

Microsoft Power Virtual Agents in a Day

Speaker Name

Please share your feedback
aka.ms/PVAiaDSurvey

Agenda

Module	ID	Name	Length
Overview & Setup	1	Introductions	20 minutes
Module 1 Power Virtual Agents	2	Build your first chatbot	30 minutes
	3	Create topics from existing webpages	15 minutes
	4	Improve your chatbot using entities, variables and topic redirects	40 minutes
	5	Integrate with prebuilt Power Automate flows	40 minutes
	6	Build Power Automate flows for your chatbot	35 minutes
	7	Authentication	40 minutes
Module 2 Power Automate & other integrations	8	Hand off to support agent– no lab	5 minutes
	9	Exporting and importing a chatbot	30 minutes
	10	Create a chatbot in Microsoft Teams Control who in the organization can chat with the bot Power Virtual Agents Licensing and Subscriptions	60 minutes
Module 4 Optimization	11	Chatbot topic design	20 minutes
	12	Best practices for writing topic trigger phrases – no lab	20 minutes
	13	Chatbot conversation style– no lab	20 minutes
	14	Analytics, monitoring and chatbot performance improvement– no lab	10 minutes
Module 5 Extending Power Virtual Agents (Optional)	15	Advanced Authoring with PVA and Bot Framework Composer	25 minutes
	16	Add a telephone number to your bot using AudioCodes	20 minutes
	17	Closing	10 minutes

Introductions (Instructor)

Introductions (Participants)

- What's your name?
- Which company/group do you represent?
- Which city/country do you live in?
- What is your role?
- What are your expectations from this training?





POWER VIRTUAL AGENTS

Intelligent Chatbots

Respond rapidly to your customer and employee needs—at scale—using **conversational chatbots built with Power Virtual Agents.** No coding required.

Microsoft Power Platform

The low-code platform that spans Office 365, Azure, Dynamics 365, and standalone applications
Innovation anywhere. Unlocks value everywhere.



Power BI
Business analytics



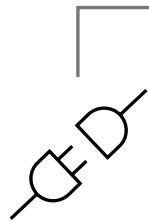
Power Apps
Application development



Power Automate
Process automation



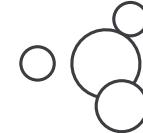
Power Virtual Agents
Intelligent chatbots



Data
connectors



Portals

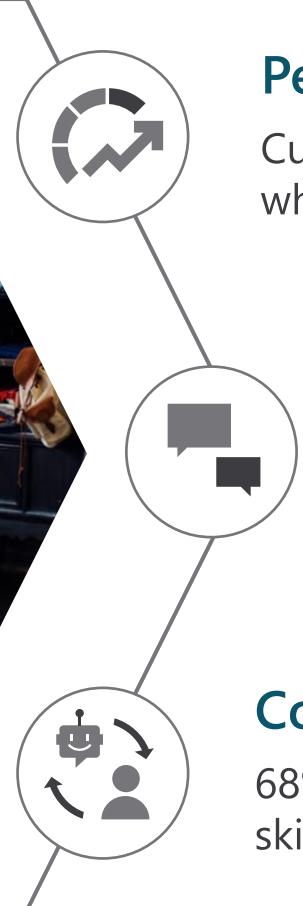


AI Builder



Microsoft Dataverse

The conversational bot opportunity



Personal and quick responses

Customers want both a personalized and fast experience when interacting with their favorite brands.¹

Strong demand for chatbots

Conversational AI is an integral part of every industry, projected to reach US\$15.7 billion market by 2024.²

Companies face an AI skills gap

68% of executives report experiencing a “moderate-to-extreme” skills gap as a barrier to reaching their AI aspirations.³

1 Dimension Data: 2017 Global Customer Experience Benchmarking Report

2 [Conversational AI makes its business case](#), Deloitte, 20 September 2019

3 Susanne Hupfer, [Talent and workforce effects in the age of AI](#), Deloitte, March 2020

Challenges to a strong customer experience



Convey
consistent
messaging

Standardized
answers and
documentation



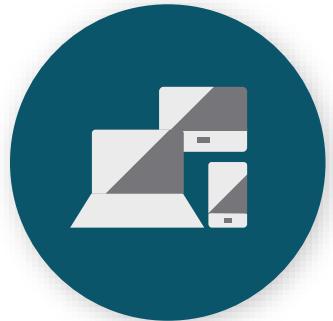
Growing number
of communication
channels

Integrate PVA across
all your
communication
channels



Fast response
time fulfilling
requests

Answer common
inquiries quickly and
at scale. Unanswered
questions sent to live
agents.



Shortage
of technical
skills

Any user can create
Power Virtual Agents



Time, resource,
and budget
constraints

No need to manage
complex infrastructure
or application life
cycle management

Build bots for every business scenario

Core opportunities

Engage in seamless conversations with users

Increase customer service and HR efficiencies

Deploy anywhere

Business to customer

Address core business requests

Rapidly respond to changing environments

Provide a seamless customer experience

Business to employee

Streamline processes with HR and FAQ bots

Help employees navigate knowledge libraries

Empower employees with digital assistants

Why Power Virtual Agents?

The chatbot service that enhances everyone's experience

Usability



Productivity



Extensibility



Scalability



Why Power Virtual Agents?

The chatbot service that enhances everyone's experience

Usability



- No-code graphical builder
- Natural language capabilities
- Reuse existing content
- Deploy to multiple channels

Productivity



Extensibility



Scalability



Why Power Virtual Agents?

The chatbot service that enhances everyone's experience

Productivity



- Self learning
- Easily improve bot performance
- Know what to build next
- Chatbots in Microsoft Teams

Usability



Extensibility



Scalability



Why Power Virtual Agents?

The chatbot service that enhances everyone's experience

Extensibility



- Pre-built connectors
- Power Platform integration
- Pro-dev extensibility
- Hand-off to Dynamics 365

Usability



Productivity



Scalability



Why Power Virtual Agents?

The chatbot service that enhances everyone's experience

Scalability



- Software as a service offering
- Support complex scenarios
- Reusable skills

Usability



Productivity



Extensibility



Empower everyone with
Power Virtual Agents



CITIZEN DEVELOPER



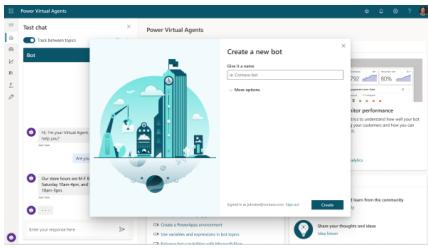
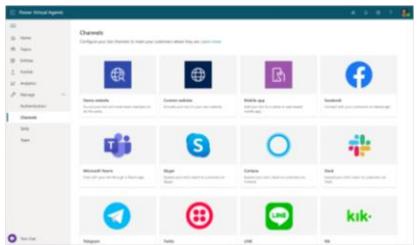
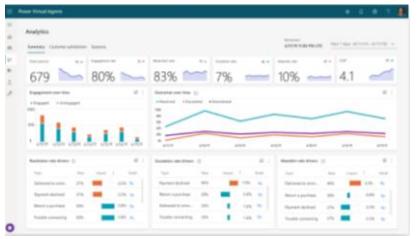
SUBJECT MATTER EXPERT



PROFESSIONAL DEVELOPER



Power Virtual Agents Lifecycle



Create Bot using simple, graphical interface

Monitor Bot performance and improve

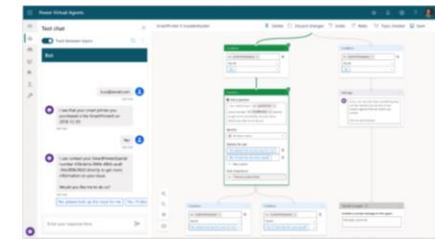
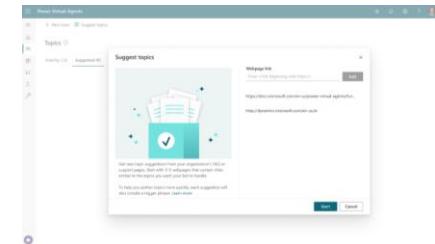
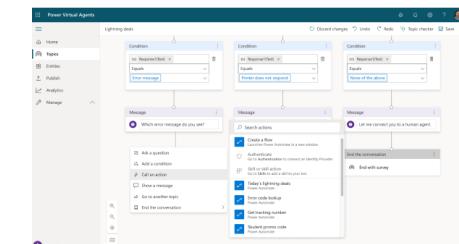
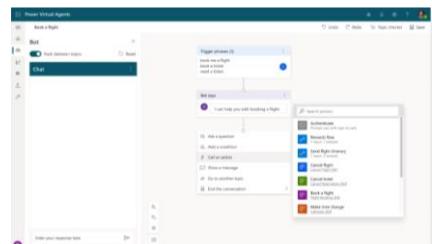
Public Bot to BF channels

Extend Bot with BF Skills for complex scenarios

Get starter topics to build upon (from FAQs, sites, etc)

Author topics with NL, slot extraction, variables, etc

Integrate Bot with backend APIs using MS Flow





Power Virtual Agents

Power Platform

The full power of our low code platform optimized for business users. Use 100s of pre-built connectors or use Flows to call custom APIs

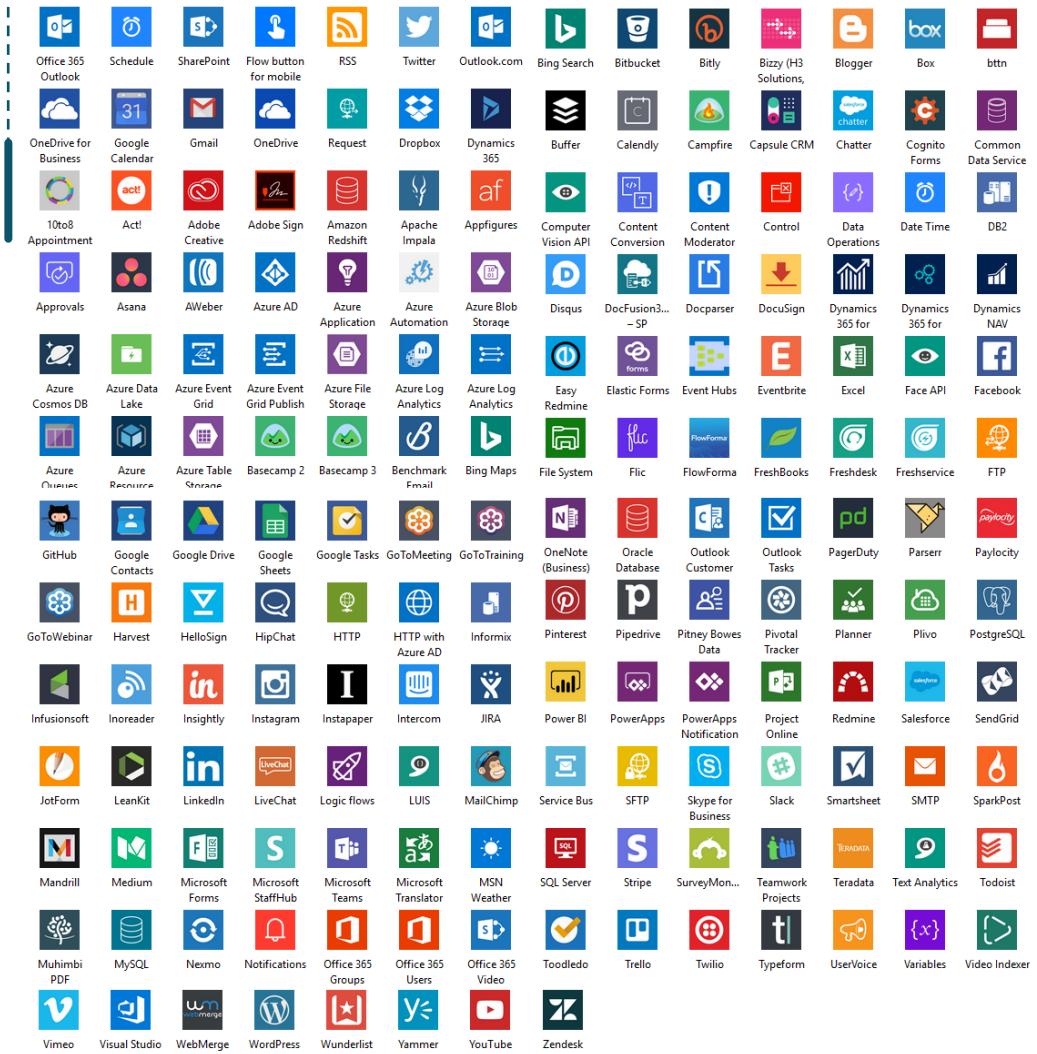
Bot Framework

Easy, no-cliff access to all the capabilities of Microsoft Bot Framework

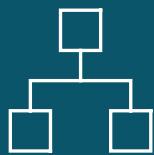
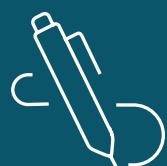
Azure & Cognitive Services

Integrated with Azure Cognitive Services

Built on Power Platform & Bot Framework



SECTION SUMMARY



Power Virtual Agents helps support industry trends

Engage
Naturally

Democratize
AI

Continuously
Enhance

Take Action

Designed for Multiple Personas

Customer Focused, Connected, Extensible

**Developed on the
Microsoft Bot Framework**



Customer Stories



TruGreen's new take on technology—a catalyst for greener lawns and happier customers



"I knew that we had to tie together the entire customer journey, and up until then, I was concerned about the time, costs, and complexity involved. But seeing Power Virtual Agents in action, I had one of those 'Aha!' moments. It put all those concerns to rest."

Ayman Taha
Chief Information Officer
TruGreen



Talk to the bot: City of Ottawa helps employees navigate the pandemic with Power Virtual Agents



"Power Virtual Agents is very straightforward and incredibly powerful. And the turnaround to make things happen is exponentially better than anything else we've seen."

Jeffery Kozera
Senior Automation Developer and Integrator
City of Ottawa



The Miami Dolphins give fans the information they want when they want it with Power Virtual Agents



"We love that Power Virtual Agents doesn't require a developer to add and update content. Our IT team put the framework in place, but from then on, employees from each part of the business can continually decide how the bot should answer questions related to their function."

Kim Romero
Vice President and Chief Information Officer
Miami Dolphins and Hard Rock Stadium

Build your first chatbot

PVA Information Architecture

Microsoft Dataverse Environment

PVA BOT (0, 1 or more bots in an environment)

User Topics (1 or more in a bot)

Conversation Tree (1 per topic)

Trigger Phrases

Prebuilt Entities

Custom Entities

Power Automate Flows

Bot Framework Skills

System Topics (8 pre-defined in a bot)

Conversation tree

Trigger Phrases
(read only in system Topics)

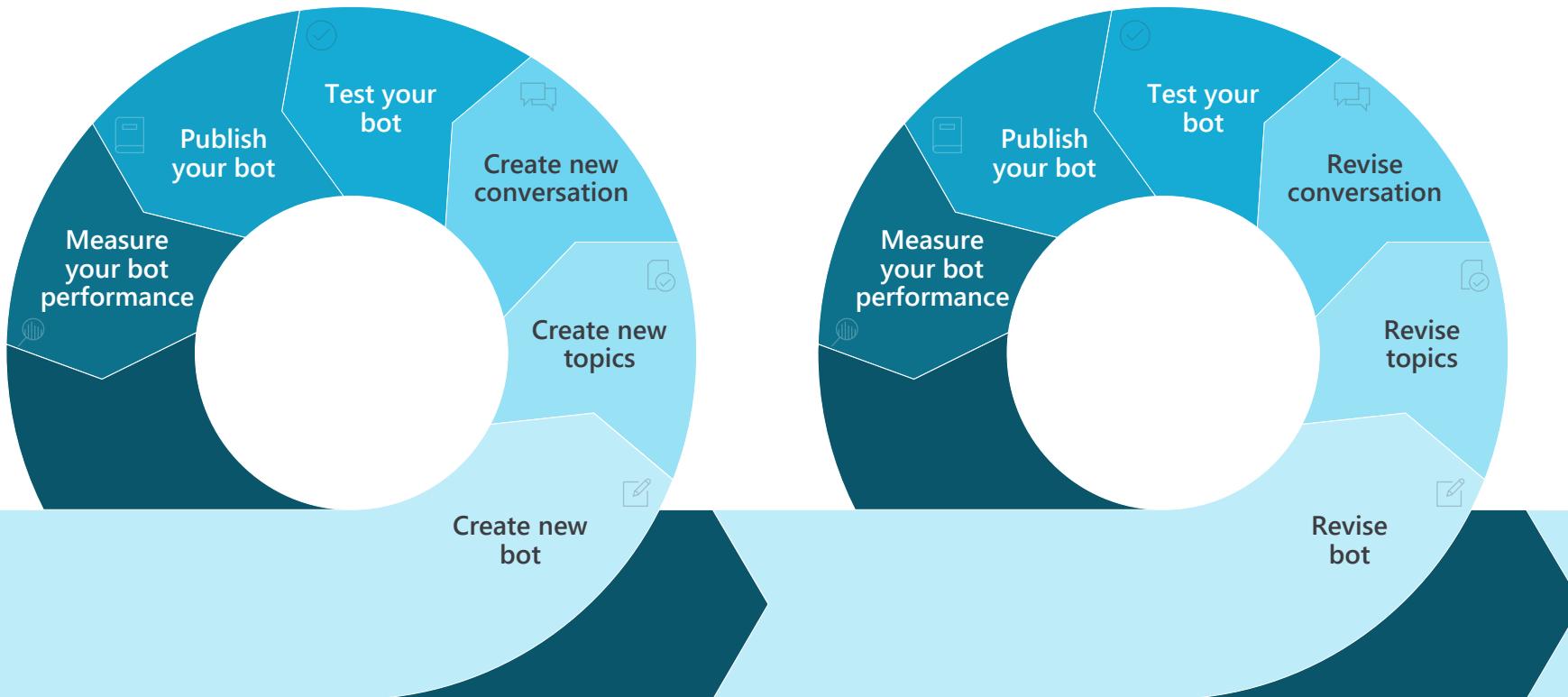
Prebuilt Entities

Custom Entities

Power Automate Flows

Bot Framework Skills

Chatbot Creation Process overview



Create a new chatbot



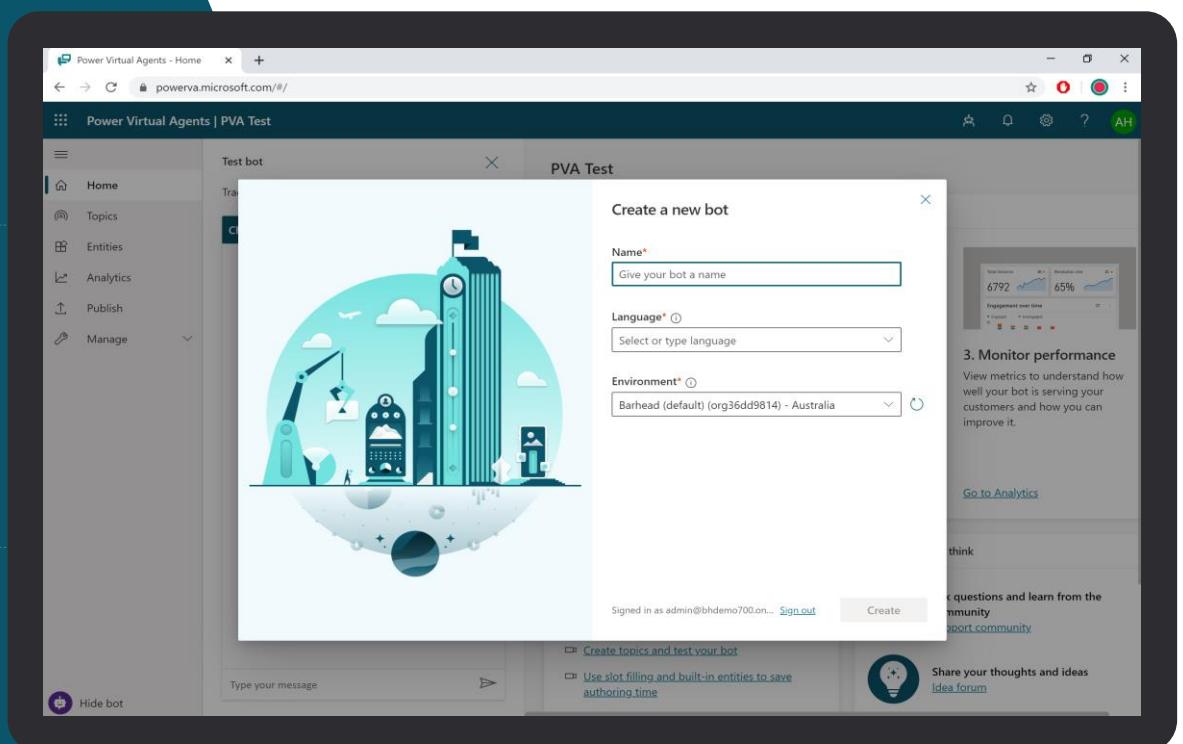
Open the Power Virtual Agents designer



Power Virtual Agents



Select 'new bot'



