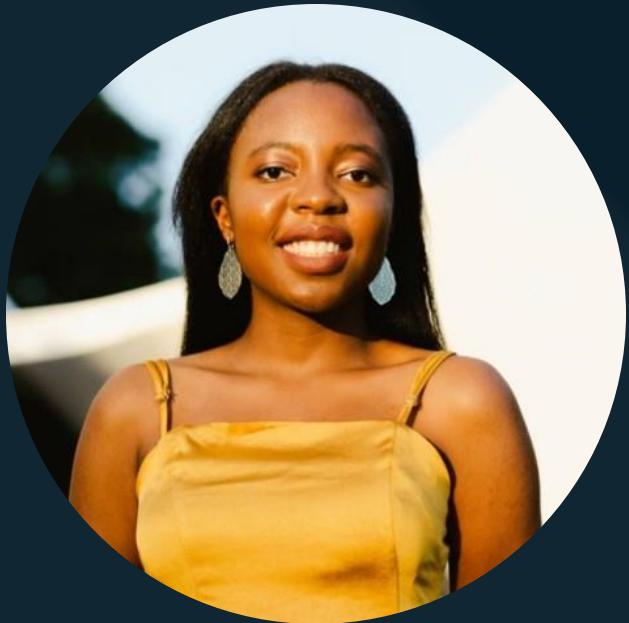




Power CAT AI WEBINARS

Building an AI-ready organization

Meet your hosts



Ashleigh Nyazema
Program Manager
Power CAT



Henry Jammes
Principal PM Manager
Power CAT



Hazim Sharafeldin
Principal Program Manager
Power CAT



Application Lifecycle Management (ALM) with Copilot Studio

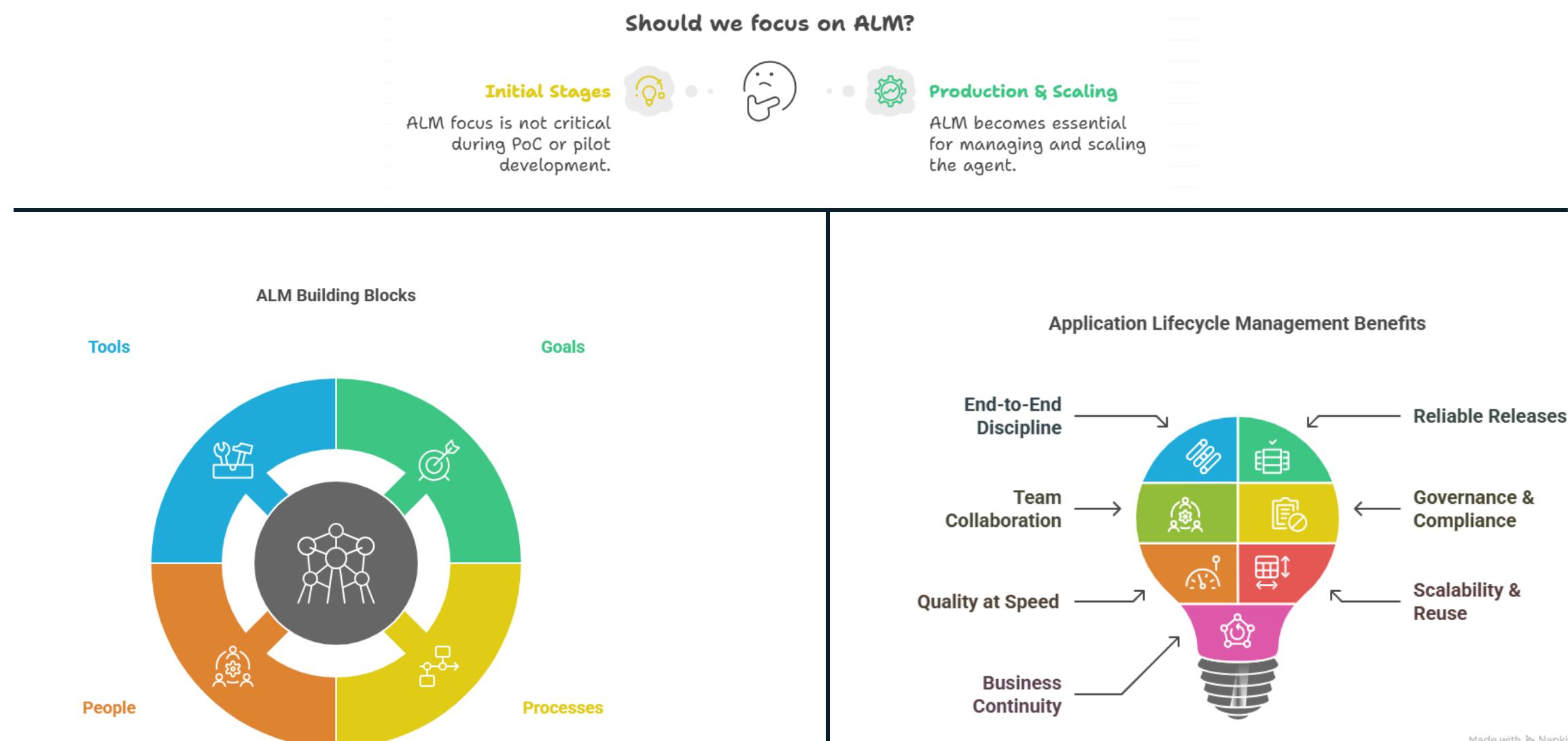


Agenda

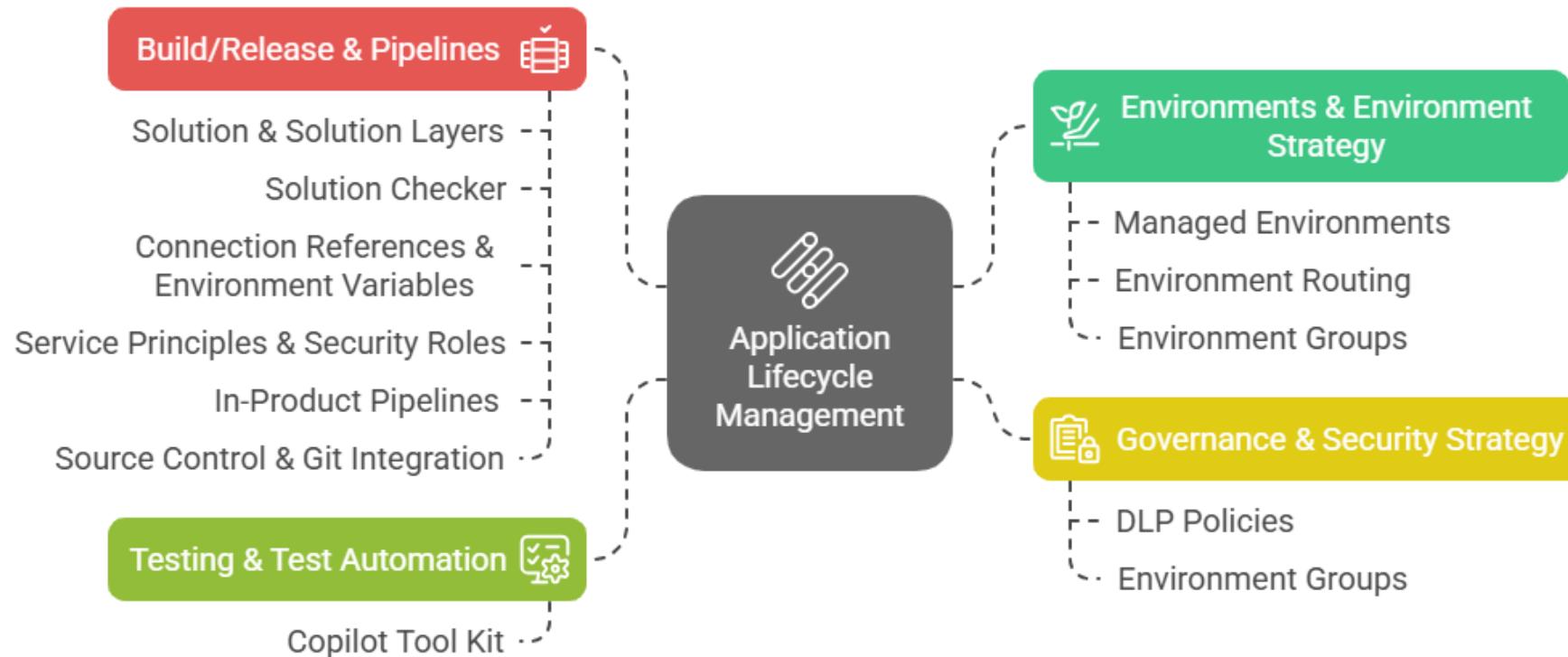
- **Introduction to ALM - What is ALM and why is it important ?**
- **ALM for Copilot Studio – From Basics to Advanced**
