

Attribute-based omnichannel product and inventory search

Natural language product and inventory search via copilot

Presenter

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Steve Mo

Product Manager
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TechTalk Series

Session 1 Jan-17th-2024

- **Attribute based omnichannel product and inventory search**
- **Natural language product and inventory search using copilot**

Session 2 Feb-2024

- Inventory on-hand mobile app for Dynamics 365 SCM

Session 3 Mar-2024

- Soft reservation and inventory adjustment for products with and without site and warehouse in Inventory Visibility Service

Agenda for today

Attribute-based omnichannel product and inventory search

- Overview
- Demo

Natural language product and inventory search via copilot

- Overview
- Demo

Attribute-based omnichannel product and inventory search



Business Challenges

Product discover is fraught with challenges



Find the right product

Do we have tablet PC product with dual camera and drive capacity is 32G?

Find the real-time inventory

What's the real-time stock of table PC with dual camera and drive capacity is 32G in Boston store?

User experience

How to help user find the required information in one click...

Product search service

Enable customers to search product and relevant business data by query on specific attributes or characteristics, enhancing the overall efficiency and effectiveness.

Discovery

Facilitates faster and accurate product discovery, enhance user experience when using natural language in Copilot*

Standardization

Support manage and govern multi-source data in the unified data model

Insights to action

Help user gain an insights to action and take business decision out of search result



Modernize, utilize next-gen experiences within product search service



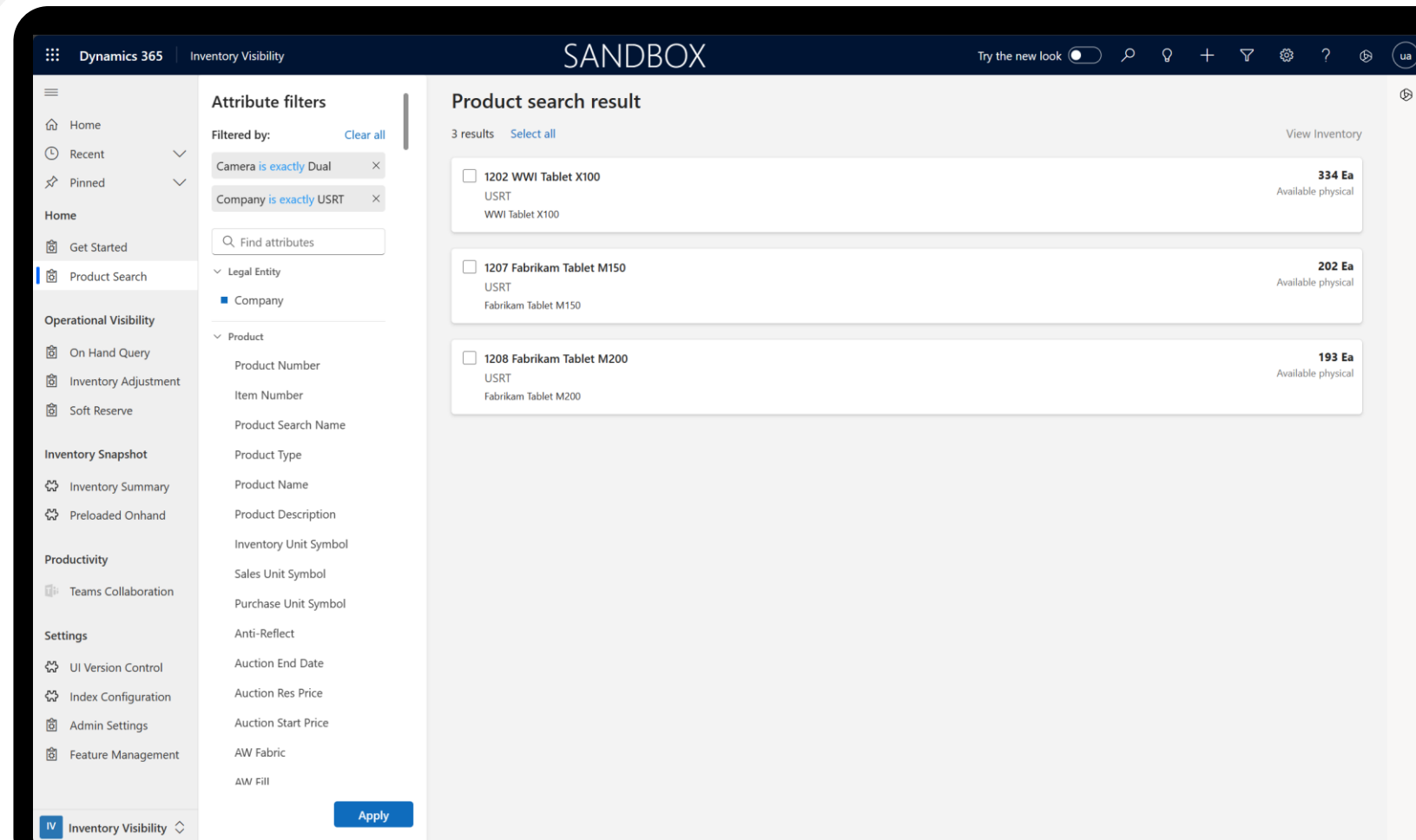
Attribute-based product and inventory Search

Seamlessly integrate with FnO (Finance and Operations) and other data systems for out-of-the-box data sync in product search service.

Facilitate **dynamic search options** by incorporating operators such as "and" and "or" for a more versatile and refined product search experience.

Delve into **real-time inventory data** to provide in-depth insights within the search results, offering users a comprehensive view of product availability and stock levels at the moment of their search.

Serve as the **foundational search capacity** for the Copilot feature, ensuring robust and reliable support for seamless integration and enhanced user assistance.