Supported Languages



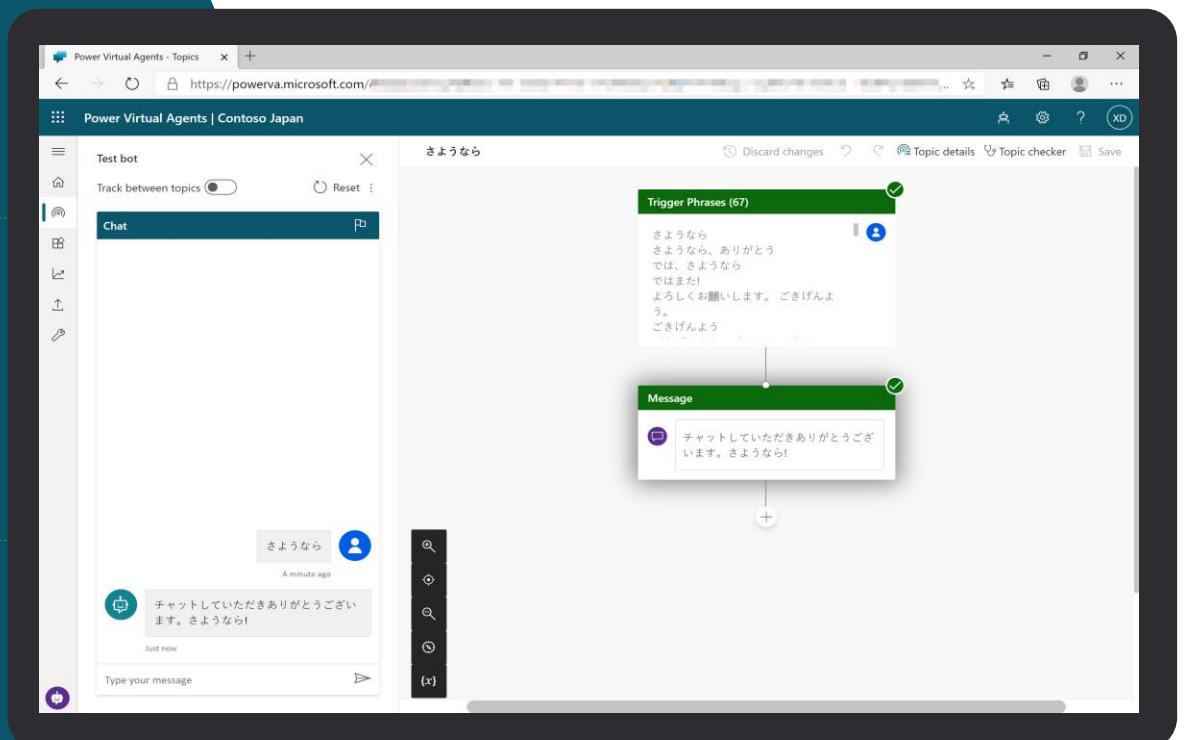
Create chatbots in many different languages



Choose your language when you create your bot



Each bot speaks one language



View topics

A chatbot comes with 4 User topics & 8 system topics

Using one of the 4 topics to get familiar with the structure

The screenshot shows the 'Topics' page in the Power Virtual Agents Preview interface. The left sidebar includes options for Home, Topics (selected), Entities, Analytics, Publish, and Manage. The main content area displays a table of topics under the heading 'Topics'. The table has columns for Name, Trigger phrases, Status, Errors, and Modified. It is divided into two sections: 'Existing (12)' and 'Suggested (0)'. The 'Existing' section contains four entries under 'User Topics (4)': 'Lesson 1 - A simple topic', 'Lesson 2 - A simple topic with a condition and variable', 'Lesson 3 - A topic with conditions, variables and a pre-built en...', and 'Lesson 4 - A topic with conditions, variables and custom entity...'. Each entry has a status switch set to 'On' and a modified date of '1/15/18, 2:31 PM'. The 'System Topics (8)' section lists eight system topics: Greeting, Escalate, End of Conversation, Confirmed Success, Confirmed Failure, Goodbye, Start over, and Thank you. Each system topic has a status switch set to 'On' and a modified date of '1/15/18, 12:00 AM'.

Name	Trigger phrases	Status	Errors	Modified
Lesson 1 - A simple topic	(4) When are you closed?	On		1/15/18, 2:31 PM
Lesson 2 - A simple topic with a condition and variable	(5) Are there any stores around the area	On		1/15/18, 2:31 PM
Lesson 3 - A topic with conditions, variables and a pre-built en...	(3) Buy items	On		1/15/18, 2:31 PM
Lesson 4 - A topic with conditions, variables and custom entity...	(3) What is the best product for me	On		1/15/18, 2:31 PM
Greeting	(5) Good afternoon	On		1/15/18, 12:00 AM
Escalate	(8) Talk to agent	On		1/15/18, 12:00 AM
End of Conversation	No trigger phrases	On		1/15/18, 12:00 AM
Confirmed Success	No trigger phrases	On		1/15/18, 12:00 AM
Confirmed Failure	No trigger phrases	On		1/15/18, 12:00 AM
Goodbye	(8) Bye	On		1/15/18, 12:00 AM
Start over	(3) start over	On		1/15/18, 12:00 AM
Thank you	(4) thanks	On		1/15/18, 12:00 AM

Add conversational trigger phrases



For a topic you'll define a few trigger phrases



A trigger phrase is a way to describe an intent, it captures the way a customer might ask about a problem/issue.
E.g., "problem with weeds in lawn"



You only need to provide a few sample phrases – the AI will parse whatever the user says and trigger the topic closest in meaning to the user utterance

The screenshot shows the Microsoft Power Virtual Agents Preview interface. The main area displays a 'Test bot' window titled 'Chat'. To the right, under the heading 'Issue with your lawn', there's a 'Setup' tab selected. In the 'Trigger phrases' section, there are seven entries listed:

- Name: Issue with your lawn
- Description: Enter a description
- lawn issues
- lawn issue
- brown yard
- terrible back yard
- issue with front yard
- issue with grass
- I have an issue with my lawn

On the far left, a sidebar lists navigation options: Home, Topics (which is currently selected), Entities, Analytics, Publish, and Manage. On the far right, there's a sidebar with status information: Modified 11/2/19, 2:00 PM, and Status -.

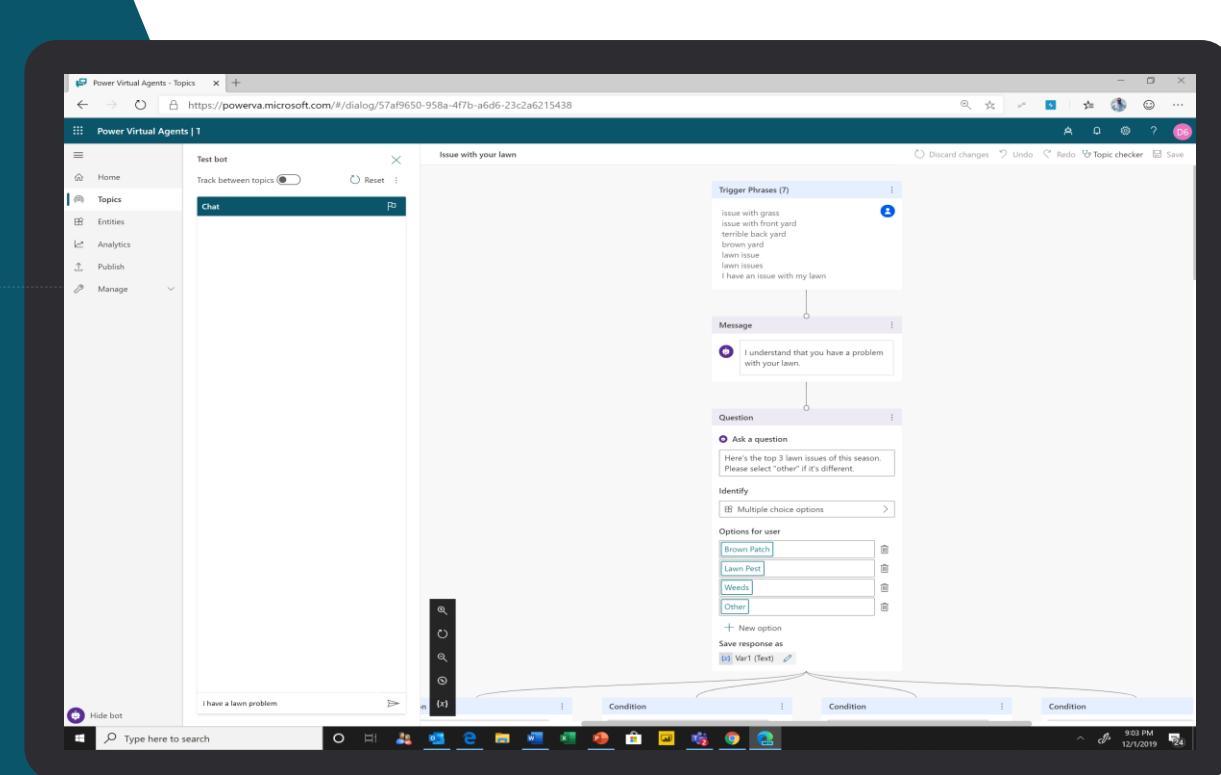
Open the authoring canvas and begin editing a topic



Open authoring canvas to view the conversation tree



You'll see the trigger phrases at the top. You can edit the conversation tree, adding questions the bot should ask, things the bot should say etc.



Test your topic as you construct it



To test what you've created click on test bot (bottom left) to expand test window



Turn on "Track between topics". This lets you trace your way through both this topic and any others you call

The screenshot shows the Microsoft Power Virtual Agents interface. On the left, a test window titled 'Test bot' displays a conversation with a user asking about lawn problems. The bot responds with general information about Brown Patch and asks if the user wants to schedule a service. On the right, the 'Topics' section of the interface is visible, showing a flow editor for a topic named 'Issue with your lawn'. The flow includes several steps: 'Ask a question' (Do you want me to schedule a service to take care of it?), 'Identify' (Multiple choice options), 'Options for user' (Yes, No), and 'Save response as' (Var2 (Text)). Below these are two 'Condition' blocks: 'Var2 (Text) is equal to Yes' and 'Var2 (Text) is equal to No'. At the bottom, there's another 'Question' step: 'Ask a question' (OK. Could you please provide your email address?). The interface also shows a sidebar with navigation links like Home, Topics, Entities, Analytics, Publish, and Manage.

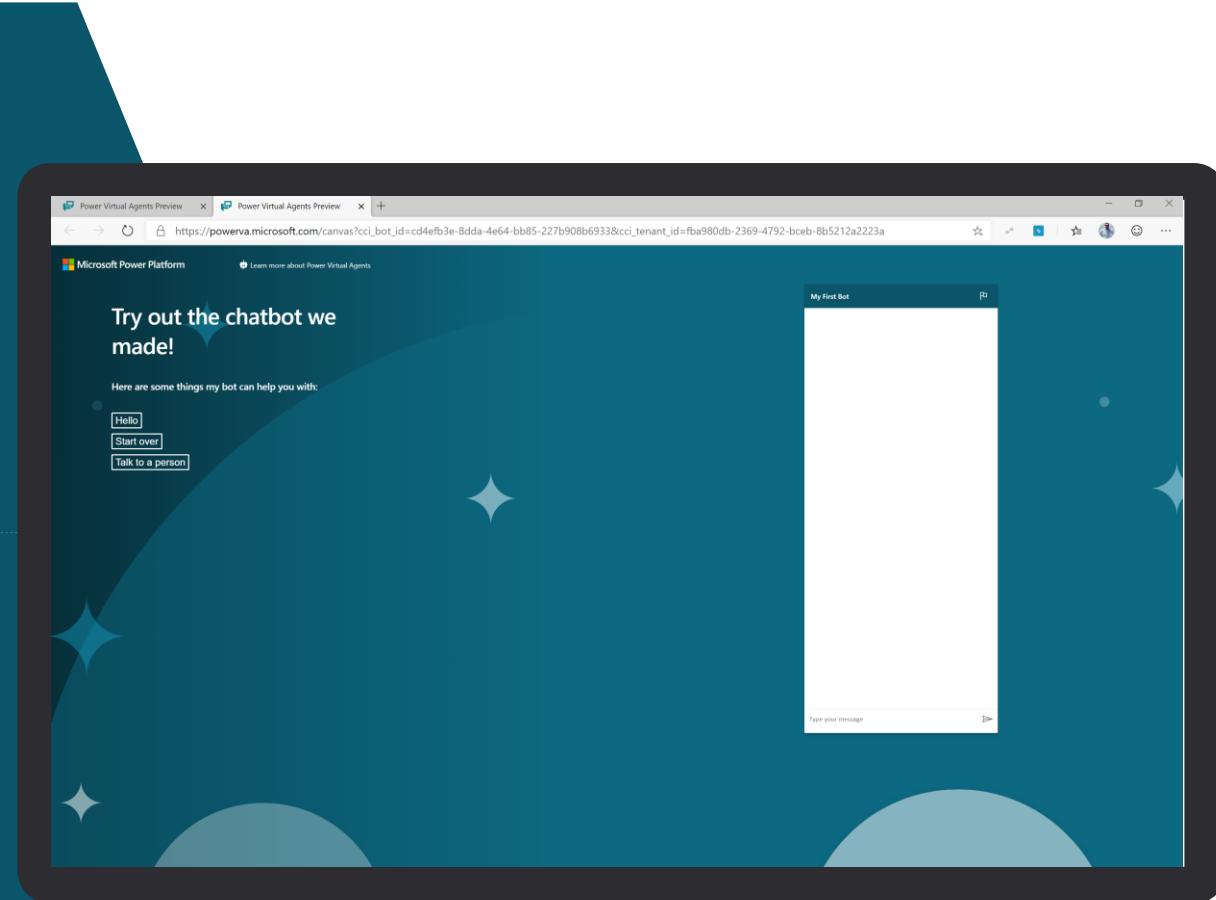
Publish to demo website



Publish to demo website and share the URL with colleagues so they can try the bot



Add screen shot with that publish to demo site show and demo page



Enhance your chatbot from Analytics

GAIN VISIBILITY OF MANY PARAMETERS



Summary charts



Engagement over time chart



Session outcomes over time chart



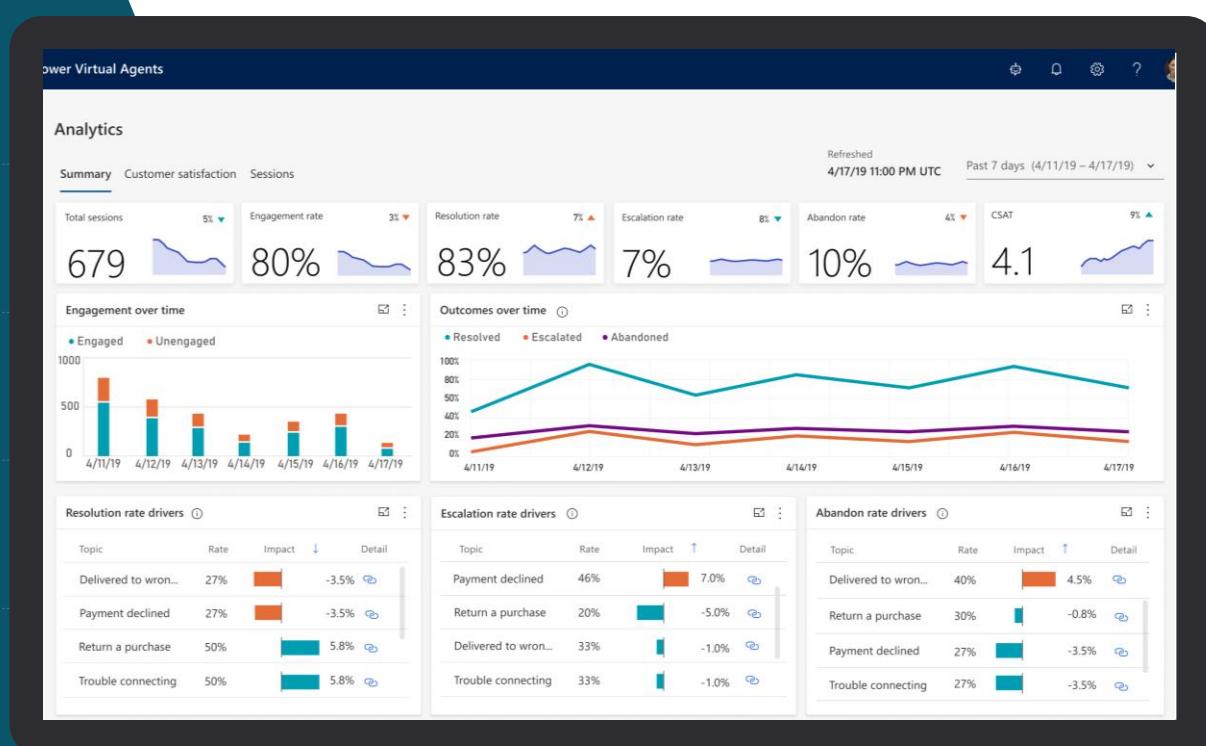
Resolution rate drivers chart



Escalation rate drivers chart



Abandon rate drivers chart



SECTION SUMMARY



Power Virtual Agents enables users to create a chatbot in just minutes

Offers an easy to use designer to help create unique customer chatbot experiences

Part of the Microsoft Power Platform

Built on Microsoft Dataverse



Lab 02:

Build your first chatbot

Create topics from existing webpages

Let Microsoft AI offer you suggested FAQ chatbot topics



Each FAQ becomes a chatbot trigger



The answer to your FAQ becomes message text in dialogue tree



Create a single turn conversation tree in minutes

The screenshot shows the 'Power Virtual Agents Preview | My First Chatbot' interface. On the left, there's a sidebar with options like Home, Topics, Entities, Analytics, Publish, and Manage. The main area has tabs for Chat and Topics. A modal window titled 'Suggest topics' is open, featuring an illustration of a stack of papers with a checkmark. It says: 'Get topic suggestions from your web content. Start with 3-5 webpages containing content (such as question and answer pairs, or documentation) that you'd like your bot to handle.' Below that, it says: 'To help you author topics more quickly, each suggestion will also include a trigger phrase. [Learn more about topic suggestions](#)'.

On the right side of the interface, there's a table with columns for Status, Errors, and Modified. It lists several rows of data, all marked as 'On'. At the bottom, there are buttons for 'Start' and 'Cancel'.

