

Microsoft Learn

● LIVE

# Exam Readiness

Preparing for PL-100

Preparing for the PL-100

## Power Platform App Maker Exam

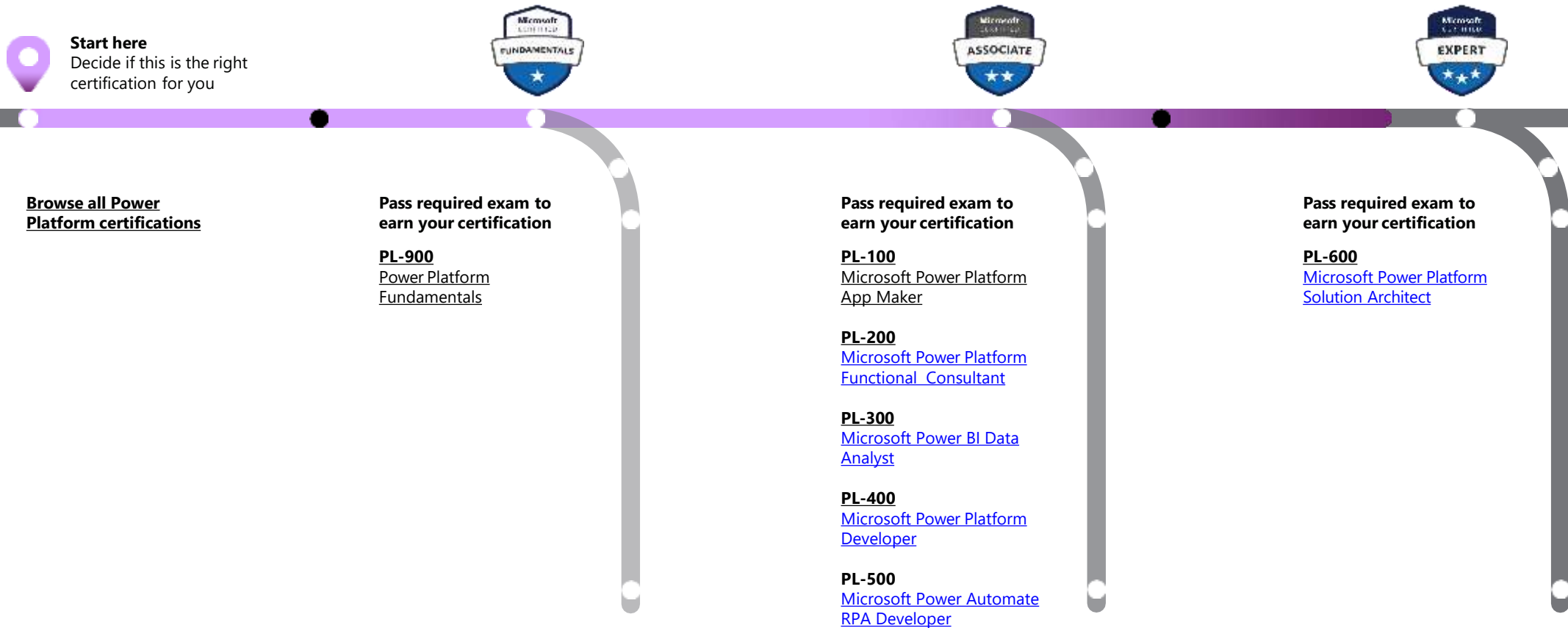
April Dunnam, Principal Cloud Advocate

Daniel Laskewitz, Senior Cloud Advocate

David Abu, Cloud Advocate

Gomolemo Mohapi, Cloud Advocate

# The journey to Microsoft Certified: Power Platform



# Exam Core Concepts

- Design business solutions (20 – 25%)
- Analyze and visualize data (10 – 15%)
  - Creating and consuming Power BI Dashboards
  - Describing AI Builder models
- Create business solutions (60 – 65%)
  - Manage Power Platform components
  - Create model-driven apps
  - Create canvas apps
  - Configure Dataverse
  - Create Power Automate flows
  - Create Power Virtual Agents chatbots in Teams

# Design Business Solutions

- Create a high-level design
- Identify Power Platform components
- Design the user interface (UI) and reporting/visualizations

# Design Business Solutions


- **Create a high-level design**
  - ✓ Identify existing data sources needed
  - ✓ Describe the expected user experience
  - ✓ Describe the differences between Microsoft Power Platform app types
  - ✓ Create a high-level structure for a new data sources

# Design Business Solutions

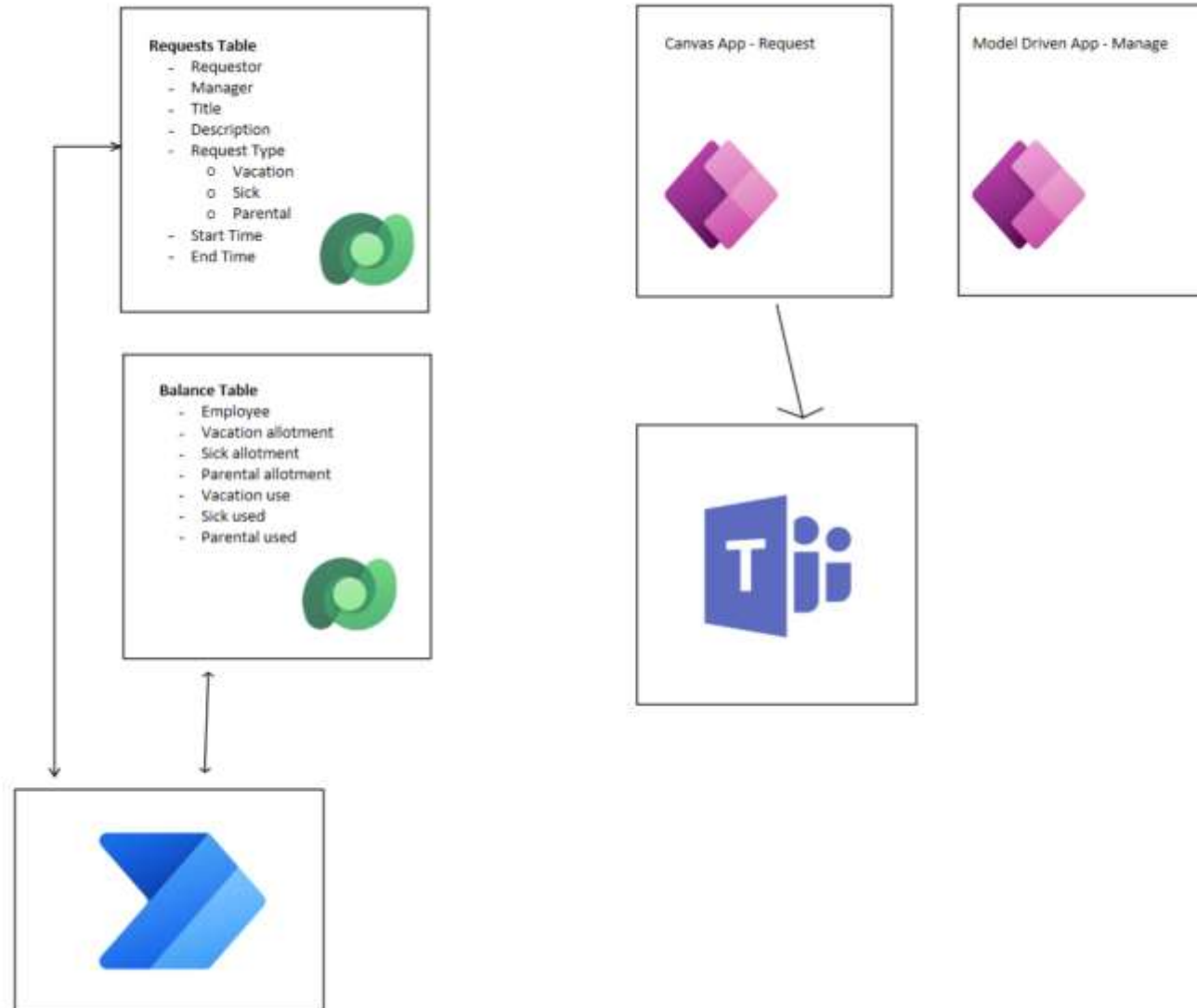
## ○ **Identify Power Platform components**