Public Preview

User Case & Opportunities



Enrich Dynamics 365 product search

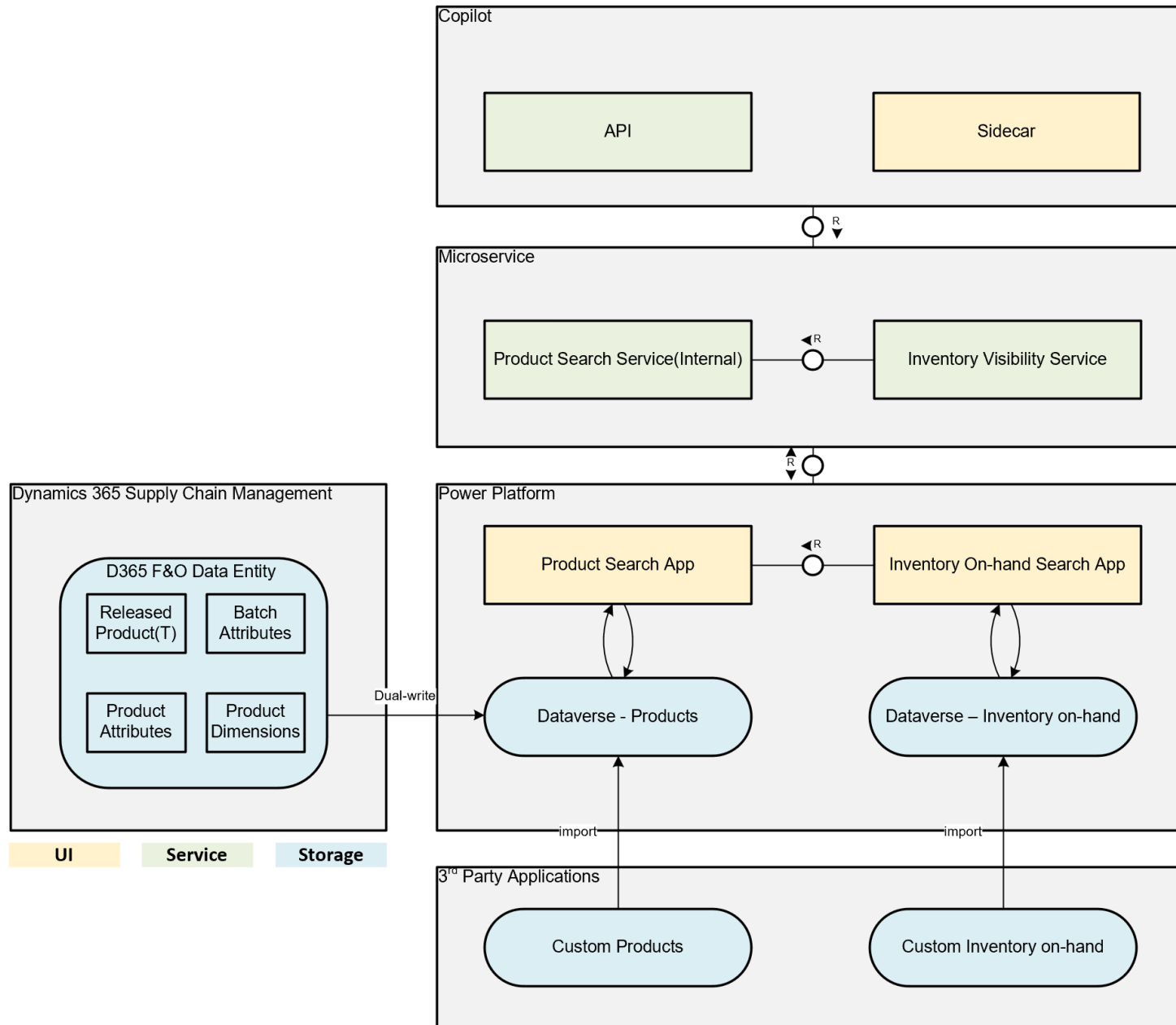
Enhance Dynamics 365 supply chain with *AI-powered product search* service to facilitate user quickly identifying the products and compare products with the attributes that best suites the needs.



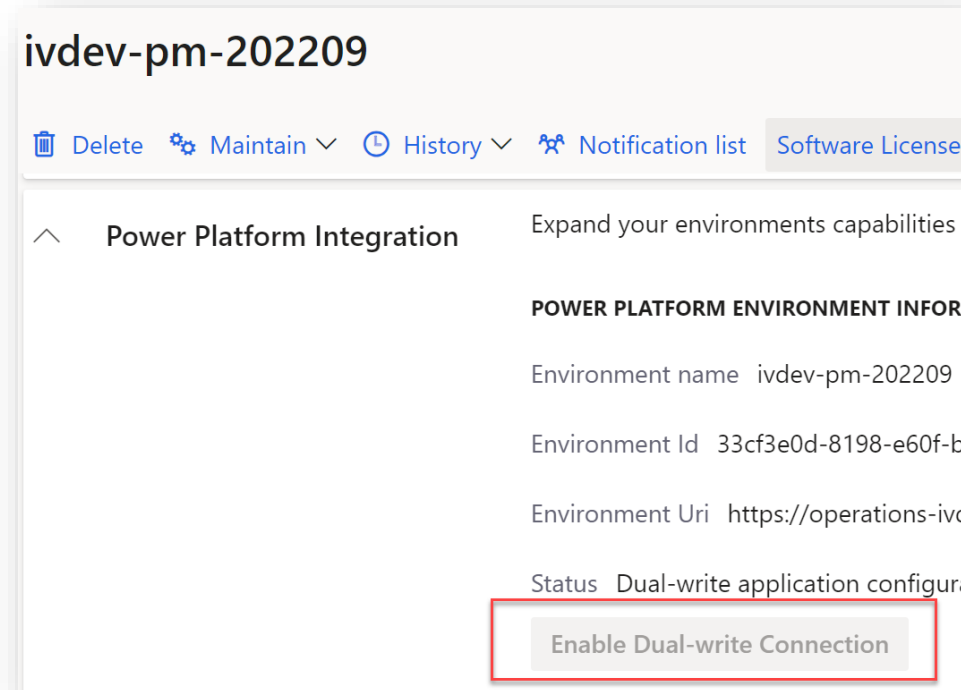
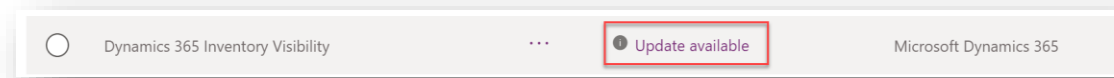
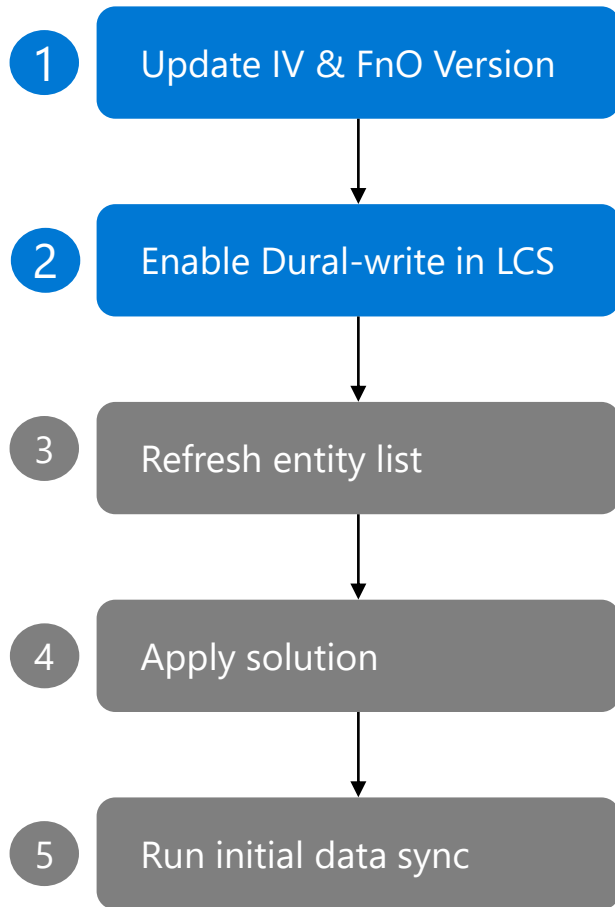
Multi-channel Inventory query