- **Wrap-Up**
 - Key takeaways
 - Q&A



What is ALM and Why is it important ?

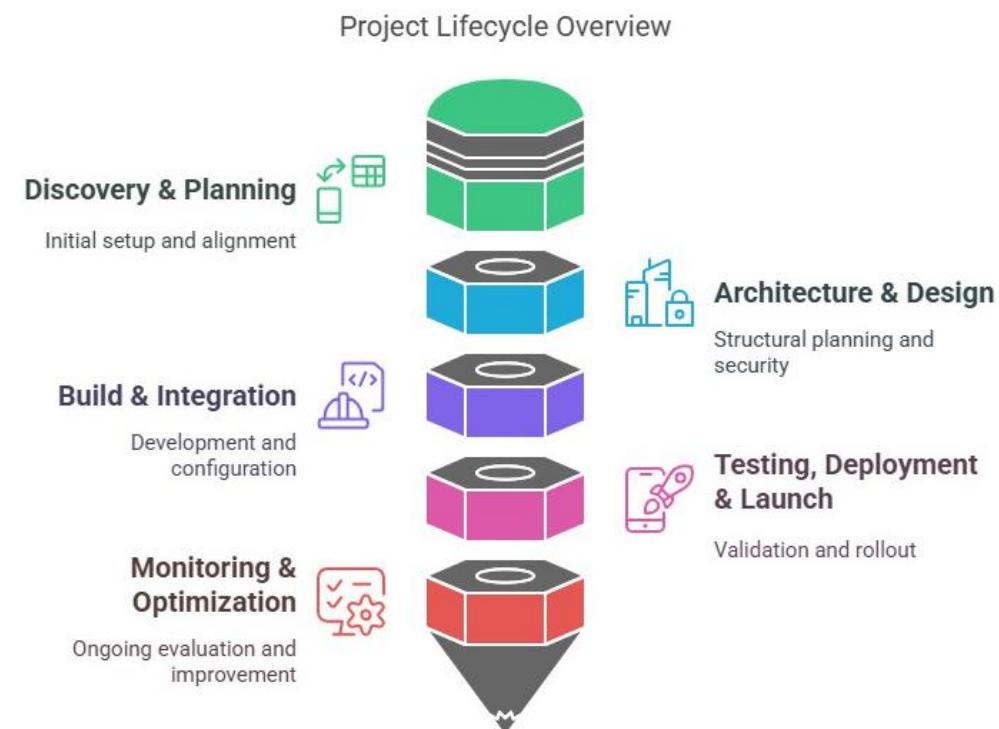


ALM Broader Concepts



Useful Resources

Copilot Studio Governance and security Guide



aka.ms/mcs_sg

ALM With Microsoft Power Platform

Application lifecycle management (ALM) with Microsoft Power Platform
Learn how to implement application lifecycle management (ALM) using Microsoft Power Platform (Power Apps, Power Automate, Microsoft Dataverse, Microsoft Copilot Studio).

