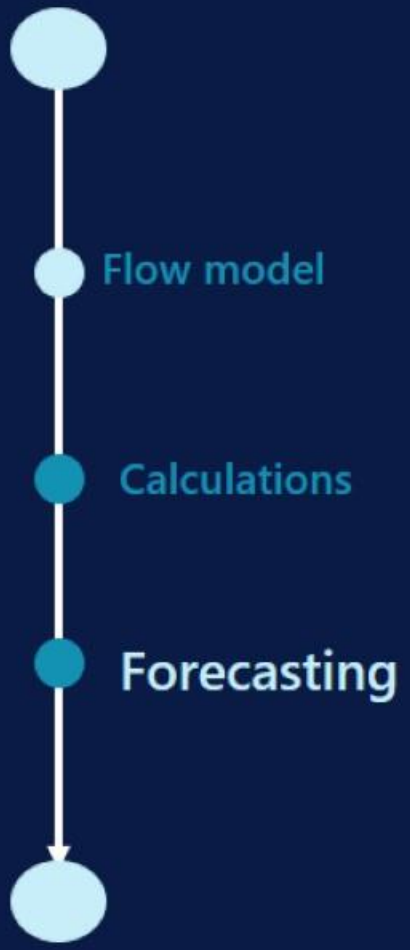
Out-of-box forecasting and outlier algorithms

- **IQR** (Interquartile Range)
  - Identifies data points that fall outside a certain range defined by the quartiles
  - Calculates IQR and determines IQR range.
  - Multiplier of the IQR is determined by the user.
    - Lower bound = *Q1* - ***Multiplier*** *X IQR*
    - Upper bound = *Q3* + ***Multiplier*** *X IQR*

Out-of-box forecasting and outlier algorithms

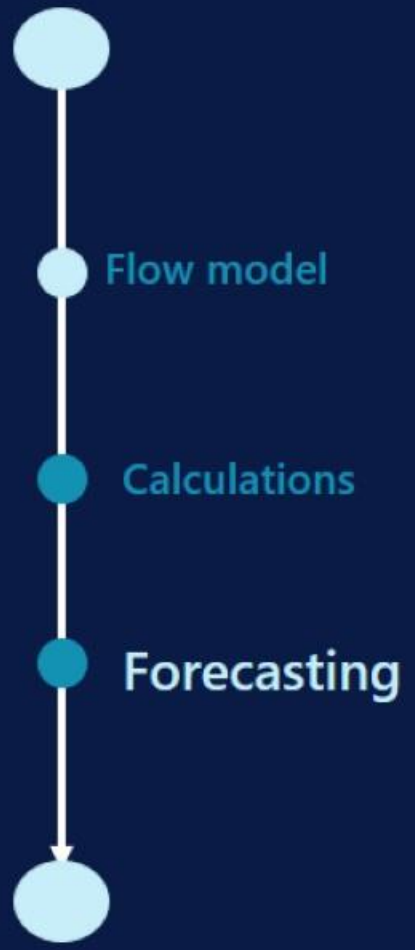


Scenario	IQR	STL
Data with Seasonal or Trend Patterns	✗	✓
Robust Handling of Outliers	✓	✗
Faster Performance	✓	✓
Sensitivity to Extreme Values	✓	✗



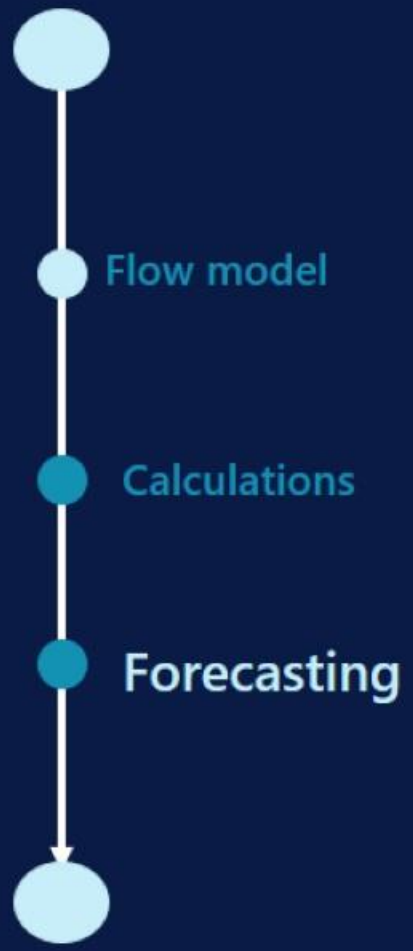
Out-of-box forecasting and outlier algorithms

- **ETS** (Error-Trend-Seasonality)
  - Data with clear trends and seasonality.
- **ARIMA** (AutoRegressive Integrated Moving Average)
  - Data with complex trends and relationships between past and future values.
- **Prophet**
  - Data with strong seasonal patterns and special events
- **Best Fit**



Out-of-box forecasting and outlier algorithms

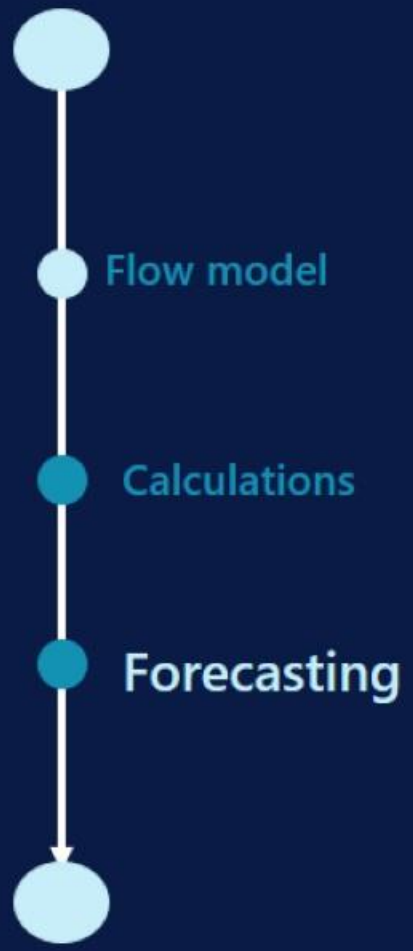
- **ETS** (Error-Trend-Seasonality)
  - Exponential smoothing is a time series forecasting method for predicting future data points by assigning different weights to different observations.
  - Recent data points are more weighted than older ones.



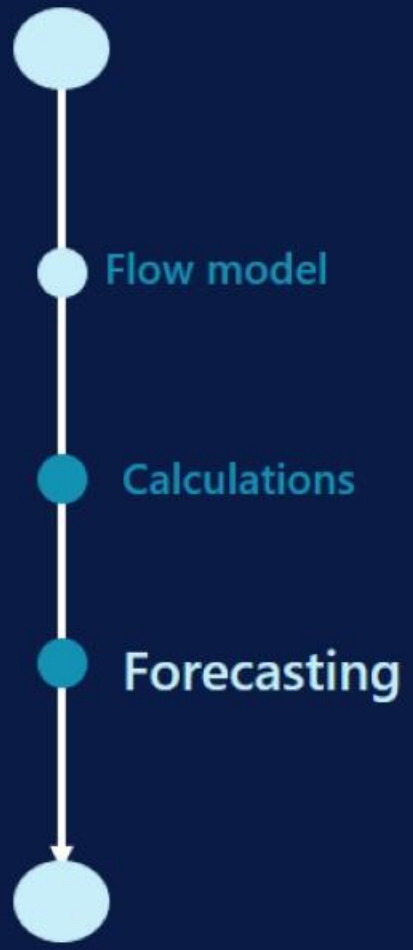
Out-of-box forecasting and outlier algorithms

- **ETS** (Error-Trend-Seasonality)
  - Decomposes the time series into 3 components:
    - Seasonality
    - Trend
    - Error
  - The error component represents the random or unexplained variation in the time series data.

Out-of-box forecasting and outlier algorithms



- **ARIMA** (AutoRegressive Integrated Moving Average)
  - Stationarity Check
  - Differencing when needed
  - Autoregression between observed data point and lagged ones.
  - Moving averages model the relationship between an observation and a residual error from a moving average.
  - Model selection (p, d, q)
    - P: autoregression
    - D: order of differencing
    - Q: order of the moving average.



Out-of-box forecasting and outlier algorithms

- **Prophet**
  - Time series decompositions into 3 components:
    - Seasonality
    - Trend
    - Holidays
  - Automatic outlier handling
  - Saturation

ETS	Arima	Prophet
Prefer a model that can adapt to different types of time series components automatically.	There is no significant seasonality, or the seasonality can be managed through differencing.	Your data has strong seasonal patterns, including yearly, weekly, and daily seasonality.
Your business case is simple and requires quick forecasting	Data is stationary or can be easily transformed to be stationary through differencing.	There are holidays or special events that need to be considered in the forecasting.
Data has different patterns, including linear or exponential trends and various types of seasonality.	Time series exhibits a clear linear trend.	The time series exhibits piecewise linear trends or has abrupt changes

Out-of-box forecasting and outlier algorithms

Flow model

Calculations

Forecasting

- **ETS** (Error-Trend-Seasonality)

$$Y_t = m + b \cdot t + S_{t-m} + E_t$$

$$S_t = \alpha \cdot (Y_t - m - b \cdot t) + (1 - \alpha) \cdot S_{t-m}$$

$$m = \alpha \cdot (Y_t - S_t) + (1 - \alpha) \cdot (m + b \cdot t)$$

$$b = \beta \cdot (m - m_{t-1}) + (1 - \beta) \cdot b_{t-1}$$

$$E_t = \gamma \cdot (Y_t - m - S_t) + (1 - \gamma) \cdot E_{t-1}$$

CHAPTER #2

Demand Planning Demo – Forecast Generation

Consensus demand view

Multiple sources of demand

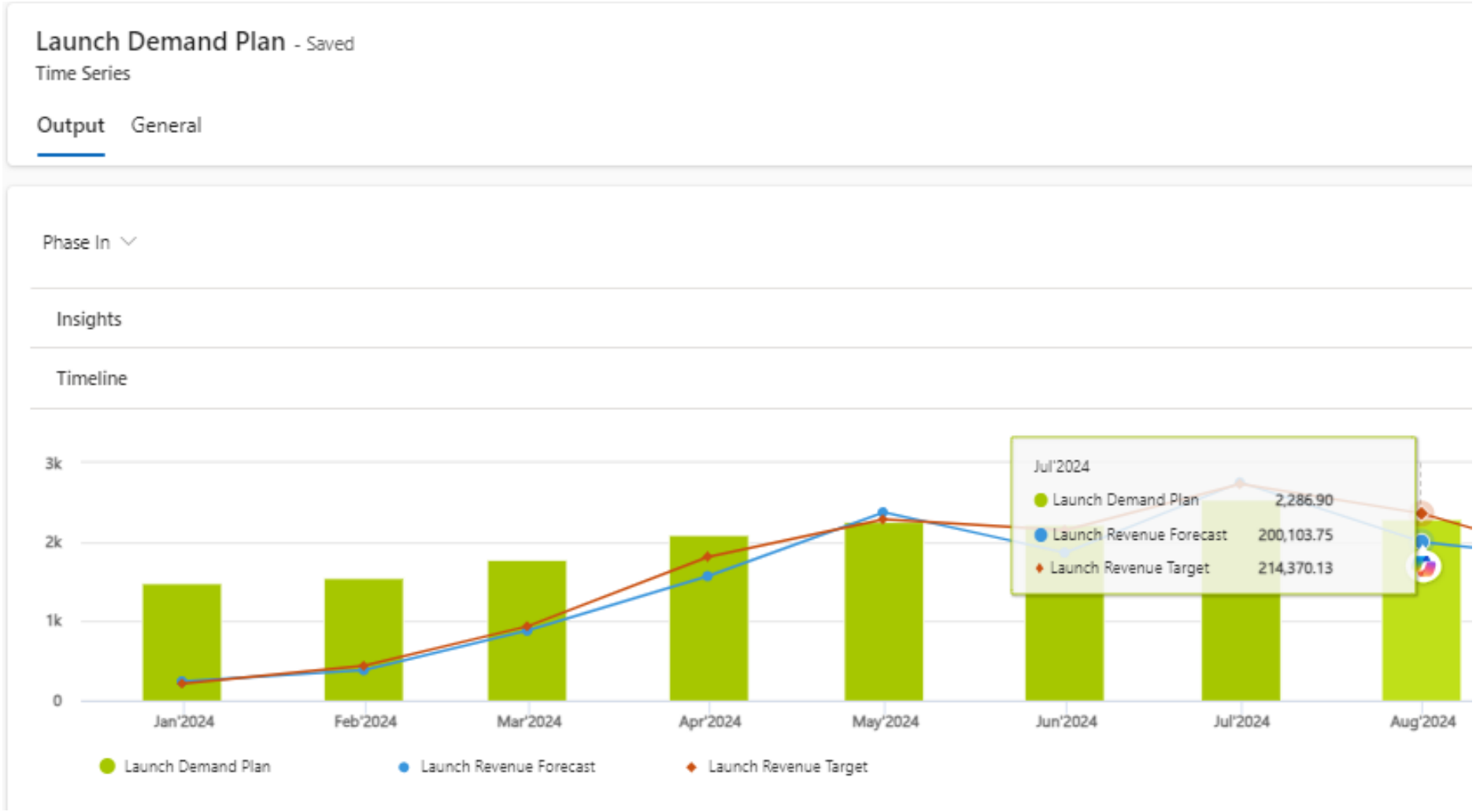
Graphical & tabular data

Plans shown:

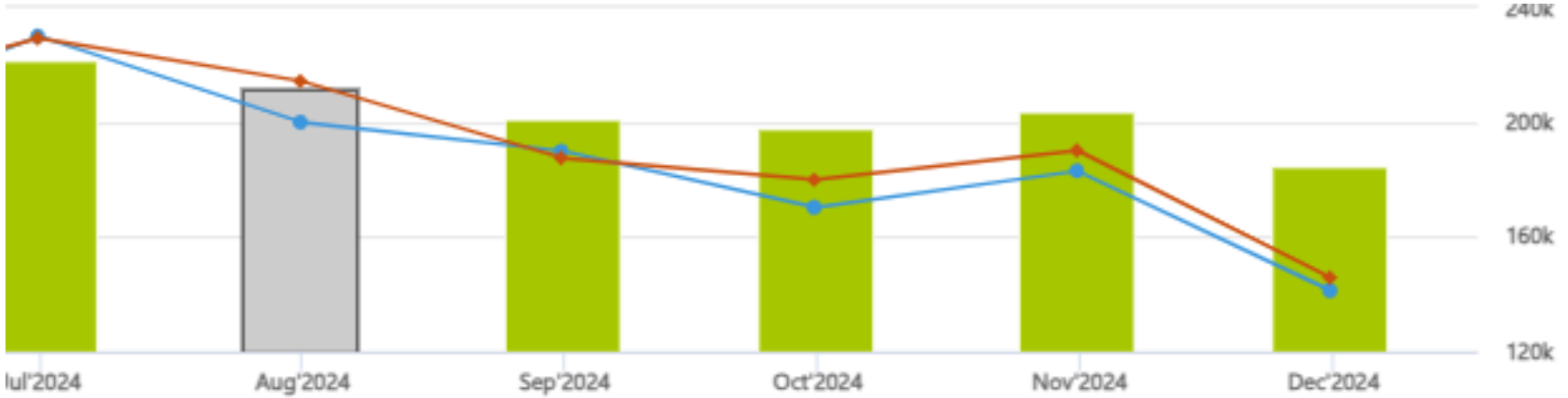
Demand Plan

Revenue Forecast

Revenue Target



Copilot analysis



Jan'2024	Feb'202
134.20	141.9
209	232.1
118.80	145.2

Copilot Preview

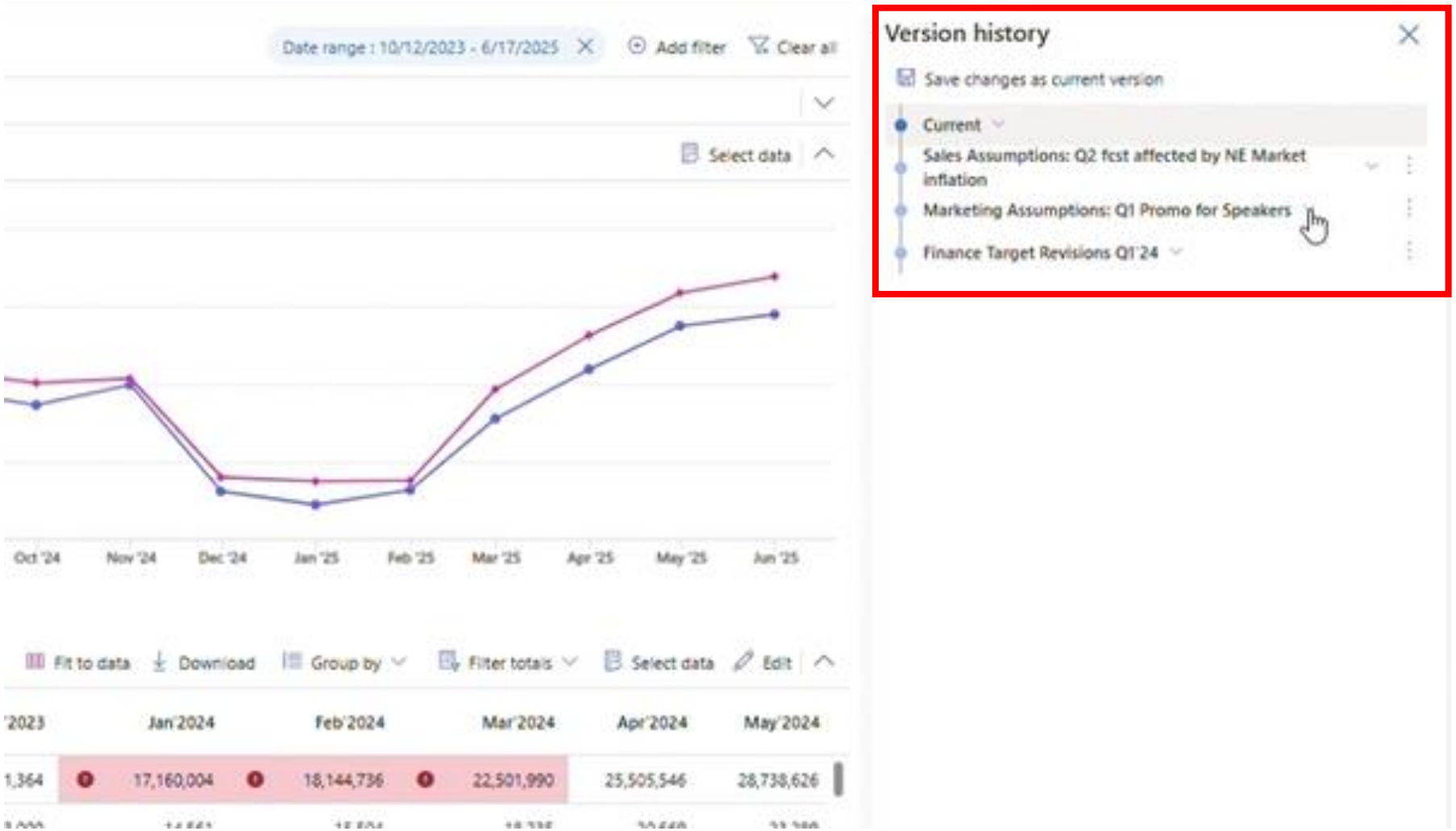
Largest shifts from Jul'24 to Aug'24

The top 3 largest shifts contributing to the change in demand are:

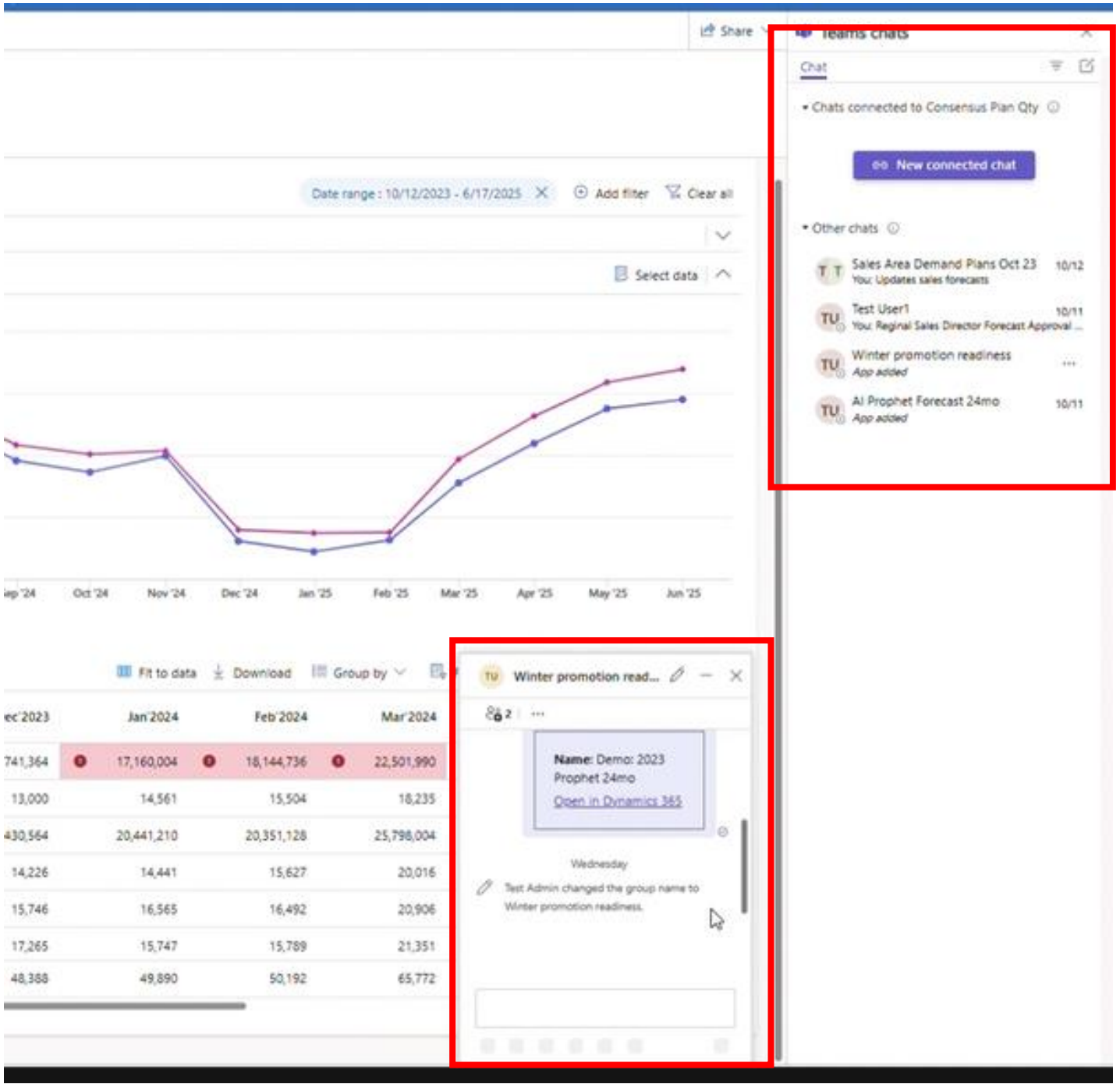
1. The demand for **Morning Brew Hazelnut** in **East US, Wholesale** has decreased by **-28%** or **49 units**.
2. The demand for **Morning Brew Hazelnut** in **West US, Retail** has increased by **47%** or **85 units**.
3. The demand in **Retail** has decreased by **47%** or **-256 units**.

AI-generated content may be incorrect. Terms

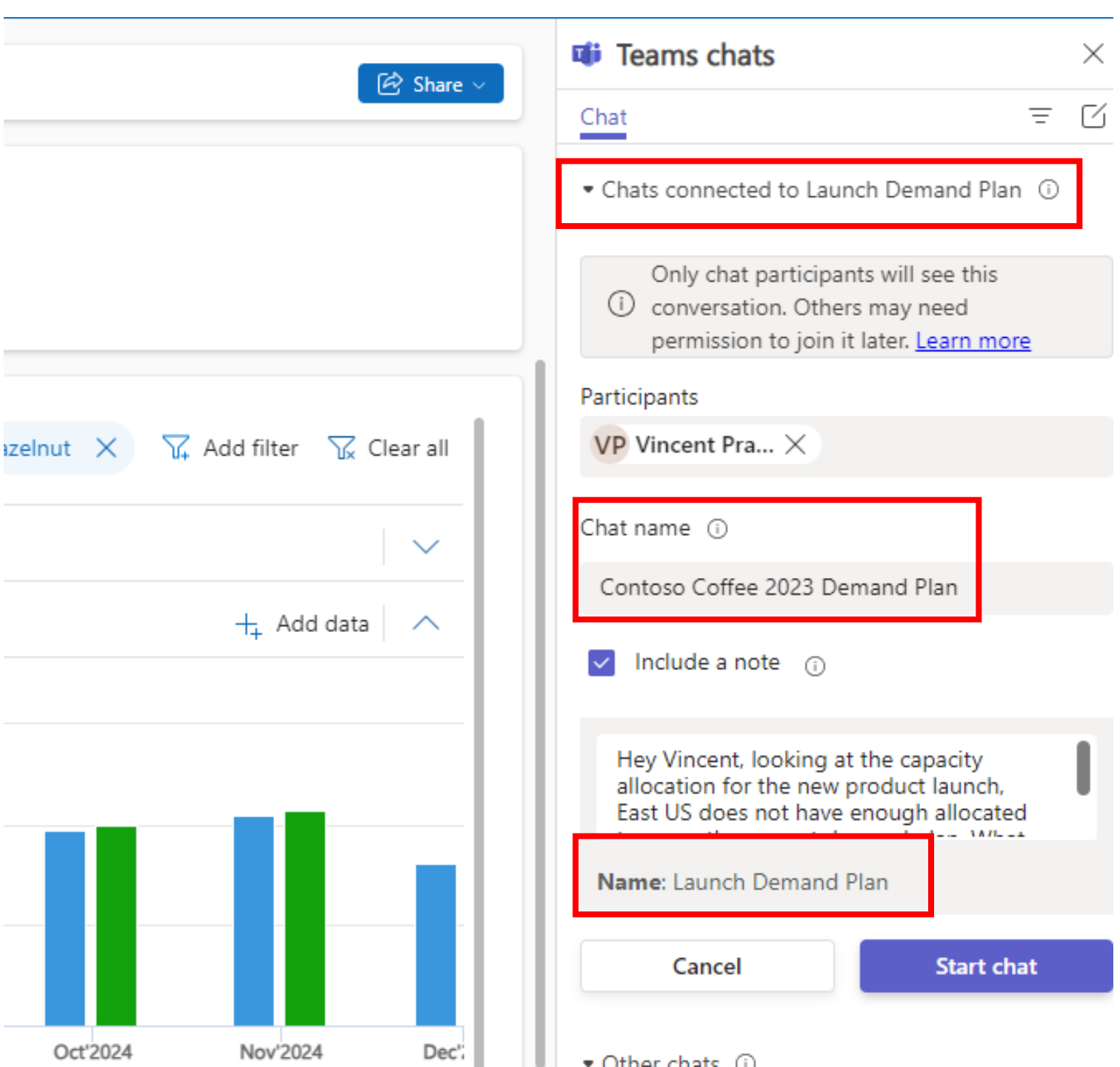
Version history



Embedded Teams chat

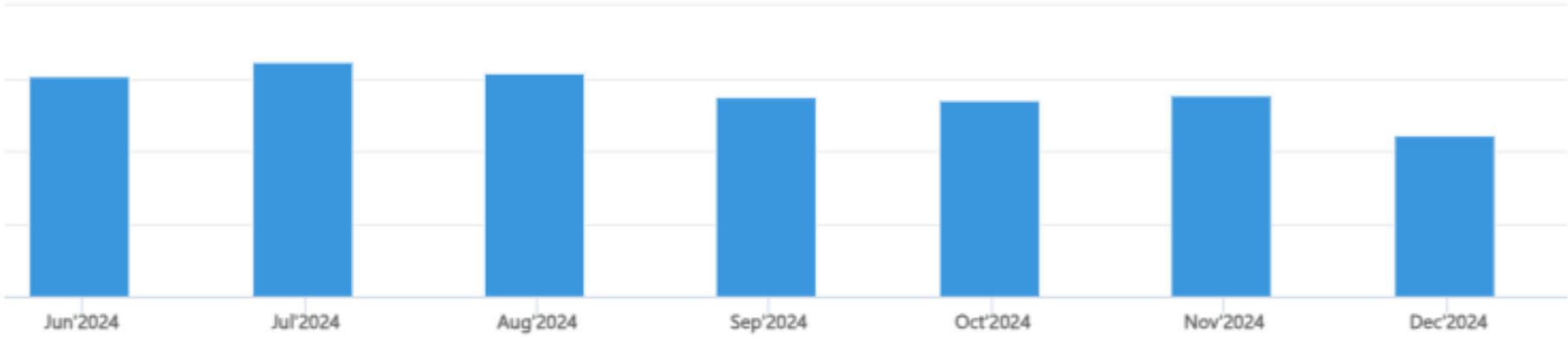


Embedded Teams chat



Conditional formatting

Similar to Excel

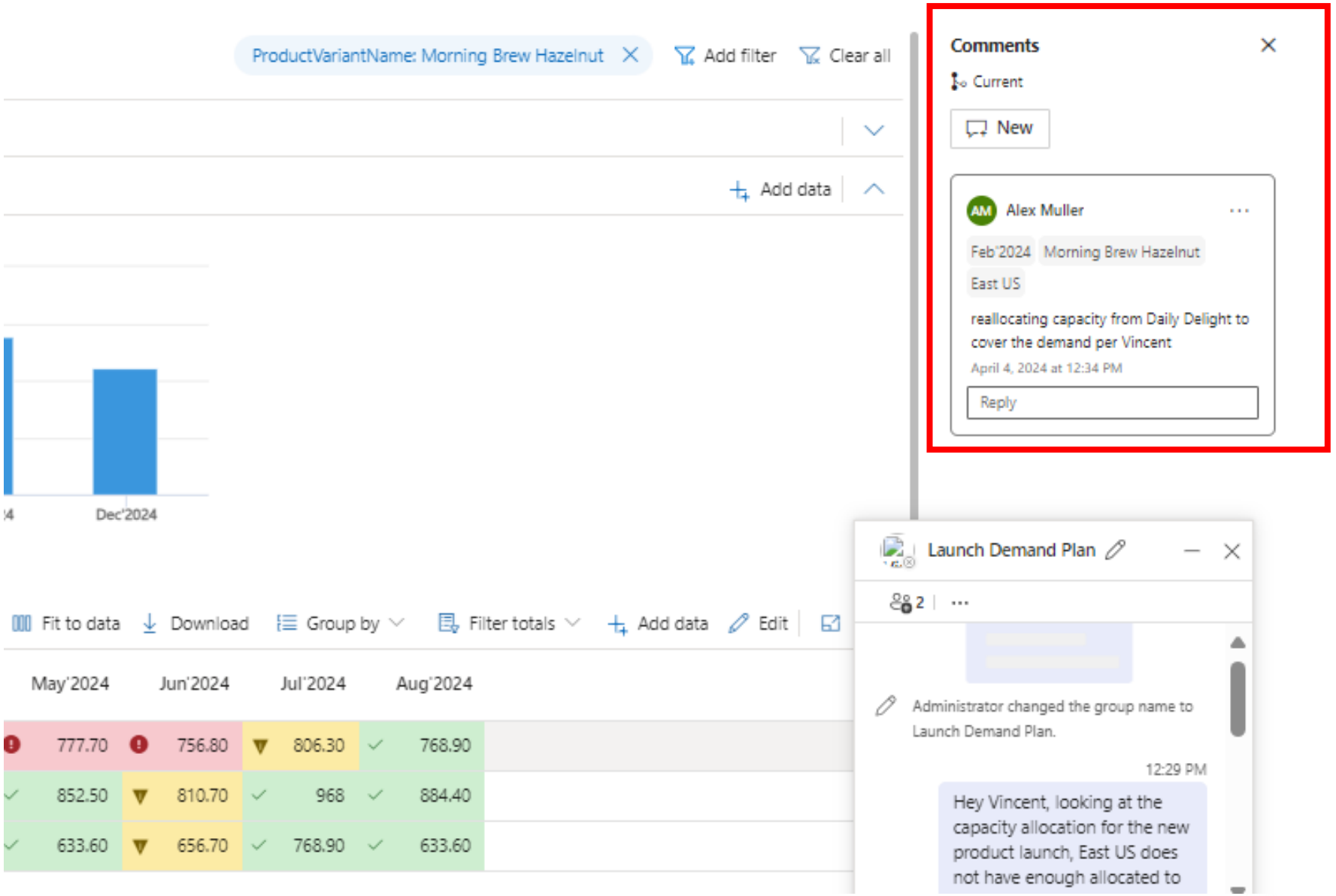


New Fit to data Dow

Totals	Jan'2024	Feb'2024	Mar'2024	Apr'2024	May'2024	Jun'2024	Jul'2024	Aug'2024	Sep'2024
8,072.90	509.30	509.30	631.40	708.40	777.70	756.80	806.30	768.90	684.20
8,948.50	550	600.60	623.70	779.90	852.50	810.70	968	884.40	764.50
6,866.20	422.40	437.80	520.30	601.70	633.60	656.70	768.90	633.60	573.10