Search product on-hand inventory for various source systems by *Attribute-based inventory query* in Inventory Visibility.

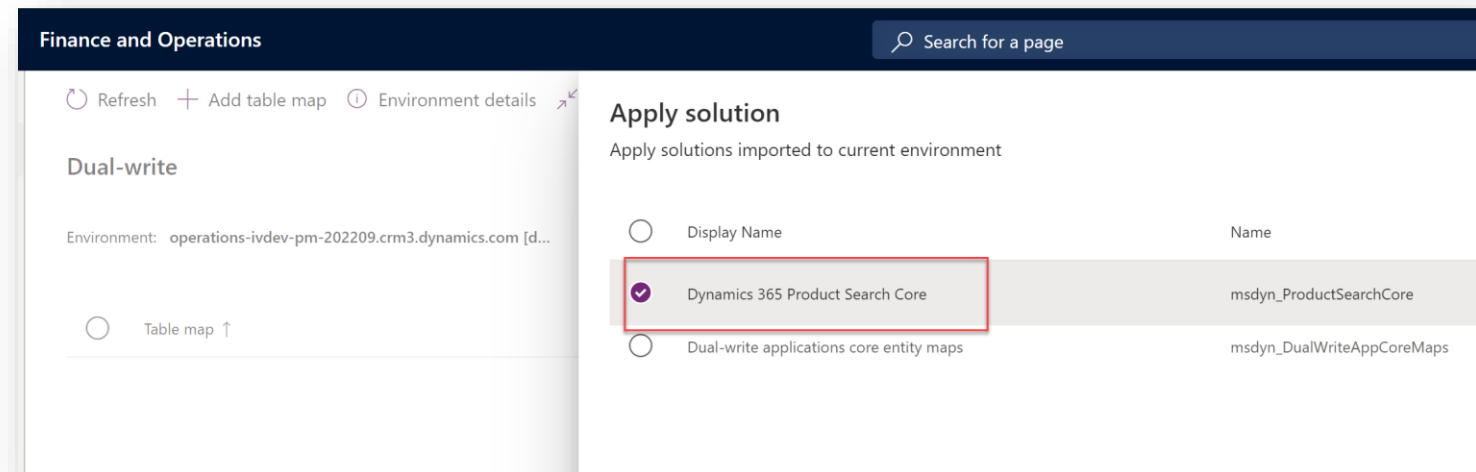
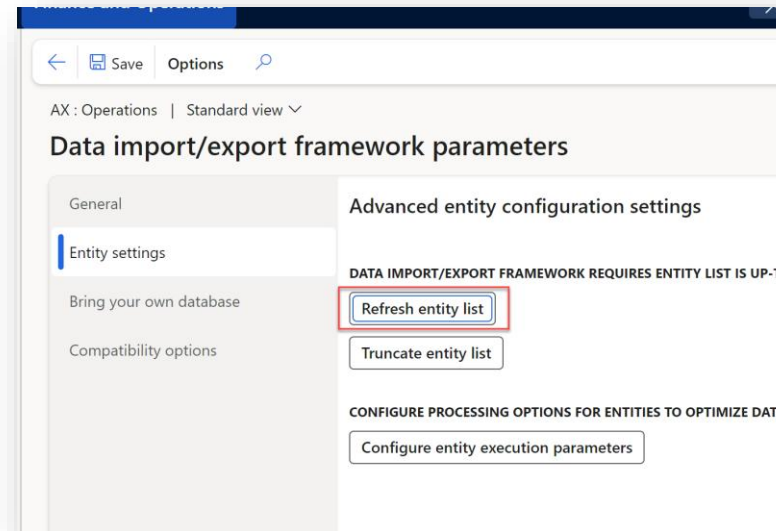
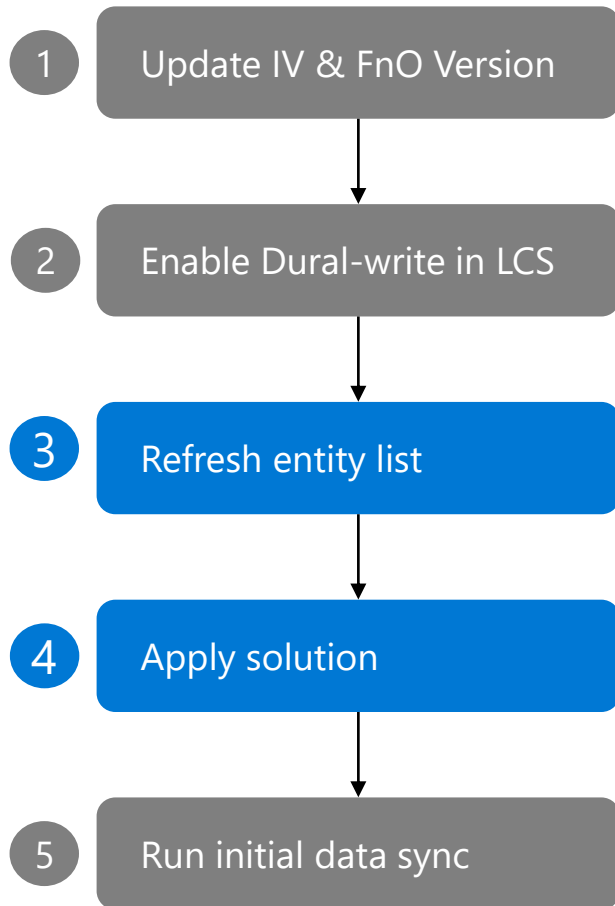
Architecture