About ALM with Power Platform

- OVERVIEW
- What is ALM?
- CONCEPT
- ALM basics with Power Platform
- Environment strategy
- REFERENCE
- Tools and apps used for ALM

Understand and work with solutions

- CONCEPT
- Solution concepts
- Understand solution layers
- Use solutions to customize
- Segment solutions

Implement healthy ALM

- CONCEPT
- Scenario 0: ALM for a new project
- Scenario 1: Citizen development ALM
- Scenario 2: Moving from a single environment
- Scenario 3: Moving from unmanaged to managed solutions
- Scenario 4: Use DevOps for automation
- Scenario 5: Support team development
- Scenario 6: Embrace citizen developers

ALM automation

- OVERVIEW
- Use Power Platform Build Tools for Azure DevOps
- Use GitHub Actions for Power Platform
- Deploy solutions using pipelines
- CoE: Set up ALM Accelerator
- CoE: Use ALM Accelerator

For developers

- CONCEPT
- ALM for developers
- Work with solution components
- Solution and packaging tools
- Manage solutions using custom code

Related docs

- OVERVIEW
- Create apps in Power Apps
- What is Microsoft Dataverse?
- Work with solutions
- Power Platform admin guide
- Power Platform Center of Excellence (CoE) Kit
- Best practices and guidance when using Microsoft Dataverse

aka.ms/powerplatform/alm

How customers use ALM in their projects today

Enterprise customers
like ABN AMRO Bank
use ALM



About ABN AMRO Bank

To ensure dedication and client focus, ABN AMRO is organized into three client units:



Personal & Business Banking

One of the largest retail banks in The Netherlands, with over five million account holders. ABN AMRO also offer banking and payment services to around 350,000 small and medium-sized companies.



Wealth Management

As one of the leading private banks in the Netherlands, Germany, France and Belgium, ABN AMRO offers wealth management clients services ranging from investment advice to asset management and estate planning.



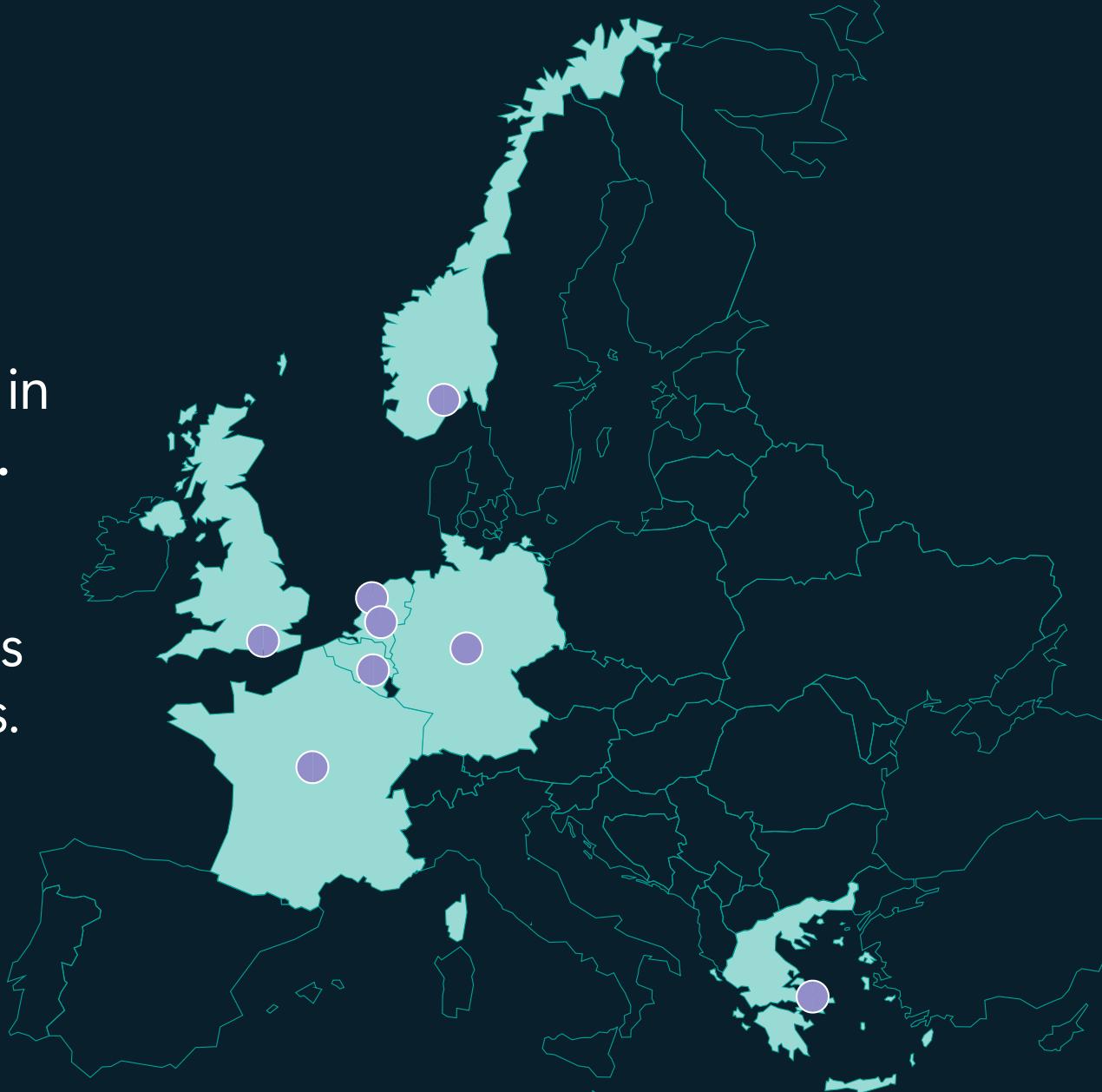
Corporate Banking

ABN AMRO provides banking and advisory products and services to more than 9,000 corporate clients. ABN AMRO is also one of the world's leading clearing banks.