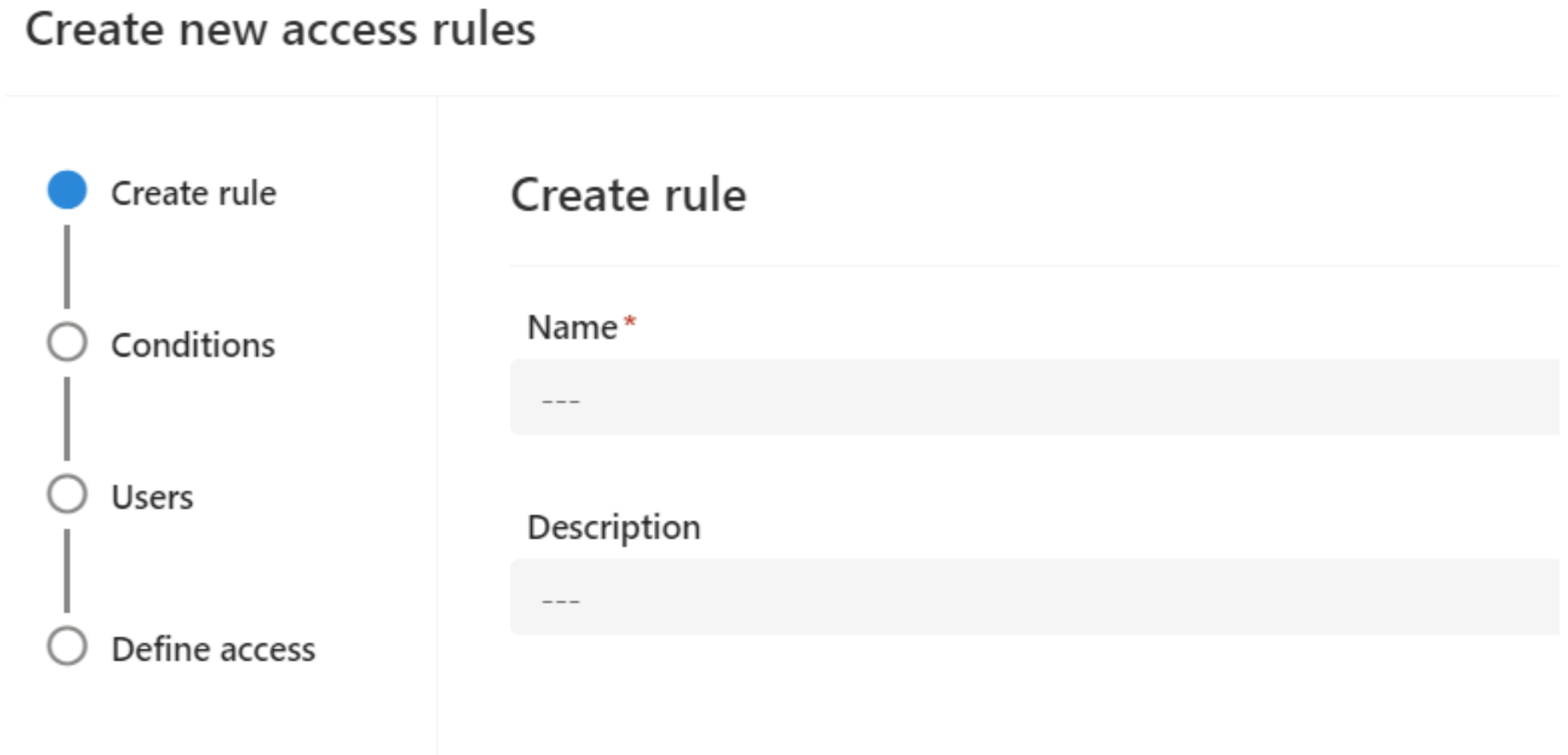
Cell commenting

Similar to Word



Roles & security

Row level security



D365 roles & duties

Role name	Duty
Production planner	Maintain forecasts
Production planner	Maintain firming of planned orders
Production manager	Enable forecast process
Production planner	Maintain forecast planning
Production planner	Maintain demand forecasts
Sales manager	Maintain demand forecast
Production manager	Enable the demand planning process

Power Platform roles

- **Basic User**
  - This is a standard security role that's included with Power Platform.
  - All users of Demand planning must have this role in order to access the app.
- **System Administrator**
  - This is a standard security role that's included with Power Platform. It also grants access to admin features within Demand planning.
  - Install the app, add users, assign roles, manage teams, and so on.
  - View, create, and manage tables, relations, and data.
  - Create and manage imports and exports.
  - View and create transformations based on requests from the demand planning manager.
  - Monitor jobs (imports, calculations, forecasts, transformations, and exports).

DYNAMICS MINDS

Power Platform roles

- **Demand Planning Manager**
  - Configure the demand planning app (role-level security, time fences, worksheets).
  - View and create planning data (forecasts and calculations).
  - View and create tables and import data from excel.
  - View and create transformations.
  - View and create worksheets.
  - Export plans when they're ready to share with Supply Chain Management.
- **Demand Planning Contributor**
  - View worksheets (see shared worksheets and save their own views).
  - Controlled by row-level access and can edit data they have access to.
  - Collaborate using Microsoft Teams and in-app comments.
- **Demand Planning Service Role**
  - An internal role required by Demand planning, which uses this role for internal operations.
  - You should never assign this role to a human user.

DYNAMICS MINDS

Licensing: D365 Supply Chain Management Premium

Optimize your licensing mix to ensure users have access to the right capabilities

Advanced planning capabilities built into your solution

- Demand planning capabilities – 10 seat minimum
- Additional capacity and storage entitlements

Dynamics 365 Supply Chain Management

Scalable, composable, secure, and streamlined solution for an intelligent supply chain.

$180.00
User/month

Dynamics 365 Supply Chain Management Premium

Enhance supply chain adaptability and performance with advanced planning, analytics, and insights.

$300.00
User/month

[Supply Chain Management Pricing]

	Dynamics 365 Supply Chain Management	Dynamics 365 Supply Chain Management Premium
⊕ Core supply chain management	●	●
⊖ Demand planning	◆	●
Read-only access, cell commenting	●	●
Full access – create, edit, analyze, publish		●
⊕ AI and machine learning	●	●
⊖ Capacity and storage		●
Higher entitlements		●

Which organizations would benefit from the Microsoft Demand Planning tool?

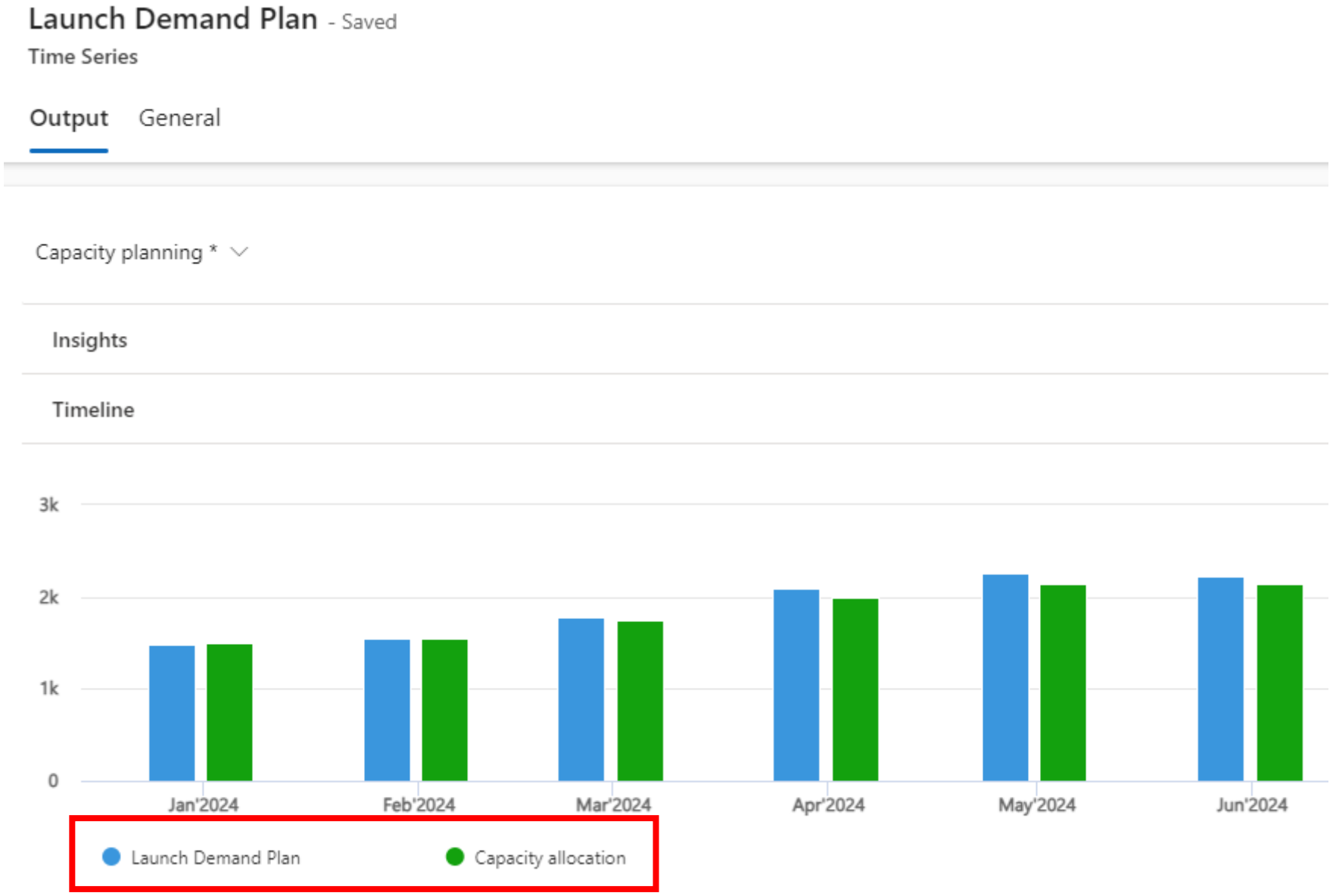
CHAPTER #3

Demand Planning Demo – Forecast demand against Capacity

Demand vs. Supply

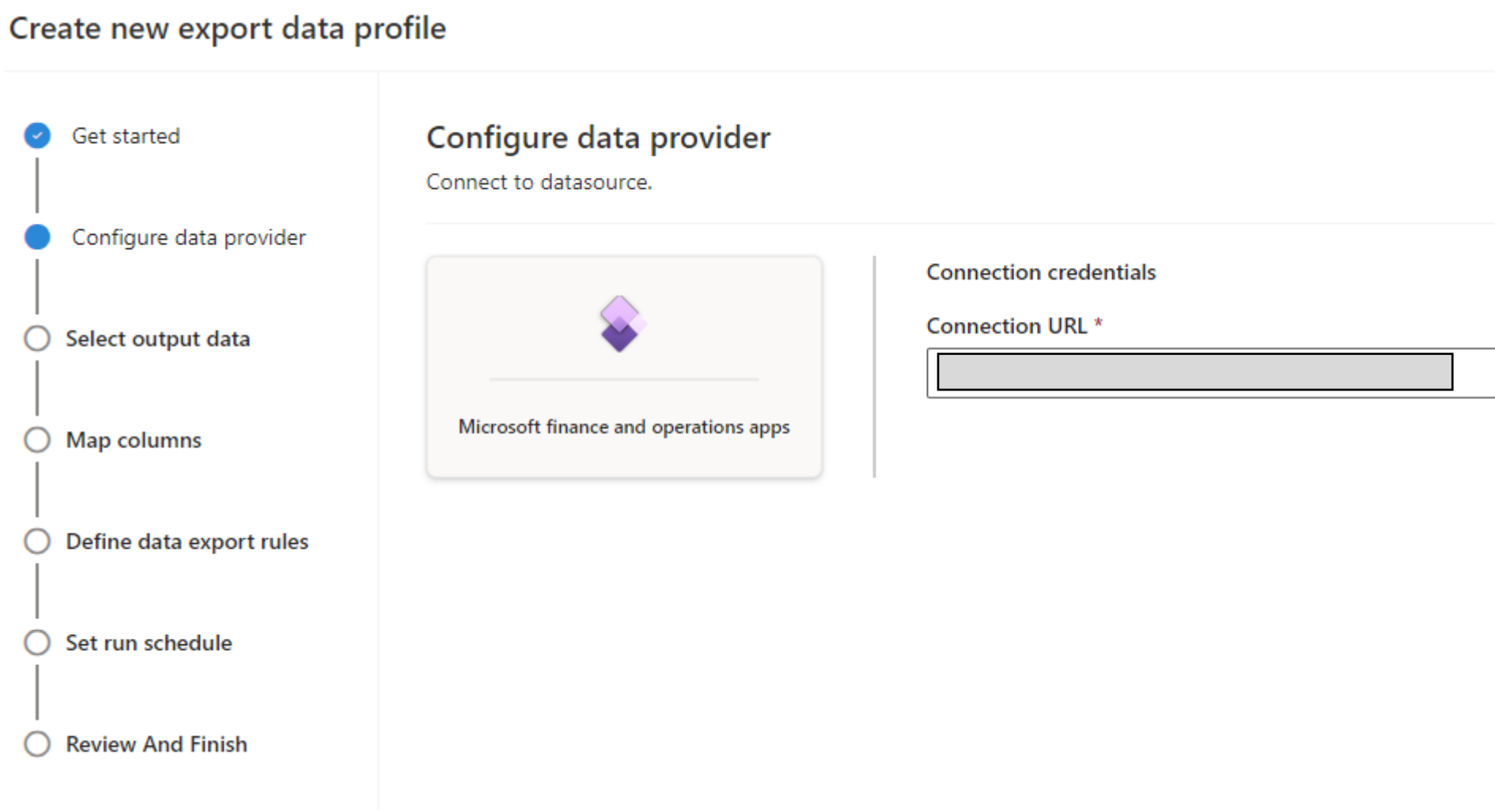
Analyse capacity plans against Sales Forecasts.