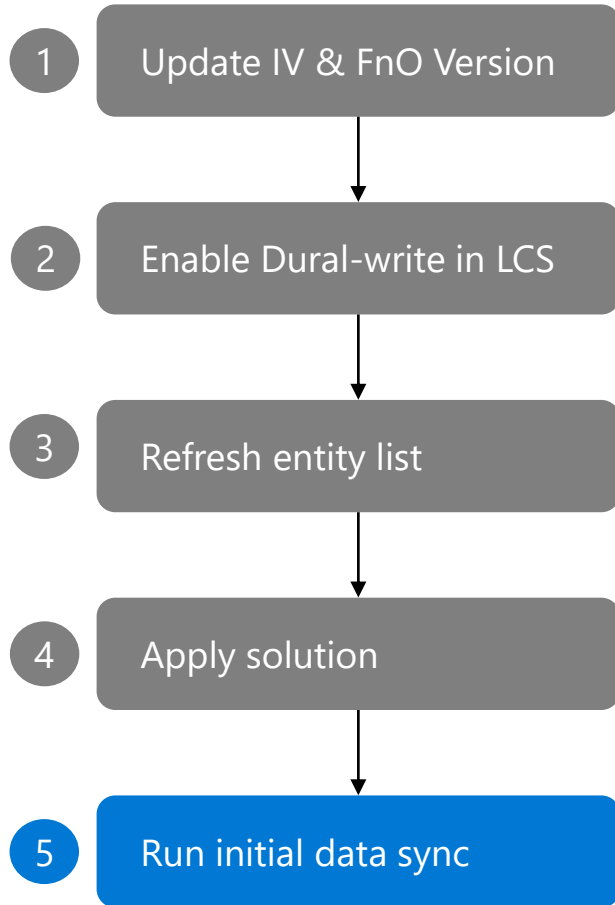
How to setup the search service



How to setup the search service



How to setup the search service



The screenshot displays the 'Dual-write' configuration in Dynamics 365. On the left, a list of table maps is shown with checkboxes for selection. A red box highlights the 'Released products V2 (cc_releasedproducts)' table map. A red arrow points from the 'Run' button at the top to the 'Dual-write' section. On the right, a table titled 'Initial writes and related table map(s)' lists the selected table maps. A red box highlights the 'Initial sync' checkbox, and another red box highlights the 'Master for initial sync' dropdown menu, which is set to 'Finance and Operations apps'.

Table map	Table map status	Version	Initial sync	Master for initial sync
Released products V2 (cc_releasedproducts)	Not running	1.0.0.0 - Dynamics 365	<input checked="" type="checkbox"/>	Finance and Operations apps
Released product variants V2 (cc_releasedproductvariants)	Not running	1.0.0.0 - Dynamics 365	<input checked="" type="checkbox"/>	Finance and Operations apps
Inventory batch attributes V2 (cc_itembatchattributevalues)	Not running	1.0.0.0 - Dynamics 365	<input checked="" type="checkbox"/>	Finance and Operations apps
Product attributes (cc_productattributes)	Not running	1.0.0.0 - Dynamics 365	<input checked="" type="checkbox"/>	Finance and Operations apps
Product attribute values V3 (cc_productattributevalues)	Not running	1.0.0.0 - Dynamics 365	<input checked="" type="checkbox"/>	Finance and Operations apps
Product translations (cc_producttranslations)	Not running	1.0.0.0 - Dynamics 365	<input checked="" type="checkbox"/>	Finance and Operations apps

Feature UI

Attribute filters

Find attributes

Legal Entity

- Company

Product

Product Dimension

- Color
- Configuration
- Size
- Style

Batch

- Acidity
- AppleDirt
- AppleRipe
- Brix
- Concentration
- Fat
- PctCaustic
- PctFattyAcid
- PieCal
- Scratch
- Viscosity
- VolatilePct

Storage Dimension

- Site
- Warehouse
- WMS Location
- License Plate ID
- Inventory status

Tracking Dimension

- Batch number

Apply

Welcome to Product Search

Search by product number or name

Text search bar

Did you know...

Search items' inventory filtering by attribute

Our innovative solution revolutionizes inventory management through Attribute based search, a powerful feature offering precision and efficiency. This new feature enables granular searches, reducing time spent and providing accurate, dynamic results. Tailored for diverse inventories, it empowers businesses with informed decision-making capabilities. Embrace Attribute based searching feature to transform your inventory management experience and drive operational excellence.

View 360 degree inventory

Introducing a paradigm shift in inventory management, our solution unveils the transformative power of 360-Degree Inventory Views. This feature provides a holistic, real-time perspective on your inventory, offering comprehensive insights into stock levels and individual item details. Provide a new user experience of inventory management, where informed decisions and optimized strategies are at your fingertips.

Your inventory data in one place

This new feature consolidates all your crucial inventory data into a single, synchronized form, providing a real-time, cross-functional view. Enjoy the benefits of efficiency, improved decision-making, and enhanced collaboration as you streamline processes and break down structures. Unleash the power of having your entire inventory data in one place, driving efficiency and informed decision-making across your organization.