About ABN AMRO Bank

ABN AMRO Bank serves clients primarily in the **Netherlands** and **Northwest Europe**.

Outside Europe, their Clearing operations maintain offices in Asia and the Americas.



Interaction at scale



7.000.000
Inbound calls



1.800.000
Outbound calls



400.000
Live Chats



88.000
Social media
messages



235.000
Conversations
via Video Banking



1.500.000
Automated summaries

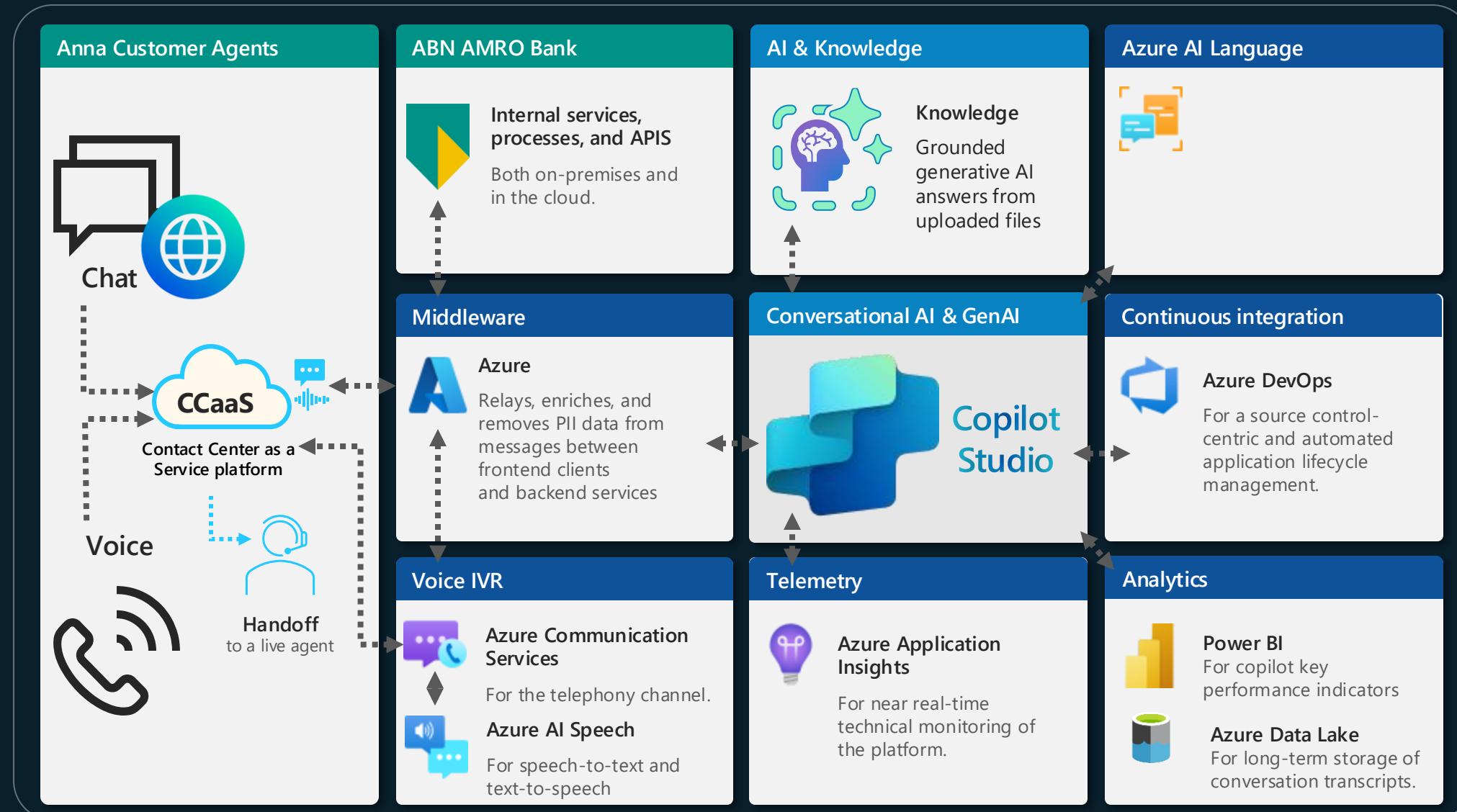


1.500.000
Conversations via IVR



2.000.000
Conversations via
chatbot Anna

Technical overview



ALM for Copilot Studio

Application Lifecycle Management

Example solution configuration

Development

Agent	1.0
▪ Contoso Agent ▪ Agent Components	

Cloud Flows	1.2
▪ ServiceNow Flow ▪ Internal API Flow	

Connectors & Variables	1.3
▪ Connection Reference ▪ Env. Variables ▪ Custom Connector	

Test

Agent	1.0
▪ Contoso Agent ▪ Agent Components	

Cloud Flows	1.1
▪ ServiceNow Flow ▪ Internal API Flow	

Connectors & Variables	1.3
▪ Connection Reference ▪ Env. Variables ▪ Custom Connector	

Q.A.

Agent	1.0
▪ Contoso Agent ▪ Agent Components	

Cloud Flows	1.1
▪ ServiceNow Flow ▪ Internal API Flow	

Connectors & Variables	1.3
▪ Connection Reference ▪ Env. Variables ▪ Custom Connector	

Production

Agent	1.0
▪ Contoso Agent ▪ Agent Components	

Cloud Flows	1.1
▪ ServiceNow Flow ▪ Internal API Flow	

Connectors & Variables	1.2
▪ Connection Reference ▪ Env. Variables ▪ Custom Connector	



Learn from agent usage in production to make improvements in dev for future releases

ALM Golden Rules



- ✓ Work in the context of solutions
- ✓ Create separate solutions only if you need to deploy components independently.
- ✓ Use a custom publisher and prefix.
- ✓ Use environment variables for settings and secrets that change across those.
- ✓ Export and deploy solutions as managed, unless setting up a dev environment.
- ✓ Don't do customizations outside of dev.
- ✓ Consider automating ALM for source control and automated deployments.