- ✓ Determine the required Power Apps app type
- ✓ Determine when to use Dataverse for Teams
- ✓ Map a problem domain to Microsoft Power Platform tools
- ✓ Identify options for implementing business logic
- ✓ Describe connectors
- ✓ Describe uses cases for cloud flows and desktop flows
- ✓ Describe use cases for chatbots in Microsoft Teams

# Sample Business Problem: Time Off Request

- Users need an application that works on mobile and desktop to view and submit their time off requests
  - Approvers should receive automatic notifications to approve requests
  - Approvers and admins need a way to see all submitted requests and to build reports off the data
  - Your organization uses Microsoft Teams heavily
  - The org is large, and you expect a high volume of data
- 

# Design





# Easily integrate with Microsoft Teams

## Microsoft Teams integrations

Depth of coding required

Ready-made apps



+ *hundreds of partner apps*

Low-code apps  
& workflows  
  
(Power Platform)

Power Apps



Build custom apps

Power Automate



Automate repetitive tasks

Power Virtual Agents



Create tailored chatbots

Power BI



Visualize and discuss data

Full-code custom solutions



Departmental tools



Employee resources



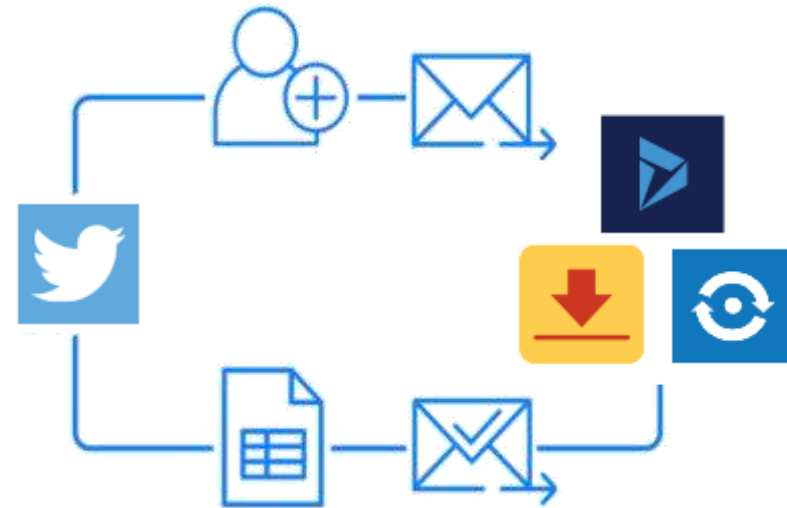
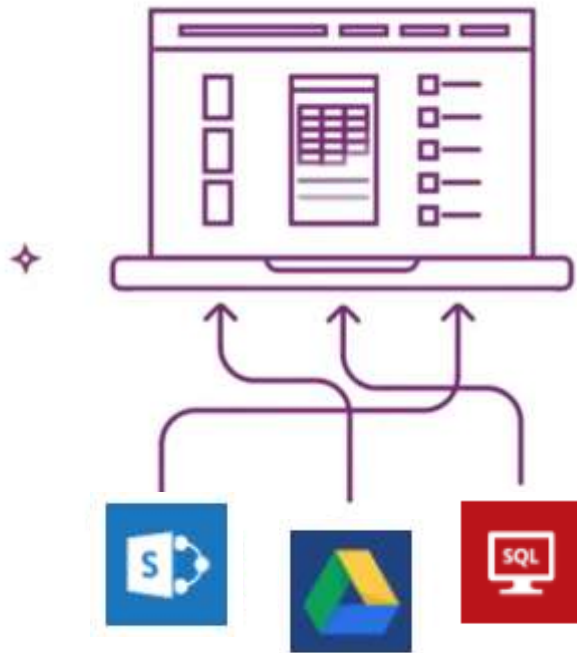
Processes and workflow



Support and info

# A connector is a wrapper

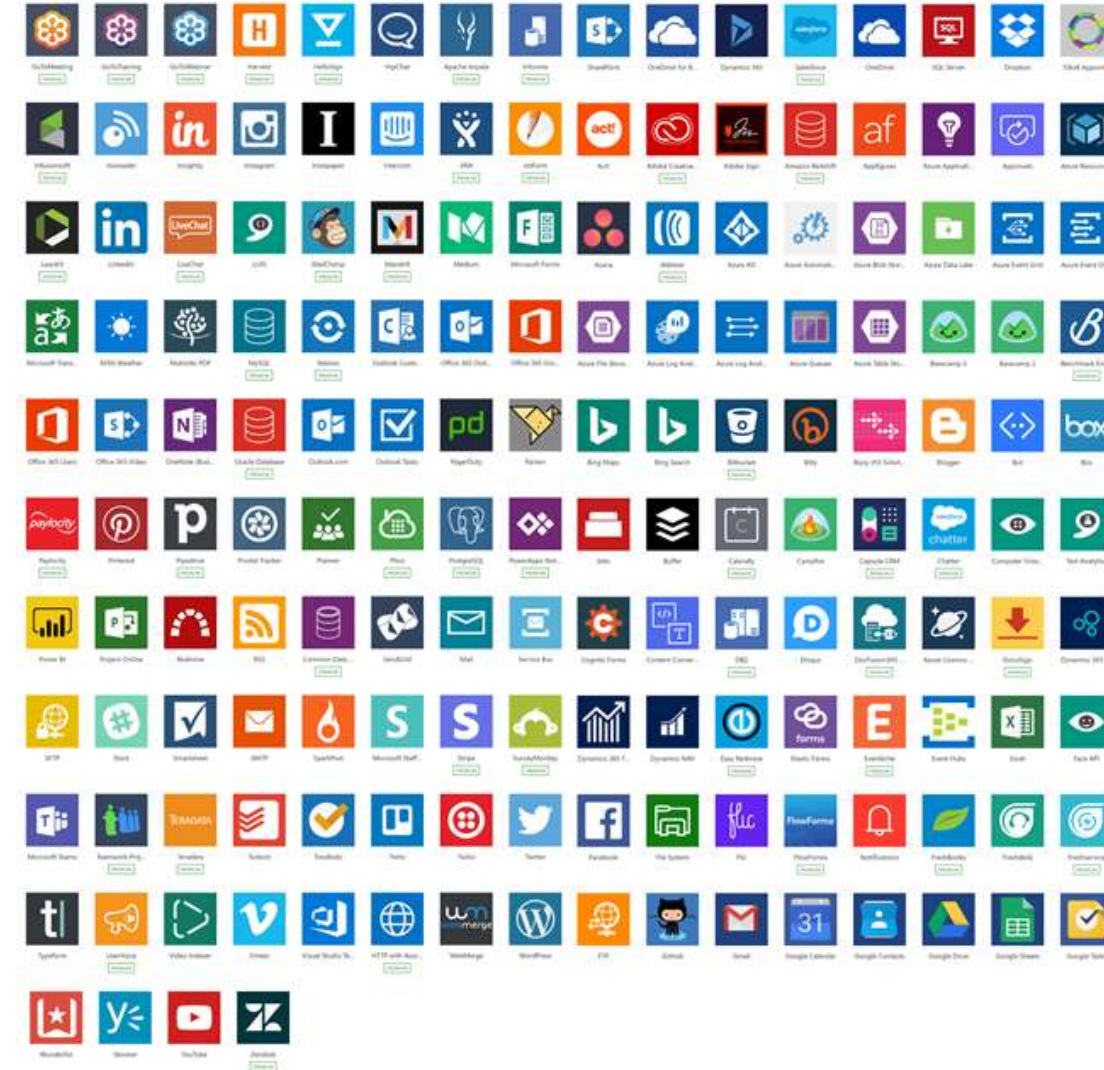
A **connector** is a wrapper around an API that allows the underlying service to talk to **Power Automate** and **Power Apps**