Attribute search Filters

Try the new look

Feature UI

Dynamics 365 | Inventory Visibility

SANDBOX

Try the new look

Home

Recent

Pinned

Home

Get Started

Product Search

Operational Visibility

On Hand Query

Inventory Adjustment

Soft Reserve

Inventory Snapshot

Inventory Summary

Preloaded Onhand

Productivity

Teams Collaboration

Settings

UI Version Control

Index Configuration

Admin Settings

Feature Management

Attribute filters

Filtered by: [Clear all](#)

Product Search Name **contains** Cable ×

Company **is exactly** USMF ×

Find attributes

Legal Entity

Company

Product

Product Dimension

Color

Configuration

Size

Style

Batch

Concentration

Storage Dimension

Site

Warehouse

WMS Location

License Plate ID

Inventory status

Tracking Dimension

Batch number

Serial number

Owner

Other Dimension

Version ID

InventDimension1

InventDimension2

InventDimension3

Apply

Product search result

5 results [Select all](#) [View Inventory](#)

<input type="checkbox"/> A0002 HDMI 12' Cables USMF	1020 Pcs Available physical
<input type="checkbox"/> F00010 Cable wires STD17 USMF Cable wires STD17	47 pcs Available physical
<input type="checkbox"/> M0024 Speaker Cable In-wall 50 Ft USMF	0 ea Available physical
<input type="checkbox"/> A0001 HDMI 6' Cables USMF	2385 Pcs Available physical
<input type="checkbox"/> T0001 SpeakerCable USMF	340 ea Available physical

Result and real-time inventory data



Demo

- Home
- Recent
- Pinned
- Home
- Get Started**
- Product Search
- Operational Visibility
 - On Hand Query
 - Inventory Adjustment
 - Soft Reserve
- Inventory Snapshot
 - Inventory Summary
 - Preloaded Onhand
- Productivity
 - Teams Collaboration
- Settings
 - UI Version Control
 - Index Configuration
 - Admin Settings
 - Feature Management

Get Started

Setup your Inventory Visibility and find more resources

Feature Management

Manage feature statuses, setup data sources and configurations

Manage

Index Hierarchy

Configure frequently-used query dimensions for best performances

Manage

Partition Configuration

Configure rules to store inventory data under different partitions. Only applicable to environments with no inventory data.

Manage

Entity Version

Switch between legacy UI (version 1) and new UI (version 2 - preview) experience; To migrate existing configuration to new UI, Go to 'Admin Settings' -> Migrate UI Versions -> Manage

Manage

Other Settings

Set tokens; View and update your configuration to Inventory Visibility instances

Manage

More resources

- [Documentations](#)
- [Tech Talks](#)

Copilot for Inventory Visibility

Natural language product and
inventory search



Momentum of Conversational AI



By 2025, **80% of enterprise applications will embed a virtual conversational assistant** to fulfill content fetching and content generation tasks. ¹

By 2026, **conversational artificial intelligence** deployments within contact centers will **reduce agent labor costs by \$80 billion**²

By 2025, **GenAI will be embedded in 80% of Conversational AI offerings.** ¹

Source:

1. 2023 Gartner® - The Impact of Generative AI on the Conversational AI Market

2. 2022 Gartner - Forecast Analysis: Hyperautomation Enablement Software, Worldwide

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Copilot Everywhere – Across the stack

Applications

 Microsoft 365

 Microsoft Dynamics 365

Partner Solutions

Application Platform

AI Builder



Power BI



Power Apps



Power Automate



Power Virtual Agents

Scenario-Based Services & Customizable AI Models

Cognitive Services



Bot Service



Cognitive Search



Form Recognizer



Video Indexer



Metrics Advisor



Immersive Reader



Vision



Speech



Language



Decision



OpenAI Service

NEW

ML Platform



Azure Machine Learning



Business Users



Developers & Data Scientists

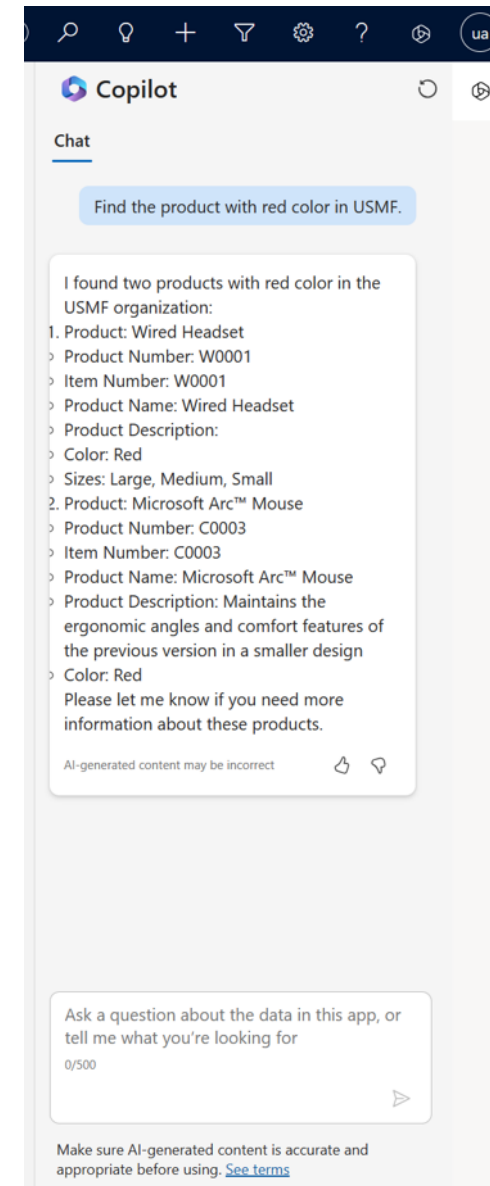
Copilot for Inventory Visibility

■ Copilot for Inventory Visibility

- ❖ Introduce an in-app Copilot sidecar and API-driven solution that simplifies and revolutionizes the management of your inventory.

■ Build your own chatbot with IV Copilot API

- ❖ Natural language search APIs can be consumed by 3rd party e-commerce websites or apps.
- ❖ Use the API to build your own chat feature could help customers find products, view availability and view alternatives.