What 'Publish' really does in Copilot Studio

Publishing an agent in Copilot Studio and publishing customizations in a solution are not the same thing.

The image shows two screenshots of the Copilot Studio interface. The top screenshot shows the 'Ask Me Anything' page with a 'Publish' button highlighted by a red box. Below it, a large red '≠' symbol points to a text block about publishing agents. The bottom screenshot shows a list view with a 'Publish all customizations' button highlighted by a red box. Below it, another text block describes publishing other Power Platform customizations like Dataverse table changes.

Copilot Studio

Ask Me Anything

Overview Topics Knowledge Actions

Home

Publish

Test

...

≠

Publishes the latest version of the agent to its deployed channels (Web, Teams, etc.)

Copilot Studio

New Add existing

Publish all customizations

Search

Publishes other Power Platform customizations, like Dataverse table changes

Copilot Studio-specific ALM considerations

- There are a few specific settings in Copilot Studio that are not solution-aware.
- That means they don't follow normal solution deployment and require post-deployment steps on the downstream environment.
 - Azure Application Insights settings
 - Manual authentication settings
 - Direct Line / Web channel security settings
 - Deployed channels
 - Sharing (with other makers, or with end-users)

Getting started with solutions

Always start by making sure you work from a solution

Copilot Studio

Environment
Contoso (DEV)



HJ

Home

Create

Agents

Flows

Library

...

Describe your agent to create it

Helpdesk

Expense tracking

HR and benefits

Use everyday words to describe what your agent should do



Features labeled as 'preview' are subject to supplemental terms. [See terms](#).

Explore agents

Managed agents are currently a preview feature. [See terms](#)

[See more](#)



Website Q&A

Agent template

Instantly answer user questions using the content of your website or other knowledge.



Store Operations

Managed agent

Improve the efficiency of retail frontline workers for managing daily activities



Financial Insights

Agent template

Help financial services professionals get quick and concise info from their org's financial documents and other available resources.



Leave Management

Managed agent

Streamline the time-off process for employees with AI-assisted leave requests and policy inquiry answers.



Wellness Check

Managed agent

Conduct automated wellness checks to gauge employee morale and provide insights for a healthier workplace.



Factory Operations (Preview)

Managed agent

Improves factory output by identifying gaps and offering insights about processes and equipment.

Tip: Make sure you don't forget anything

Copilot Studio

Environment
Contoso (DEV)

?

HJ

Ask Me Anything Overview Topics Knowledge Actions Activity Analytics Channels Publish Settings ... Test

Your agent is ready! Here's what's next:

- Add actions so your agent can do things for you
- Add trigger so your agent can be activated by an event
- Publish your agent so others can use it

Details

Name: Ask Me Anything

Description: None provided

General instructions: None provided

Orchestration: Use generative AI to determine how best to respond to users and events. [Learn more](#) Enabled

Topics

Add conversation topics to focus and guide the way your agent answers.

+ Add topic

Home

Create

Agents

Flows

Library

...

Manual deployments

Manual exports/imports between environments

Copilot Studio

Environment
Contoso (DEV)

HJ

Objects <

+ New Add existing Publish all customizations

Search

Ask Me Anything > All

	Display name ↑ ↓	Name ↓	Type ↓	Managed ↓	Customized ↓	Last Modif... ↓	Owner ↓	Status
Ask Me Anything	Ask Me Anything	Agent	No	Yes	19 minutes ago	Henry Jammes	-	
Conversation Start	Conversation Start	Topic	No	Yes	19 minutes ago	Henry Jammes	-	
Conversational boosting	Conversational b...	Topic	No	Yes	19 minutes ago	Henry Jammes	-	
End of Conversation	End of Conversat...	Topic	No	Yes	19 minutes ago	Henry Jammes	-	
Escalate	Escalate	Topic	No	Yes	19 minutes ago	Henry Jammes	-	
Fallback	Fallback	Topic	No	Yes	19 minutes ago	Henry Jammes	-	
Goodbye	Goodbye	Topic	No	Yes	19 minutes ago	Henry Jammes	-	
Greeting	Greeting	Topic	No	Yes	19 minutes ago	Henry Jammes	-	
https://learn.microsoft.com	https://learn.micr...	Knowledge	No	Yes	3 minutes ago	Henry Jammes	-	
Multiple Topics Matched	Multiple Topics ...	Topic	No	Yes	19 minutes ago	Henry Jammes	-	
On Error	On Error	Topic	No	Yes	19 minutes ago	Henry Jammes	-	
Reset Conversation	Reset Conversati...	Topic	No	Yes	19 minutes ago	Henry Jammes	-	
Sign in	Sign in	Topic	No	Yes	19 minutes ago	Henry Jammes	-	

Because your agent is managed, you can't make changes

Copilot Studio Environment Contoso (TEST) HJ

Ask Me Anything Overview Topics Knowledge Actions Activity Analytics Channels Published 5/7/2025 Publish Settings ... Test

Your agent is ready! Here's what's next:

- Add actions so your agent can do things for you
- Add trigger so your agent can be activated by an event
- Publish your agent so others can use it

Details

Name: Ask Me Anything

Description: None provided

General instructions: None provided

Analytics

Total sessions: 0 Engagement: 0% Satisfaction score: --

Test your agent

Hello, I'm Ask Me Anything, a virtual assistant. Just so you are aware, I sometimes use AI to answer your questions. If you provided a website during creation, try asking me about it! Next try giving me some more knowledge by setting up generative AI.

Just now

Ask a question or describe what you need
0/2000

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

Making your agent ALM-ready

Add environment variables and connection references

Copilot Studio Environment Contoso (DEV) HJ ?