At the very bottom of the interface, there's a list of messages in a dialogue tree:

- (1) Goodbye
- (2) Start over
- (3) Thank you
- (4) Thanks

Lab 03:

Create topics from existing webpages

Enhance Chatbot using variables, topic redirections and entities

Easily create an intelligent chatbot



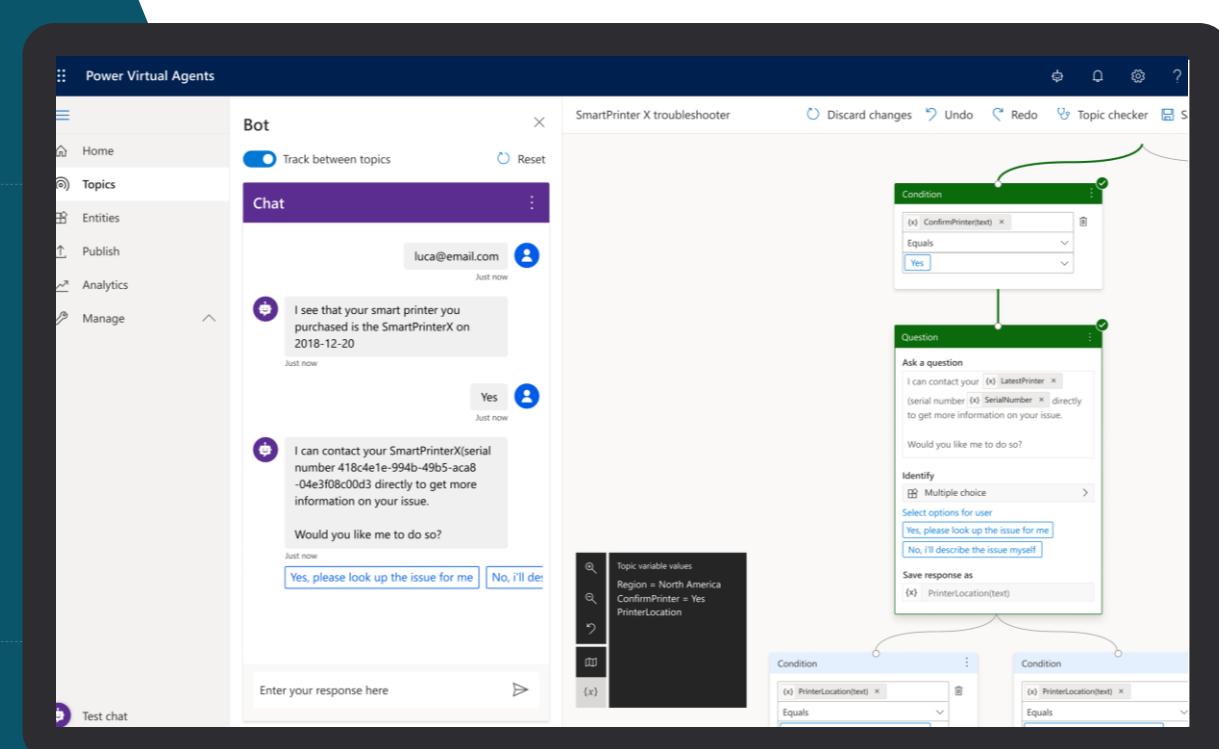
Simple, graphical chatbot creation and maintenance with an easy to use graphical interface.



Recognize, extract and act on dozens of common entities in user responses



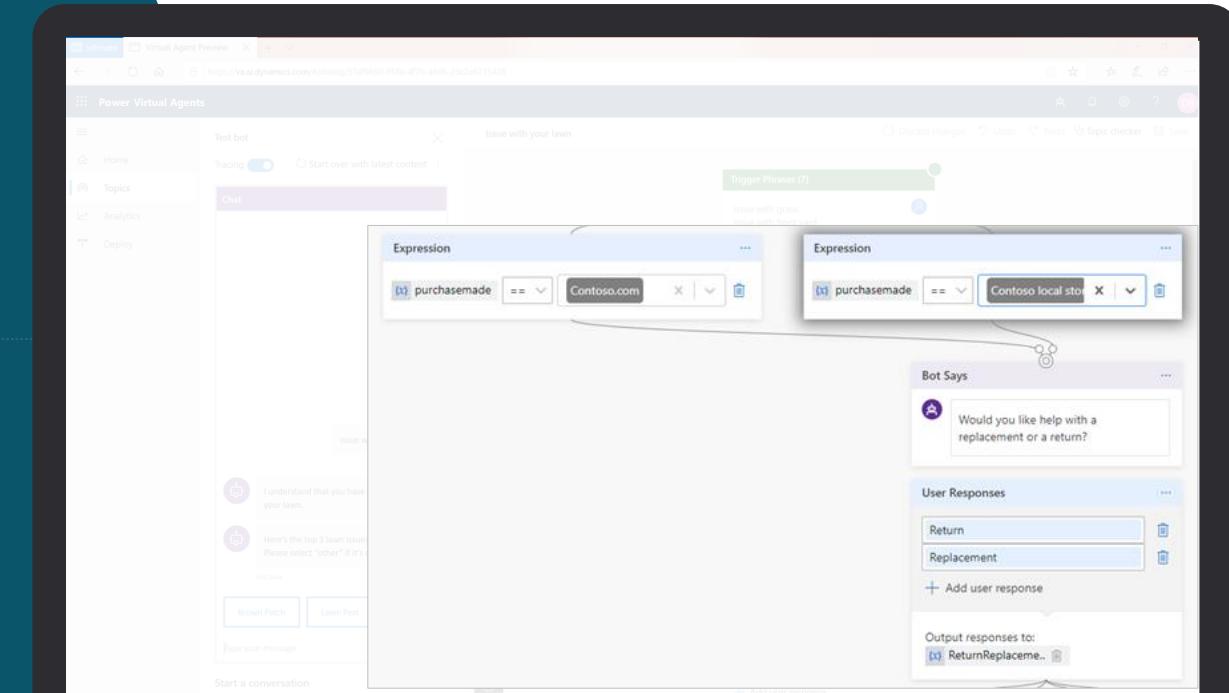
Remember user responses by storing them in variables to use later



Use variables to navigate customers to tailored content

Direct your customers to content you want them to see

Add variables to keep customer information for later in the conversation



Slot-filling capabilities



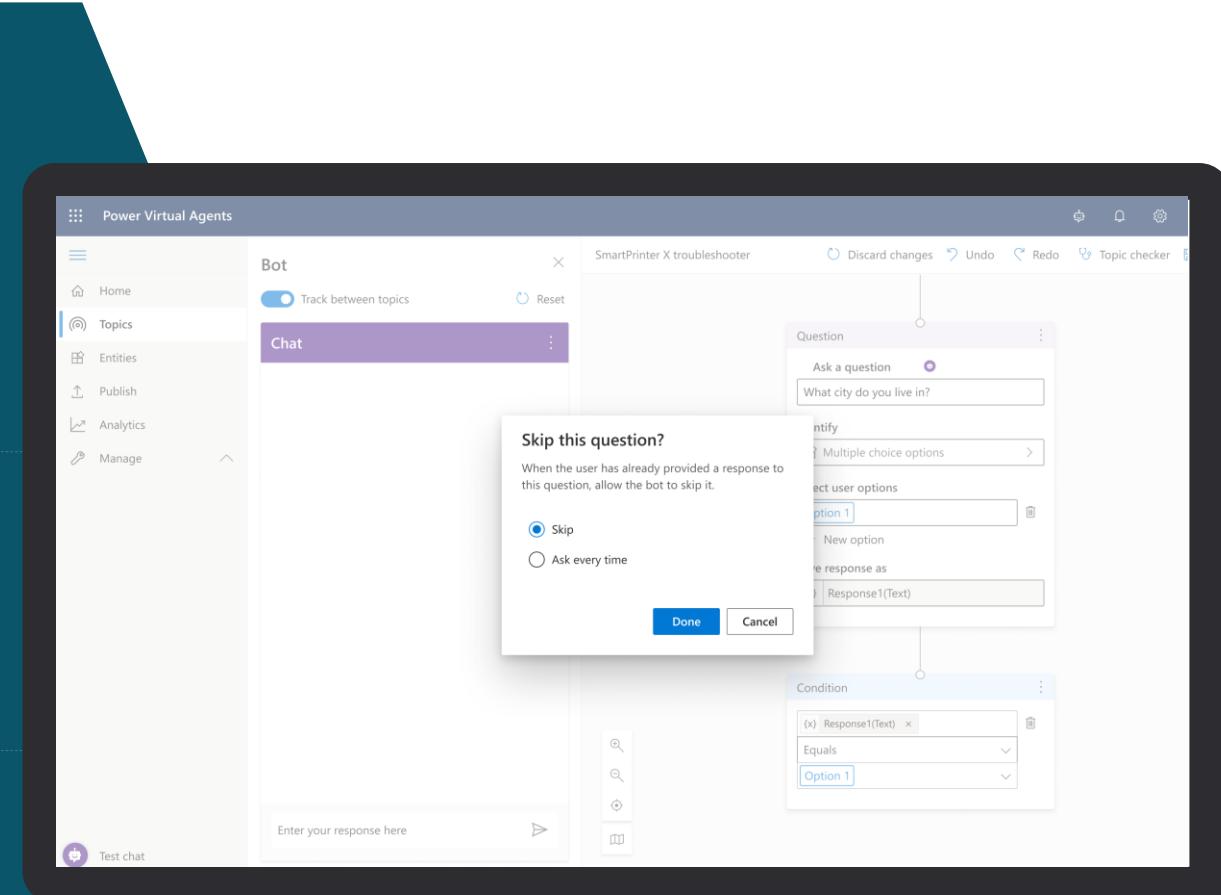
Power Virtual Agents can intelligently avoid repetitive conversations



Enhances your efficiency as a maker



Power Virtual Agents can guide you to making the best experience



Easily re-direct users to related topics



Re-direct and connect customers to related topics

Use it when:

A conversation requires more than one topic, such as when you need to ask a clarifying question to determine which topic the user needs

The screenshot shows the Microsoft Power Virtual Agents interface. On the left, a message card displays a message from a virtual agent: "Thank you for shopping at Contoso.com!". Below the message card is a list of actions:

- Ask a question
- Add a condition
- Call an action
- Show a message
- Go to another topic
- End the conversation

On the right side of the interface, there is a sidebar with a search bar and a list of system intents:

- Cancel an order
- Return an item
- Greeting
- Escalate
- End of Conversation
- Confirmed Success

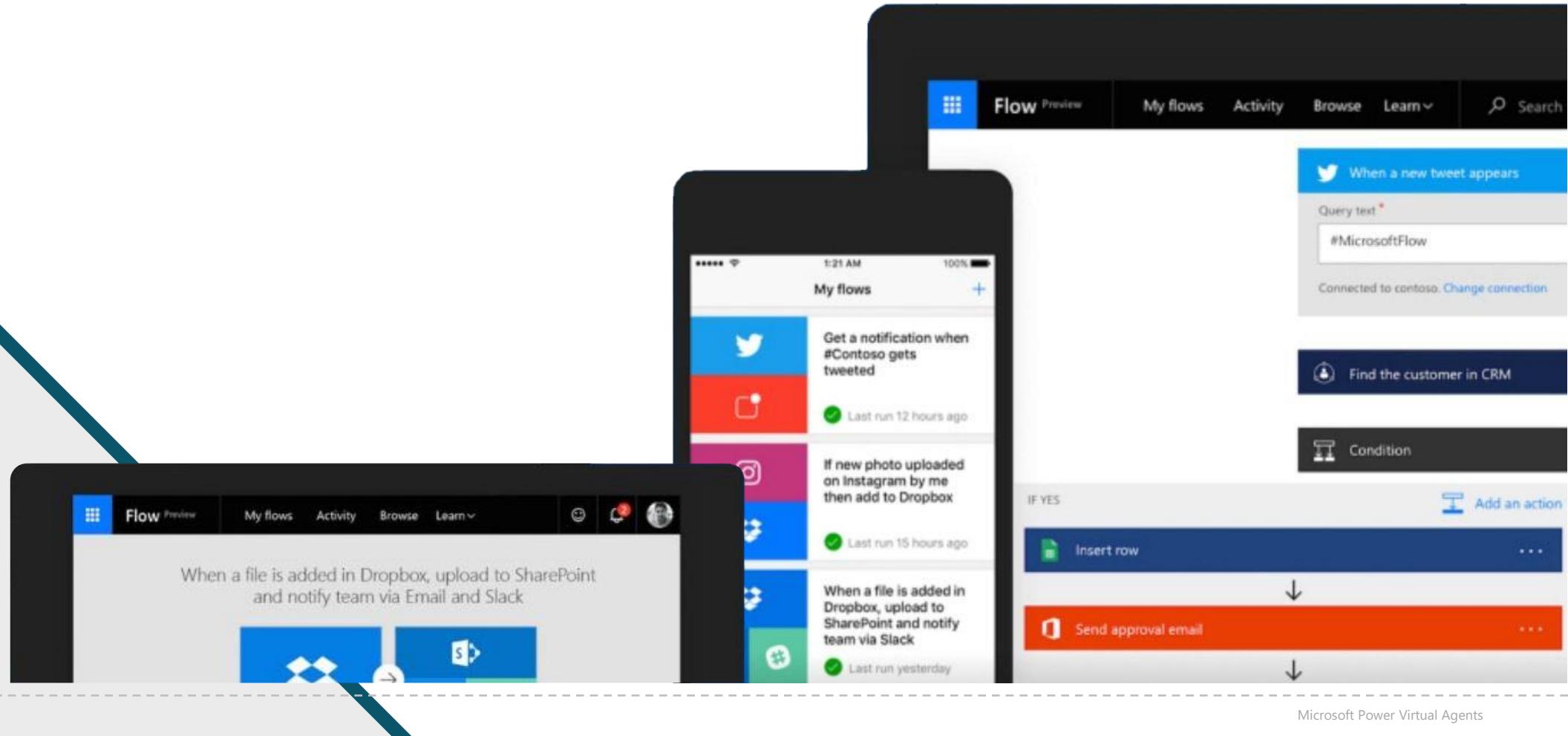
Lab 04:

Use variables, topic redirections and entities

Power Virtual Agents + Power Automate

Microsoft Power Automate

is an online workflow service that **automates actions across apps and services**



Connectivity & integration



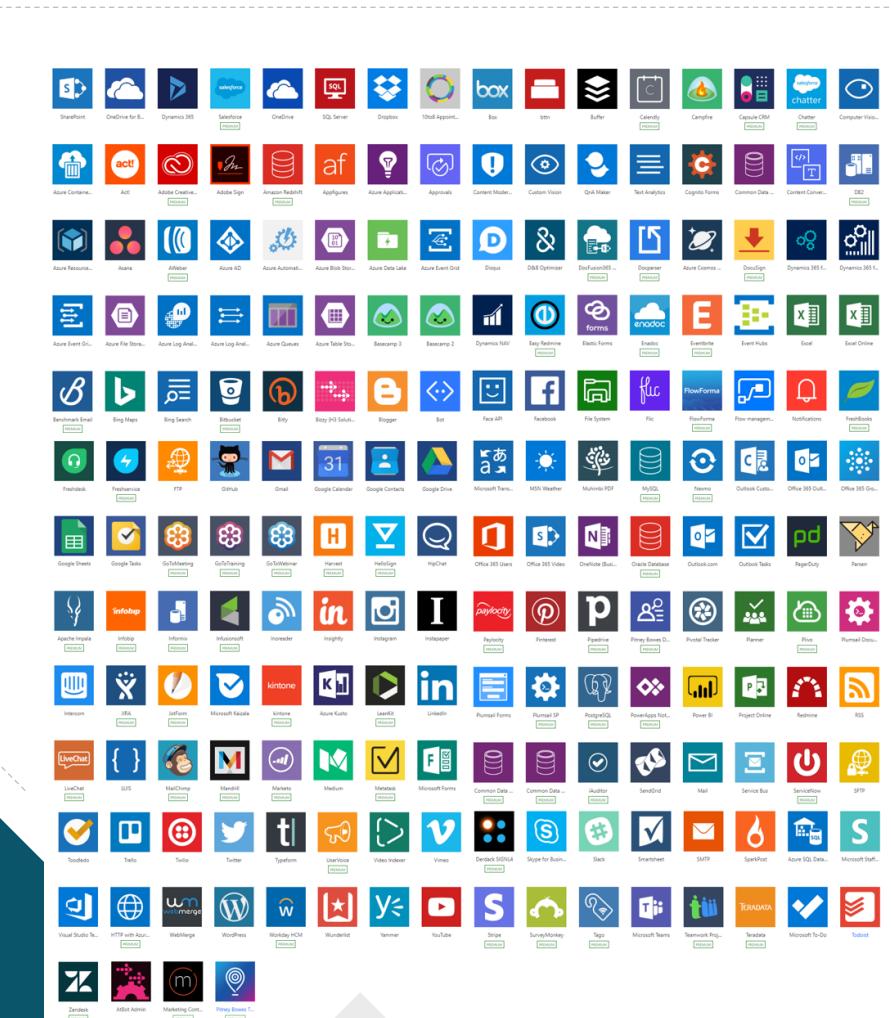
- 450+ SaaS cloud services
- File providers
- Databases
- Web APIs
- Productivity apps, etc.

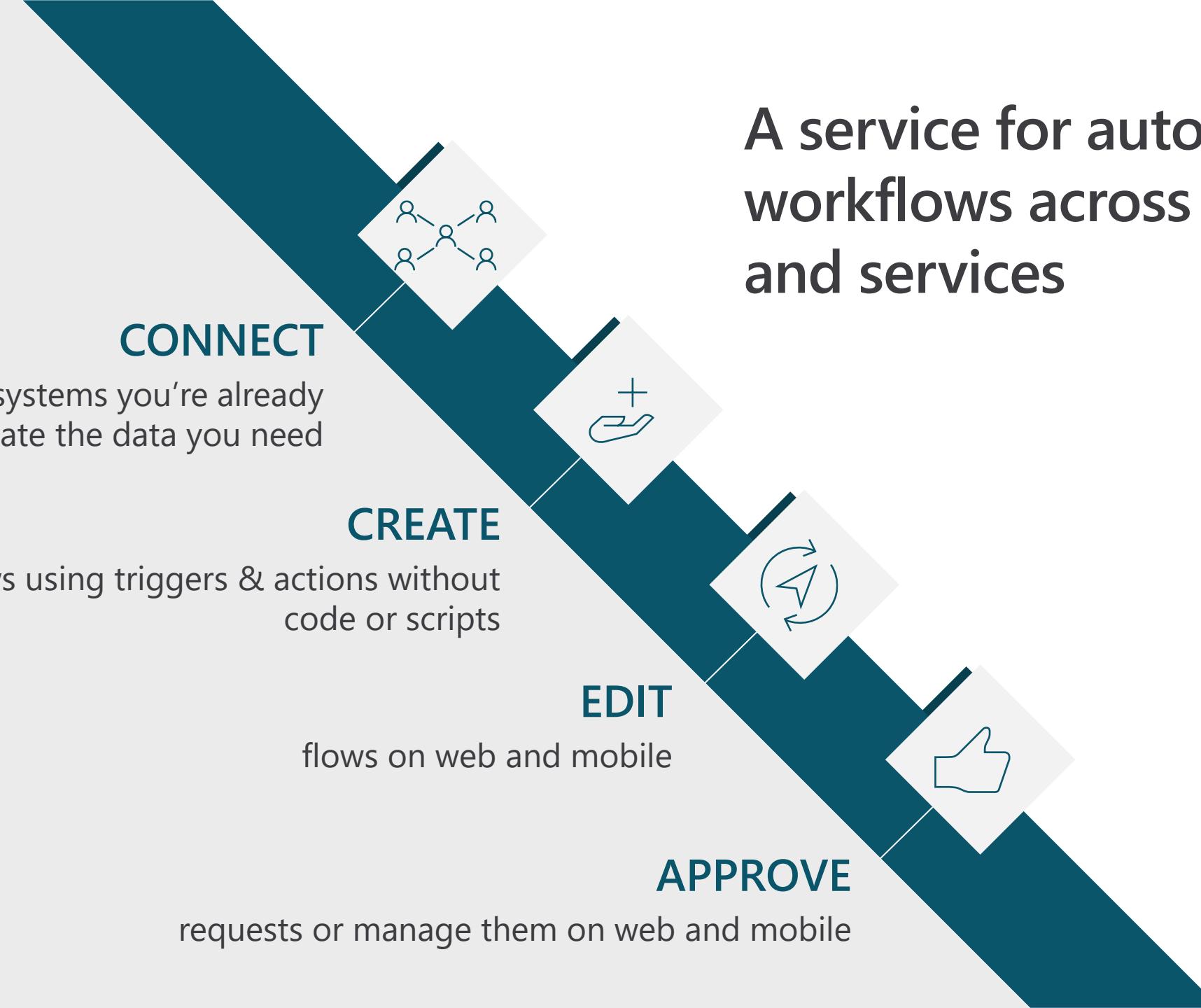


Connect to on-premises systems via Data Gateway



Pluggable extensibility via Custom Connectors to integrate existing LOB systems into Power Automate