Scenario 1

- ✓ Do product and inventory search

Example output:

'There are two products matched for Michelin 18-inch black tire that are available in warehouse Chicago

- MICHELIN Defender LTX M/S1 with available quantity 3
- MICHELIN X TWEEL TURF with available quantity 5

Example input:

'I am looking for 18-inch black Michelin tyres in warehouse Chicago, what are the products and stock available ?

Example output:

The following table lists all the products and their stock levels that are going to expire by 20th Aug in store Chicago:

• The following table lists all the dairy products and their stock levels that are going to expire by 20th Aug in store Chicago:

Product	Stock Level	Expiration Date
Milk	50 gallons	18th Aug
Cheese	20 pounds	19th Aug
Yogurt	30 cups	20th Aug
Butter	10 sticks	20th Aug

• You may want to consider selling these products at a discounted price or donating them to a food bank before they expire.

Example input:

'List all the dairy products and stock levels that are going to expire by 20th Aug in store Chicago

Scenario 2

- ✓ Check real-time inventory availability

Example output:

'The inventory of product bike, color black in company USMF, site 1, warehouse 11 is as follows:

Product ID: bike

Site ID: 1

Location ID: 11

Color: Black

Quantities:

- Inbound: 1200
- Outbound: 0
- Available Quantity: 1200

Example input:

'What's the inventory of product bike, color black in company USMF, site 1, warehouse 11?

Example output:

'In company USMF, red bike is available in site 1, warehouse 13, with 18 quantities available, details as follow:

Product ID: bike

Site ID: 1

Location ID: 13

Color: Red

Quantities:

- Availablephysical: 20
- Onorder: 2
- Available Quantity: 18

Example input:

'I am looking for red bike in company USMF, where do I have inventory available?

Copilot in-app sidecar UI

Dynamics 365 | Inventory Visibility

SANDBOX

Try the new look

- Home
- Recent
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 - Teams Collaboration
- Settings
 - UI Version Control
 - Index Configuration
 - Admin Settings
 - Feature Management
- IV Inventory Visibility

Attribute filters

Find attributes

- Legal Entity
 - Company
- Product
 - Product Number
 - Item Number
 - Product Search Name
 - Product Type
 - Product Name
 - Product Description
 - Inventory Unit Symbol
 - Sales Unit Symbol
 - Purchase Unit Symbol
 - Anti-Reflect
 - Auction End Date
 - Auction Res Price
 - Auction Start Price
 - AW Fabric
 - AW Fill
 - AW Material
 - AW Polarized
 - AW Weight

Apply

Welcome to Product Search

Search by product number or name

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Copilot Sidecar

Chat

Find the product with red color in USMF.

I found two products with red color in the USMF organization:

- Product: Wired Headset
 - Product Number: W0001
 - Item Number: W0001
 - Product Name: Wired Headset
 - Product Description:
 - Color: Red
 - Sizes: Large, Medium, Small
- Product: Microsoft Arc™ Mouse
 - Product Number: C0003
 - Item Number: C0003
 - Product Name: Microsoft Arc™ Mouse
 - Product Description: Maintains the ergonomic angles and comfort features of the previous version in a smaller design
 - Color: Red

Please let me know if you need more information about these products.