Create S&OP



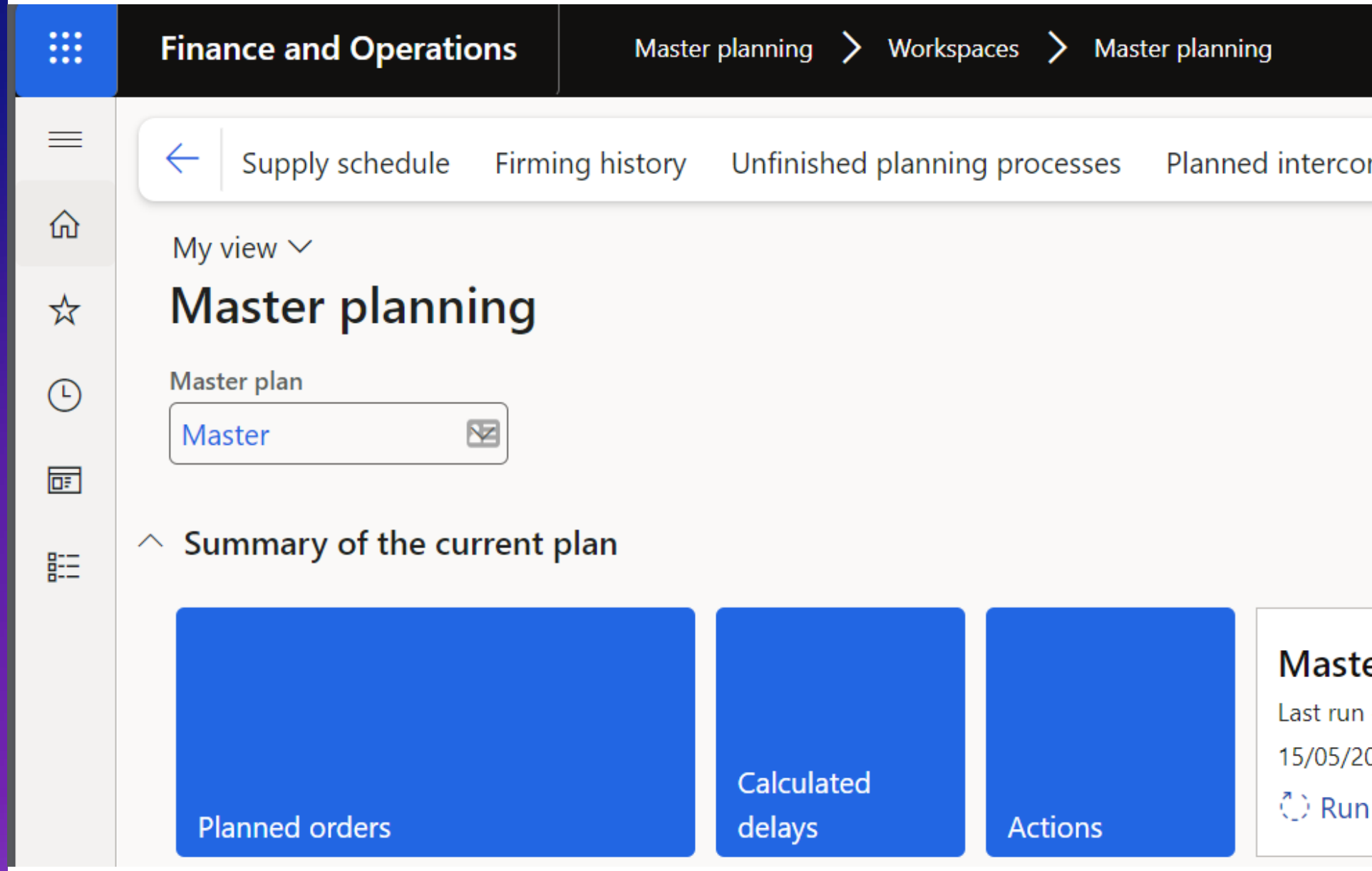
Edit, save, upload to D365

Analyse capacity plans against Sales Forecasts



Edit, save, upload to D365

Analyse capacity plans against Sales Forecasts



CHAPTER #4

MRP & Demand Driven MRP with
Microsoft Dynamics 365 SCM

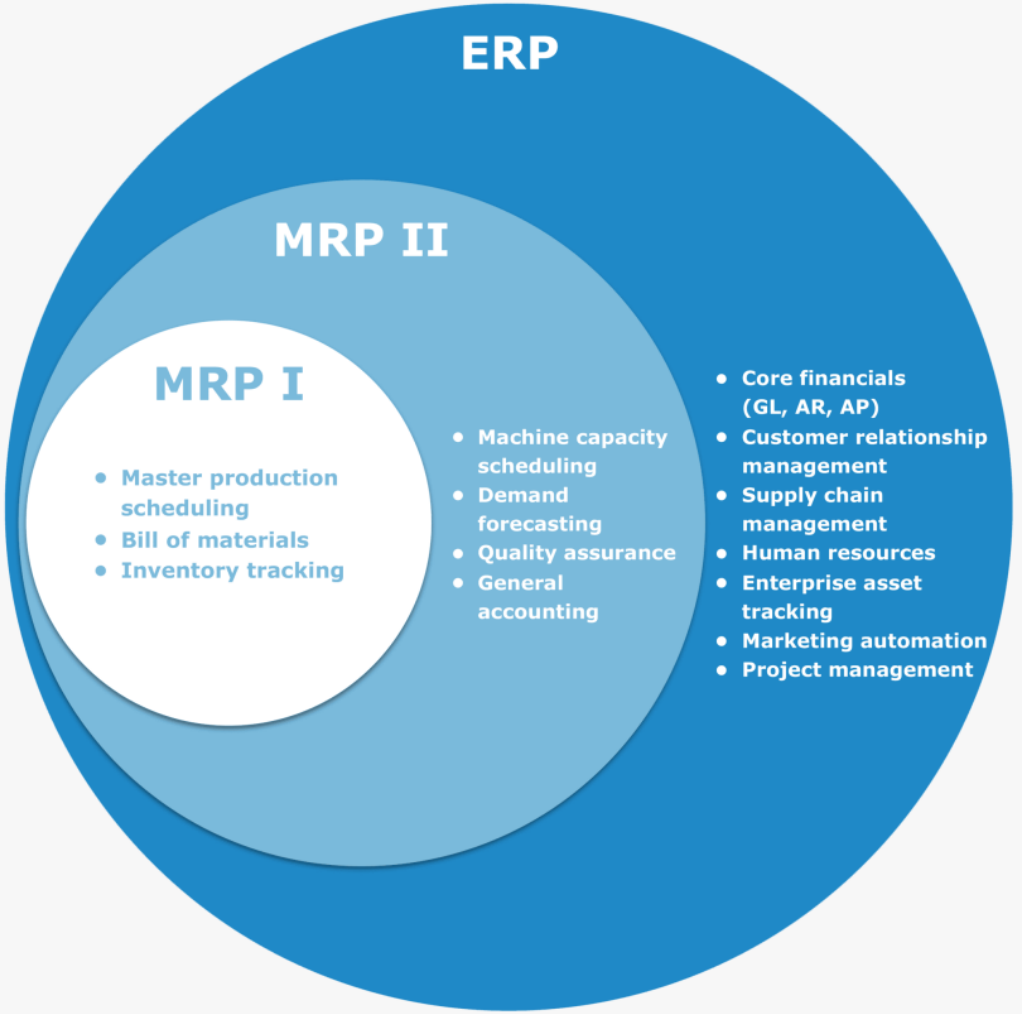
Material Requirements Planning (MRP) evolution to ERP

Material Requirements Planning (MRP) was released in the early 1960s, with a primary focus on determining the materials needed for production. It addressed which items were needed, how much and when.

Manufacturing Resource Planning (MRP II) emerged in the 1980s, to address global supply chain planning. Features added included general accounting, quality management, and capacity scheduling.

Enterprise Resource Planning (ERP) was the next evolution, extending beyond manufacturing to cover inventory management, finances, sales and customer management, Human Resources (HR), etc.

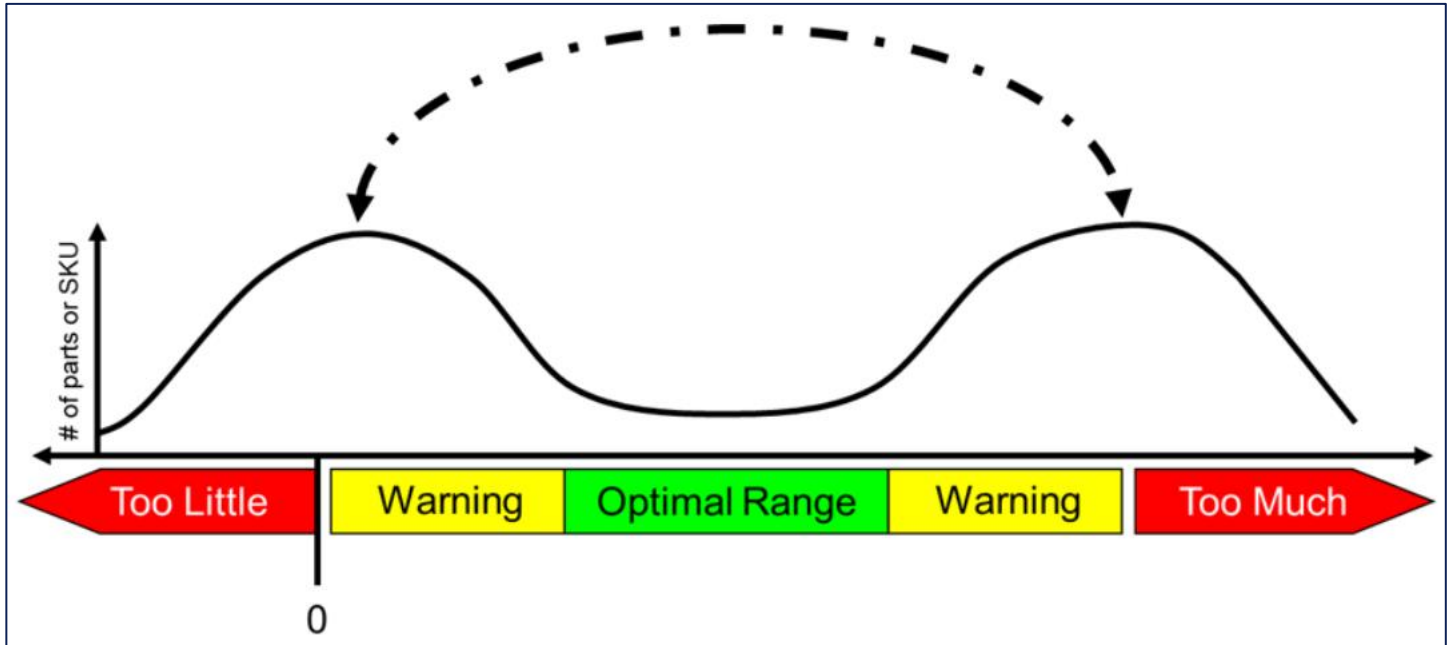
- Alongside came the influx of **Advanced Planning and Scheduling** (APS) systems, to address the shortcomings of ERP systems for planning and optimization of resources.



Source: kindpng.com

Conventional MRP Planning

With MRP, companies typically struggle with having the wrong inventory or too much inventory or both.



Source: Why Conventional Planning Fails, Chad Smith and Carol Ptak, Demand Driven Institute

The bi-modal distribution shown in the picture is typical in the industry. It is "**too much of the wrong and too little of the right" at any point in time and too much in total over time**."

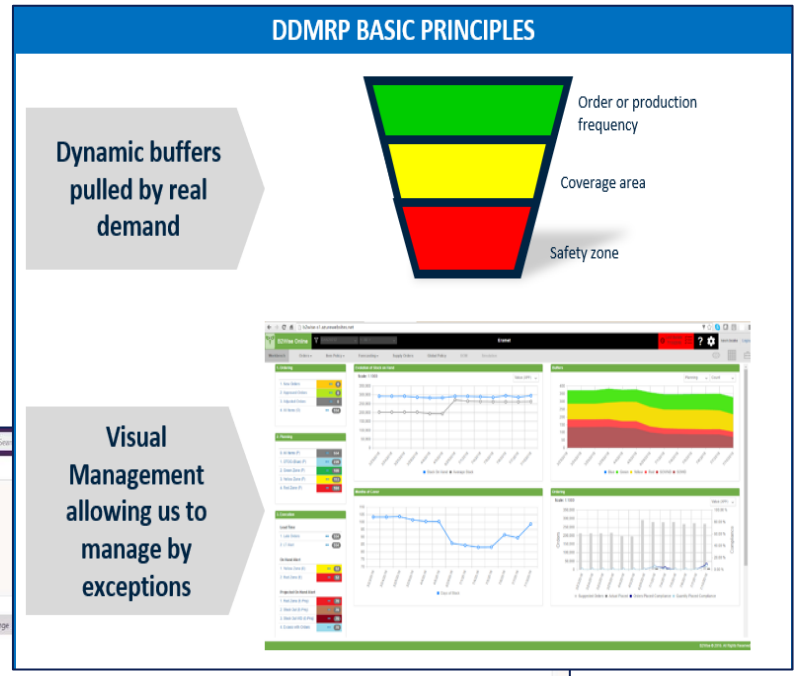
- Across all the parts of a company's supply chain, you tend to find the fewest parts in the optimal zone, plus, an individual part stays in the optimal zone for a short amount of time.
- You tend to see that most parts oscillate between the two extremes of Too Little and Too Much.
- This oscillation occurs with every MRP run, resulting in a planner or buyer having many parts in both extremes simultaneously.

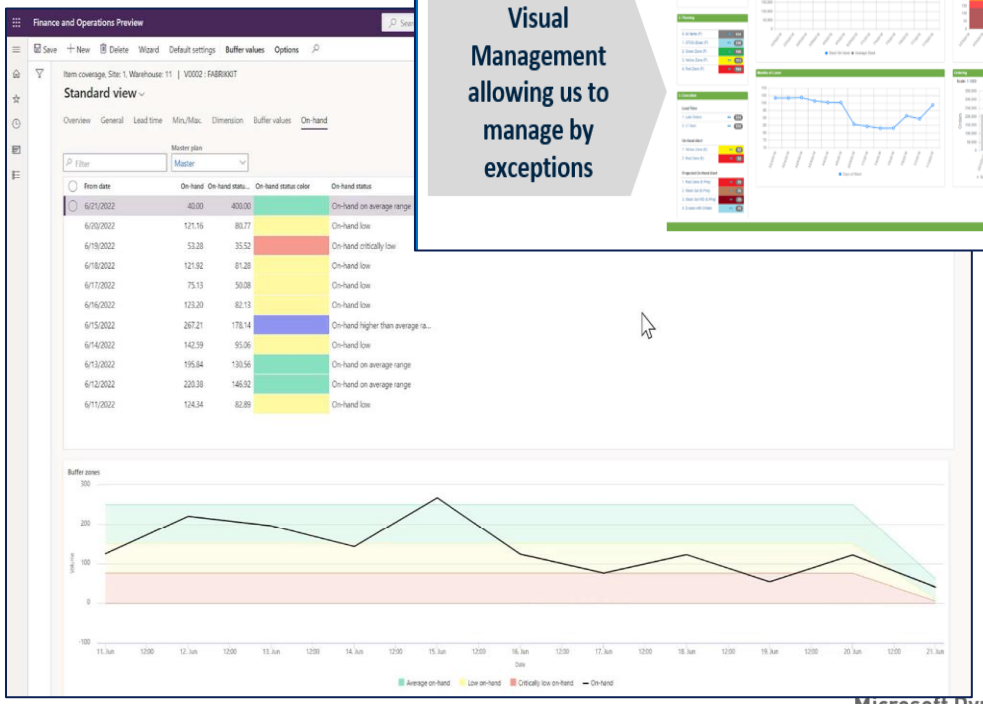
Demand Driven Material Requirements Planning (DDMRP)

Demand Driven Material Requirements Planning (DDMRP) is a body of knowledge that has come of age in the last 10+ years.

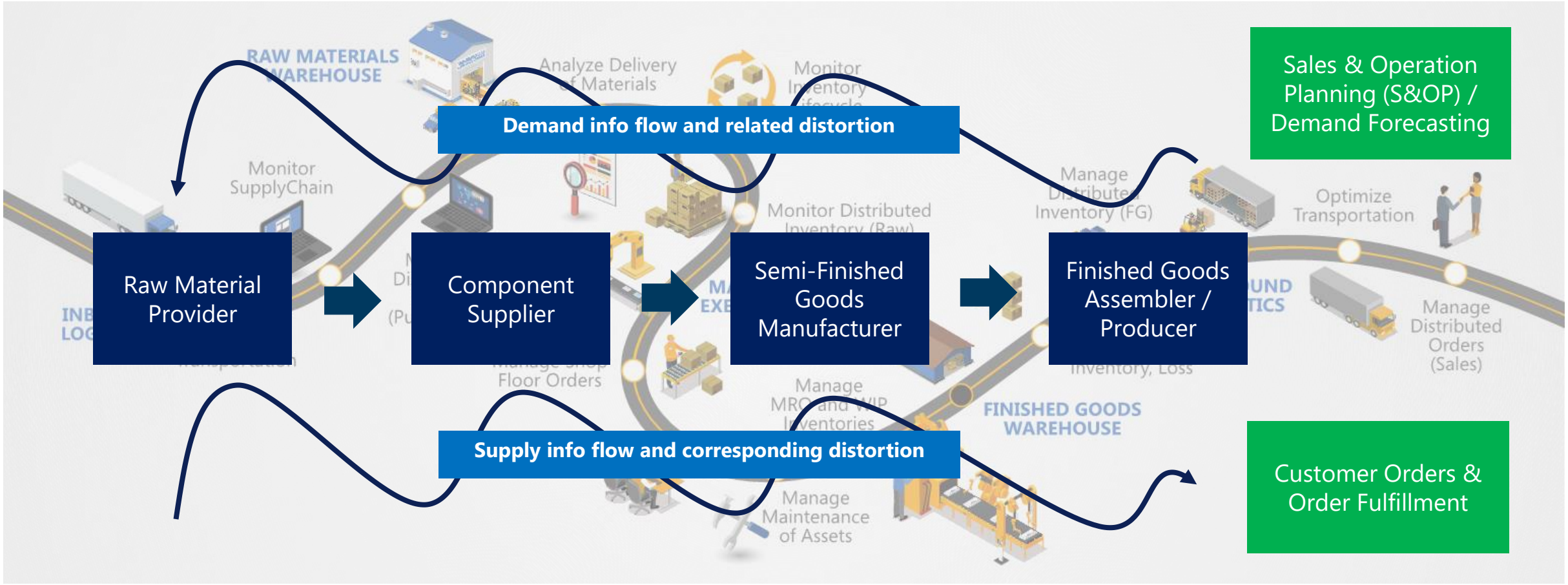
DDMRP combines aspects of **Material Requirements Planning (MRP)** and **Distribution Requirements Planning (DRP)** with the pull and visibility emphases found in **Lean** and the **Theory of Constraints** and the variability reduction emphasis of **Six Sigma**.