# Cloud and on-premises connectivity

- Built-in connectivity to cloud services, files, databases, web APIs, etc. using public connectors
- Seamless hybrid connectivity to on-premises systems via the On-Premises Data Gateway
- Connect to the service with your own security credentials
- Open source
  - <https://github.com/microsoft/PowerPlatformConnectors>
- With custom connectors, you can extend the reach for your organization

## Hundreds of connectors today



# Unlock access to any data source with custom connectors

- Communicate with services that are not available as prebuilt connectors.
- Create a connector using in-product wizards in Power Platform
- Connectors in Power Automate can include your own triggers and actions.
- Connectors in Power BI can include your own logic and credential options.



## **BUILD API**

Start with API for data source or build new API.



## **BUILD CONNECTOR**

Define connector using custom connector wizard or Power Query SDK.



## **BUILD SOLUTION**

Citizen developer selects custom connector to build app, dashboard, etc.



## **SHARE CONNECTOR**

Add connector to Power Platform or share directly with citizen developers.



# Design Business Solutions

## ○ **Describe the UI**

- ✓ Identify opportunities for component reuse
- ✓ Select UI elements for canvas apps
- ✓ Identify the model-driven forms and Microsoft Dataverse views that are needed

# Low-code Creation of Reusable Components



Quickly develop reusable, embeddable components with the low-code canvas



Reuse within and across apps; compose with pro-dev components



Enable faster and more consistent development when many makers are using the same components



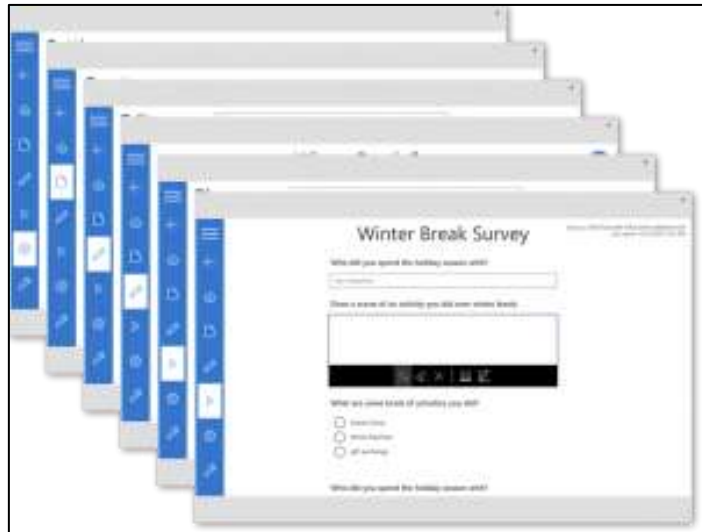
# Types of components

## Canvas Components

Targeted for canvas app makers

Built in Power Apps Studio using Power Fx

Works in canvas apps

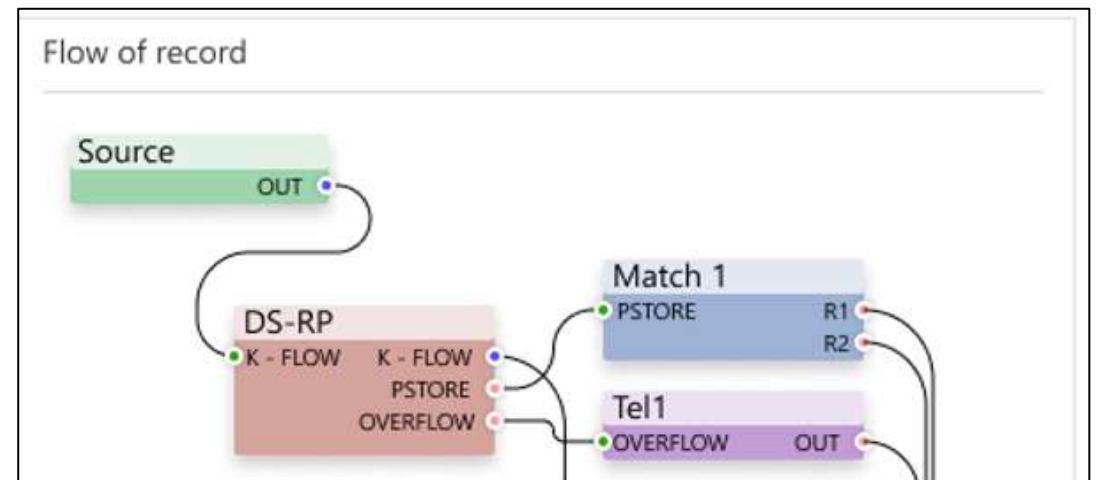


## Power Apps Component Framework (PCF)

Targeted for professional developers to build

Built in TypeScript using pro tooling

Works in model-driven, canvas and portal apps



# Solutions



# Solution Overview

Home

Learn

Apps

Create

Data

Flows

AI Builder

Solutions

+ New solution

↔ Import

📁 Open AppSource

📄 Publish all customizations

🔄 Switch to classic

🕒 See history

All

Search

Solutions

| Display name                          |     | Name                 | Created ↓ | Version  | Managed externa... | Solution check     |
|---------------------------------------|-----|----------------------|-----------|----------|--------------------|--------------------|
| Test Solution                         | ... | TestSolution         | 5/21/2020 | 1.0.0.1  | 🔒                  | Hasn't been run    |
| Contextual Help Base                  | ... | msdyn_ContextualH... | 12/6/2019 | 1.0.0.10 | 🔒                  | Checked by publ... |
| Contextual Help                       | ... | msdyn_ContextualH... | 12/6/2019 | 1.0.0.10 | 🔒                  | Checked by publ... |
| Power Apps Checker Base               | ... | msdyn_PowerAppsC...  | 8/3/2019  | 1.2.0.16 | 🔒                  | Checked by publ... |
| Power Apps Checker                    | ... | msdyn_PowerAppsC...  | 5/5/2019  | 1.2.0.16 | 🔒                  | Checked by publ... |
| Common Data Services Default Solution | ... | Crac9ba              | 2/9/2019  | 1.0.0.0  | 🔒                  | Hasn't been run    |
| Default Solution                      | ... | Default              | 2/9/2019  | 1.0      | 🔒                  | Not supported f... |