Objects < + New Add existing Publish all customizations ... Search

Ask Me Anything > All

	Display name ↑ ↓	Name ↓	Type ↓	Managed ↓	Customized ↓	Last Modif... ↓	Owner ↓	Status
Ask Me Anything	Ask Me Anything	Agent	No	Yes	36 minutes ago	Henry Jammes	-	
Conversation Start	Conversation Start	Topic	No	Yes	37 minutes ago	Henry Jammes	-	
Conversational boosting	Conversational b...	Topic	No	Yes	37 minutes ago	Henry Jammes	-	
End of Conversation	End of Conversat...	Topic	No	Yes	37 minutes ago	Henry Jammes	-	
Escalate	Escalate	Topic	No	Yes	37 minutes ago	Henry Jammes	-	
Fallback	Fallback	Topic	No	Yes	37 minutes ago	Henry Jammes	-	
Goodbye	Goodbye	Topic	No	Yes	37 minutes ago	Henry Jammes	-	
Greeting	Greeting	Topic	No	Yes	37 minutes ago	Henry Jammes	-	
https://learn.microsoft.com	https://learn.micr...	Knowledge	No	Yes	20 minutes ago	Henry Jammes	-	
Multiple Topics Matched	Multiple Topics ...	Topic	No	Yes	37 minutes ago	Henry Jammes	-	
On Error	On Error	Topic	No	Yes	37 minutes ago	Henry Jammes	-	
Reset Conversation	Reset Conversati...	Topic	No	Yes	37 minutes ago	Henry Jammes	-	
Sign in	Sign in	Topic	No	Yes	37 minutes ago	Henry Jammes	-	

Use them in your agent

The screenshot shows the Copilot Studio interface with the following elements:

- Top Bar:** Includes the Copilot Studio logo, environment name "Environment Contoso (DEV)", settings, help, and user profile ("HJ").
- Sidebar:** Navigation icons for Home, Create, Agents, Flows, Library, and more.
- Header:** "Ask Me Anything" section with tabs: Overview, Topics (selected), Knowledge, Actions, Activity, Analytics, Channels. Includes "Publish", "Settings", and "Test" buttons.
- Topics List:** A table showing four custom topics:

Name	Type	Trigger	Last modified	Editing	Errors	Enabled
Goodbye	Topic	By agent	Henry Jammes 40 minu...	<input checked="" type="button"/>	On	
Greeting	Topic	By agent	Henry Jammes 40 minu...	<input checked="" type="button"/>	On	
Start Over	Topic	By agent	Henry Jammes 40 minu...	<input checked="" type="button"/>	On	
Thank you	Topic	By agent	Henry Jammes 40 minu...	<input checked="" type="button"/>	On	
- Test Your Agent:** A sidebar showing an AI-generated response:

Hello, I'm Ask Me Anything, a virtual assistant. Just so you are aware, I sometimes use AI to answer your questions. If you provided a website during creation, try asking me about it! Next try giving me some more knowledge by setting up generative AI.

Just now

Ask a question or describe what you need

0/2000
- Bottom Footer:** A note: "Make sure AI-generated content is accurate and appropriate before using. [See terms](#)".

**Use pipelines in Power Platform to automate
deployments**

Easy automation using pipelines in Power Platform

The screenshot shows the Copilot Studio interface with the 'Objects' section selected in the left sidebar. The main area displays a list of objects under the 'Ask Me Anything > All' category. The list includes various components such as Agent components, Agents, Apps, Cards, Cloud flows, Connection references, Data Workspace, Environment variables, and Tables. The 'Display name' column is sorted in ascending order. The table has columns for Display name, Name, Type, Managed, Customized, Last Modified, and Owner.

	Display name ↑	Name	Type	Managed	Customized	Last Modif...	Owner
[AMA] Cat Fact URL	con_AMACatFact...	Environment Vari...	No	No	10 minutes ago	Henry Jammes	
[AMA] MSN Weather	con_AMAMSNW...	Connection Refe...	No	Yes	9 minutes ago	Henry Jammes	
Ask Me Anything	Ask Me Anything	Agent	No	Yes	48 minutes ago	Henry Jammes	
Cat Fact	Cat Fact	Topic	No	Yes	6 minutes ago	Henry Jammes	
Conversation Start	Conversation Start	Topic	No	Yes	48 minutes ago	Henry Jammes	
Conversational boosti...	Conversational b...	Topic	No	Yes	48 minutes ago	Henry Jammes	
End of Conversation	End of Conversat...	Topic	No	Yes	48 minutes ago	Henry Jammes	
Escalate	Escalate	Topic	No	Yes	48 minutes ago	Henry Jammes	
Fallback	Fallback	Topic	No	Yes	48 minutes ago	Henry Jammes	
Goodbye	Goodbye	Topic	No	Yes	48 minutes ago	Henry Jammes	
Greeting	Greeting	Topic	No	Yes	48 minutes ago	Henry Jammes	
https://learn.microsoft...	https://learn.micr...	Knowledge	No	Yes	32 minutes ago	Henry Jammes	
MSN Weather - Get fo...	MSN Weather -	Topic	No	Yes	2 minutes ago	Henry Jammes	

Easy source control your changes in Azure DevOps

Simple source control with Git integration

Azure DevOps CopilotStudioTraining / Agents / Overview / Summary

Search

☰ ☰ ? ⚙ HJ

A Agents +

Agents

Private Invite

Overview

Summary

Dashboards

Wiki

Boards

Repos

Pipelines

Test Plans

Artifacts

About this project

Help others to get on board!

Describe your project and make it easier for other people to understand it.