A service for automating workflows across apps and services

CONNECT

to data & systems you're already using, and create the data you need

CREATE

workflows using triggers & actions without code or scripts

EDIT

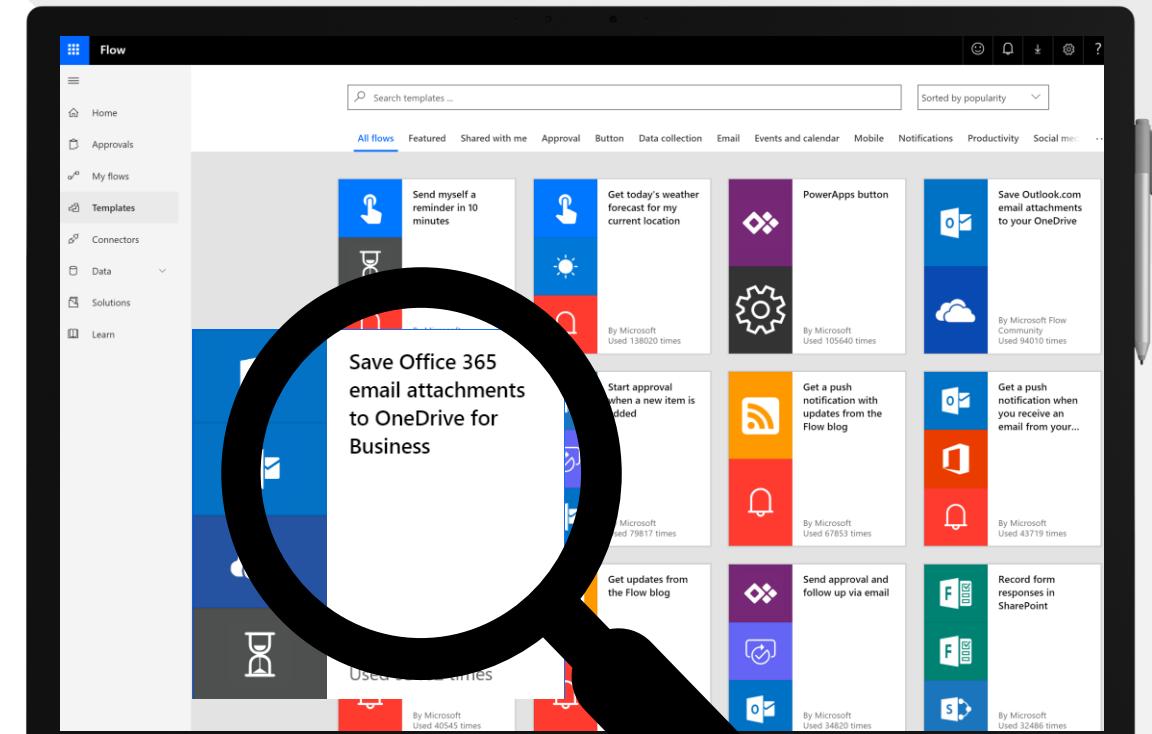
flows on web and mobile

APPROVE

requests or manage them on web and mobile

Get started with a growing library of templates

Jumpstart flows using over 100+ templates for common scenarios
Connect services you're already using in more meaningful ways



Efficient and secure data integration and storage

Power Automate is built on the Dataverse

Microsoft Dataverse lets you securely store
and manage data that's used by business applications.

Dynamics 365



Power BI

Office 365



Power Apps

Mobile Apps



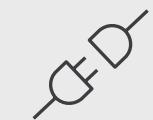
Power Automate

Web Apps



Power Virtual Agents

Microsoft Dataverse



Data connectors

Azure

Unlock your imagination with Power Automate + PVA



Chatbot uses location-based services (LBS) to provide personalized services



2-factor authentications to increase security



Proactively recommends new promotions, benefits, and better rates to your customers



Check user eligibility and submit applications on their behalf



Remote diagnosis for IOT devices



Make appointments for your customers



Get a picture of the receipt from employee and use Azure AI for expense reimbursement (integration with Azure AI)

Lab 05:

Add a Power Automate flow

Lab 06:

Build a Power Automate flow

Chatbot Authentication

Easily add end-user authentication to your chatbot



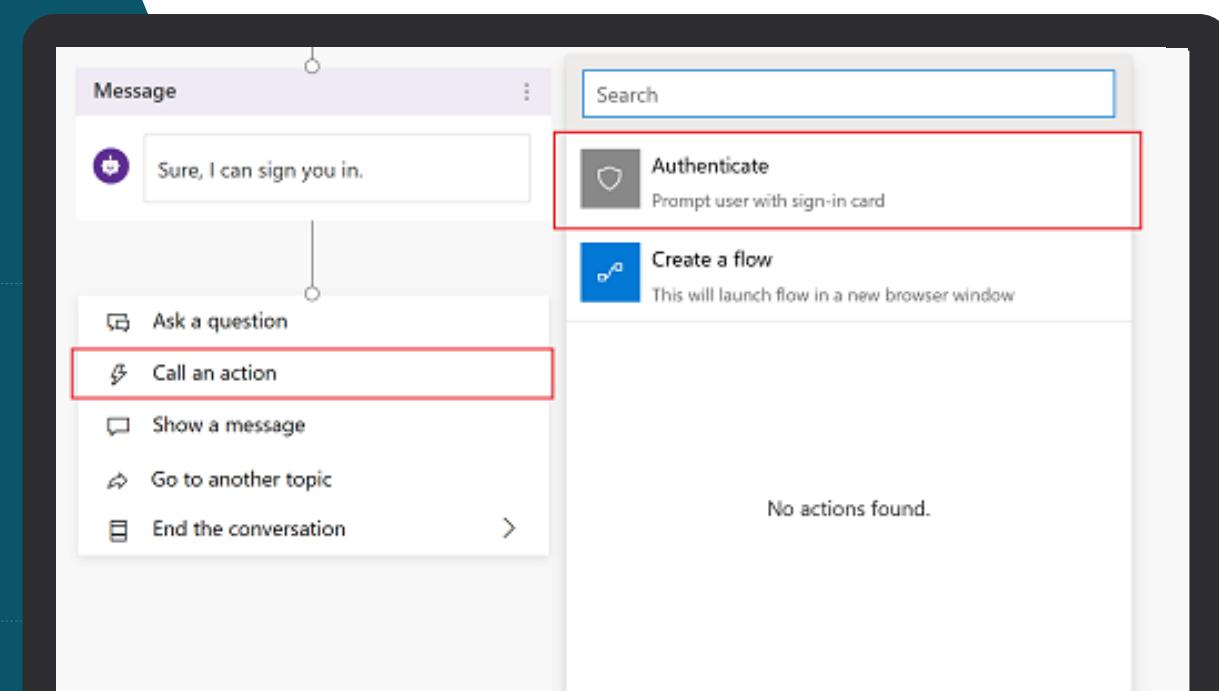
Add right from dialogue tree



Call an action



Choose Authenticate



Configure end-user authentication



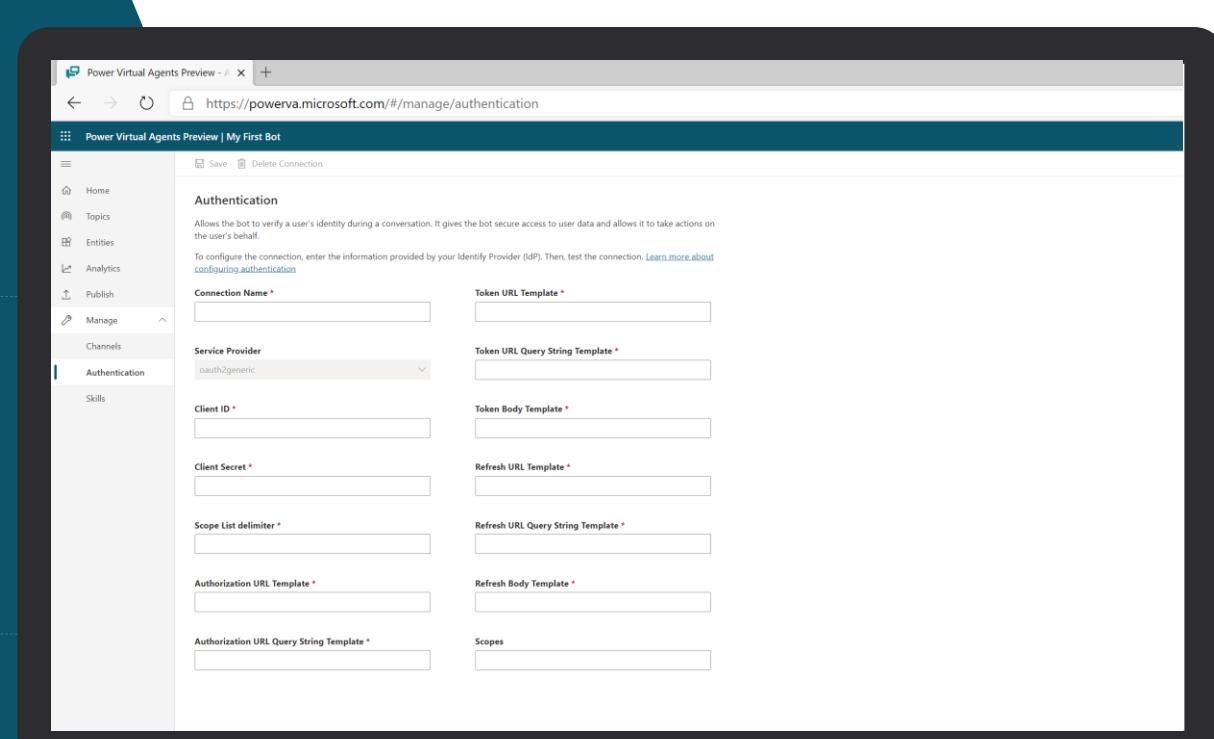
Add configuration capabilities
to your chatbot



Leverage Azure Active Directory



Adheres to OAuth2 standard



Lab 07:

Authentication

Hand off to support agent

Chatbots and human agents enhance each other



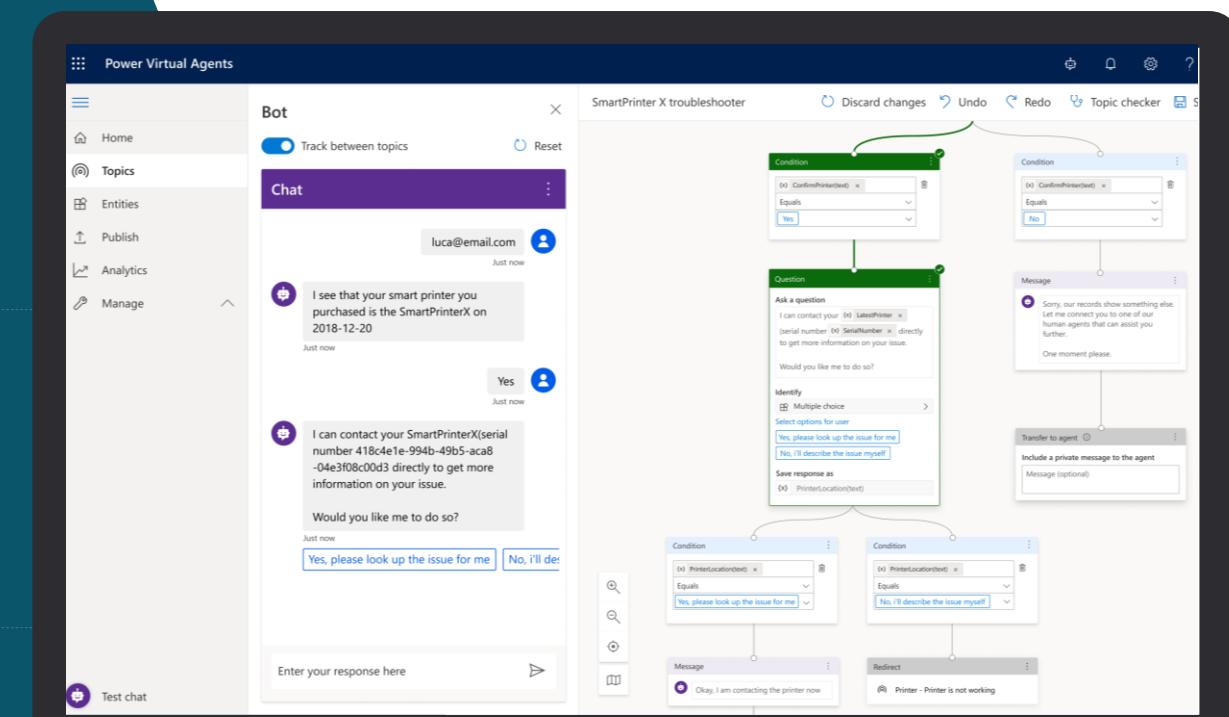
Power Virtual Agents easily partners with your human agents



Leverage the best of both



Create the ultimate experiences for your customers



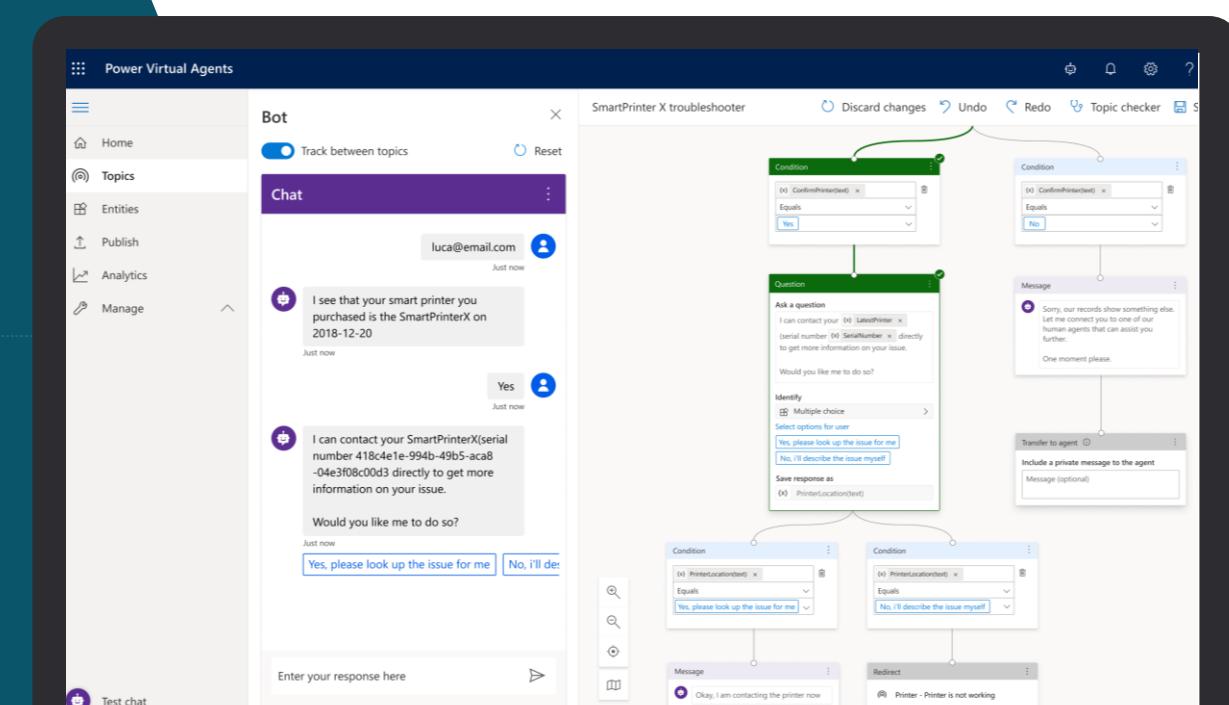
Configure and connect a chatbot to a human



**Hand-off to Dynamics 365
Omnichannel for Customer Service**
IT admins can configure hand-off to live
chat using Dynamics 365 Omnichannel for
Customer Service



Hand-off to generic live-chat provider
IT admins can configure hand-off to live
chat using an interface and sample code



Dynamics 365 Omnichannel for Customer Service

Channels
Provide personalized service to customers from a channel of their choice – Chat, SMS. Plugin a bot to handle routine requests and free your agents to work on complex issues



Productivity
Multisession, Unified, Contextually rich experience for agents & Supervisors with enhanced service management capabilities for routing, work distribution and new productivity tools.

Intelligence
Determine customer satisfaction automatically in real time with Sentiment Analysis. Get actionable insights from Interaction trends across channels, Agent performance & utilization data

Convenient

Productive

Insightful

Exporting and Importing a Chatbot

Export and import bots using solutions



Move your bot across multiple environments



Create a solution



Export the solution with your bot

The screenshot shows the Microsoft Power Apps interface. On the left is a navigation menu with options like Home, Learn, Apps, Create, Data, Flows, Chatbots, AI Builder, and Solutions. The Solutions option is currently selected. The main area displays a list of items under the heading 'Solutions > Contoso Customer Service bot'. Each item has a 'Display name' and a 'Name' column. A red box highlights the 'Export' button in the top right corner of the header bar.

Display name	Name
Confirmed Failure	Confirmed Failure
Confirmed Success	Confirmed Success
Contoso customer service	Contoso customer service
CSAT Rating	CSAT Rating
End of Conversation	End of Conversation
Escalate	Escalate

Lab 09:

Export and import bots using solutions

Power Platform and Teams

Power Virtual Agents App in Microsoft Teams



Create a bot in Microsoft Teams



Internal bot for employees



Same bot creation experience

The screenshot shows the Microsoft Teams interface with the Power Virtual Agents app open. The app's header includes the Microsoft Teams logo, a search bar, and tabs for Home, Chatbots, and About. The main content area features a hero section with two icons (a blue 'T' and a blue speech bubble) and the text 'Empower employees, one chat at a time'. Below this, it says 'Give people access to the help they need, 24/7. Automate frequently asked questions and common business processes for HR, service desks, and more.' A 'Create a chatbot' button is present, along with a note that it takes 5 minutes and no code. To the right, there's a preview window showing a video player and a 'Watch now' button. At the bottom, there are three cards: 'Discover the power of chatbots', 'Quickstart your HR bot', and 'Watch a 1-min video about bots in Teams'. On the far right, there's a 'Join our community' section.