DDMRP is a formal multi-echelon planning and execution method to **protect and promote the flow of relevant information** through the establishment and management of **strategically placed decoupling point stock buffers**.

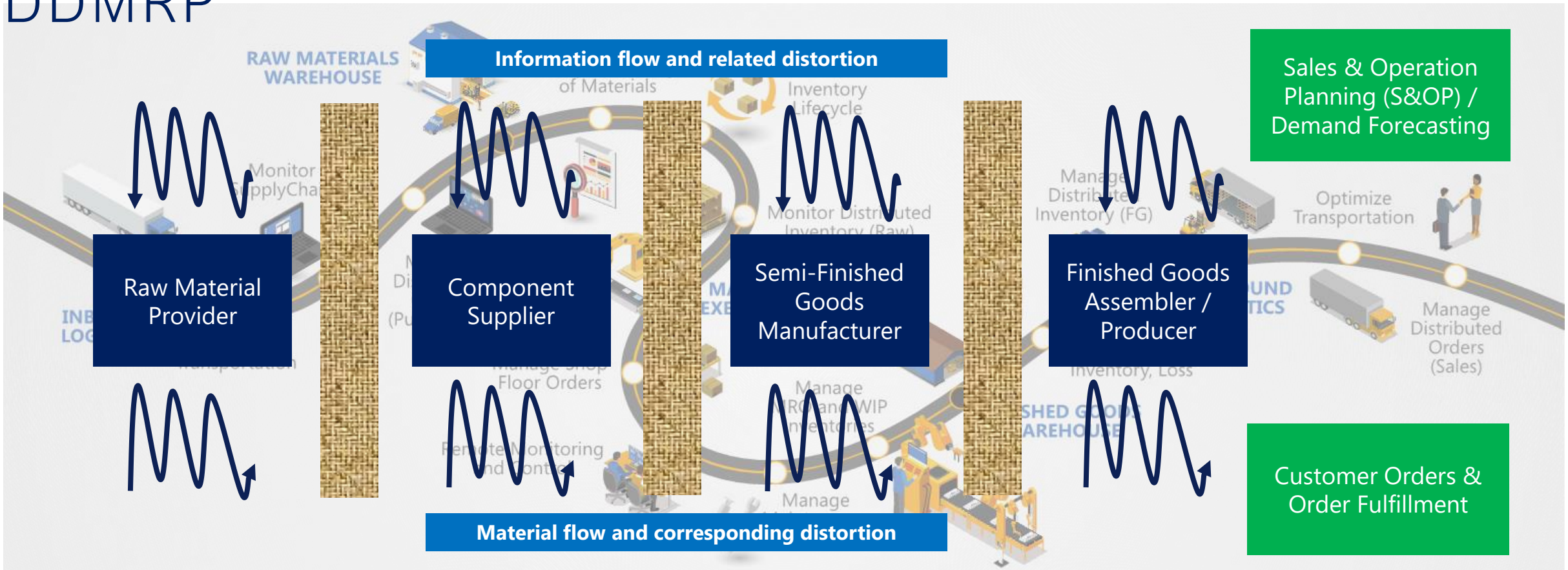




Information Flow and the **Bullwhip Effect** through the Manufacturing Value Chain



Material & Information Flow after Decoupling with DDMRP



With Decoupling, the DDMRP process becomes **akin to executing multiple MRP runs**. The net effect **isolates impact to limited areas rather than the global schedule**, thereby **reducing the bull-whip effect of schedule changes downstream**.

Note that the location of the **Decoupling Points** shown are for illustration only. It is unlikely that they will be placed exactly bet' sub-processes as shown here; more realistically, they will be placed at the appropriate points where **independence can be imposed in the supply chain**.

MRP vs. DDMRP

Per Bing ChatGPT Copilot

MRP (Material Requirements Planning):

- Push System: MRP starts production based on forecasting information to anticipate future demand.
- Input: It calculates requirements for each level of a bill of material using end item demand as input.
- Enacted Orders: MRP generates purchase orders for raw materials or external components and manufacturing orders for internally manufactured products.
- Safety Stocks: MRP relies on safety stocks for finished products and raw materials to ensure material availability.
- Issues:
  - MRP forces the use of forecasted demand, which may not align with actual customer demand.
  - Safety stocks are not planned to be consumed, leading to bullwhip effects in the supply chain.
  - MRP is better suited for make-to-order scenarios but poorly manages inventory.

DDMRP (Demand Driven Material Requirements Planning):

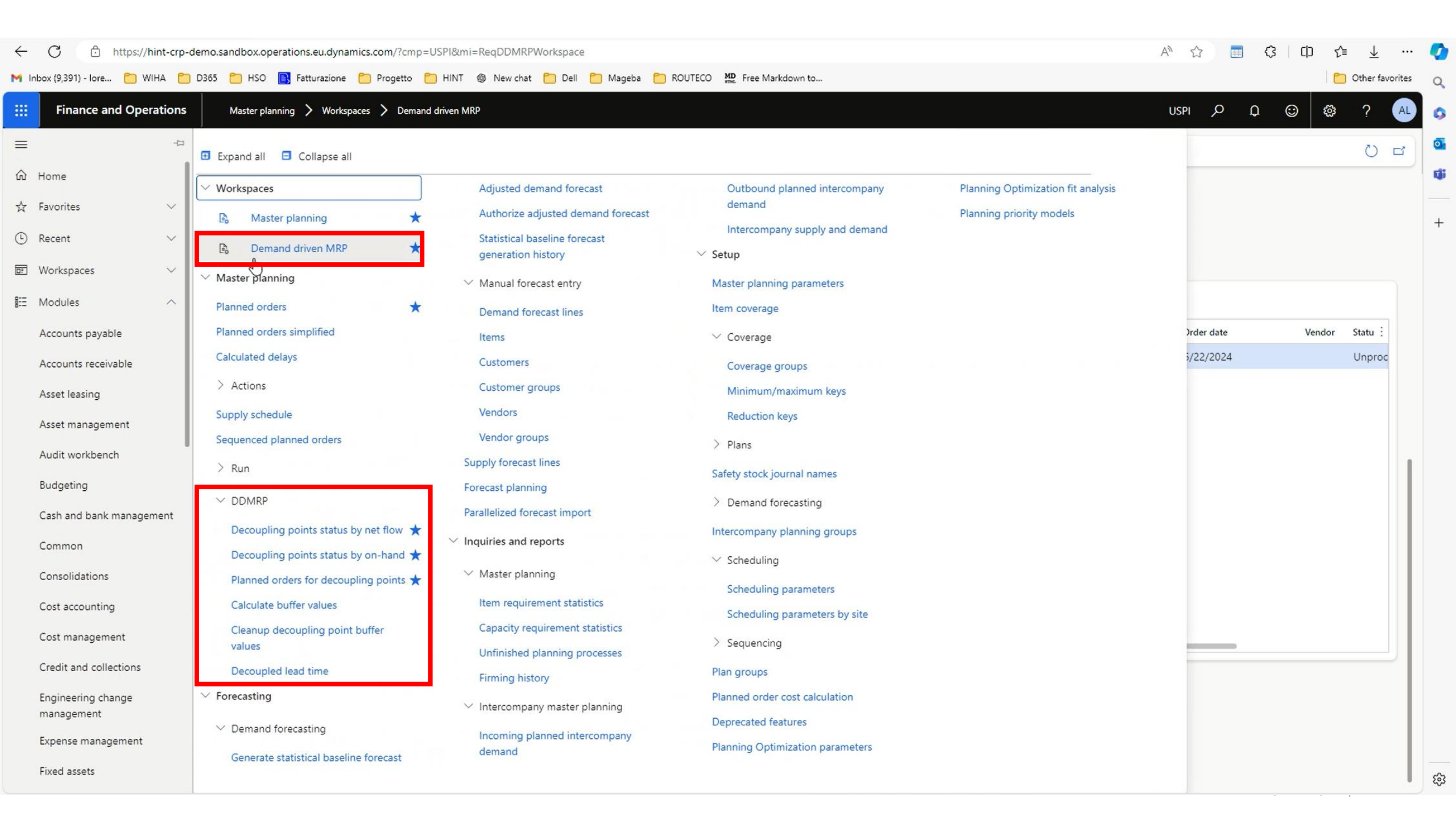
- Pull System: DDMRP plans inventories and materials based on current demand.
- Dynamic Inventory Buffers: DDMRP decouples the supply chain by creating independent planning horizons. It uses dynamic inventory buffers triggered by current stock levels, open supply orders, and qualified demand.
- Demand-Driven Planning: DDMRP uses sales orders or actual consumption as demand signals and propagates them through the supply chain using pull signals.
- Stock Buffers: Unlike safety stocks, DDMRP stock buffers absorb variability from both directions, preventing bullwhip effects.
- Firm Orders: All orders generated in a DDMRP system are firm, unchanging, and easily prioritized.

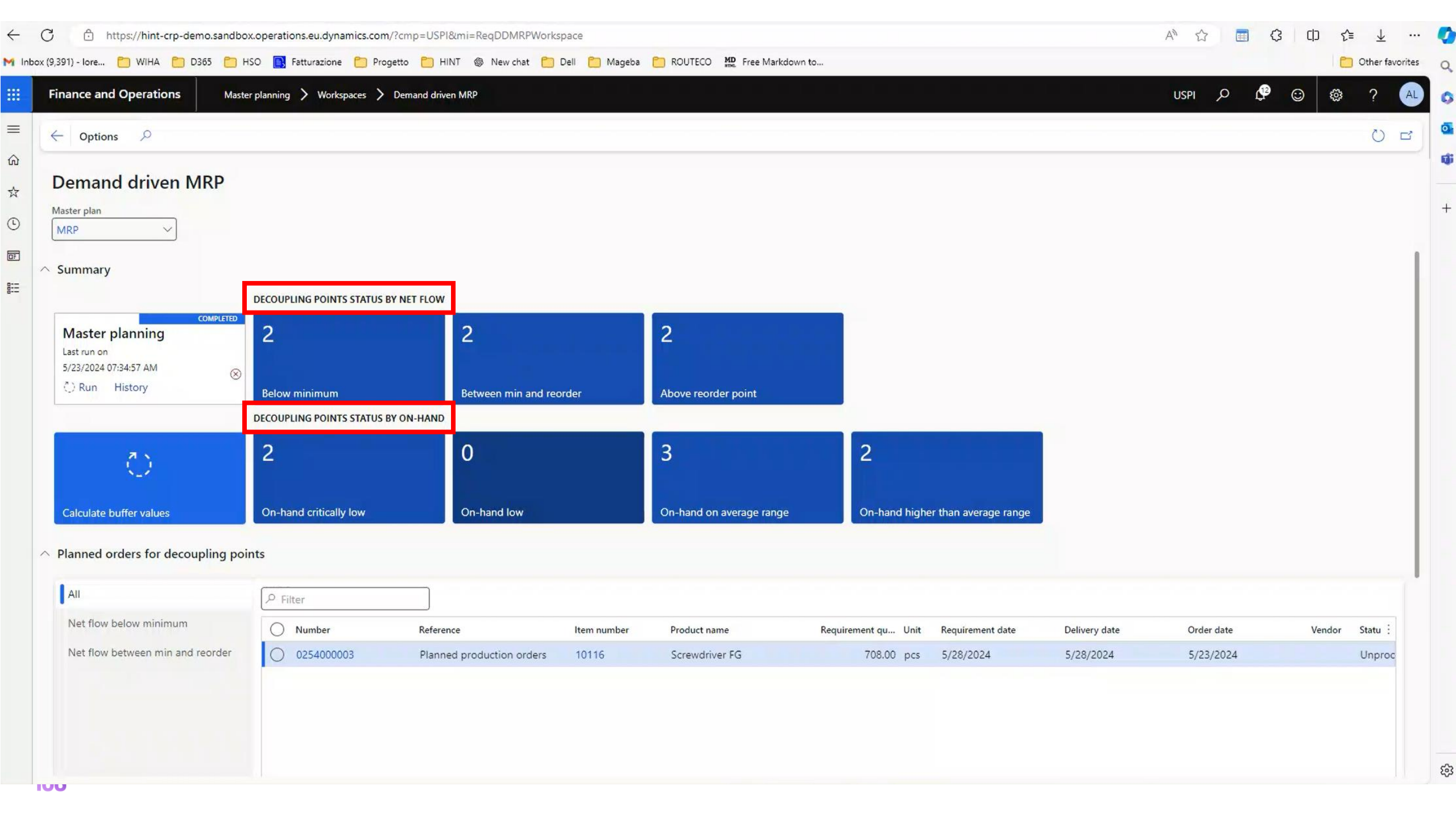
In summary, while MRP has been widely used since the 1970s, **DDMRP offers higher performance at a lower cost**.

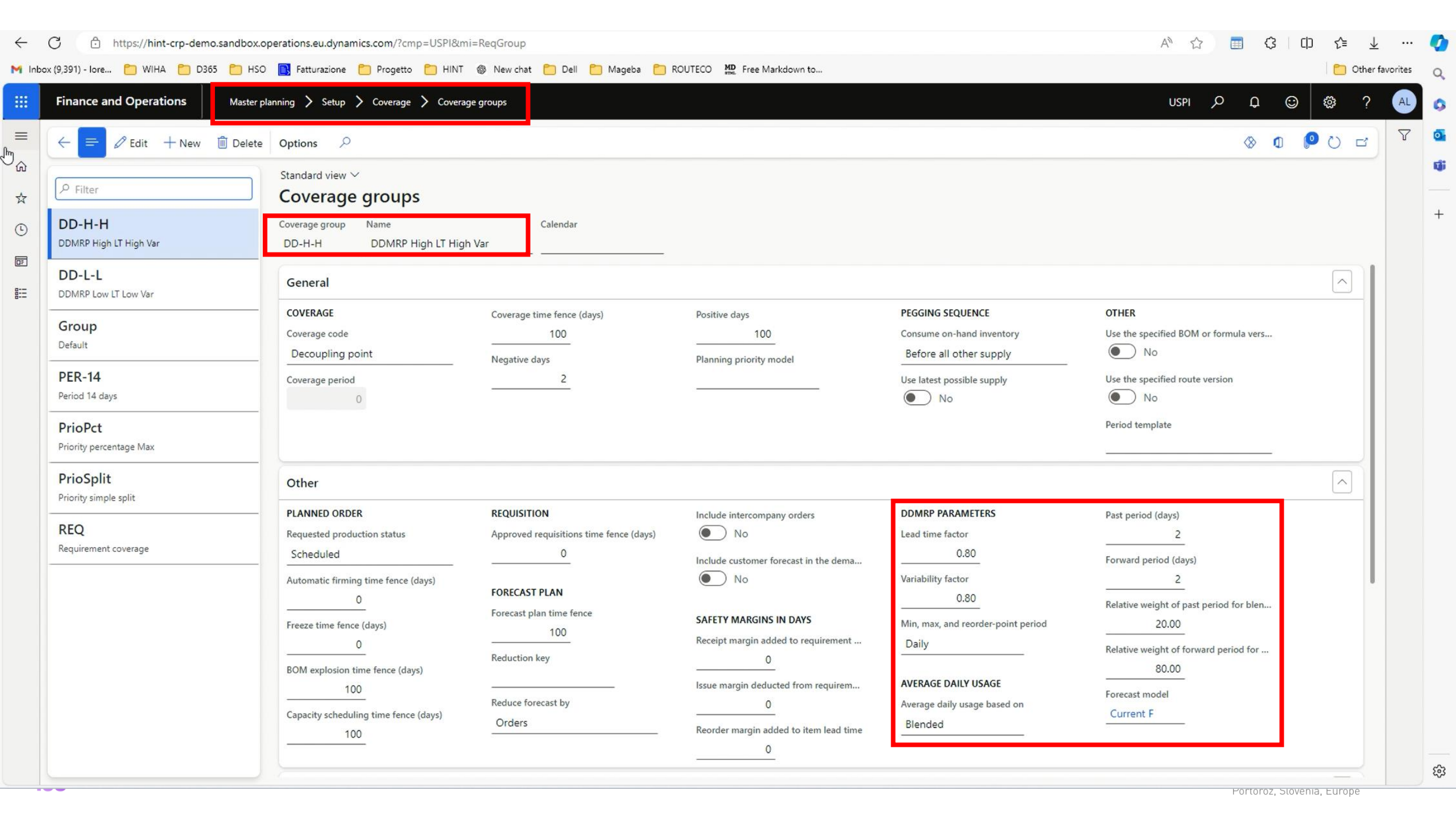
DDMRP combines the best concepts from MRP, Lean Mfg, & Theory of Constraints, addressing traditional MRP issues while maintaining relevant aspects of material requirements planning and distribution requirements planning.