+ Add Project Description



Project stats

Period: Last 7 days

Repos

0 Pull requests opened

3 Commits by 1 authors

Members 1

HJ

Project settings

Advanced source control and CI/CD with Azure DevOps

Advanced CI/CD with Azure DevOps

Azure DevOps PVACAT / MCS ALM Demo / Pipelines

The team project PVA ALM Demo has been renamed to MCS ALM Demo

Pipelines

New pipeline

Recent All Runs

All pipelines

New folder

Name	Star
Export, unpack, and commit DEV #1.0.0.52 • Merged PR 40: MyChatbot updates	★
Pack & deploy to PROD #115 • Merged PR 40: MyChatbot updates	★
Simple DEV to PROD #1.0.0.4 • Merged PR 6: PVAJobsAzureDevOps solution changes.	

Project settings

Automated testing with Copilot Studio Kit

Copilot Studio Kit

The **Copilot Studio Kit** is a comprehensive set of capabilities built for [Microsoft Copilot Studio](#). The kit includes features such as

 **Conversation KPIs** – Gain deeper insights into long-term agent performance with structured analytics.

 **Test Automation** – Batch test custom agents with multiple validation methods.

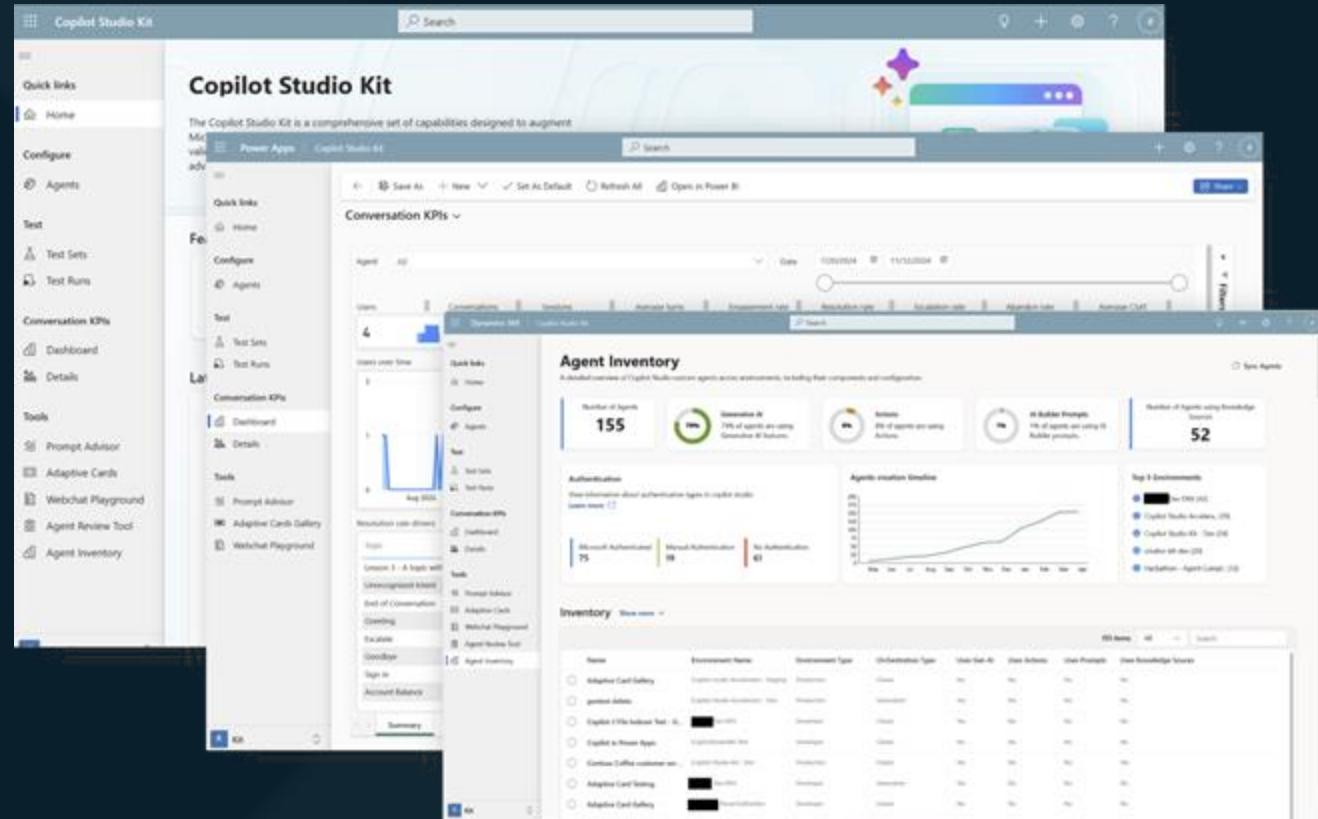
 **Agent Inventory** – Get tenant-wide visibility to all the Copilot Studio custom agents in the organization, across environments.

 **Agent Review Tool** - Static analysis of copilot studio agents from solution. Detecting anti-patterns and suggesting mitigation.

 **SharePoint Synchronization** - Selectively synchronize knowledge from a SharePoint site as local knowledge of your custom agent.

 **Webchat Playground** – Customize the look and feel of your webchat with an easy-to-use interface.

 **Adaptive Cards Gallery** – Access a set of pre-built Adaptive Card templates for custom agents



- <https://aka.ms/DownloadCopilotStudioKit> (AppSource)
- <https://aka.ms/CopilotStudioKit> (GitHub + Docs)



Automated testing with the Copilot Studio Kit

Copilot Studio

Environment Copilot Studio Accelerator... ? HJ

Home Create Agents Flows Library ...

Microsoft Learn Agent Overview Knowledge Topics Actions Activity Analytics Channels Published 5/7/2025 Publish Settings ...

Details Edit

Name Microsoft Learn Agent

Description None provided

General instructions None provided

Orchestration Use generative AI to determine how best to respond to users and events. [Learn more](#) Enabled

Analytics Open Analytics

Total sessions ① 0 Engagement ① 0% Satisfaction score ① --

Topics Add topic

Add conversation topics to focus and guide the way your agent answers.