Dataverse for Teams



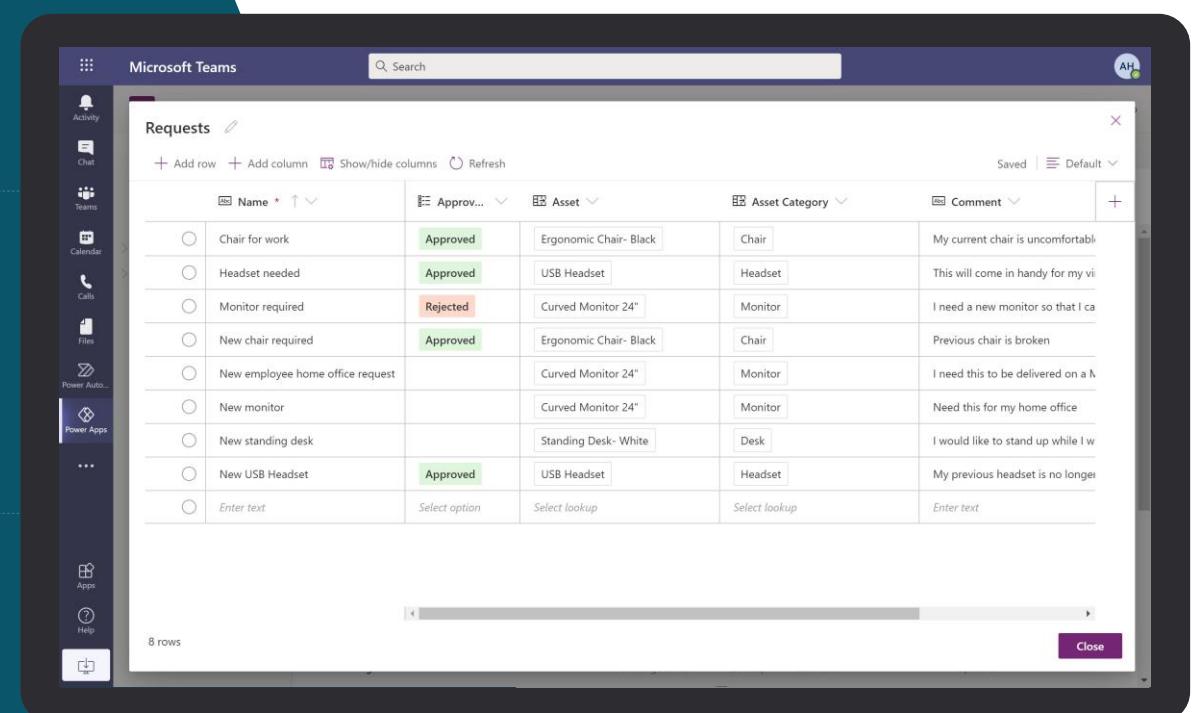
Teams-tailored version of the relational database behind Dynamics 365 and Power Platform



Provides storage, rich data types with enterprise capabilities



Your chatbot in Teams can connect to this data



The screenshot shows a Microsoft Teams window displaying a 'Requests' list in a Dataverse for Teams environment. The list includes columns for Name, Approval status, Asset, Asset Category, and Comment. The data in the table is as follows:

Name	Approval	Asset	Asset Category	Comment
Chair for work	Approved	Ergonomic Chair- Black	Chair	My current chair is uncomfortable
Headset needed	Approved	USB Headset	Headset	This will come in handy for my vi
Monitor required	Rejected	Curved Monitor 24"	Monitor	I need a new monitor so that I ca
New chair required	Approved	Ergonomic Chair- Black	Chair	Previous chair is broken
New employee home office request		Curved Monitor 24"	Monitor	I need this to be delivered on a N
New monitor		Curved Monitor 24"	Monitor	Need this for my home office
New standing desk		Standing Desk- White	Desk	I would like to stand up while I w
New USB Headset	Approved	USB Headset	Headset	My previous headset is no longer
Enter text	Select option	Select lookup	Select lookup	Enter text

Lab 10

Create a chatbot in Microsoft Teams

Lab 10

**Control who in the
organization can chat
with the bot**

Share your bot with other users



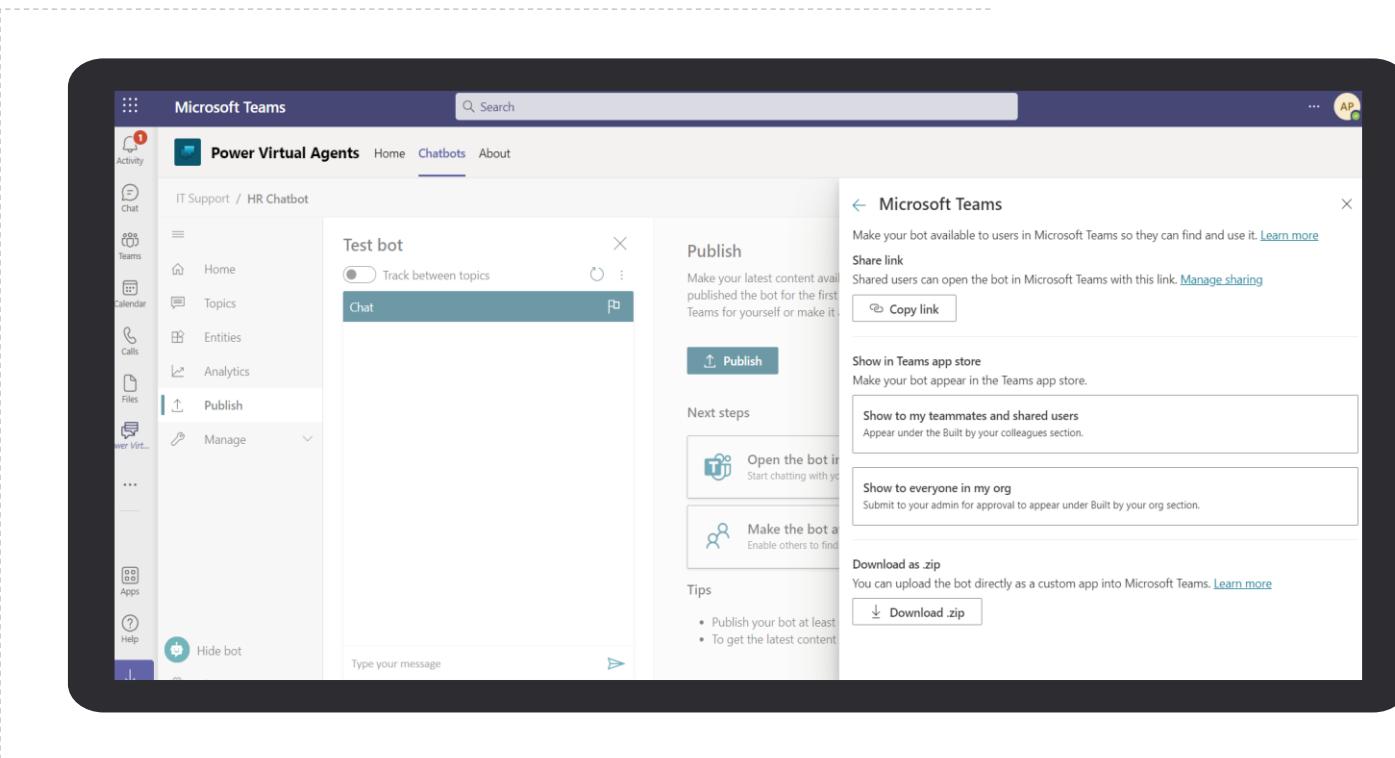
Share your bot with other users so they can chat with it or collaborate to author the bot



Bot is shared via security groups

The screenshot shows the Microsoft Power Virtual Agents interface. On the left, there's a sidebar with options: Home, Topics, Entities, Analytics, Publish, and Manage. Below this is a 'Test your bot' button. The main area displays a 'Power Virtual Agents | Roy' card for a bot named 'Roy'. It includes sections for 'Quickstart with topic suggestions', 'Learn more', 'Power Virtual Agents documentation', 'Product videos', and a 'Test your bot' button. To the right of this card is a 'Share bot' dialog box. The dialog has a search bar at the top labeled 'Enter a name, security group, or email address' and a 'Sort by Name' dropdown. A list of users is shown, with one entry for 'Admin PVA' selected. The 'Bot permissions' section contains several checkboxes, some of which are checked: 'Manager' (can view, edit, configure, share, publish bot but not delete it), 'Power Automate user' (can create and add flows to the bot), and 'Transcript viewer' (can view transcripts of chat sessions with end users). The 'Environment security roles' section lists 'Environment maker' and 'Bot transcript viewer' with their respective descriptions. At the bottom of the dialog are 'Send an email invitation to new users' (checked) and 'Manage security roles' buttons, along with 'Share' and 'Cancel' buttons.

Share your bot in Teams



Share via link

Teammates & Shared Users

Org-wide

Licensing

Power Virtual Agents Licensing and Subscriptions

Which subscription do I need?

Capability	Power Virtual Agents for Microsoft Teams	Power Virtual Agents (standalone)
Channels	Microsoft Teams only	All supported channels
Connect to your data	Standard connectors	Premium and custom connectors On premises data gateway
Chat sessions (Sessions / Tenant / Month)	Unlimited (Teams only)	2k
Extend your bot with Azure bot framework skills	Not available	Available
		(Power Virtual Agents Viral Trial)

Power Virtual Agents Standalone Pricing



Power Virtual Agents is licensed per tenant, charged by the number of billed sessions



Users who author chatbots need to be assigned a Power Virtual Agent User License

Power Virtual Agents pricing

US Dollar (\$)

Power Virtual Agents

Create and maintain intelligent chatbots without having to code.

\$1,000

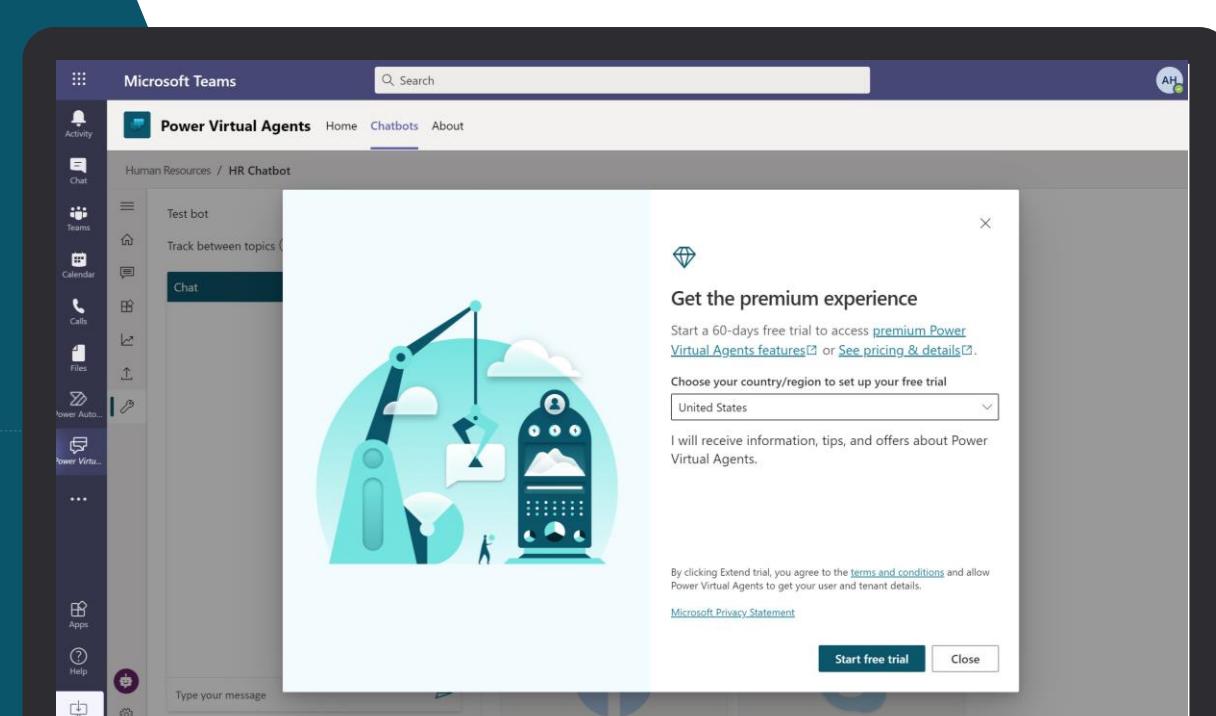
per month for 2,000 sessions^{1,2}

[Buy now >](#)

Upgrading your license

Upgrade from within the Power Virtual Agents app for Teams when prompted

Start a free trial of Power Virtual Agents to try all capabilities



Chatbot topic design

What makes a chatbot successful?



Knowing your customer



Having accurate,
latest and
effective content



Knowing when
to hand off to a
human



Understanding
the customer's
request and
connecting it to
the right topic



Providing
personalized,
context-aware
help, and taking
actions for the
customer

Types of conversation topics

People use your bot with a specific issue ("topic") to address or resolve. You can loosely categorize topics into 3 types:



Informational

What is...? When will...? Why...?

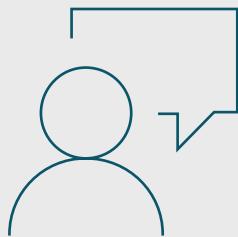
Task completion

I want to... How do I...?

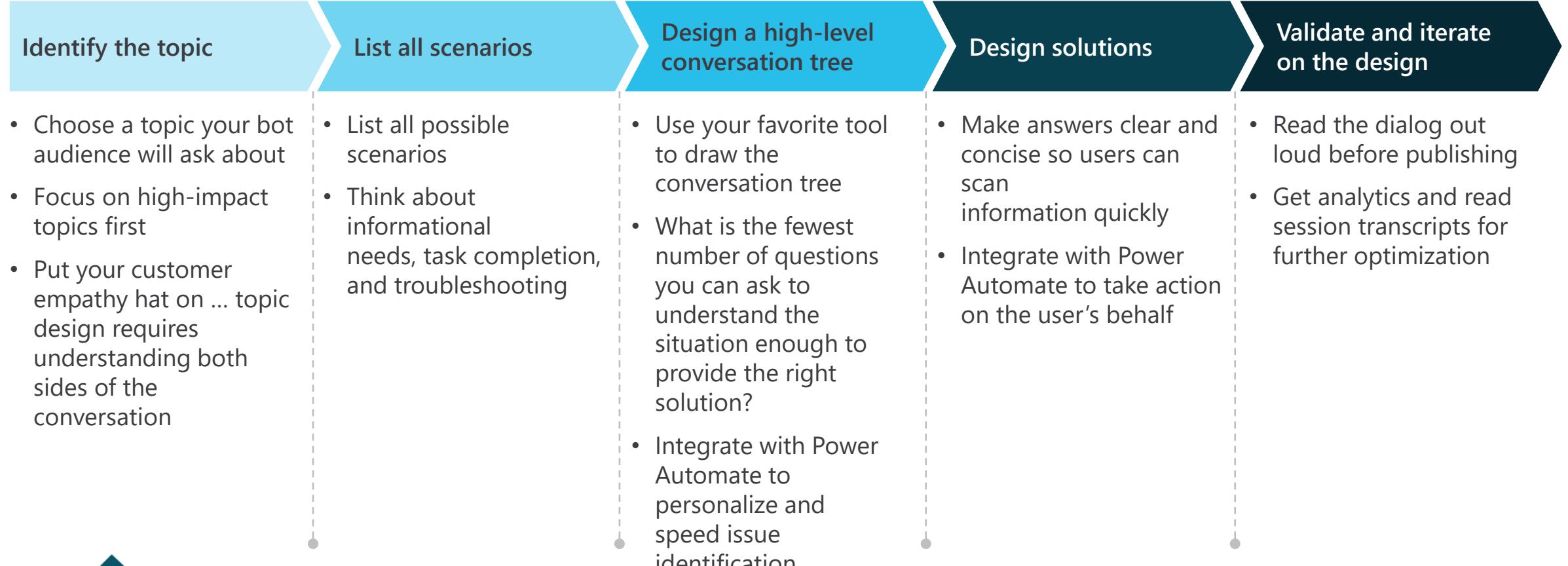


Troubleshooting

Something isn't working right. I got an error message



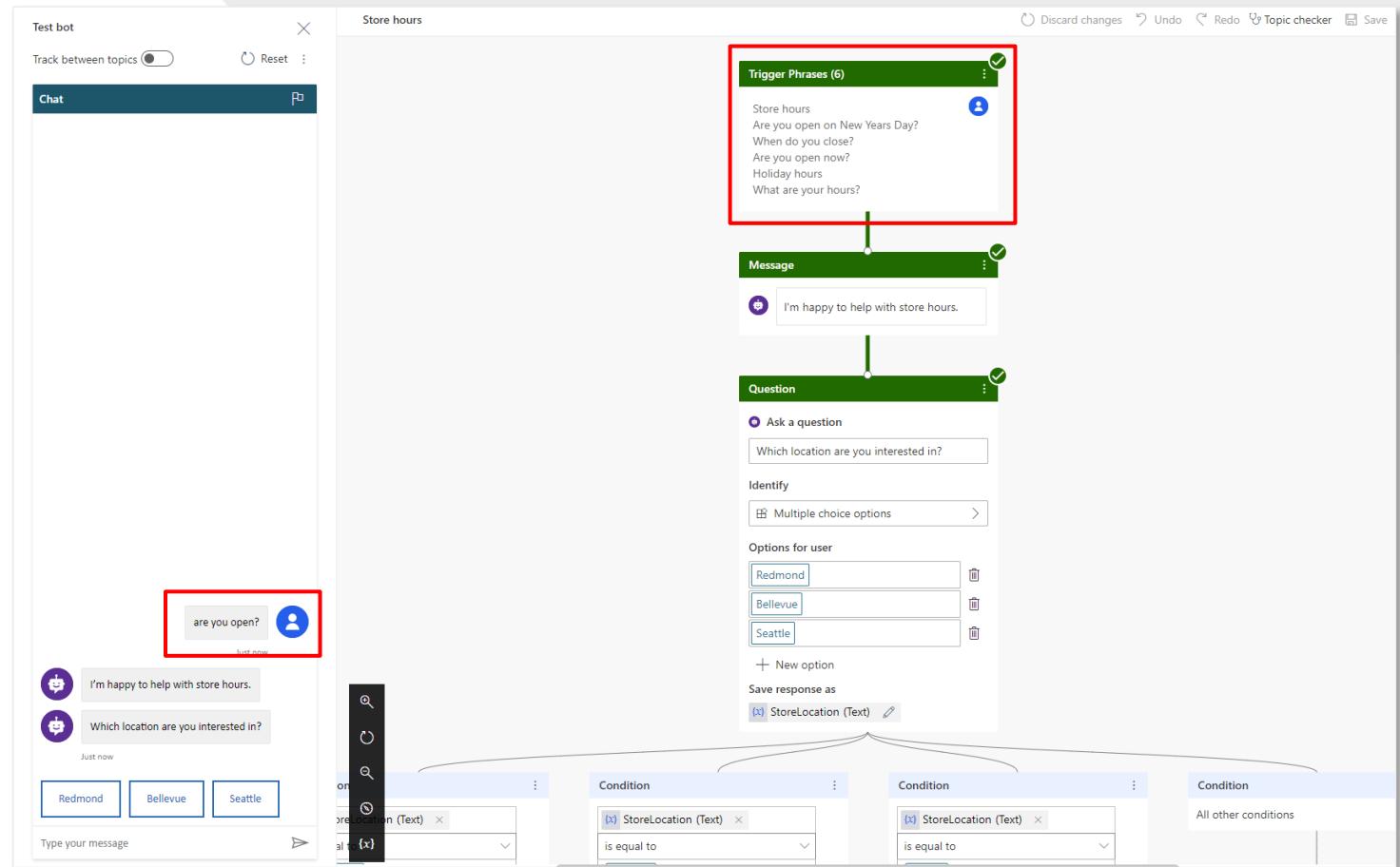
Designing a topic



Best practices for writing topic trigger phrases

Trigger phrases – Definition

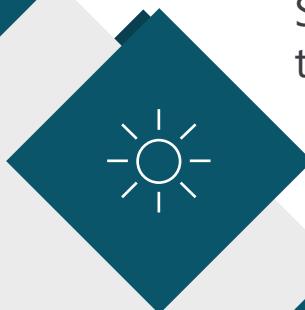
Trigger the chatbot to begin a conversation about a specific topic



Guidelines for better trigger phrase design



Clearly understand the goal
and scope of the topic



Start with 5 to 10
trigger phrases



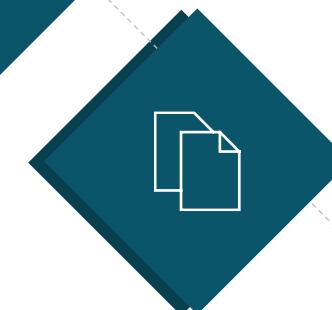
Shorter trigger phrases
with fewer than 10 words
are generally better



Make sure the trigger phrases
are semantically different

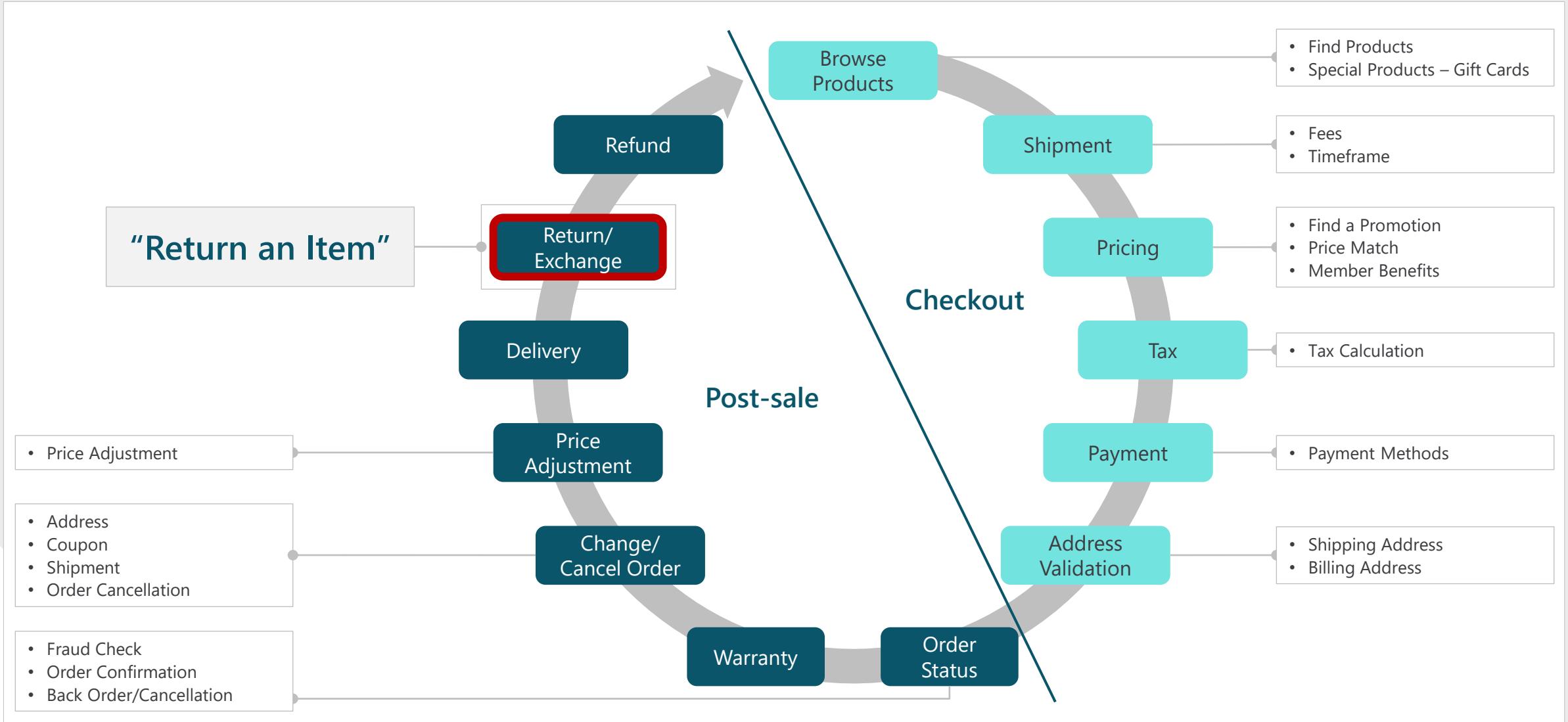


Use the words your
customers use!