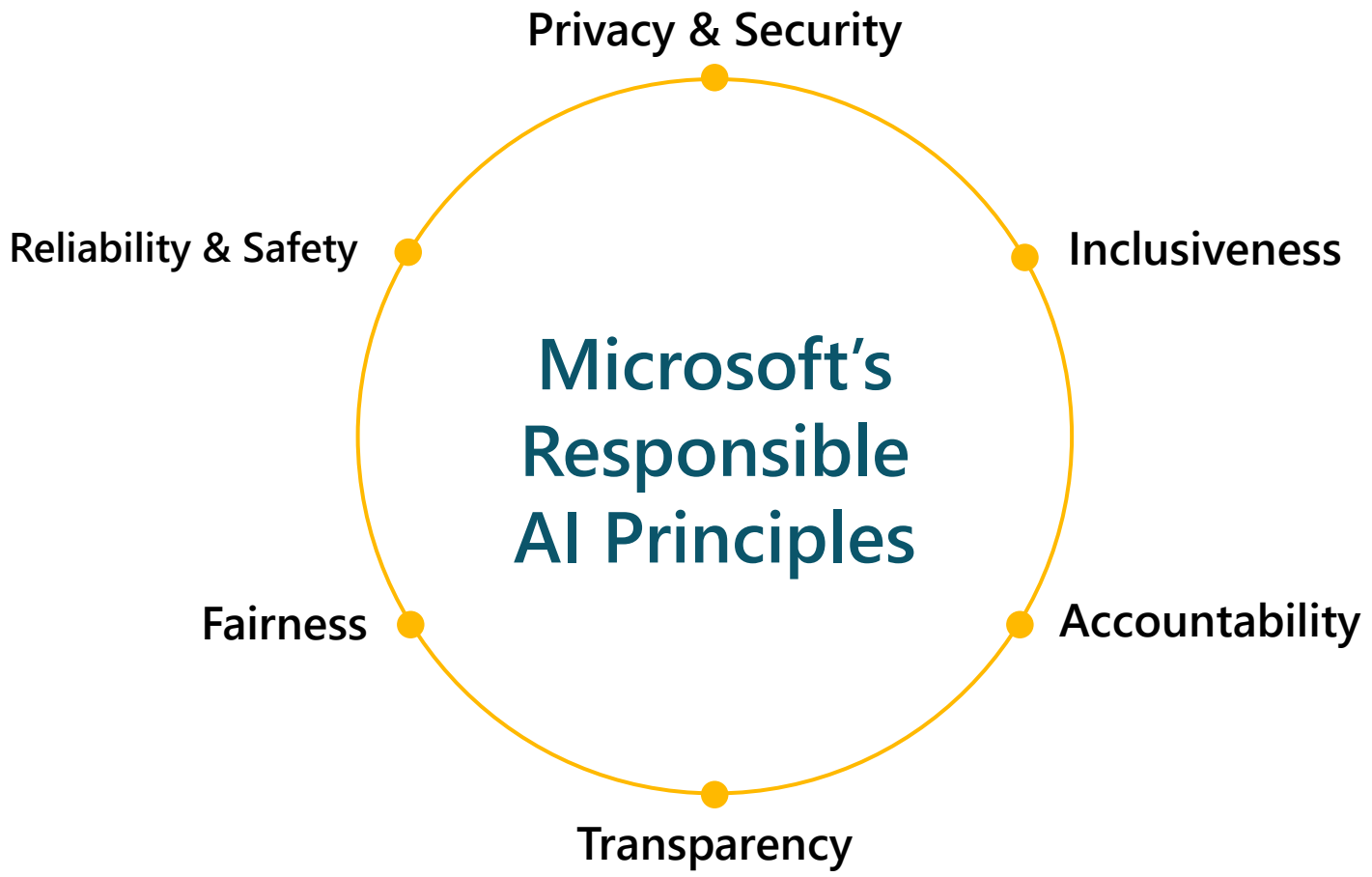
AI-generated content may be incorrect

Ask a question about the data in this app, or tell me what you're looking for

0/500

Make sure AI-generated content is accurate and appropriate before using. [See terms](#)

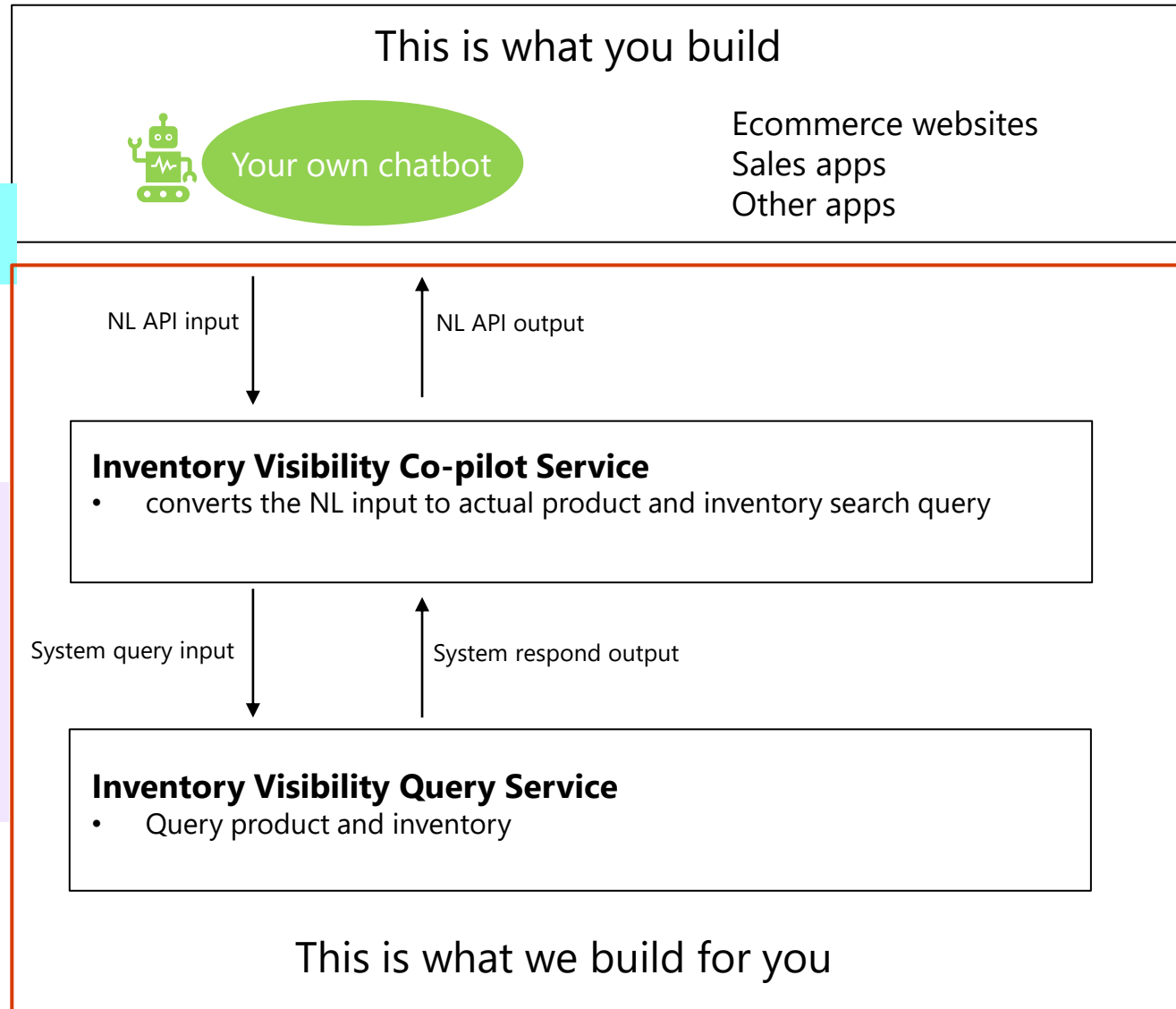
Microsoft's Responsible AI principles



Building blocks to enact principles



Use case: Consume IV Copilot API



'The inventory of product bike, colour black in company USMF, site 1, warehouse 11 is as follows:
Product ID: bike
Site ID: 1
Location ID: 11
Colour: Black
Quantities:
• Inbound: 1200
• Outbound: 0
• Available Quantity: 1200

```
{  
  "dimensionDataSource": "pos",  
  "filters": {  
    "organizationId": "usmf",  
    "productId": "bike",  
    "dimensions": ["siteId", "locationId", "colorId"],  
    "values": [  
      ["1", "11", "black"],  
    ]  
  },  
  "groupByValues": ["colorId", "sizeId"],  
  "returnNegative": true  
}
```

```
{  
  "id": "Test202",  
  "organizationId": "usmf",  
  "productId": "bike",  
  "dimensions": {  
    "siteId": "1",  
    "locationId": "11",  
    "colorId": "Black"  
  },  
  "quantities": {  
    "pos": {  
      "inbound": 1200  
      "Outbound": 0  
      "Available": 1200  
    }  
  }  
}
```

Build your own custom copilot with Copilot Studio

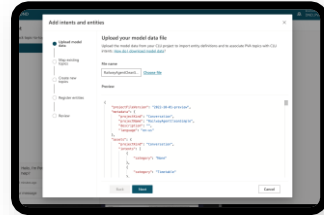
- > Generative conversations
- > Natural language to build
- > Dynamically complete tasks

The screenshot displays the Copilot Studio interface. On the left, a sidebar contains navigation options: Copilots, Overview, Generative AI, Topics & Plugins, Entities, Analytics, Publish, Extend Microsoft Copilot (preview), and Settings. The main area is split into two panes. The left pane, titled 'Test copilot', shows a chat window with a message from the '2024_01_08 Demo Bot' and a response from the AI. The right pane, titled 'Http Request to IV Copilot API', shows a workflow editor with a 'Trigger' (Message received) and an 'HTTP Request' step. The HTTP Request step is configured with the URL 'https://dataverse/api/data/v9.1/iv_plug...', Method 'Post', and 'Record' as the response data type. The 'Save response as' field is set to 'Response record'.