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

Test your agent

Hello, I'm Microsoft Learn Agent, a virtual assistant. Just so you are aware, I sometimes use AI to answer your questions. If you provided a website during creation, try asking me about it! Next try giving me some more knowledge by setting up generative AI.

Just now

Ask a question or describe what you need 0/2000

Create test sets

Dynamics 365 | Copilot Studio Kit

Search

Show As | Show Chart | New | Delete | Refresh | Export to Excel | Import from Excel | Share

My Agent Configurations

Name	Configuration Type(s)	Owner	Created On
Microsoft Learn Agent	Test Automation	Henry Jammes (Offline)	5/7/2025 3:10 PM

Quick links

- Home
- Setup Wizard

Configure

- Agents

Test

- Test Sets
- Test Runs

Conversation KPIs

- Dashboard
- Details

Tools

- Prompt Advisor
- Adaptive Cards
- Webchat Playgrou...

Kit

Run tests

Dynamics 365 | Copilot Studio Kit

Search

Show As | Show Chart | New | Delete | Refresh | Export to Excel | Import from Excel | Share

My Test Sets

Name	Owner	Created On
Microsoft Learn Agent	# Henry Jammes (Offline)	5/7/2025 3:11 PM

Test Sets

Test Runs

Conversation KPIs

Dashboard

Details

Prompt Advisor

Adaptive Cards

Webchat Playgrou...

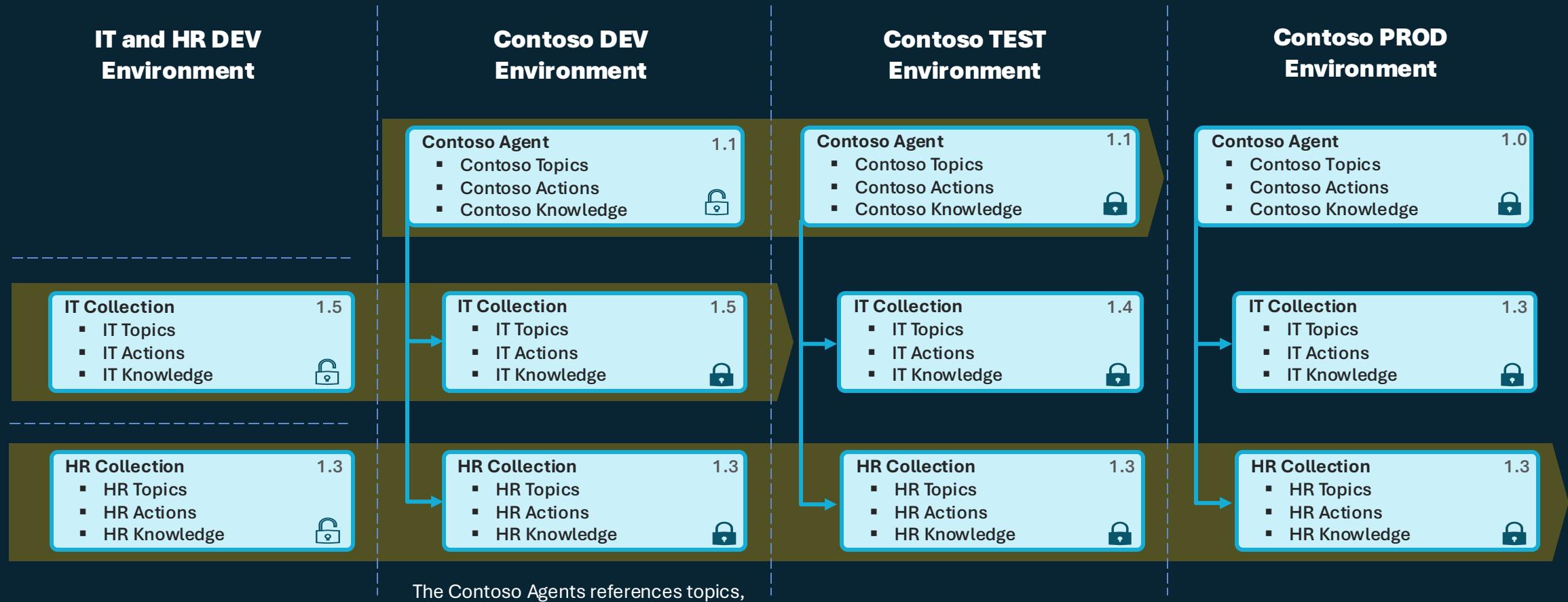
Kit

Rows: 1

Create re-usable assets across agents and environments so that multiple dev teams can work on different parts of an agent

Component collections

Example solution and component collection configuration



Multi-dev collaboration with component collections

Copilot Studio

Environment
Contoso (DEV)

New solution Import solution Open AppSource Publish all customizations Set preferred solution See history Connect to Git

Search

Solutions

Current preferred solution Ask Me Anything Manage

Unmanaged Managed All

Display name ▾	Name ▾	Created ↓ ▾	Version ▾	Publisher ▾	Solution check	Source control status
Ask Me Anything <small>Preferred solution</small>	AskMeAnything	1 hour ago	1.0.0.2	Contoso	Hasn't been run	Connected to Git
Common Data Services Default Solution	Cr59fbf	3 weeks ago	1.0.0.0	CDS Default Publis...	Hasn't been run	Unsupported item
Default Solution	Default	3 weeks ago	1.0	Default Publisher f...	Not supported for analy...	Unsupported item

Multi-dev collaboration with component collections

Copilot Studio

Environment
Contoso (DEV)

HJ

Home

Create

Agents

Flows

Library

...

← Library > HR Tools

Details

Name: HR Tools

Description: HR topics, knowledge, and actions

[View Solution \(HR Components\)](#)

Edit

Installed on

No connected agents

Add agent

Collection must be tested with a copilot *

Select a copilot

Select a copilot to test your component collection



Add components

Component collections can be used by multiple agents

+ Add

Thank you for participating!