Avoid trigger phrases that
are highly ambiguous
among different topics

Step 1: Pick a topic



Step 2: Define the goal for the topic

The screenshot shows a software interface for defining a topic. On the left, there's a sidebar with 'Return an item' selected under 'Setup'. Below it, there are two main sections: 'Name *' and 'Description'. The 'Name *' section contains the text 'Return an item'. The 'Description' section contains a numbered list: 1. Describe the return policy, 2. Check the customer's eligibility for return, and 3. Process the return. To the right of the interface, there are two boxes. The top box is labeled 'Topic: "Return an item"' and the bottom box is labeled 'Goal:' followed by the same numbered list.

Return an item

Setup Analytics

Name *

Return an item

Description

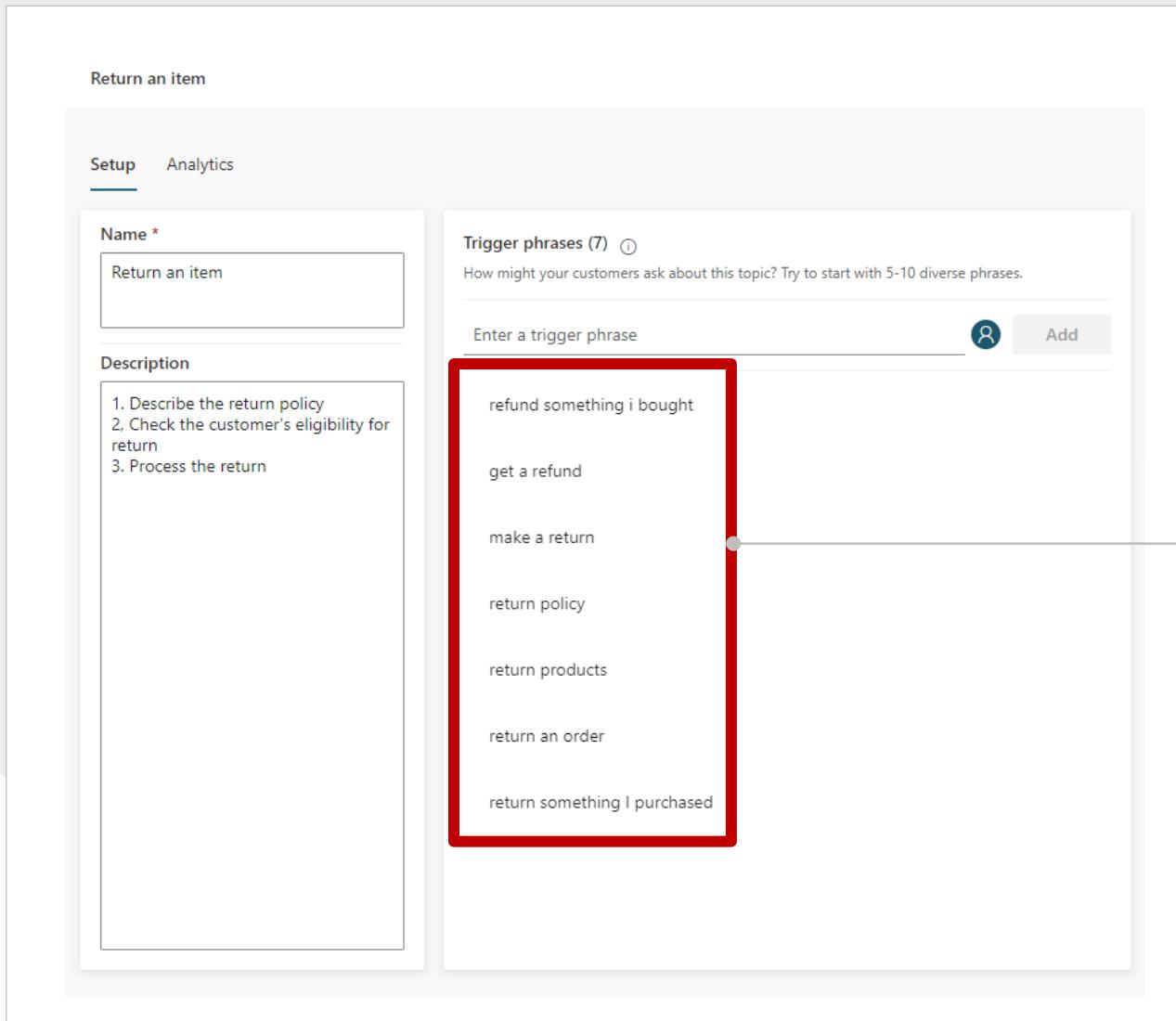
1. Describe the return policy
2. Check the customer's eligibility for return
3. Process the return

Topic: "Return an item"

Goal:

1. Describe return policy of the store
2. Check customer's eligibility for return
3. Process the return

Step 3: Create trigger phrases



Return an item

Setup Analytics

Name *

Return an item

Description

1. Describe the return policy
2. Check the customer's eligibility for return
3. Process the return

Trigger phrases (7) ⓘ
How might your customers ask about this topic? Try to start with 5-10 diverse phrases.

Enter a trigger phrase Add

refund something i bought
get a refund
make a return
return policy
return products
return an order
return something I purchased

Steps:

- Start with 5 to 10 trigger phrases. You may need more trigger phrases if the scope of the topic is large
- Shorter trigger phrases with less than 10 words are generally better

Step 4: Review trigger phrases 1/3

Refund something I bought

Get a refund

Make a return

Return policy

Return products

Return an order

Return something I purchased

Steps:

- Make sure the trigger phrases are semantically different; using one different noun or verb could be enough to expand a topic's coverage

Step 4: Review trigger phrases 2/3



- Adding articles (an, the, etc.), capitalization, contractions, and pluralization has a low chance of improving the triggering

Step 4: Review trigger phrases 3/3

The image shows two screenshots of a customer service topic setup interface. The top screenshot is for 'Return an item' and the bottom one is for 'Cancel an order'. Both screens have a red box around the 'Name' field. In the 'Trigger phrases' section, the 'cancel and get a refund' phrase is highlighted with a red box and connected by a red line to the 'cancel order' phrase in the 'Cancel an order' screen, which is also highlighted with a red box. A large red circle with a diagonal slash is overlaid on the interface between the two screens, indicating that the overlapping trigger phrases are problematic.

Return an item

Setup Analytics

Name *
Return an item

Description
1. Describe the return policy
2. Check the customer's eligibility for

Trigger phrases (8) ⓘ
How might your customers ask about this topic? Try to start with 5-10 diverse phrases.

Enter a trigger phrase Add

cancel and get a refund

Cancel an order

Setup Analytics

Name *
Cancel an order

Description
Walks customer through canceling an order

Trigger phrases (3) ⓘ
How might your customers ask about this topic? Try to start with 5-10 diverse phrases.

Enter a trigger phrase Add

stop a transaction
cancel my shipment
cancel order

• Avoid overlapping trigger phrases or ambiguous trigger phrases among different topics

Quiz time... 1/2

Q1: For the topic “Return an item,” please select the best trigger phrase from below:

A

I want to return an item.

B

My mom was cooking last night when I came back home from school, and suddenly the refrigerator stopped working. Can I return it?

C

I don't like any of the items I purchased from your store.



Answer: A

A

I want to return an item.

A is the best because it's direct and simple

B

My mom was cooking last night when I came back home from school, and suddenly the refrigerator stopped working. Can I return it?

B is not good because it is too complicated. It introduces too many irrelevant keywords which could potentially connect to the wrong topics

C

I don't like any of the items I purchased from your store.

C depends on your business logic. If you want to cover this scenario in this topic, then you should add it to the trigger phrases

Q2: For the topic “Return an item,” please select the good trigger phrases from below:

A

What is your return policy?

B

I want to return my refrigerator.

C

How can I make a return?

D

I want to return an item.



Answer: A, B, C, D

A

What is your return policy?

A is good because it is simple and direct. However, you need to make sure your topic covers "return policy"

B

I want to return my refrigerator.

B is good because it is simple and direct. However, you need to make sure your topic covers "refrigerator"

C

How can I make a return?

C is good because it covers another way to request a return -- use "return" as a noun

D

I want to return an item.

D is good especially when your store has many items and you cannot list them all

Q3: For the topic “Return an item,” here is a sentence from real customer chatlogs.

Write some trigger phrases for it:

“I am a member of your store for over 5 years. I was wondering how to return items that I got yesterday. I don’t like the color.”

Answer:

After that, we can produce 5 good trigger phrases:

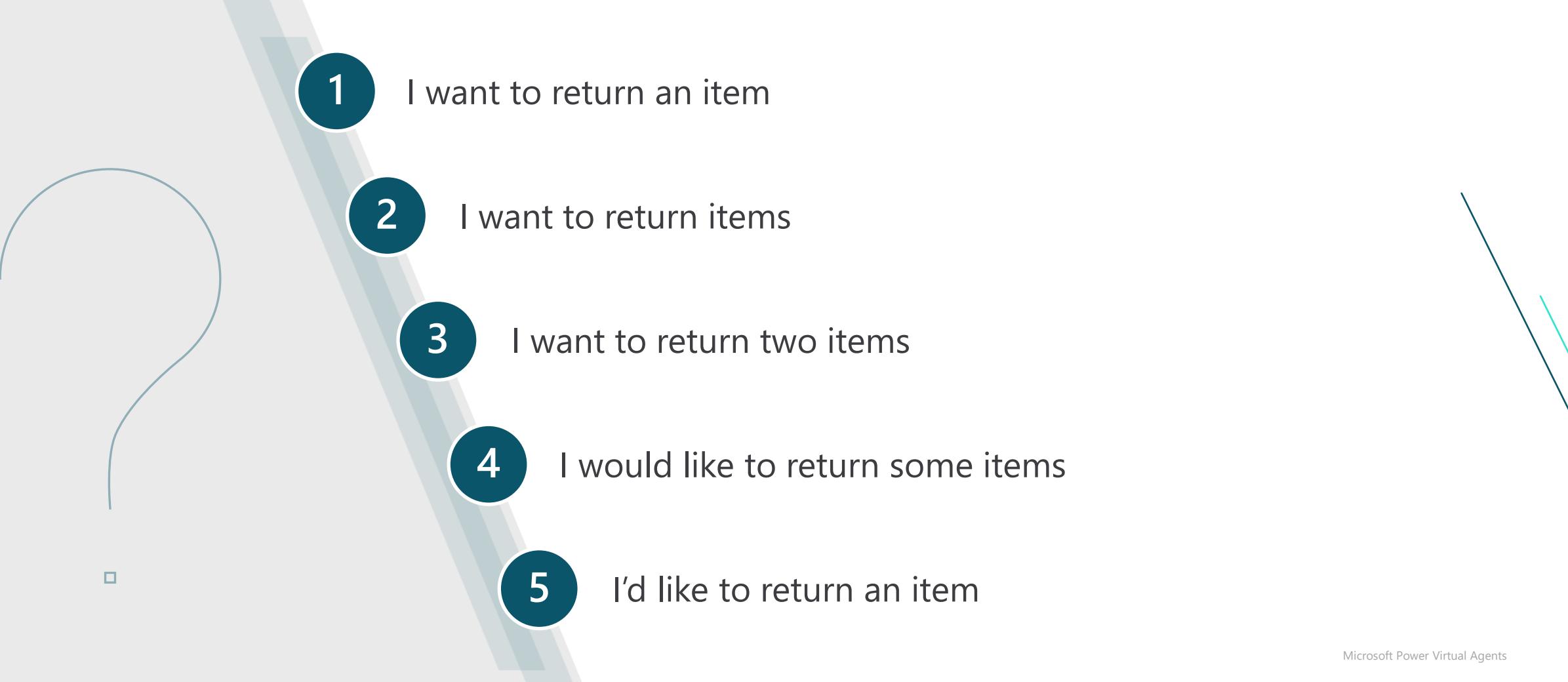
- 1 How to return **something** that I **purchased** last week
- 2 How to return **something** that I **bought** yesterday
- 3 How to return **products**
- 4 How to return **orders**
- 5 How to return **items** that I got yesterday

Step 1: Remove all irrelevant parts, and keep words relevant to the goals of the topic

*"I am a member of your store for over 5 years. I was wondering **how to return items that I got yesterday**. I don't like the color."*

Step 2: Add new trigger phrases with different keywords

Q4: For the “Return an item” topic, which trigger phrases below should you include as a start?

- 
- 1 I want to return an item
 - 2 I want to return items
 - 3 I want to return two items
 - 4 I would like to return some items
 - 5 I'd like to return an item



Answer: Any ONE of those trigger phrases works

1 I want to return an item

2 I want to return items

3 I want to return two items

4 I would like to return some items

5 I'd like to return an item

Guideline

Adding articles (an, the, etc.), capitalization, contractions, and pluralization has low chance of improving the triggering.

Q5: For the topic “My appliance doesn’t work”, please select the best trigger phrase from below:

A

I want to buy another dishwasher.

B

My freezer doesn't work.

C

I have a problem.

D

Something is wrong with my appliance.



Answer: D

A

I want to buy another dishwasher.

A is not good because it is not related to the topic at all

B

My freezer doesn't work.

B depends on your business logic. If "freezer" is out of your business scope, you should not use it

C

I have a problem.

C is not good because it is too broad. You may want to use another generic topic to handle "I have a problem"

D

Something is wrong with my appliance.

D is the best because it is simple and direct

Q6: Below is a sentence from real customer chatlogs. Which topic should we add this trigger phrase to?

Sentence: *"My new refrigerator stops working, so I want to return it"*

A

Add it to the "**Return item**" topic.

B

Add it to the "**My appliance doesn't work**" topic.

C

We shouldn't add it to any of these two topics.

D

We should add it to both topics.

Answer: C

Sentence: "*My new refrigerator stops working, so I want to return it*"

- A Add it to the "Return item" topic.
- B Add it to the "My appliance doesn't work" topic.
- C **We shouldn't add it to any of these two topics.**
- D We should add it to both topics.

Answer: C

1. This is a bad trigger phrase because it's too ambiguous. To avoid confusion, do not add this sentence to either of the 2 topics
2. The AI model DYM (do you mean) will further clarify with customers and ask them to choose a topic

Chatbot conversation styles

Qualities of a good conversation

Cooperative



Goal-oriented



Fast



Turn-based



Truthful



Polite



Style: How to sound conversational 1/9

Customer conversations should emulate the best elements of any conversation — personal and polite, friendly and supportive

A few stylistic changes in writing can impart warmth and familiarity to your brand voice

Don't overuse exclamation points to convey energy. It's easy to rely on them for this purpose, but too many, in the wrong places, could be interpreted as insincere and robotic

The image shows a mobile phone screen with a text message conversation. The phone has a dark blue case. The screen displays three messages from a virtual agent (represented by a teal person icon) and one message from a customer (represented by a small circular profile picture of a man). The messages are:

- Hey Bryan! Would you like the usual — a large cheese pizza?
- So you know, there is a buy-a-large-get-a-small-free deal going on through Saturday. Do you want to try this deal?
- Great! Let me get your order started for you.

At the bottom right, the customer's response "Yeah!!" is shown next to their profile picture.

Style: How to sound conversational 2/9



Use short sentences



Sounds great! Let me get that started for you.



Be positive



Let's get started. I have a couple questions. Should only take a minute.



Use active voice



No problem. I can resolve this for you.

Style: How to sound conversational 3/9



I'm going to ask you a couple questions.
It should only take a minute.



Good choice. I have a couple suggestions
based on what you've selected.

Great.



Use contractions: "I'm" instead of "I am."

**Select a pronoun to represent your brand agent
in chat and be consistent: "I" or "we."**

Style: How to sound conversational 4/9

Be consistent with tone and style so the conversation sounds like it's with the same agent and brand



Do



Hi there. Welcome to the Store Assistant. I can help you make a return or exchange.



Let me know at any time if you'd like to chat with a live customer service agent.

I want to return an item



OK. Could you provide your order number, please?



Don't



Hi there. Welcome to the Store Assistant. I can help you make a return or exchange.



If you wish to be in contact with a live customer service agent in regards to your problem, please click the button below.

Tone shifts to formal

I want to return an item



OK. Provide your order number.

Demanding tone

Style: How to sound conversational 5/9

If you're using website documentation to answer a question, break sections down into short, scannable graphs



Do



How to reset your password:

1. Go to <https://account.live.com/password/reset>.
2. Select the reason for resetting your password and the alternate contact info where you can receive a security code to verify your identity.

Note: This alternate contact info is part of the security info you already added to your Microsoft account.



Don't



How to reset your Password
If you cannot remember your password, go to <https://account.live.com/password/reset> and select the reason for resetting your password. Then include the alternate contact info where you can receive a security code to verify your identity. Note: This alternate contact info is part of the security info you already added to your Microsoft account.