CHAPTER #5

Showcase of Demand Driven MRP with Microsoft Dynamics 365 SCM


https://hint-crp-demo.sandbox.operations.eu.dynamics.com/?cmp=USPI&mi=ReqDDMRPWorkspace
Finance and Operations
Master planning > Workspaces > Demand driven MRP
USPI
Expand all
Collapse all
Home
Favorites
Recent
Workspaces
Modules
Accounts payable
Accounts receivable
Asset leasing
Asset management
Audit workbench
Budgeting
Cash and bank management
Common
Consolidations
Cost accounting
Cost management
Credit and collections
Engineering change management
Expense management
Fixed assets
Workspaces
Master planning
Demand driven MRP
Master planning
Planned orders
Planned orders simplified
Calculated delays
Actions
Supply schedule
Sequenced planned orders
Run
DDMRP
Decoupling points status by net flow
Decoupling points status by on-hand
Planned orders for decoupling points
Calculate buffer values
Cleanup decoupling point buffer values
Decoupled lead time
Forecasting
Demand forecasting
Generate statistical baseline forecast
Adjusted demand forecast
Authorize adjusted demand forecast
Statistical baseline forecast generation history
Manual forecast entry
Demand forecast lines
Items
Customers
Customer groups
Vendors
Vendor groups
Supply forecast lines
Forecast planning
Parallelized forecast import
Inquiries and reports
Master planning
Item requirement statistics
Capacity requirement statistics
Unfinished planning processes
Firming history
Intercompany master planning
Incoming planned intercompany demand
Outbound planned intercompany demand
Intercompany supply and demand
Setup
Master planning parameters
Item coverage
Coverage
Coverage groups
Minimum/maximum keys
Reduction keys
Plans
Safety stock journal names
Demand forecasting
Intercompany planning groups
Scheduling
Scheduling parameters
Scheduling parameters by site
Sequencing
Plan groups
Planned order cost calculation
Deprecated features
Planning Optimization parameters
Planning Optimization fit analysis
Planning priority models
Order date
Vendor
Statu
/22/2024
Unproc


https://hint-crp-demo.sandbox.operations.eu.dynamics.com/?cmp=USPI&mi=ReqDDMRPWorkspace
Finance and Operations
Master planning > Workspaces > Demand driven MRP
USPI
Options
Demand driven MRP
Master plan
MRP
Summary
DECOUPLING POINTS STATUS BY NET FLOW
COMPLETED
Master planning
Last run on
5/23/2024 07:34:57 AM
Run
History
2
Below minimum
2
Between min and reorder
2
Above reorder point
DECOUPLING POINTS STATUS BY ON-HAND
Calculate buffer values
2
On-hand critically low
0
On-hand low
3
On-hand on average range
2
On-hand higher than average range
Planned orders for decoupling points
All
Net flow below minimum
Net flow between min and reorder
Filter
Number
Reference
Item number
Product name
Requirement qu...
Unit
Requirement date
Delivery date
Order date
Vendor
Statu
0254000003
Planned production orders
10116
Screwdriver FG
708.00
pcs
5/28/2024
5/28/2024
5/23/2024
Unproc


https://hint-crp-demo.sandbox.operations.eu.dynamics.com/?cmp=USPI&mi=ReqGroup
Finance and Operations
Master planning > Setup > Coverage > Coverage groups
USPI
Edit
New
Delete
Options
Standard view
Coverage groups
Filter
DD-H-H
DDMRP High LT High Var
DD-L-L
DDMRP Low LT Low Var
Group
Default
PER-14
Period 14 days
PrioPct
Priority percentage Max
PrioSplit
Priority simple split
REQ
Requirement coverage
Coverage group
DD-H-H
Name
DDMRP High LT High Var
Calendar
General
COVERAGE
Coverage code
Decoupling point
Coverage period
0
Coverage time fence (days)
100
Negative days
2
Positive days
100
Planning priority model
PEGGING SEQUENCE
Consume on-hand inventory
Before all other supply
Use latest possible supply
No
OTHER
Use the specified BOM or formula vers...
No
Use the specified route version
No
Period template
Other
PLANNED ORDER
Requested production status
Scheduled
Automatic firming time fence (days)
0
Freeze time fence (days)
0
BOM explosion time fence (days)
100
Capacity scheduling time fence (days)
100
REQUISITION
Approved requisitions time fence (days)
0
FORECAST PLAN
Forecast plan time fence
100
Reduction key
Reduce forecast by
Orders
Include intercompany orders
No
Include customer forecast in the dema...
No
SAFETY MARGINS IN DAYS
Receipt margin added to requirement ...
0
Issue margin deducted from requirem...
0
Reorder margin added to item lead time
0
DDMRP PARAMETERS
Lead time factor
0.80
Variability factor
0.80
Min, max, and reorder-point period
Daily
AVERAGE DAILY USAGE
Average daily usage based on
Blended
Past period (days)
2
Forward period (days)
2
Relative weight of past period for blen...
20.00
Relative weight of forward period for ...
80.00
Forecast model
Current F
Portoroz, Slovenia, Europe

https://hint-crp-demo.sandbox.operations.eu.dynamics.com/?cmp=USPI&mi=ReqDDMRPWorkspace

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Finance and Operations | Master planning > Workspaces > Demand driven MRP | USPI

Options

Demand driven MRP

Master plan: MRP

Summary

DECOUPLING POINTS STATUS BY NET FLOW

COMPLETED
Master planning
Last run on
5/23/2024 07:34:57 AM
Run History

2 Below minimum

2 Between min and reorder

2 Above reorder point

DECOUPLING POINTS STATUS BY ON-HAND

Calculate buffer values

2 On-hand critically low

0 On-hand low

3 On-hand on average range

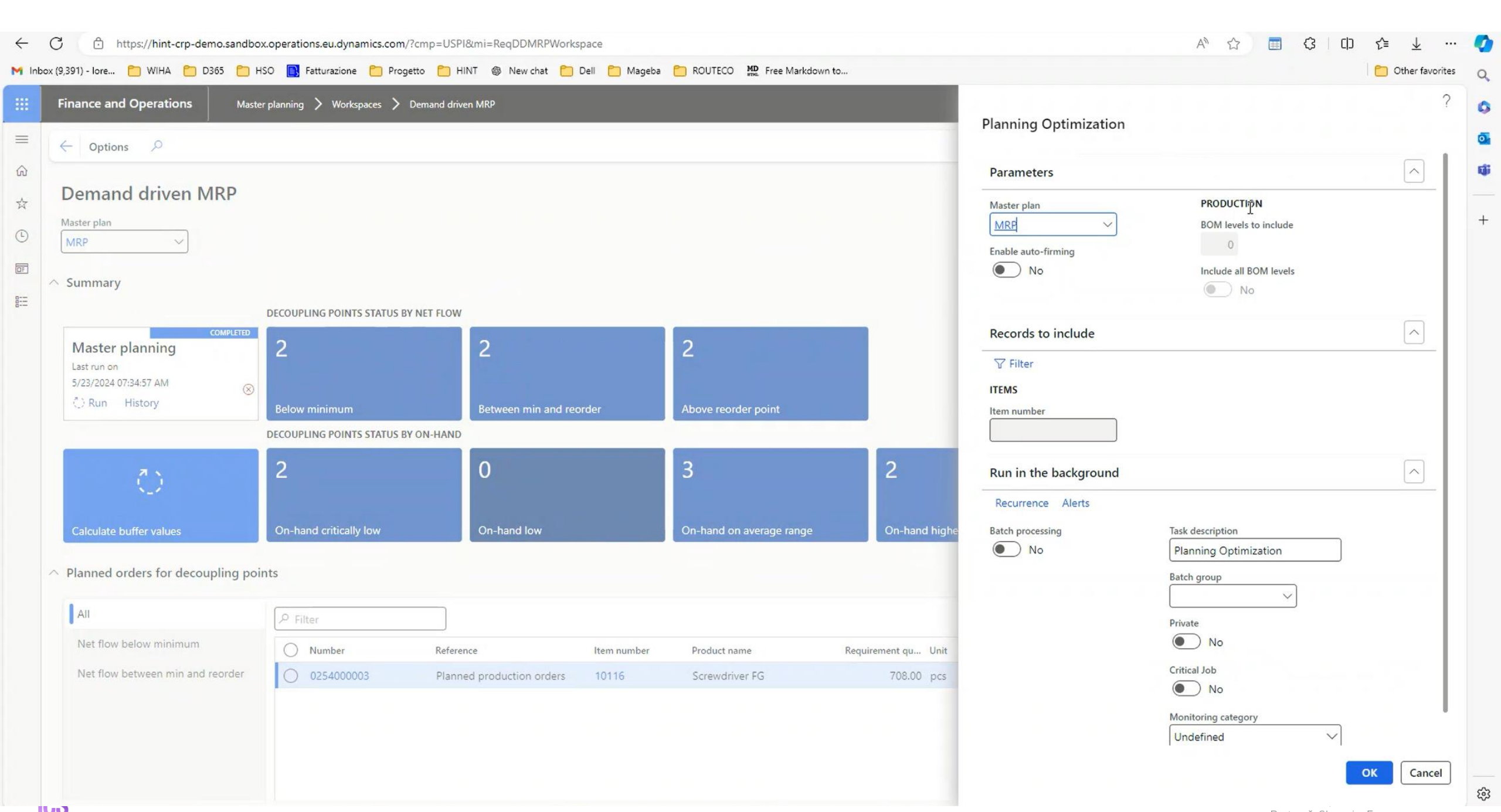
2 On-hand higher than average range

Planned orders for decoupling points

All
Net flow below minimum
Net flow between min and reorder

Filter

Number	Reference	Item number	Product name	Requirement qu...	Unit	Requirement date	Delivery date	Order date	Vendor	Statu
0254000003	Planned production orders	10116	Screwdriver FG	708.00	pcs	5/28/2024	5/28/2024	5/23/2024		Unproc


https://hint-crp-demo.sandbox.operations.eu.dynamics.com/?cmp=USPI&mi=ReqDDMRPWorkspace
Finance and Operations
Master planning > Workspaces > Demand driven MRP
Options
Demand driven MRP
Master plan
MRP
Summary
DECOUPLING POINTS STATUS BY NET FLOW
COMPLETED
Master planning
Last run on
5/23/2024 07:34:57 AM
Run History
2
Below minimum
2
Between min and reorder
2
Above reorder point
DECOUPLING POINTS STATUS BY ON-HAND
Calculate buffer values
2
On-hand critically low
0
On-hand low
3
On-hand on average range
2
Planned orders for decoupling points
All
Net flow below minimum
Net flow between min and reorder
Filter
Number
Reference
Item number
Product name
Requirement qu...
Unit
0254000003
Planned production orders
10116
Screwdriver FG
708.00
pcs
Planning Optimization
Parameters
Master plan
MRP
Enable auto-firming
No
PRODUCTION
BOM levels to include
0
Include all BOM levels
No
Records to include
Filter
ITEMS
Item number
Run in the background
Recurrence
Alerts
Batch processing
No
Task description
Planning Optimization
Batch group
Private
No
Critical Job
No
Monitoring category
Undefined
OK
Cancel

https://hint-crp-demo.sandbox.operations.eu.dynamics.com/?cmp=USPI&mi=ReqDecouplingPointsStatusByNetFlow

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Finance and Operations | Master planning > Workspaces > Demand driven MRP | USPI

Edit | New | Delete | View planned orders | Manage buffer values | Run master planning | Display dimensions | Options

Decoupling points status by net flow

Standard view

Filter | Master plan: MRP | Last planning run: 5/23/2024 07:46:41 AM

Item number	Product name	Warehouse	On-hand	On order	Qualified demand	Unit	Net flow	Planning priority	Net flow status	Planned order quantity	Minimum
10116	Screwdriver FG	20	150.00	249.00	329.00	pcs	70.00	9.00	Below minimum	708.00	346.00
20480	Steel bar RM	20	5,000.00	500,000.00	104,700.00	g	400,300.00	80.06	Above reorder point	0.00	10,000.00
307921	Box Slide small	20	300.00	0.00	0.00	pcs	300.00	150.00	Above maximum	0.00	50.00
38140	Screwdriver head RM	20	1,000.00	0.00	0.00	g	1,000.00	20.00	Between min and reorder	4,000.00	50.00
38142	Screwdriver shaft RM	20	1,000.00	0.00	0.00	g	1,000.00	50.00	Between min and reorder	1,000.00	50.00
65242	Screwdriver handle	20	1,000.00	0.00	0.00	g	1,000.00	20.00	Above reorder point	0.00	90.00
81547	Cel acetate pellet RM	20	1,500.00	0.00	9,000.00	g	-7,500.00	0.00	Below minimum	9,500.00	20.00

https://hint-crp-demo.sandbox.operations.eu.dynamics.com/?cmp=USPI&mi=ReqPlannedOrderForm

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Finance and Operations | Master planning > Workspaces > Demand driven MRP | USPI | AL

New | Delete | Firm | Firm all | Approve | View | Planned order | Options

Planned orders simplified | 10116 : #000000100001EC8F

LinkedPartView---68719945052

Filter | Plan: MRP

Number	Reference	Item number	Product name	Requirement qu...	Unit	Requirement date	Delivery date	Order date	Vendor	Status	Planning priority
0255000003	Planned production orders	10116	Screwdriver FG	708.00	pcs	5/28/2024	5/28/2024	5/23/2024		Unprocessed	9.00

https://hint-crp-demo.sandbox.operations.eu.dynamics.com/?cmp=USPI&mi=ReqPlannedOrderForm

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Finance and Operations | Master planning > Workspaces > Demand driven MRP

New | Delete | Firm | Firm all | Approve | View | Planned order | Options

Planned orders simplified | 10116 : #000000100001EC8F

LinkedPartView---68719945052

Filter | Plan: MRP

Number	Reference	Item number	Product name	Requirement qu...	Unit	Requirement date	Delivery date
0255000003	Planned production orders	10116	Screwdriver FG	708.00	pcs	5/28/2024	5/28/2024

Firming

Parameters

Firm the current planned order.

Update marking: No

Group by buyer group: No

Group by period: No

PURCHASE ORDERS

Group by vendor: Yes

Group by planning priority: No

Run in the background

Recurrence | Alerts

Batch processing: No

Task description: Firming

Batch group:

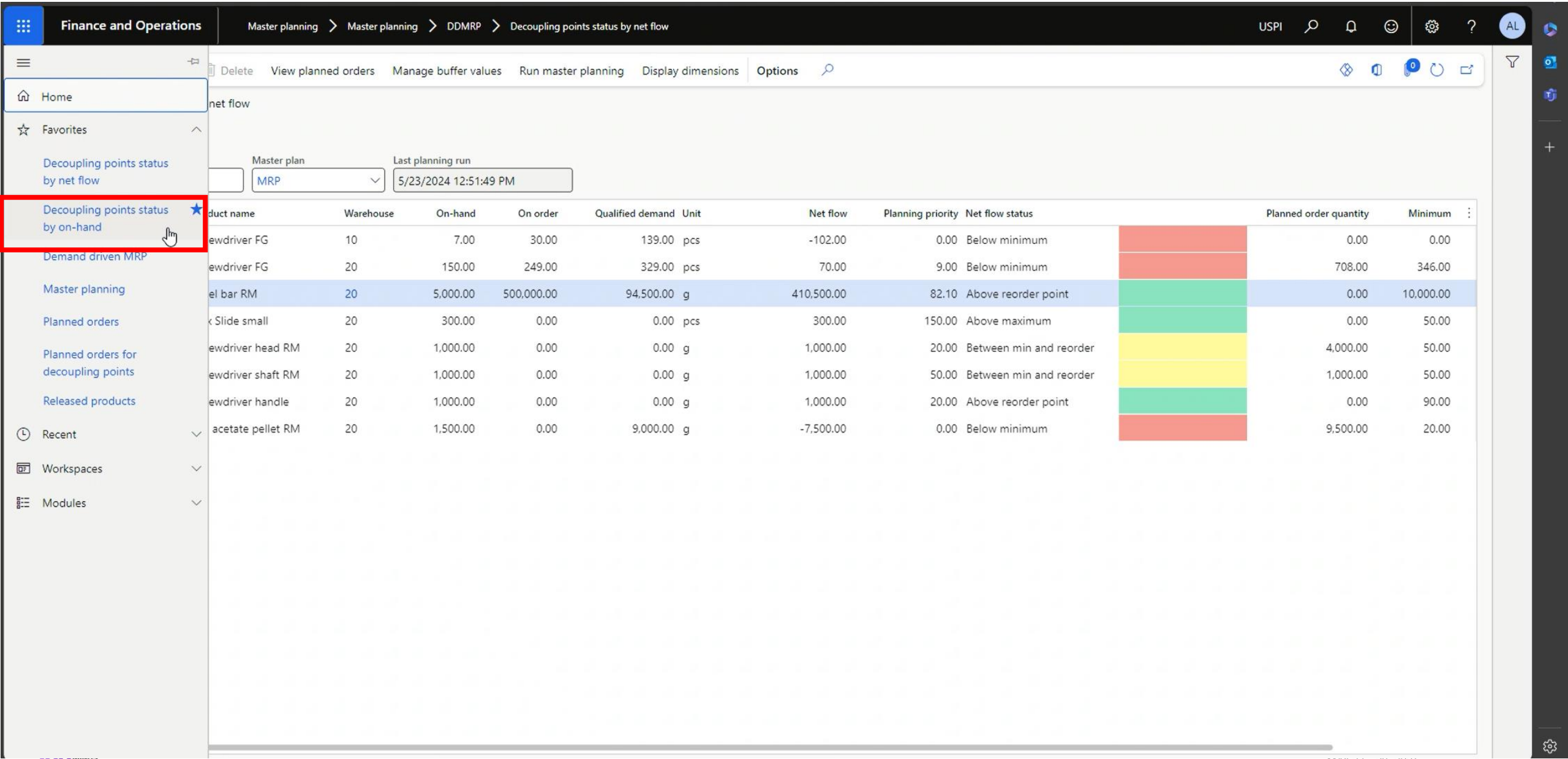
Private: No

Critical Job: No

Monitoring category: Undefined

Start date: 5/23/2024 (07:47:26 am) (GMT) Coordinated Universal Time

OK (Alt+Enter) | OK | Cancel


Finance and Operations
Master planning > Master planning > DDMRP > Decoupling points status by net flow
USPI
AL
Delete
View planned orders
Manage buffer values
Run master planning
Display dimensions
Options
Home
Favorites
Decoupling points status by net flow
Decoupling points status by on-hand
Demand driven MRP
Master planning
Planned orders
Planned orders for decoupling points
Released products
Recent
Workspaces
Modules
net flow
Master plan
MRP
Last planning run
5/23/2024 12:51:49 PM
duct name | Warehouse | On-hand | On order | Qualified demand | Unit | Net flow | Planning priority | Net flow status | Planned order quantity | Minimum
ewdriver FG | 10 | 7.00 | 30.00 | 139.00 | pcs | -102.00 | 0.00 | Below minimum | 0.00 | 0.00
ewdriver FG | 20 | 150.00 | 249.00 | 329.00 | pcs | 70.00 | 9.00 | Below minimum | 708.00 | 346.00
el bar RM | 20 | 5,000.00 | 500,000.00 | 94,500.00 | g | 410,500.00 | 82.10 | Above reorder point | 0.00 | 10,000.00
k Slide small | 20 | 300.00 | 0.00 | 0.00 | pcs | 300.00 | 150.00 | Above maximum | 0.00 | 50.00
ewdriver head RM | 20 | 1,000.00 | 0.00 | 0.00 | g | 1,000.00 | 20.00 | Between min and reorder | 4,000.00 | 50.00
ewdriver shaft RM | 20 | 1,000.00 | 0.00 | 0.00 | g | 1,000.00 | 50.00 | Between min and reorder | 1,000.00 | 50.00
ewdriver handle | 20 | 1,000.00 | 0.00 | 0.00 | g | 1,000.00 | 20.00 | Above reorder point | 0.00 | 90.00
acetate pellet RM | 20 | 1,500.00 | 0.00 | 9,000.00 | g | -7,500.00 | 0.00 | Below minimum | 9,500.00 | 20.00

https://hint-crp-demo.sandbox.operations.eu.dynamics.com/?cmp=USPI&mi=ReqDecouplingPointStatusByOnHand

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Finance and Operations | Master planning > Master planning > DDMRP > Decoupling points status by on-hand | USPI

Display dimensions | Options

Decoupling points status by on-hand

Standard view

Filter | Master plan: MRP | Last planning run: 5/23/2024 07:46:41 AM

Item number	Product name	Warehouse	On-hand status (%of min)	On-hand	On-hand status	On-hand status color	On order	Qualified dem...	Unit	Net flow	Net flow status
10116	Screwdriver FG	20	43.35	150.00	On-hand critically low		249.00	329.00	pcs	70.00	Below minimum
20480	Steel bar RM	20	50.00	5,000.00	On-hand critically low		500,000.00	104,700.00	g	400,300....	Above reorder point
307921	Box Slide small	20	600.00	300.00	On-hand higher than average range		500,000.00	0.00	pcs	300.00	Above maximum
38140	Screwdriver head RM	20	2,000.00	1,000.00	On-hand on average range		0.00	0.00	g	1,000.00	Between min and reorder
38142	Screwdriver shaft RM	20	2,000.00	1,000.00	On-hand higher than average range		0.00	0.00	g	1,000.00	Between min and reorder
65242	Screwdriver handle	20	1,111.11	1,000.00	On-hand on average range		0.00	0.00	g	1,000.00	Above reorder point
81547	Cel acetate pellet RM	20	7,500.00	1,500.00	On-hand on average range		0.00	9,000.00	g	-7,500.00	Below minimum

https://hint-crp-demo.sandbox.operations.eu.dynamics.com/?cmp=USPI&mi=ReqDecouplingPointStatusByOnHand

Inbox (9,391) - lore... | WIHA | D365 | HSO | Fatturazione | Progetto | HINT | New chat | Dell | Mageba | ROUTECO | Free Markdown to... | Other favorites

Finance and Operations | Master planning > Master planning > DDMRP > Decoupling points status by on-hand

Display dimensions | Options

Decoupling points status by on-hand

Standard view

Filter | Master plan: MRP | Last planning run: 5/23/2024 07:46:41 AM

Item number	Product name	Warehouse	On-hand status (%of min)	On-hand	On-hand status
10116	Screwdriver FG	20	43.35	150.00	On-hand critically low
20480	Steel bar RM	20	50.00	5,000.00	On-hand critically low
307921	Box Slide small	20	600.00	300.00	On-hand higher than average range
38140	Screwdriver head RM	20	2,000.00	1,000.00	On-hand on average range
38142	Screwdriver shaft RM	20	2,000.00	1,000.00	On-hand higher than average range
65242	Screwdriver handle	20	1,111.11	1,000.00	On-hand on average range
81547	Cel acetate pellet RM	20	7,500.00	1,500.00	On-hand on average range

Standard view

Product information

Details | Engineer | Inventory | Purchase | Plan

IDENTIFICATION

Product number: 20480
Description:
Product name: Steel bar RM
Search name: EMGR075f14F0

COMPANY-SPECIFIC IDENTIFICATION

Item number: 20480
Search name: DDMRP

CLASSIFICATIONS AND GROUPS

Product type: Item
Default order type: Purchase order
Item group: Pellets
Coverage group: PER-14
Product lifecycle state: Operational

EXTERNAL REFERENCES

Code	External code definition	Value

Close

https://hint-crp-demo.sandbox.operations.eu.dynamics.com/?cmp=USPI&mi=EcoResProductDetailsExtended

Inbox (9,391) - lore... | WIHA | D365 | HSO | Fatturazione | Progetto | HINT | New chat | Dell | Mageba | ROUTECO | Free Markdown to... | Other favorites

Finance and Operations | Master planning > Master planning > DDMRP > Decoupling points status by on-hand | USPI

Options

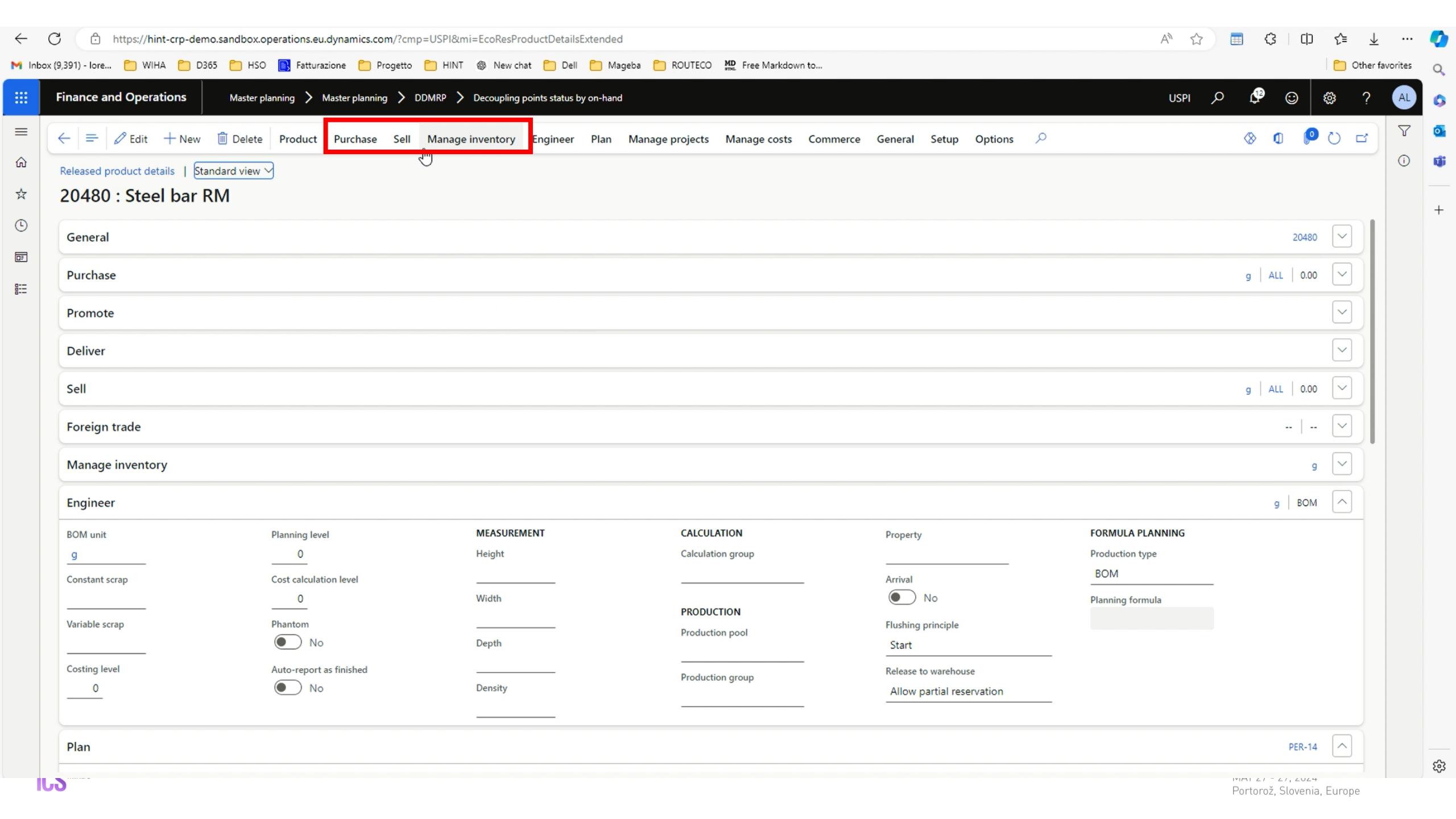
Open purchase order lines | 000013 : 20480

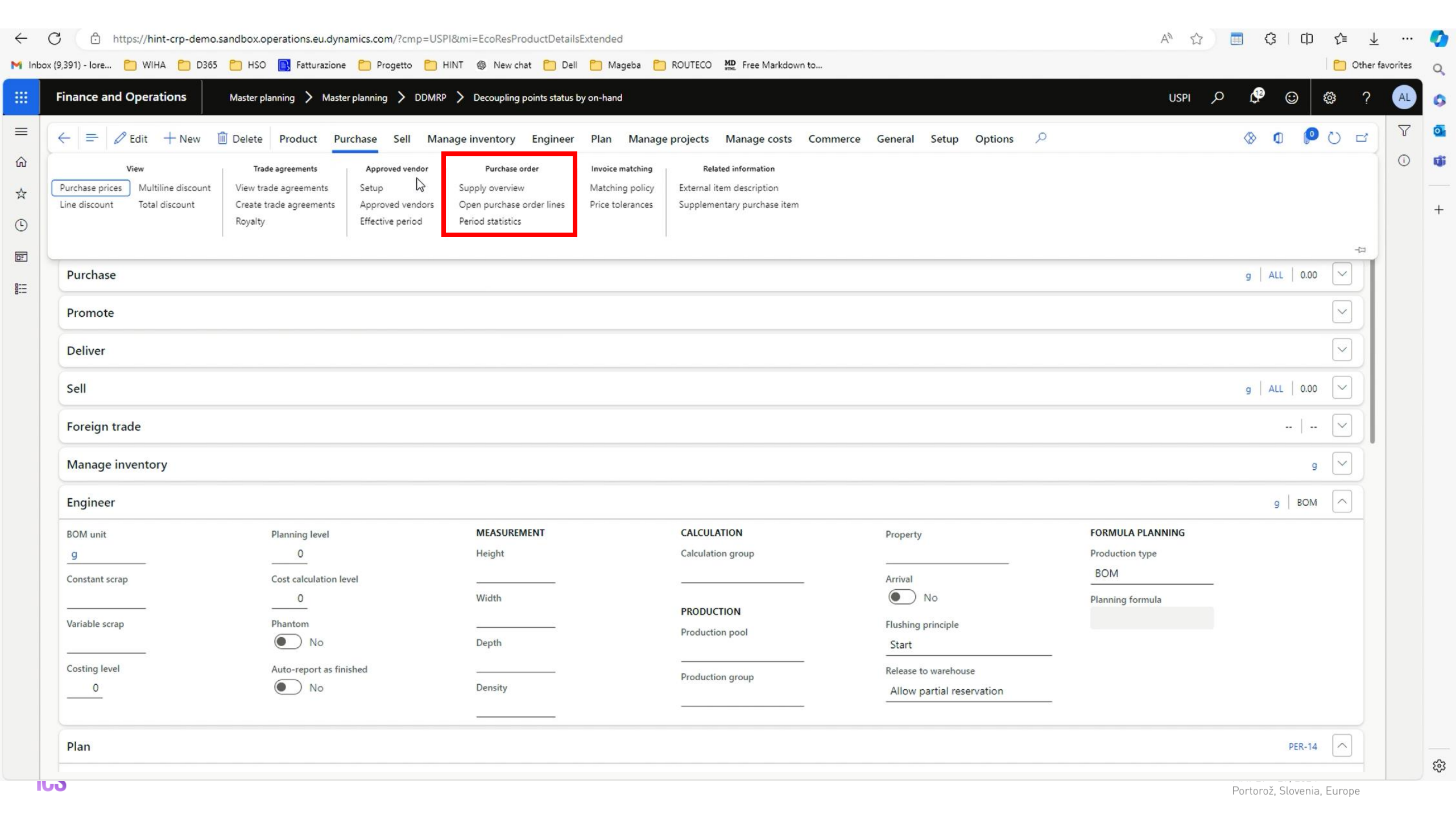
Standard view

Overview | Purchase order

Inventory

Purchase order	Line number	Item number	Procurement category	Requested receipt date	Deliver remain...	Quantity	CW deliver re...	CW quantity
000013	1	20480		6/30/2024	500,000.00	500,000.00		


https://hint-crp-demo.sandbox.operations.eu.dynamics.com/?cmp=USPI&mi=EcoResProductDetailsExtended
Finance and Operations
Master planning > Master planning > DDMRP > Decoupling points status by on-hand
USPI
Edit
New
Delete
Product
Purchase
Sell
Manage inventory
Engineer
Plan
Manage projects
Manage costs
Commerce
General
Setup
Options
Released product details | Standard view
20480 : Steel bar RM
General 20480
Purchase g | ALL | 0.00
Promote
Deliver
Sell g | ALL | 0.00
Foreign trade -- | --
Manage inventory g
Engineer g | BOM
BOM unit
g
Constant scrap
Variable scrap
Costing level
0
Planning level
0
Cost calculation level
0
Phantom
No
Auto-report as finished
No
MEASUREMENT
Height
Width
Depth
Density
CALCULATION
Calculation group
PRODUCTION
Production pool
Production group
Property
Arrival
No
Flushing principle
Start
Release to warehouse
Allow partial reservation
FORMULA PLANNING
Production type
BOM
Planning formula
Plan PER-14


https://hint-crp-demo.sandbox.operations.eu.dynamics.com/?cmp=USPI&mi=EcoResProductDetailsExtended
Finance and Operations
Master planning > Master planning > DDMRP > Decoupling points status by on-hand
USPI
Edit
New
Delete
Product
Purchase
Sell
Manage inventory
Engineer
Plan
Manage projects
Manage costs
Commerce
General
Setup
Options
View
Purchase prices
Multiline discount
Line discount
Total discount
Trade agreements
View trade agreements
Create trade agreements
Royalty
Approved vendor
Setup
Approved vendors
Effective period
Purchase order
Supply overview
Open purchase order lines
Period statistics
Invoice matching
Matching policy
Price tolerances
Related information
External item description
Supplementary purchase item
Purchase
Promote
Deliver
Sell
Foreign trade
Manage inventory
Engineer
BOM unit
g
Constant scrap
Variable scrap
Costing level
0
Planning level
0
Cost calculation level
0
Phantom
No
Auto-report as finished
No
MEASUREMENT
Height
Width
Depth
Density
CALCULATION
Calculation group
PRODUCTION
Production pool
Production group
Property
Arrival
No
Flushing principle
Start
Release to warehouse
Allow partial reservation
FORMULA PLANNING
Production type
BOM
Planning formula
Plan

https://hint-crp-demo.sandbox.operations.eu.dynamics.com/?cmp=USPI&mi=EcoResProductDetailsExtended