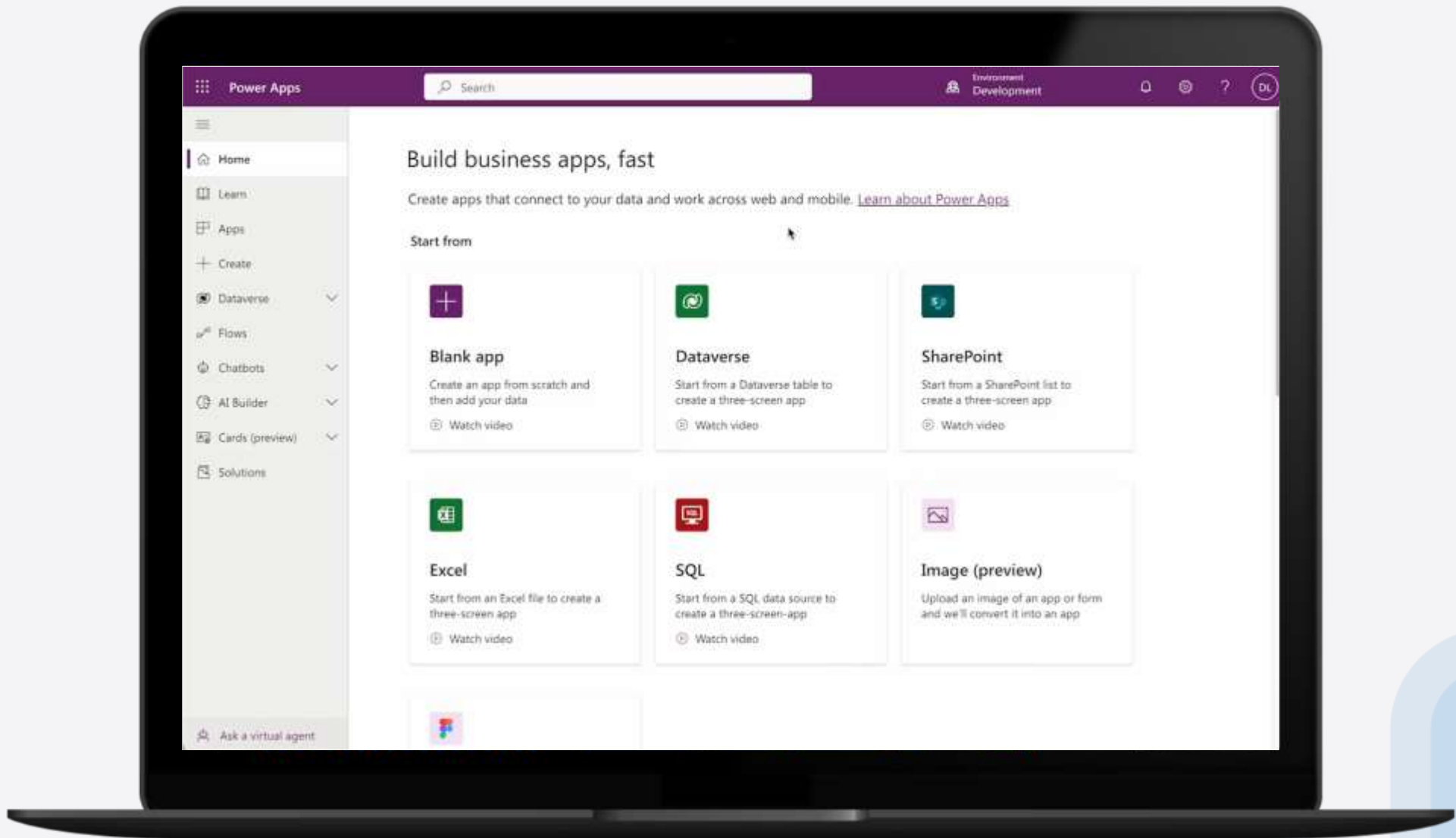
# Solution View

The screenshot displays the Microsoft Power Apps Solution View interface. The interface is divided into several sections, with numbered annotations (1-5) highlighting specific features:

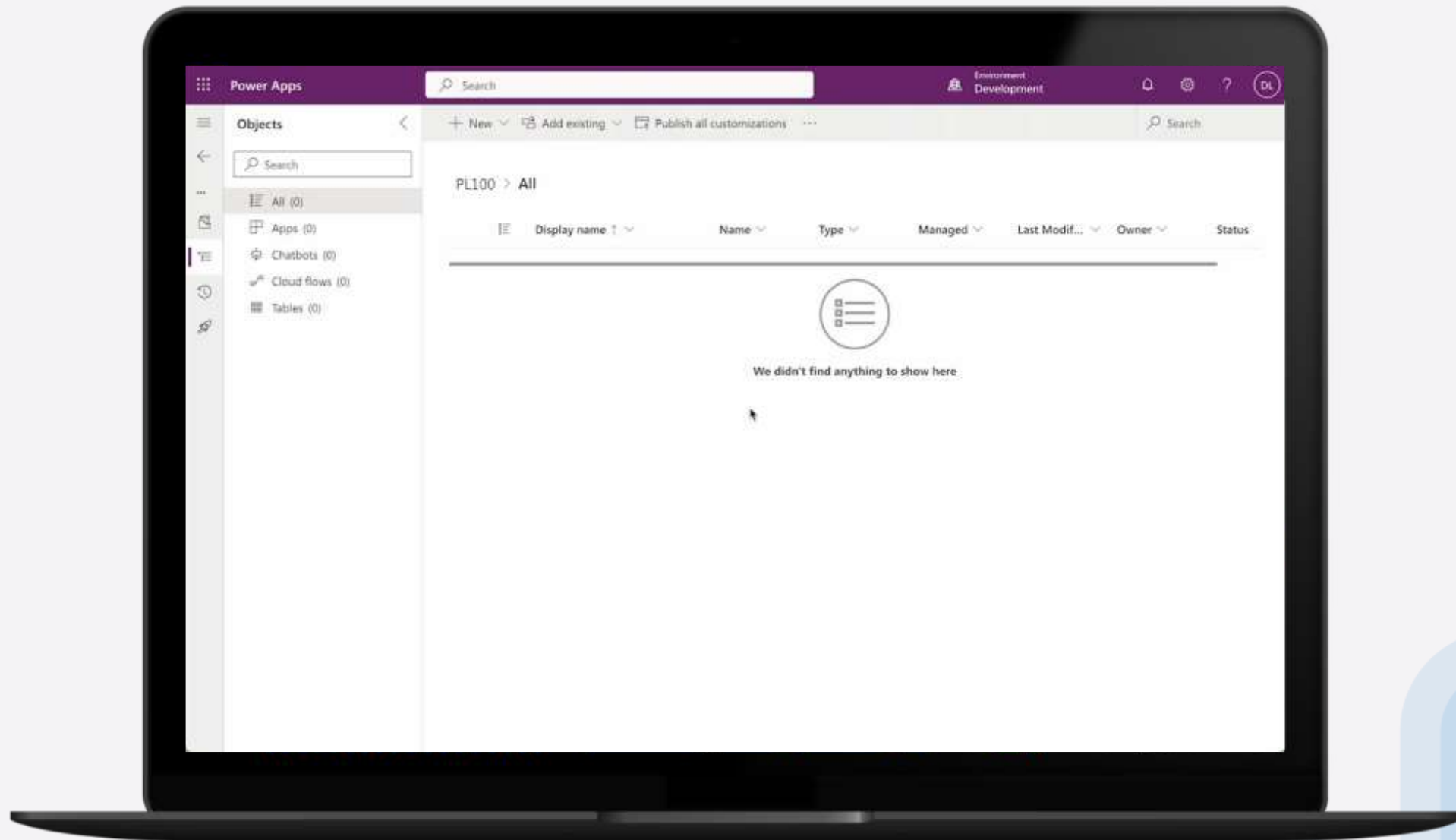
- 1**: The left-hand navigation pane, which includes a hamburger menu, a 'Back to solutions' link, the solution name 'Contoso', and a list of navigation items: 'Overview', 'Objects' (highlighted with a purple bar), and 'History'.
- 2**: The 'Objects' pane, which contains a search bar and a list of object categories with their counts: 'All (7)', 'Apps (1)', 'Chatbots (0)', 'Cloud flows (1)', 'Connection references (2)', 'Site maps (1)', 'Tables (0)', and 'Web resources (2)'.
- 3**: The top toolbar, which includes buttons for '+ New', 'Add existing', 'Publish all customizations', 'Show dependencies', and a search bar.
- 4**: The main content area, which displays a list of objects under the 'All' filter. The list has columns for 'Display name', 'Name', 'Type', 'Ma...', 'Last Modif...', 'Owner', and 'Sta...'. The objects listed are: 'Contoso Sales' (Model), 'Contoso Sales' (Site Map), 'HD icon' (Web Re...), 'HD svg' (Web Re...), 'Microsoft Dataverse' (Connec...), 'SharePoint' (Connec...), and 'When an item is created -> Add a new row' (Cloud F...).
- 5**: The search bar in the top right corner of the main content area.