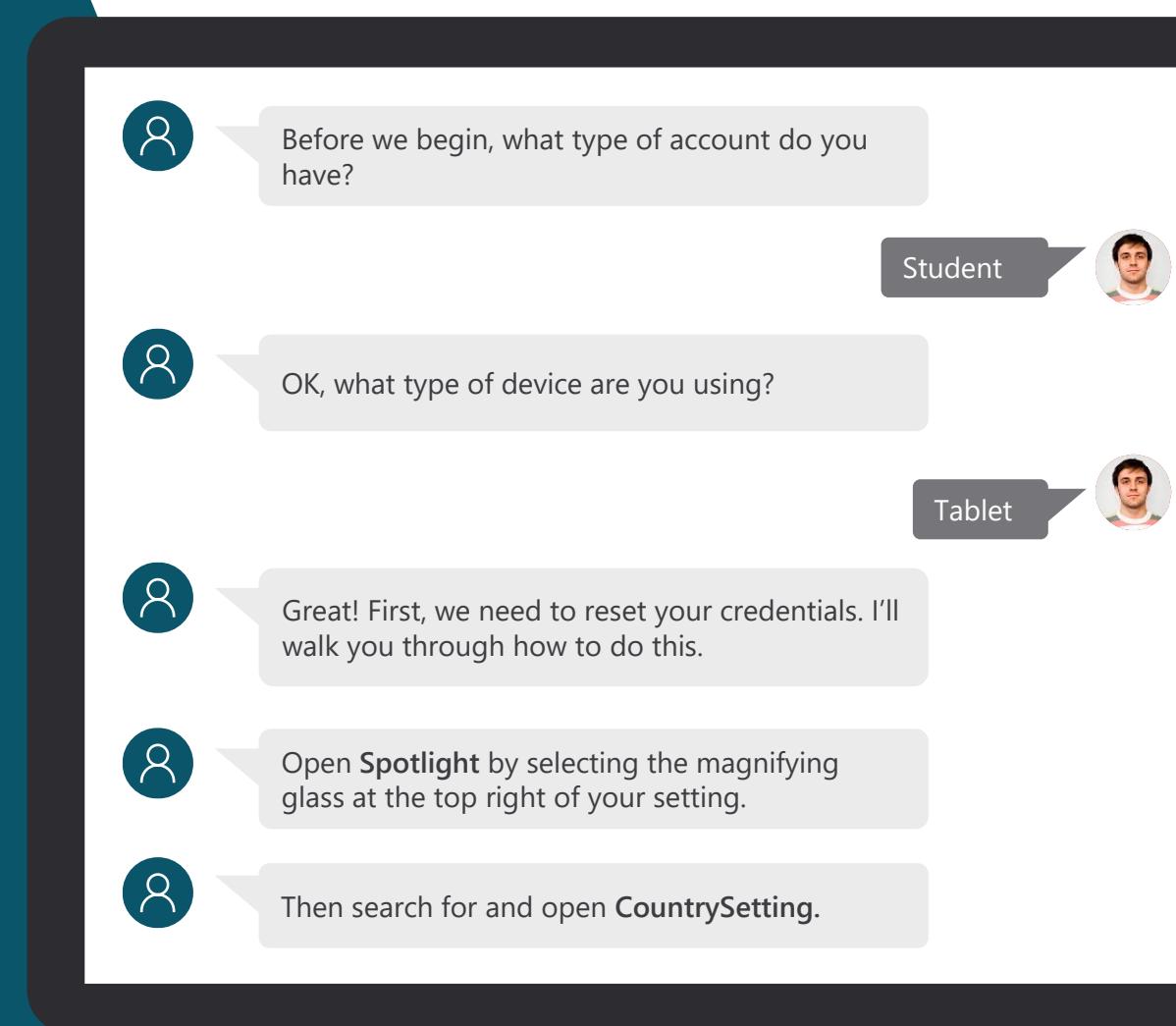
Style: How to sound conversational 6/9

Pace the conversation in short, scannable units

Break up messages into separate, readable blocks to make the pace of the conversation feel more natural

Make sure the chatbot doesn't respond so quickly that it rushes the customer. Add a minimum delay if necessary

Check in to make sure the user is following the conversation after explaining or answering a question, particularly a complex one



Style: How to sound conversational 7/9

Maintain a friendly tone when helping to complete the task

Tailor the tone of the chatbot's responses to the context. If it's something serious—like billing or cybersecurity—be empathetic but brief and straightforward. If it's a more mundane situation (like creating a new account), the tone can be more relaxed.

Exclamation points don't express energy or excitement. Strong writing does, particularly strong verbs. In your desire to help, avoid sounding condescending or insincerely enthusiastic.

Don't

Hi, I need help with my bill.

Oh! The first step is understanding how your service is billed.

Bills can be complex!

Do

I understand you need help with your bill. Can you tell me in a few words what the issue is?

Charges

Account Settings

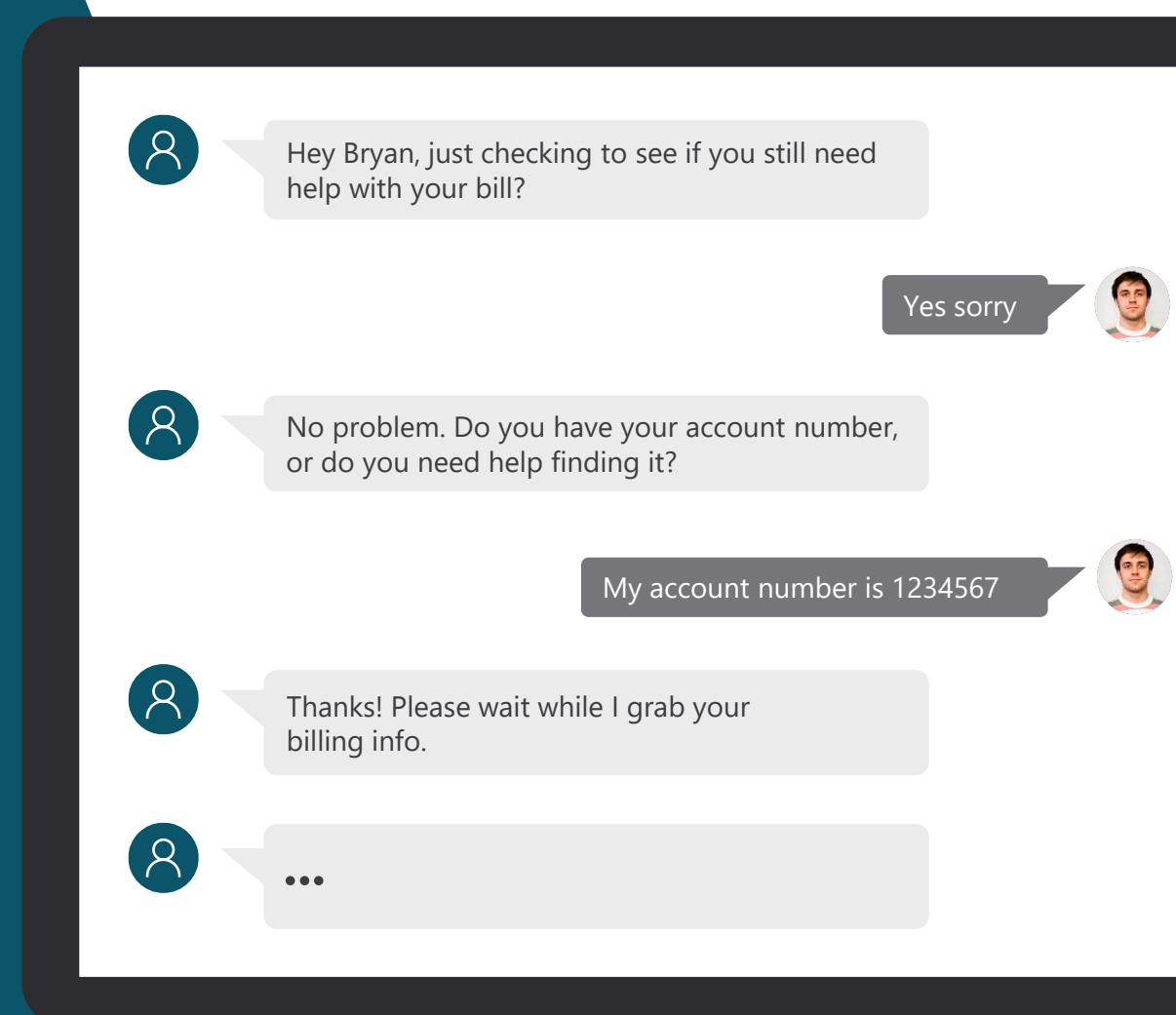
Payment

Style: How to sound conversational 8/9

Invite the user into the conversation on a regular basis by asking questions or making suggestions.

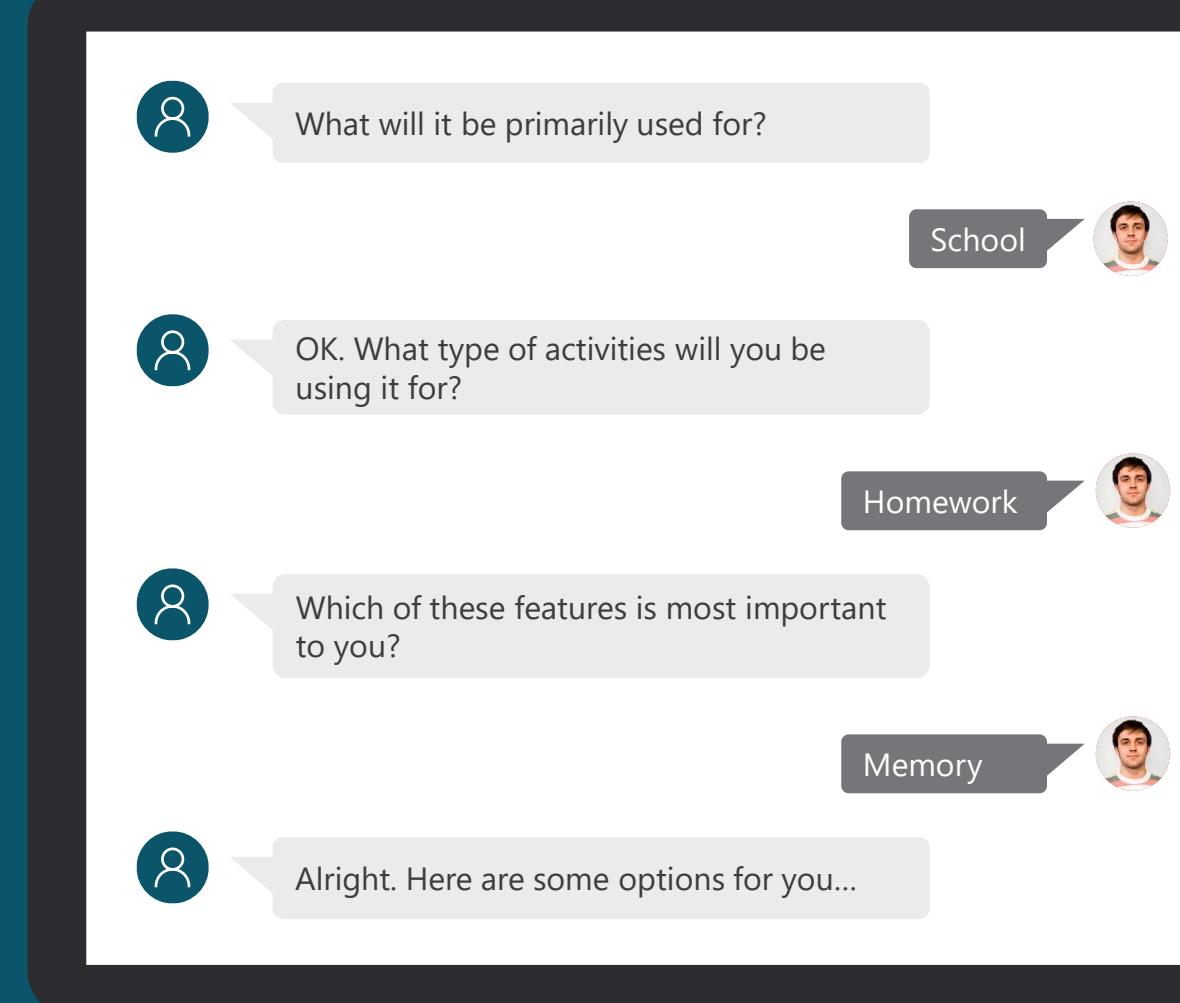
Respond to the customer in a timely manner.

If the chatbot may take a while to process the customer's request, let the customer know what to expect.



Style: How to sound conversational 9/9

Customers abandon a chat when the prompts are lengthy, so keep them brief. To keep your writing simple and straightforward, use the Flesch-Kincaid Grade Level feature in Microsoft Word or an app like Hemingwayapp.com to figure out the grade level for your scripts. In general, the lower the grade level, the better.



Lab 13:

Style & the sound of conversation

Instructions

In this session, go through the writing tips and see how the example for each was revised using conversation design principles that you just learned

Tips 1/5



Write like you speak

Read your text aloud. Does it sound like something a real person would say? Be friendly and conversational. No. Robot. Words.

Example

Invalid ID

Revised

You need an ID that looks like this:
someone@example.com

Tips 2/5



Use bigger words, fewer ideas

Our modern design hinges on crisp minimalism. Shorter is always better.

Example

If you're ready to purchase Office 365 for your organization, contact your Microsoft account representative

Revised

Ready to buy? Contact us

Tips 3/5



Be brief

Give customers just enough information to make decisions confidently. Prune every excess word.

Example	Revised
The Recommended Charts command on the Insert tab recommends charts that are likely to represent your data well. Use the command when you want to visually present data, and you're not sure how to do it	Create a chart that's just right for your data by using the Recommend Charts command on the Insert tab

Tips 4/5



Get to the point fast

Lead with what's most important. Front-load keywords for scanning. Make customer choices and next steps obvious.

Example	Revised
<p>Templates provide a starting point for creating new documents. A template can include the styles, formats, and page layouts you use frequently. Consider creating a template if you often use the same page layout and style for documents.</p>	<p>Save time by creating a document template that includes the styles, formats, and page layouts you use most often. Then use the template whenever you create a new document</p>

Tips 5/5



Project friendliness

Use contractions: *It's, you'll, you're, we're, let's...*

Example

To help you avoid traffic, remember anniversaries, and in general do more, Cortana needs to know what you are interested in, what is on your calendar, and who you are doing things with

Revised

To help you avoid traffic, remember anniversaries, and in general do more, Cortana needs to know what you're interested in, what's on your calendar, and who you're doing things with

Analytics, monitoring and chatbot performance improvements

Understanding the Analytics dashboard

GAIN VISIBILITY OF MANY PARAMETERS



Summary charts



Engagement over time chart



Session outcomes over time chart



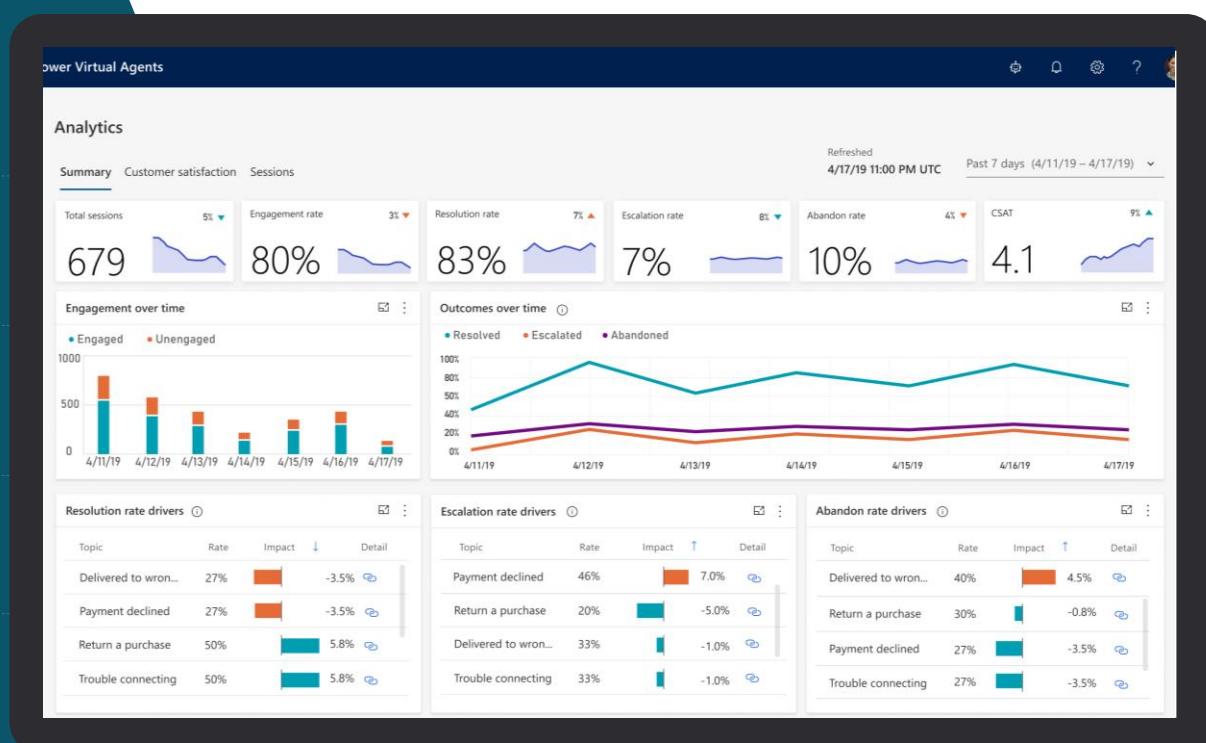
Resolution rate drivers chart



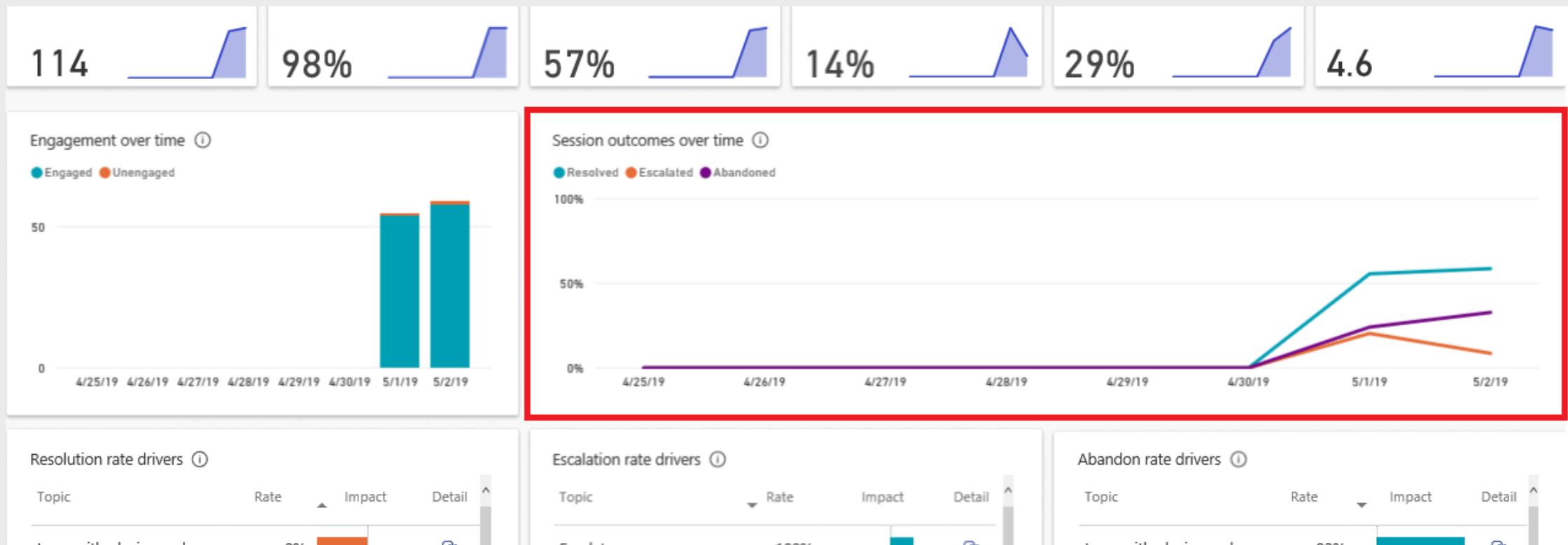
Escalation rate drivers chart



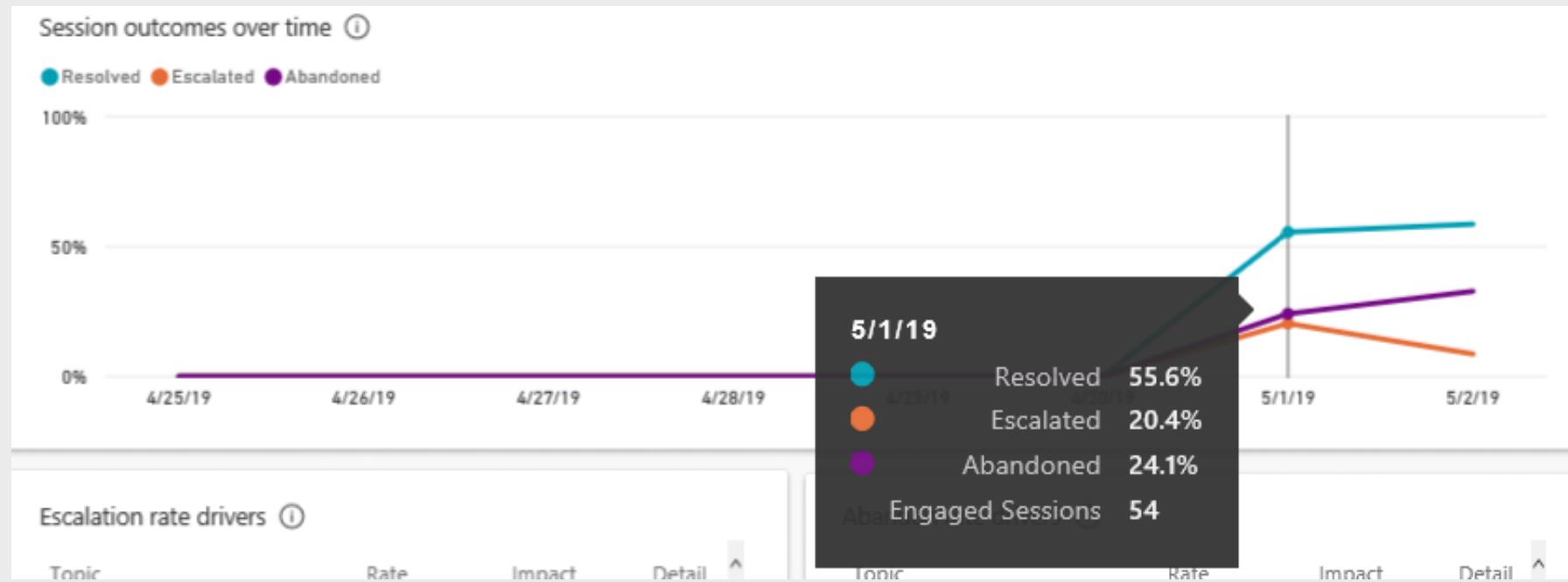
Abandon rate drivers chart



Monitor the 'Session outcomes over time' chart for trend changes



Pay attention to the purple line – Abandon rate is increasing!