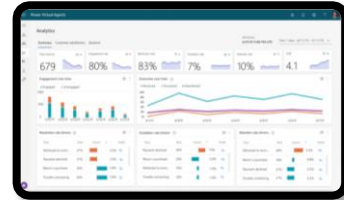
What is Copilot Studio?

Create copilot with E2E SaaS and single pane of glass

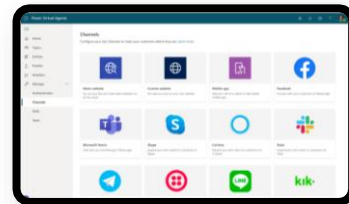
Conversational Services
Integrate with Azure AI Studio,
Azure Cognitive Services, Bot
Framework and more



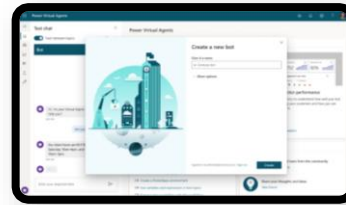
Monitor and Improve
with Rich out-of-the-
box telemetry and
analytics



Publish the copilot to
multiple channels, live
instantly on the SaaS service

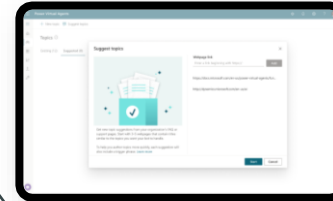


Copilot Studio
Build your own copilots

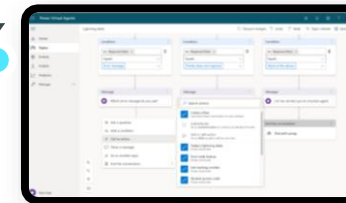


**Chat over knowledge with
Generative AI**

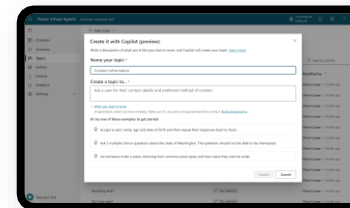
Use generative answers and custom
GPTs to provide enterprise specific
answers over your files, websites,
and internal shares



Create specific topics
Supplement generative answers
with specific, curated topics. Build
them easily with the powerful
graphical studio



Actions & Plugins
Create actions , plugins, or use
pre-built Power Platform and
OpenAI connectors to call your
backends and APIs





Demo

Demo : Sidecar experience

Dynamics 365 | Inventory Visibility

SANDBOX

Try the new look 🔍 💡 + 🏠 ⚙️ ? 🔄 ua

Get Started

Setup your Inventory Visibility and find more resources

Feature Management
Manage feature statuses, setup data sources and configurations 📄 Manage

Index Hierarchy
Configure frequently-used query dimensions for best performances 📄 Manage

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Configure rules to store inventory data under different partitions. Only applicable to environments with no inventory data. 📄 Manage

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Productivity

Teams Collaborati...

Settings

IV Inventory Visibility

Demo : Build custom chatbot in Copilot Studio

The screenshot displays the Power Apps interface. At the top, there is a search bar and a navigation menu on the left. The main area features a large banner with the text "Let's build an app. What should it do?" and four buttons: "Collect RSVPs", "Track sales leads", "List inventory", and "Manage inspections". Below this is a text input field with a placeholder "Use everyday words to describe what your app should collect, track, list, or manage ..." and a submit button. A note below the input field states "This feature uses generative AI. [See terms](#)".

Below the banner, there is a section titled "Other ways to create an app" with three options:

- Start with data**: Create a table, pick an existing one, or even import from Excel to create an app.
- Start with a page design**: Select from a list of different designs and layouts to get your app going.
- Start with an app template**: Select from a list of fully-functional business app templates. Use as-is or customize to suit your needs.

At the bottom, there is a section titled "Your apps" with a table listing existing apps:

Name	Modified	Owner	Type
Inventory Visibility	3 days ago	user01 aurora	Model-driven
Asset Management	4 days ago	App Aurora365	Model-driven
Finance and Operation Package Manager	1 week ago	user01 aurora	Model-driven



Learn more

Product Search Setup

[Set up product search for Inventory Visibility \(preview\) - Supply Chain Management | Dynamics 365 | Microsoft Learn](#)

Product Search Application guide

[Search for products using the Inventory Visibility app \(preview\) - Supply Chain Management | Dynamics 365 | Microsoft Learn](#)

Copilot Application guide

[Inquire into inventory with Copilot \(preview\) - Supply Chain Management | Dynamics 365 | Microsoft Learn](#)

Yammer Group

[\(32\) Viva Engage : Dynamics 365 and Power Platform Preview Programs : D365 SCM Inventory Visibility : All Conversations \(yammer.com\)](#)

Ideas site

[Categories \(dynamics.com\)](#)

FAQ

Q: Is there any additional cost to use Copilot feature and APIs?

A: As long as you have Dynamics 365 SCM license, you can use Copilot in IVS without any additional cost.

Q: Is it possible to extent product search service with some custom fields in the Product Information management from FnO.

A: Not possible at this moment, please consider use config product attributes instead of custom fields. The product attributes will be automatically sync to Product search service.

Q&A

The image features a dark blue background. On the right side, there is a large, light blue circle. In the lower right quadrant, there is a white rounded rectangle. The text 'Q&A' is positioned on the left side of the image.

Thank you