| Display name ↑                           | Name                | Type       | Ma... | Last Modif...  | Owner | Sta... |
|--|---------------------|------------|-------|----------------|-------|--------|
| Contoso Sales                            | contoso_Contos...   | Model...   | No    | 1 year ago     | -     | On     |
| Contoso Sales                            | contoso_Contos...   | Site Map   | No    | 1 year ago     | -     |        |
| HD icon                                  | contoso_HDicon      | Web Re...  | No    | 1 year ago     | -     |        |
| HD svg                                   | contoso_HD_svg      | Web Re...  | No    | 1 year ago     | -     |        |
| Microsoft Dataverse                      | Microsoft Datave... | Connec...  | No    | 1 minute ago   | -     | Off    |
| SharePoint                               | SharePoint          | Connec...  | No    | 1 minute ago   | -     | Off    |
| When an item is created -> Add a new row | When an item is ... | Cloud F... | No    | 28 seconds ago | -     | On     |

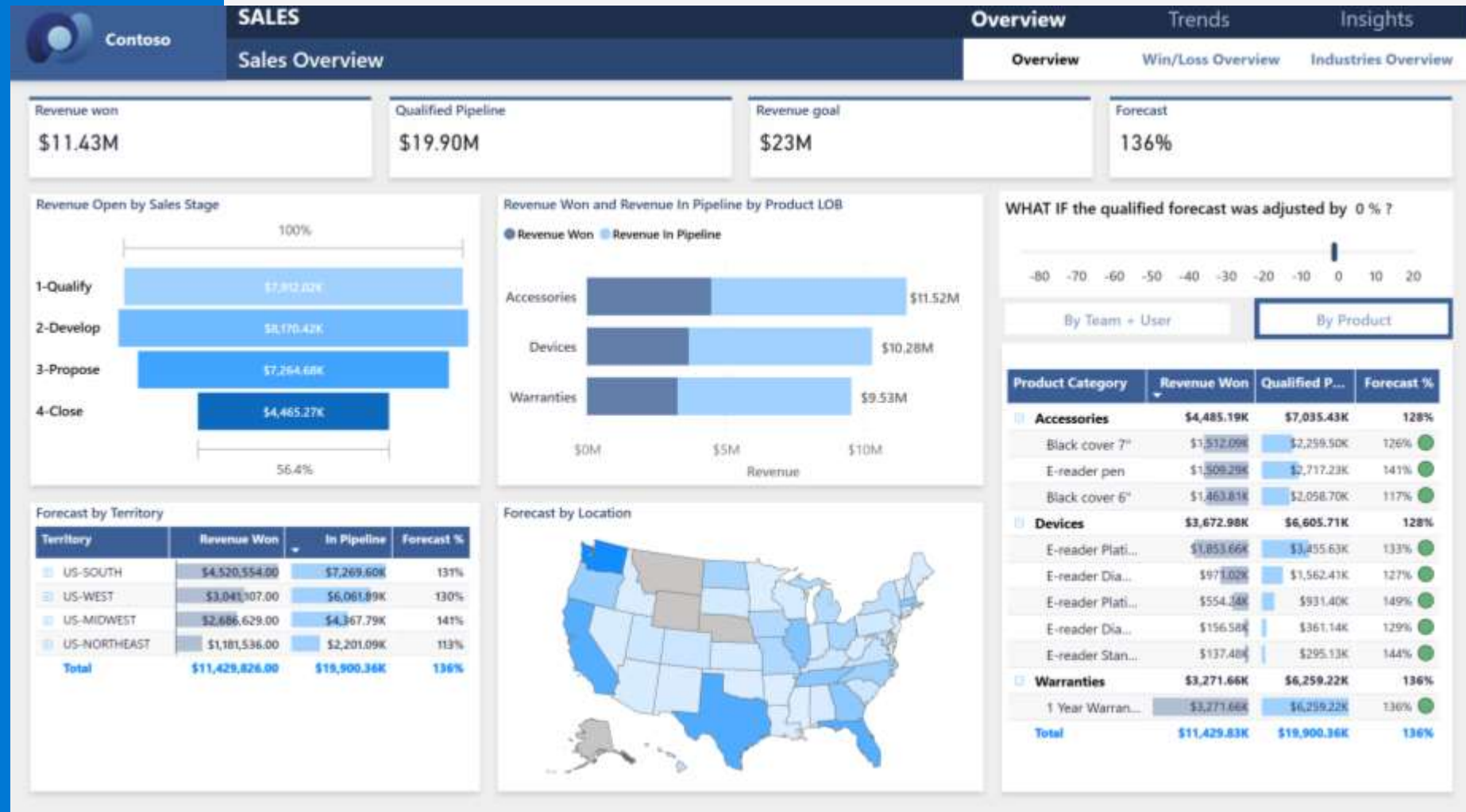
# Create a new solution




# Add an existing app / flow to a solution



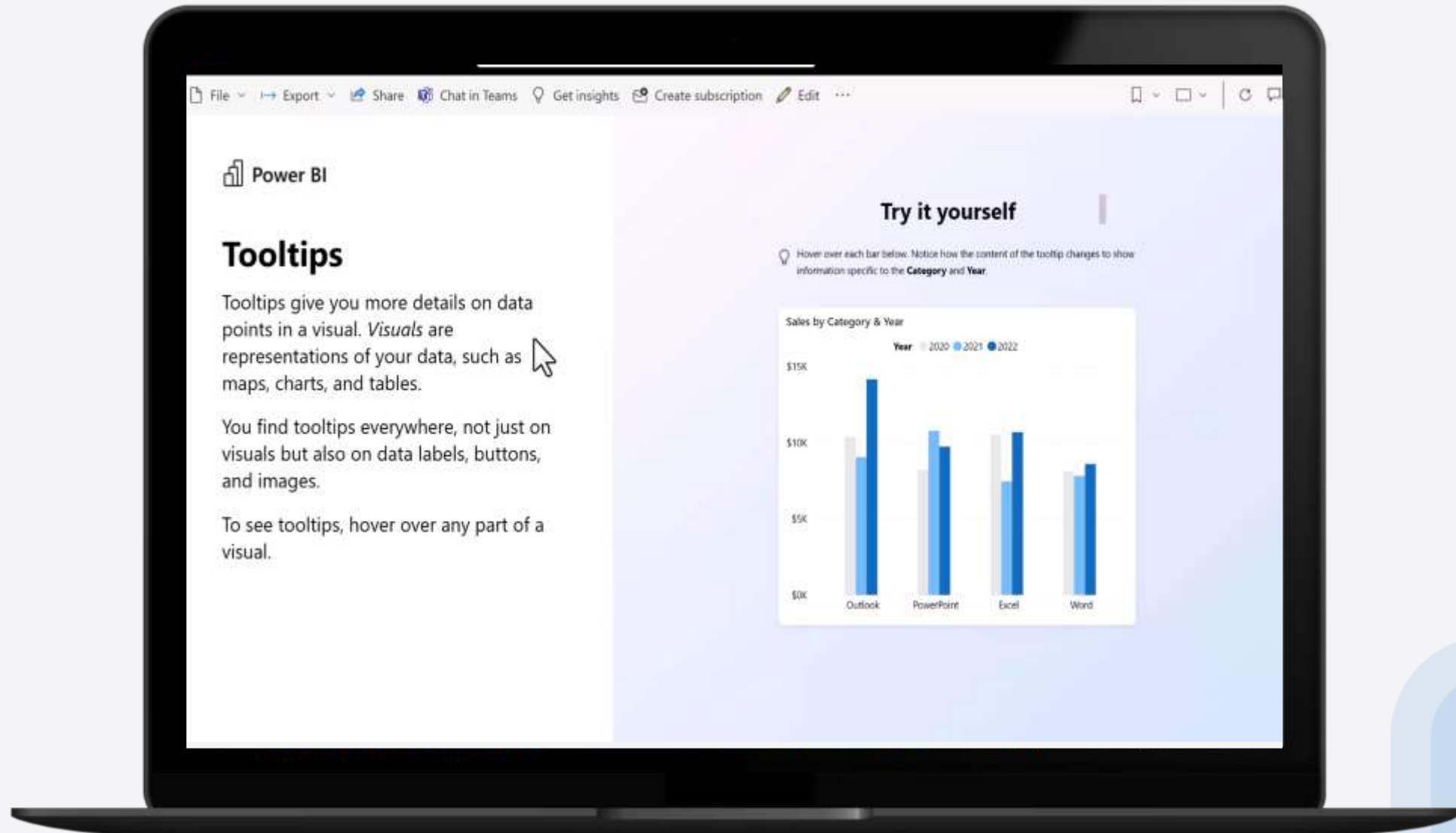
# Analyze and Visualize Data



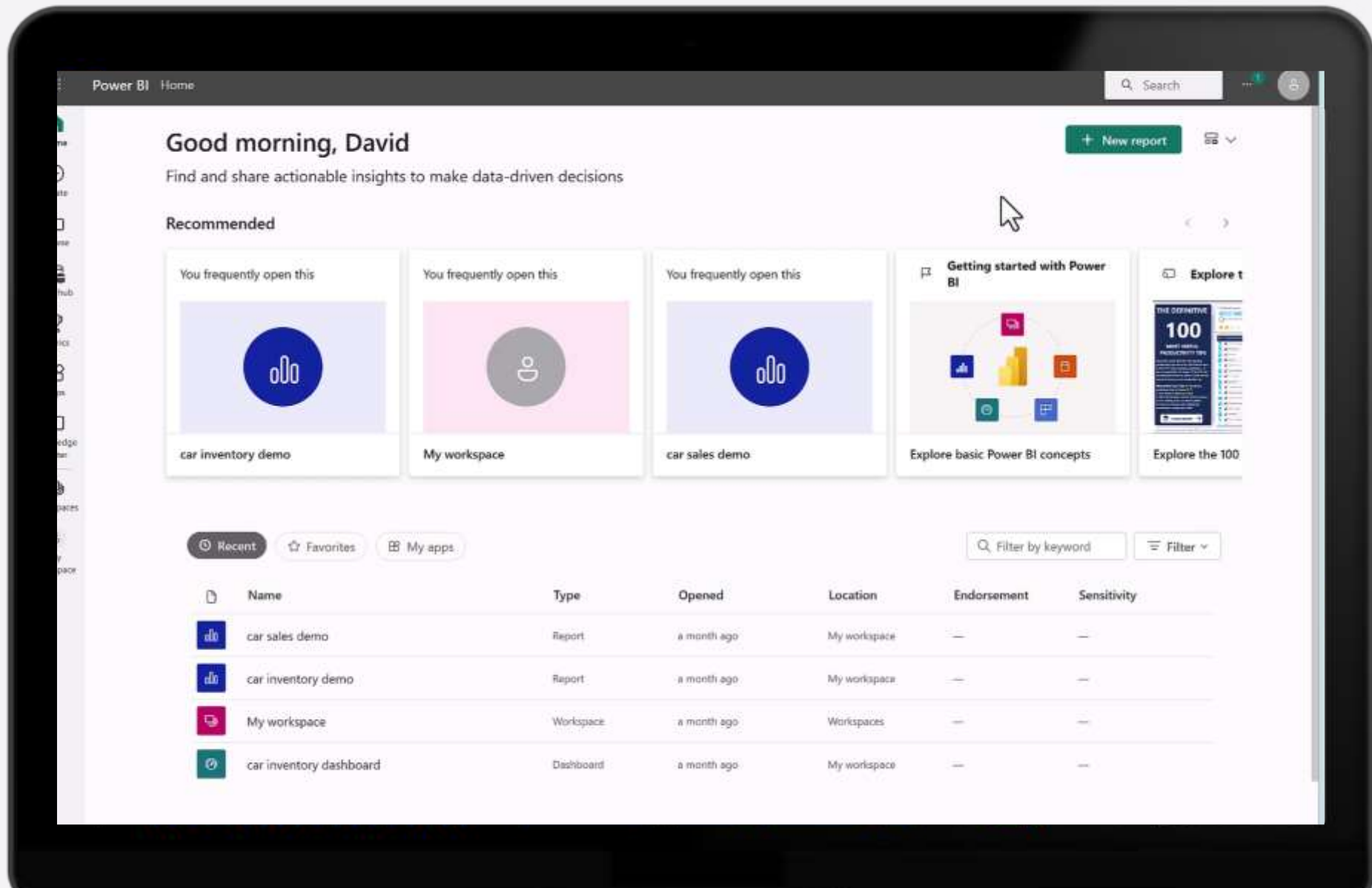
# Create and consume Power BI dashboards

- Create and consume Power BI dashboards
  - Create a simple report from an existing dataset by using Power BI Service
  - Create Power BI dashboards from existing reports
  - Share Power BI dashboards
  - Embed Power BI dashboards and tiles in canvas apps and model-driven apps
- 