Enter title name here

1. Identify high impact topics driving the abandon rate
2. Find more information about a topic by clicking 'Detail'
3. Download and read the transcript history for this topic
4. Click 'Setup' to improve the topic content

Abandon rate drivers ⓘ

Topic	Rate	Impact	Detail
Issue with placing order	92%	<div style="width: 92%;"></div>	Detail
Update shipping infor...	36%	<div style="width: 36%;"></div>	Detail
Pay bill	40%	<div style="width: 40%;"></div>	Detail
Reminders for appoint...	0%	<div style="width: 0%;"></div>	Detail

Issue with placing order

[Setup](#) [Analytics](#)

Last 7 days (4/25/2019 - 5/2/2019)

Total sessions	Avg CSAT	Resolution rate	Escalation rate	Abandon rate	CSAT impact
13	0.0	0%	8%	92%	0.00

Topic volume by date

Resolution rate impact: -7%
Escalation rate impact: -1%
Abandon rate impact: 8%

Quiz time... 2/2

Q1: Which of the following answers is correct?

If abandon rate increases, which rate will decrease?

- A Engagement rate
- B Either Resolution rate or Escalation rate
- C Both Resolution rate and Escalation rate
- D Non-engagement rate

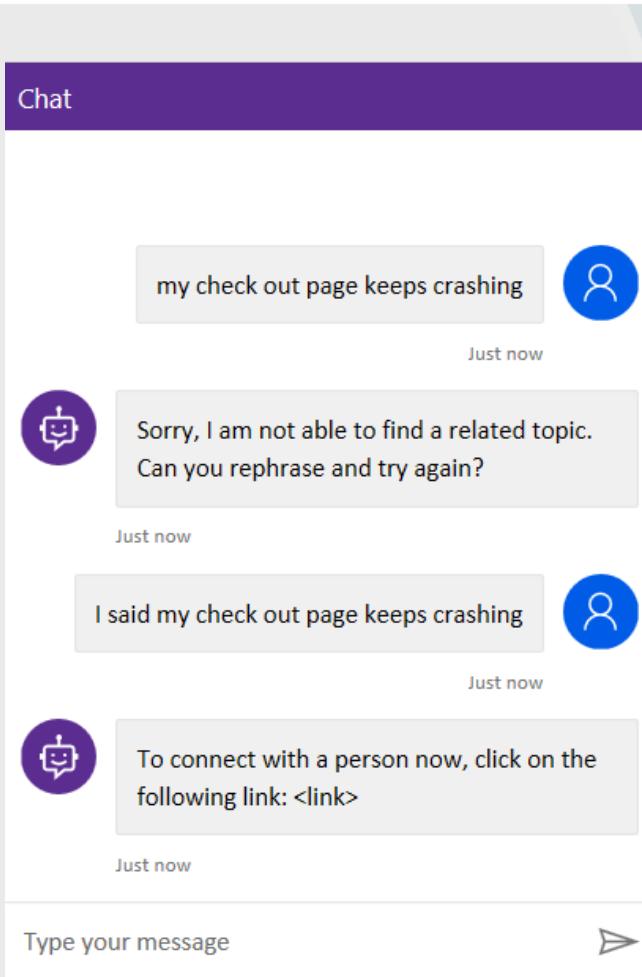
Answer: 1/3

If abandon rate increases, which rate will decrease?

- A Engagement rate
- B Either Resolution rate or Escalation rate
- C Both Resolution rate and Escalation rate
- D Non-engagement rate

$$\text{Abandon rate} + \text{Resolution rate} + \text{escalation rate} = 1$$

Q2: How would you improve this session?



A

Add new topics

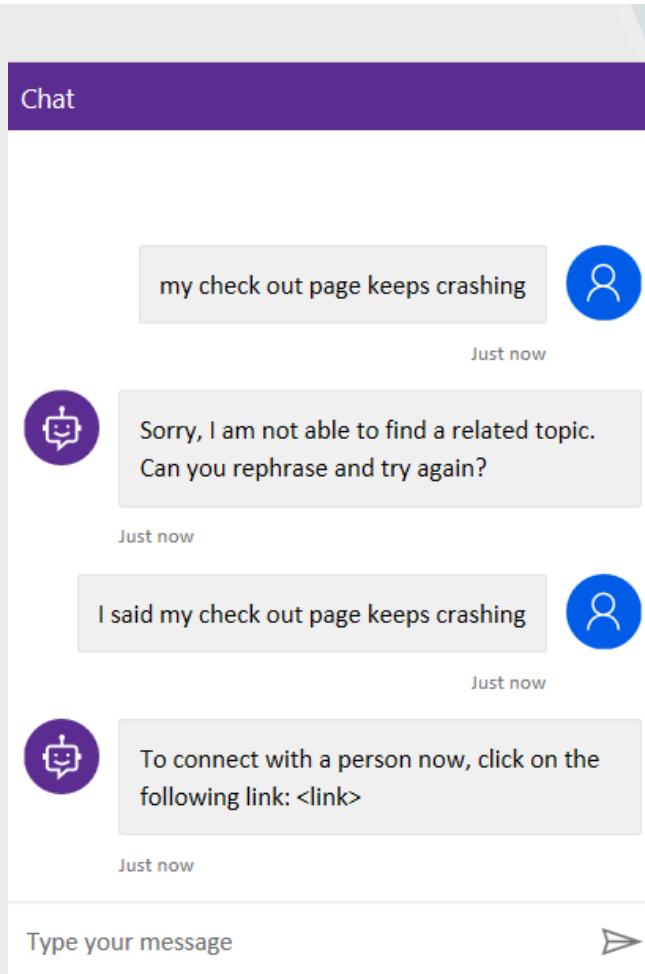
B

Re-design this topic

C

Add more trigger phrases

Answer: 2/3



A

Add new topics

B

Re-design this topic

C

Add more trigger phrases

Q3: Which of the following statements is correct?

- 
- A Adding a good variety of trigger phrases can help increase the resolution rate.
 - B If the user reaches the 'End of conversation' but he/she does not respond to the survey, this will decrease the resolution rate.
 - C Adding more escalate nodes in the conversation can increase the resolution rate.



Answer: 3/3

A

Adding a good variety of trigger phrases can help increase the resolution rate.

B

If the user reaches the 'End of conversation' but he/she does not respond to the survey, this will decrease the resolution rate.

C

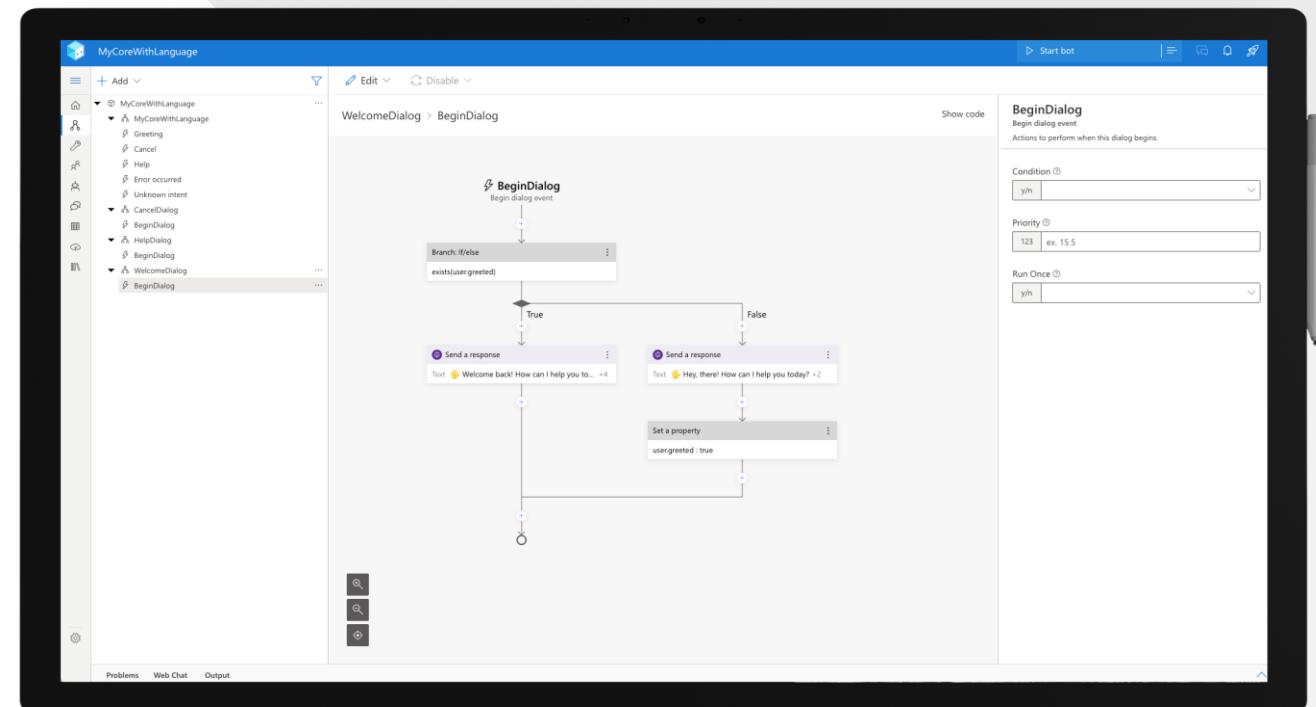
Adding more escalate nodes in the conversation can increase the resolution rate.

Optional: Advanced Authoring with PVA and Bot Framework Composer

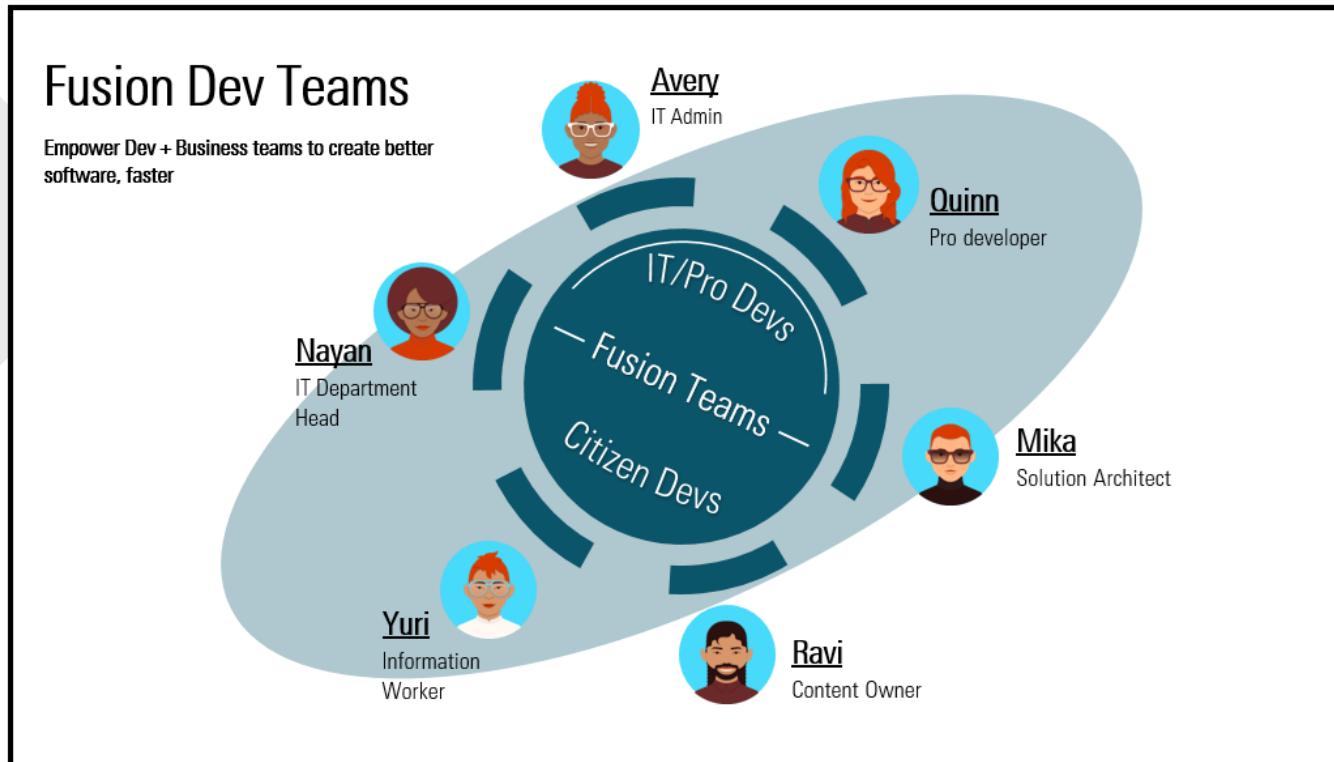
Bot Framework Composer



- Adaptive dialogs
- Language understanding
- Language generation
- QnA Maker



Fusion Development



This screenshot shows the Power Virtual Agents interface for creating a virtual agent named Roy. It displays a decision tree for handling a topic based on user usage type. The tree branches into four conditions: Home User, Game, Business User, and All other conditions. Each condition leads to a specific message response.

```
graph TD; Root[pva_usageType_usage type] --> C1[pva_usageType_usage type]; C1 --> C1a[Home User]; C1 --> C1b[Game]; C1 --> C1c[Business User]; C1 --> C1d[All other conditions]; C1a --> M1[We have the product for you!]; C1b --> M2[The Contoso Laptop 15 has enough power and memory to last you years.]; C1c --> M3[The Contoso Laptop 15 has enough power and memory to let you play the latest games without missing a beat.]; C1d --> M4[We have the product for you! The Contoso Laptop 15 has enough power and memory to last you years. It is also mobile, with an extra camera for crop and clear video conferences.]
```

This screenshot shows the Microsoft Bot Framework Composer interface for creating a bot dialog. It displays a "MultiModalGreeting" dialog with a "BeginDialog" action. The action triggers a response: "Hi, I am the Contoso Virtual Assistant, How can I help you?". The dialog also includes settings for priority (100), run once (yes), and a condition (empty).

Lab 15 (Optional):

Extend your bot using Bot Framework Composer

Optional:
Add a telephone number
to your bot using
AudioCodes



VoiceAI Connect

Add a telephone number to your bot

The screenshot shows a step-by-step configuration interface for adding a telephone number to a bot. The top navigation bar includes tabs for 'Bot framework', 'Bot details', 'Attach number', and 'Number settings'. The 'Number settings' tab is active. A success message indicates the phone number was created successfully and to wait a minute for activation. The configuration fields include:

- Number:** +13059288543
- Number name:** Contoso
- Barge-in:** Enable
- TTS speech service:** Microsoft
- STT speech service:** Microsoft
- Language:** English (United States) (en-US)
- Voice name:** en-US-JennyNeural (Female)

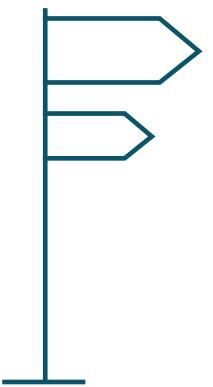
A 'Save and Close' button is located at the bottom right of the form.

Lab 16 (Optional):

Add a telephone number
to your bot using
AudioCodes

Closing: Wrap up and next steps

The Road Ahead



New & Upcoming

Enable chatbots to have more powerful conversations: Using global variables, deeper Dataverse integration, rich responses



Expand reach with support for new languages, channels, and telephony integration



Meet large enterprise needs through better IT manageability: Staging, application lifecycle



Deeper Human + AI collaboration, continually suggesting new topics to automate as the bot gets used



Learn more about Microsoft Power Virtual Agents

Visit [Power Virtual Agents](#) to learn more and request a demo

Technical details about the application are available in our [help documentation](#)

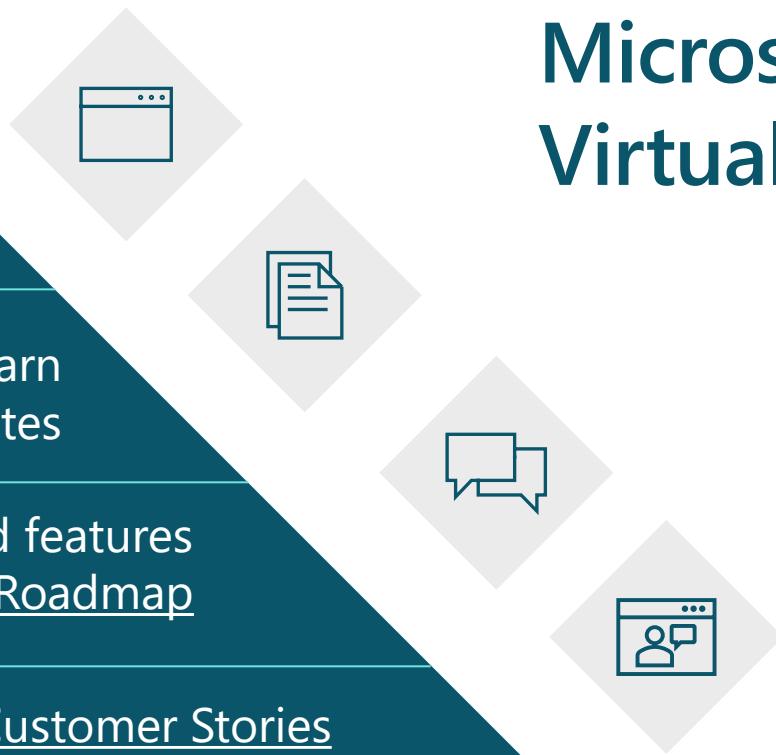
Check [Power Virtual Agents Blog](#) to learn more best practices and updates

View upcoming and planned features on the [Roadmap](#)

Explore [Customer Stories](#)

For questions please engage in our [Community forum](#)

Learn about the [Power Platform](#)



Please share your feedback



Lab Survey

aka.ms/PVAiaDSurvey

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THANK YOU