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Finance and Operations | Master planning > Master planning > DDMRP > Decoupling points status by on-hand | USPI

Options

Open purchase order lines | 000013 : 20480

Standard view

Overview | Purchase order

Inventory

Purchase order	Line number	Item number	Procurement category	Requested receipt date	Deliver remain...	Quantity	CW deliver re...	CW quantity
000013	1	20480		6/30/2024	500,000.00	500,000.00		

https://hint-crp-demo.sandbox.operations.eu.dynamics.com/?cmp=USPI&mi=ReqDecouplingPointsStatusByNetFlow

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Edit | New | Delete | View planned orders | Manage buffer values | Run master planning | Display dimensions | Options

Decoupling points status by net flow

Standard view

Filter | Master plan: MRP | Last planning run: 5/23/2024 07:46:41 AM

Item number	Product name	Warehouse	On-hand	On order	Qualified demand	Unit	Net flow	Planning priority	Net flow status	Planned order quantity	Minimum
10116	Screwdriver FG	20	150.00	249.00	329.00	pcs	70.00	9.00	Below minimum	708.00	346.00
20480	Steel bar RM	20	5,000.00	500,000.00	104,700.00	g	400,300.00	80.06	Above reorder point	0.00	10,000.00
307921	Box Slide small	20	300.00	0.00	0.00	pcs	300.00	150.00	Above maximum	0.00	50.00
38140	Screwdriver head RM	20	1,000.00	0.00	0.00	g	1,000.00	20.00	Between min and reorder	4,000.00	50.00
38142	Screwdriver shaft RM	20	1,000.00	0.00	0.00	g	1,000.00	50.00	Between min and reorder	1,000.00	50.00
65242	Screwdriver handle	20	1,000.00	0.00	0.00	g	1,000.00	20.00	Above reorder point	0.00	90.00
81547	Cel acetate pellet RM	20	1,500.00	0.00	9,000.00	g	-7,500.00	0.00	Below minimum	9,500.00	20.00

https://hint-crp-demo.sandbox.operations.eu.dynamics.com/?cmp=USPI&mi=ReqDecouplingPointsStatusByNetFlow

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Finance and Operations | Master planning > Master planning > DDMRP > Decoupling points status by net flow | USPI

Save | New | Delete | Wizard | Default settings | Buffer values | Options

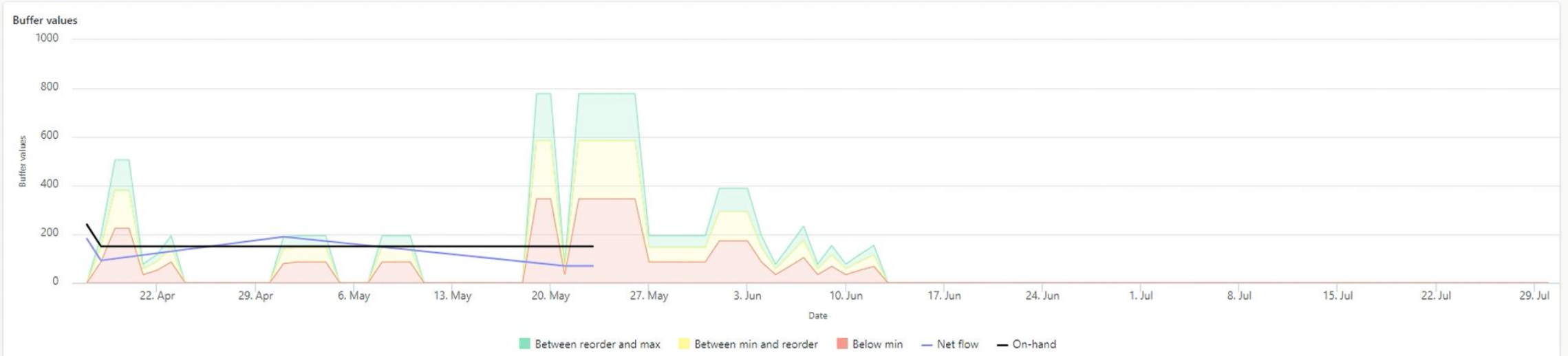
Item coverage, Site: 1, Warehouse: 20 | 10116 : #000000100001EC8F

Standard view

Overview | General | Lead time | Min./Max. | Dimension | Buffer values | On-hand

From date	To date	Min	Reorder point	Max	Average daily usage	Demand Adjustment Factor	Decoupled lead time	Lead time factor	Variability factor	Calculated min	Calculated reor...	Calculated max
5/17/2024	5/17/2024	0.00	0.00	0.00	0.00	1.00	12	0.80	0.80	0.00	0.00	0.00
5/18/2024	5/18/2024	0.00	0.00	0.00	0.00	1.00	12	0.80	0.80	0.00	0.00	0.00
5/19/2024	5/19/2024	346.00	586.00	778.00	20.00	1.00	12	0.80	0.80	346.00	586.00	778.00
5/20/2024	5/20/2024	346.00	586.00	778.00	20.00	1.00	12	0.80	0.80	346.00	586.00	778.00
5/21/2024	5/21/2024	34.00	58.00	77.00	2.00	1.00	12	0.80	0.80	34.00	58.00	77.00
5/22/2024	5/22/2024	346.00	586.00	778.00	20.00	1.00	12	0.80	0.80	346.00	586.00	778.00

Master plan: MRP



https://hint-crp-demo.sandbox.operations.eu.dynamics.com/?cmp=USPI&mi=ReqDecouplingPointsStatusByNetFlow

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Finance and Operations | Master planning > Master planning > DDMRP > Decoupling points status by net flow | USPI

Save | New | Delete | Wizard | Default settings | Buffer values | Options

Item coverage, Site: 1, Warehouse: 20 | 10116 : #000000100001EC8F

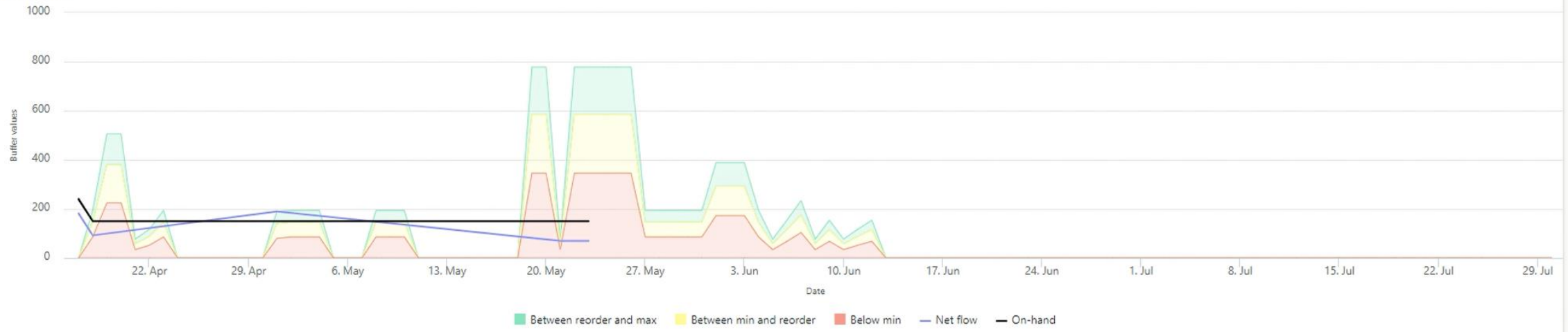
Standard view

Overview | General | Lead time | Min./Max. | Dimension | Buffer values | On-hand

From date	To date	Min	Reorder point	Max	Average daily usage	Demand Adjustment Factor	Decoupled lead time	Lead time factor	Variability factor	Calculated min	Calculated reor...	Calculated max
6/4/2024	6/4/2024	86.00	146.00	194.00	5.00	2.00	12	0.80	0.80	86.00	146.00	194.00
6/5/2024	6/5/2024	34.00	58.00	77.00	1.00	2.00	12	0.80	0.80	34.00	58.00	77.00
6/6/2024	6/6/2024	68.00	116.00	154.00	2.00	2.00	12	0.80	0.80	68.00	116.00	154.00
6/7/2024	6/7/2024	104.00	176.00	234.00	3.00	2.00	12	0.80	0.80	104.00	176.00	234.00
6/8/2024	6/8/2024	34.00	58.00	77.00	1.00	2.00	12	0.80	0.80	34.00	58.00	77.00
6/9/2024	6/9/2024	68.00	116.00	154.00	2.00	1.00	12	0.80	0.80	68.00	116.00	154.00

Master plan: MRP

Buffer values



Portorož, Slovenia, Europe

https://hint-crp-demo.sandbox.operations.eu.dynamics.com/?cmp=USPI&mi=ReqDecouplingPointsStatusByNetFlow

Inbox (9,391) - lore... | WIHA | D365 | HSO | Fatturazione | Progetto | HINT | New chat | Dell | Mageba | ROUTECO | Free Markdown to... | Other favorites

Finance and Operations | Master planning > Master planning > DDMRP > Decoupling points status by net flow | USPI

Save | New | Delete | Wizard | Default settings | Buffer values | Options

Periodic setup
- Add time periods
- Delete selected time periods

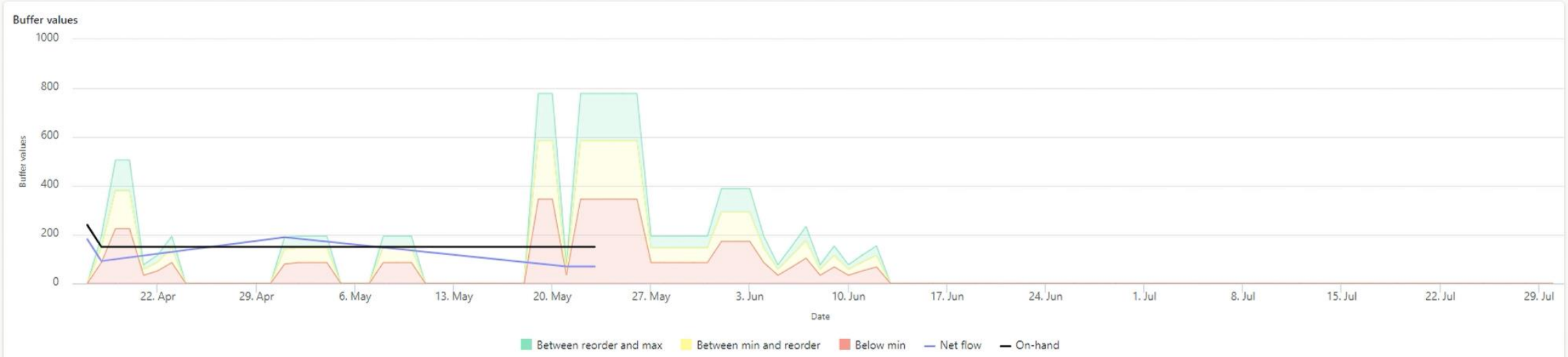
Calculate
- Calculate decoupled lead time
- Calculate Average Daily Usage
- Calculate min, max and reorder point quantities

Take Action
- Accept all calculations
- Discard all calculations
- Accept calculations for selected rows
- Discard calculations for selected rows

View
- Decoupled lead time

From date	To date	Min	Reorder point	Max	Average daily usage	Demand Adjustment Factor	Decoupled lead time	Lead time factor	Variability factor	Calculated min	Calculated reor...	Calculated max
5/29/2024	5/29/2024	86.00	146.00	194.00	5.00	1.00	12	0.80	0.80	86.00	146.00	194.00
5/30/2024	5/30/2024	86.00	146.00	194.00	5.00	1.00	12	0.80	0.80	86.00	146.00	194.00
5/31/2024	5/31/2024	86.00	146.00	194.00	5.00	1.00	12	0.80	0.80	86.00	146.00	194.00
6/1/2024	6/1/2024	173.00	293.00	389.00	5.00	2.00	12	0.80	0.80	173.00	293.00	389.00
6/2/2024	6/2/2024	173.00	293.00	389.00	5.00	2.00	12	0.80	0.80	173.00	293.00	389.00
6/3/2024	6/3/2024	173.00	293.00	389.00	5.00	2.00	12	0.80	0.80	173.00	293.00	389.00

Master plan: MRP



https://hint-crp-demo.sandbox.operations.eu.dynamics.com/?cmp=USPI&mi=ReqDecouplingPointsStatusByNetFlow

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Save | New | Delete | Wizard | Default settings | Buffer values | Options

Item coverage, Site: 1, Warehouse: 20 | 10116 : #000000100001EC8F

Standard view

Overview | General | Lead time | Min./Max. | Dimension | Buffer values | On-hand

From date	To date	Min	Reorder point	Max	Average daily usage	Demand Adjustment Factor	Decoupled lead time	Lead time factor	Variability factor	Calculated min	Calculated reor...	Calculated max
4/17/20...	4/17/2024	0.00	0.00	0.00	5.00	1.00	0	0.80	0.80	0.00	0.00	0.00
4/18/2024	4/18/2024	86.00	146.00	194.00	5.00	1.00	12	0.80	0.80	86.00	146.00	194.00
4/19/2024	4/19/2024	225.00	381.00	506.00	13.00	1.00	12	0.80	0.80	225.00	381.00	506.00
4/20/2024	4/20/2024	225.00	381.00	506.00	13.00	1.00	12	0.80	0.80	225.00	381.00	506.00
4/21/2024	4/21/2024	34.00	58.00	77.00	2.00	1.00	12	0.80	0.80	34.00	58.00	77.00
4/22/2024	4/22/2024	52.00	88.00	117.00	3.00	1.00	12	0.80	0.80	52.00	88.00	117.00

Master plan: MRP

Portorož, Slovenia, Europe

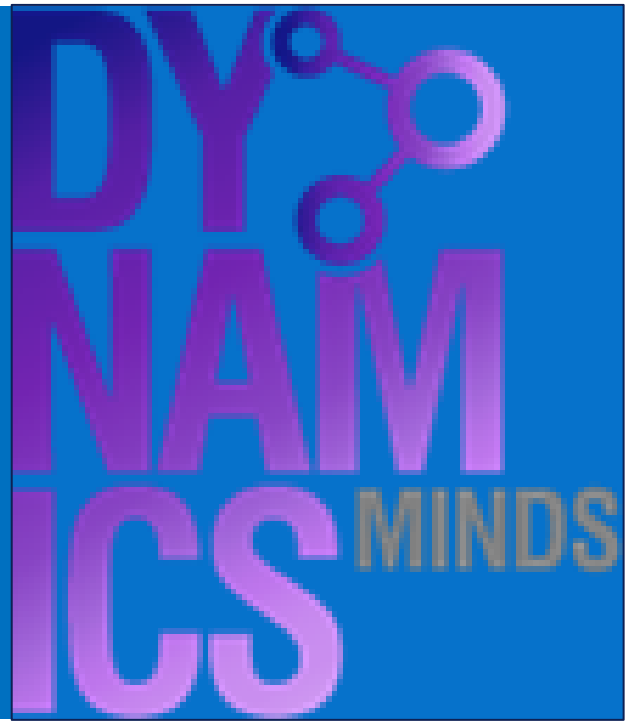
CHAPTER #6

Summary & Go-Do’s

Summary – Today's Learning Objectives

Taking Demand Planning and MRP to the next level with Microsoft solutions

- Learn how Microsoft Demand Planner can help organizations shore-up their forecasting, leading to lesser plan deviations and better inventory management.
- Learn how Microsoft Demand Planner supports organizations to collaborate, align demand & supply forecasts, and achieve Increased agility through integrated planning and execution.
- Learn how Demand Driven MRP (DDMRP) in D365 SCM improves the Sales & Operations Planning (S&OP) and Supply and Production Planning functions of an organization.



Shameless self promotion:

My new blog: Not just warehousing

Thank you!