# Create and consume Power BI dashboards

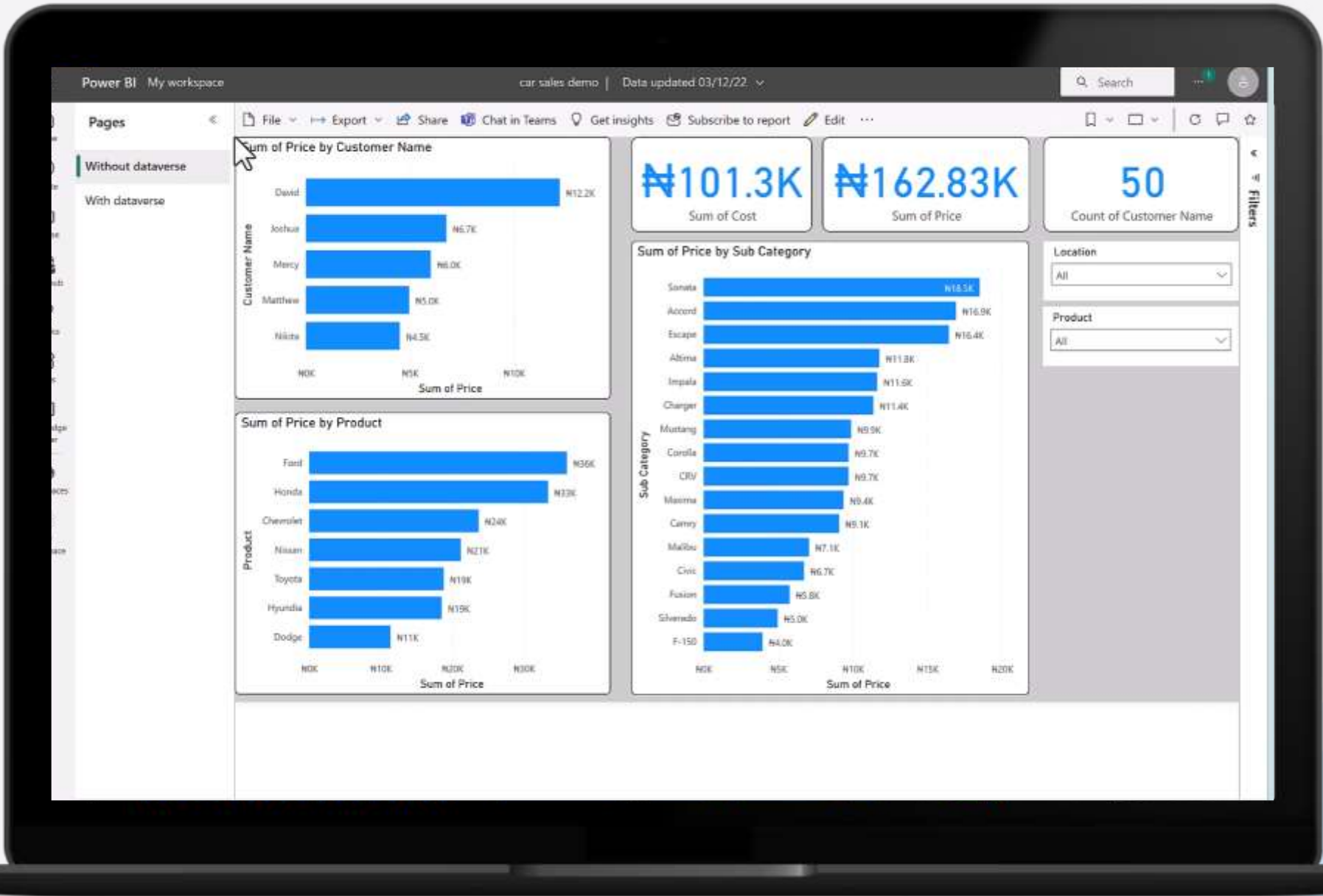


# Create a simple report from an existing dataset by using Power BI Service

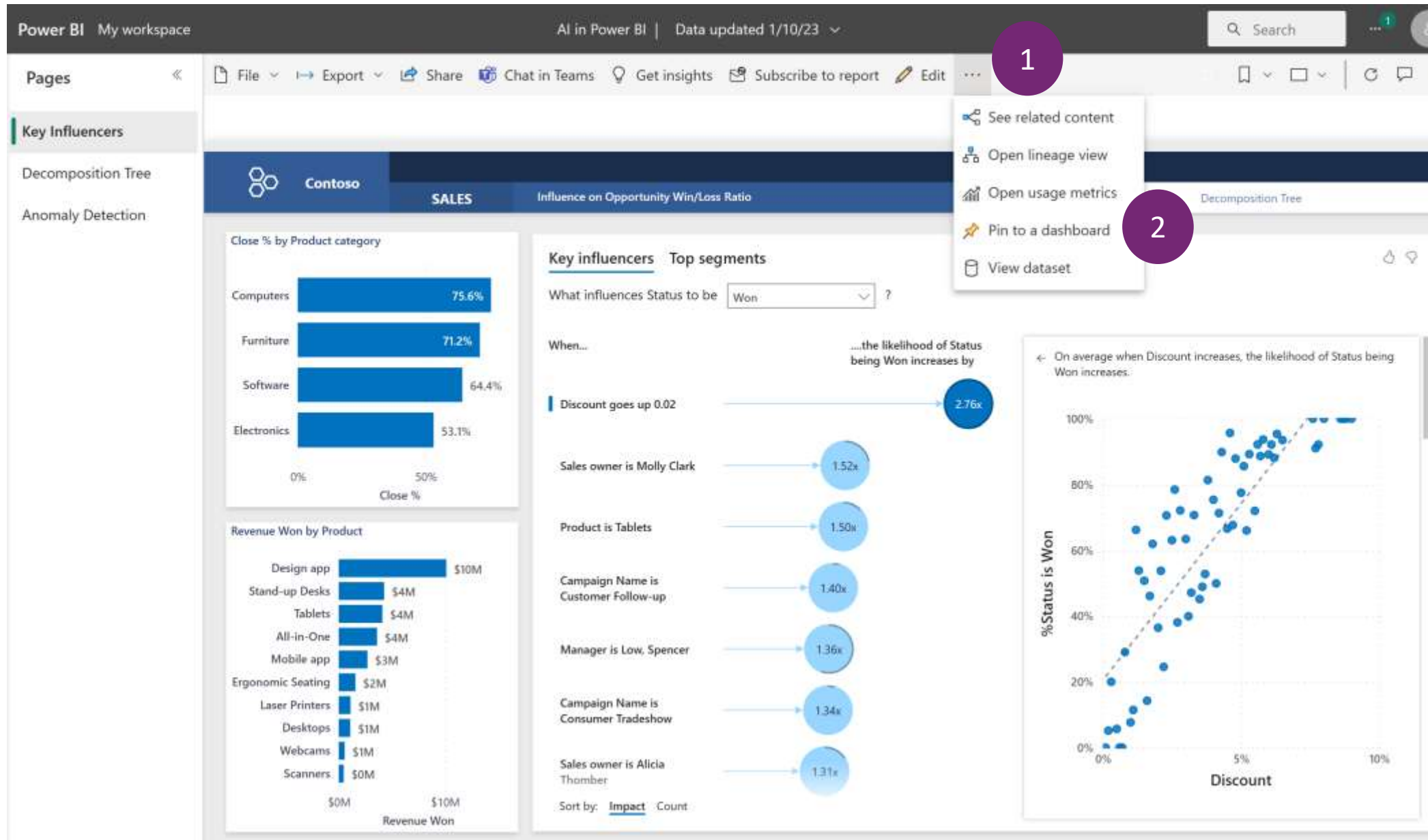




# Edit existing reports within Power BI Service



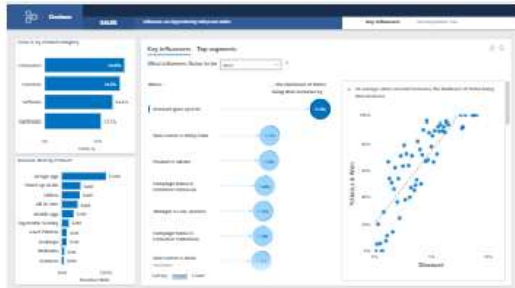
# Create Power BI dashboards from existing reports



# Create Power BI dashboards from existing reports

**Preview:** Last saved state

AI in Power BI  
KEY INFLUENCERS



## Pin to dashboard

Select an existing dashboard or create a new one.

Where would you like to pin to?

☐ Existing dashboard


☒ New dashboard

1

Dashboard name

dashboard1

2

 Pin live page enables changes to reports to appear in the dashboard tile when the page is refreshed.

3

Pin live

Cancel

# Create Power BI dashboards from existing reports

The screenshot displays the Power BI web interface. At the top, a dark header bar contains the text "AI in Power BI | Data updated 1/10/23" and a search bar. Below this, a navigation bar includes links for "Teams", "Get insights", "Subscribe to report", and "Edit". A notification bubble with the number "1" is visible in the top right corner. A modal dialog box is open in the center, titled "Pinned to dashboard" with a pin icon. The message inside states: "The visualization has been pinned to your dashboard. You can now create a mobile layout to optimize your dashboard for mobile devices as well." Below the message are two buttons: "Create mobile layout" (in a green box) and "Go to dashboard". A purple circle with the number "1" is positioned next to the "Go to dashboard" button. In the background, a report is visible with a section titled "Key influencers" and "Top segments". A dropdown menu is set to "Won". Below this, a visualization shows a bar chart with a blue bar and a value of "2.76%". A tooltip is visible over the bar, stating: "On average when Discount increases, the likelihood of Status being Won increases."

AI in Power BI | Data updated 1/10/23

Search

Teams Get insights Subscribe to report Edit

fluence on Opportunity Win/Loss Ratio

**Pinned to dashboard**

The visualization has been pinned to your dashboard. You can now create a mobile layout to optimize your dashboard for mobile devices as well.

Create mobile layout Go to dashboard

**Key influencers** Top segments

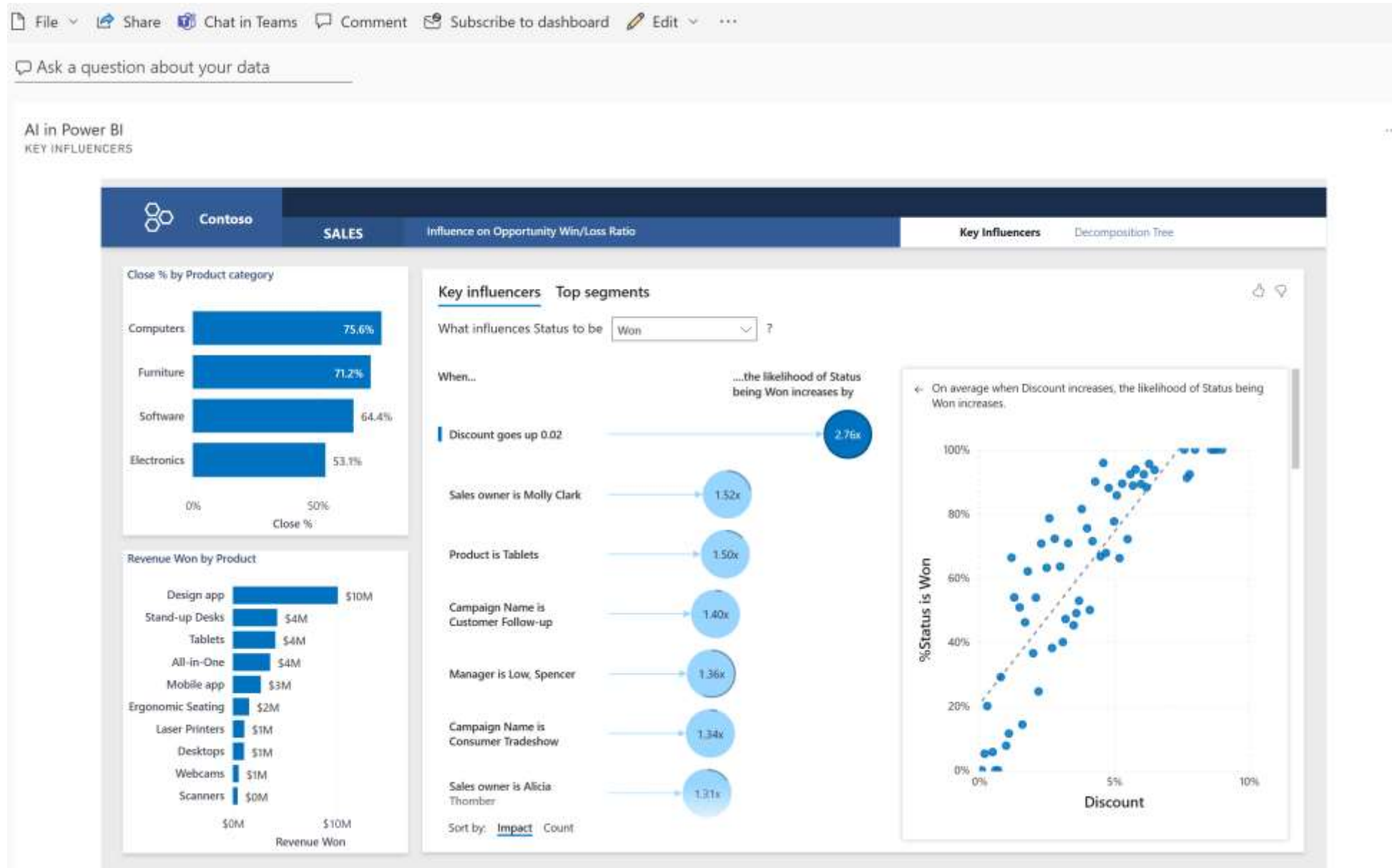
What influences Status to be Won ?

When... ....the likelihood of Status being Won increases by

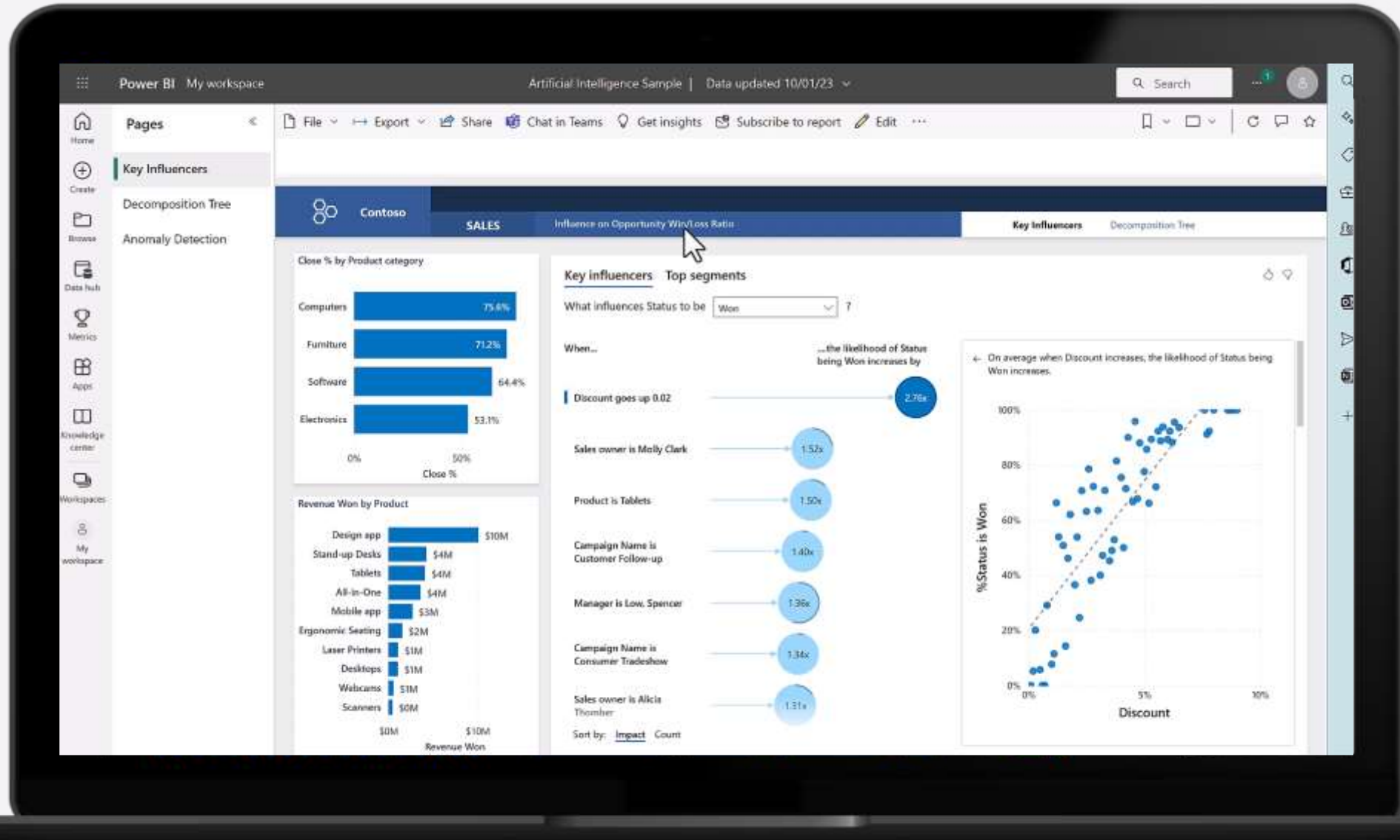
Discount goes up 0.02 2.76%

On average when Discount increases, the likelihood of Status being Won increases.

# Create Power BI dashboards from existing reports

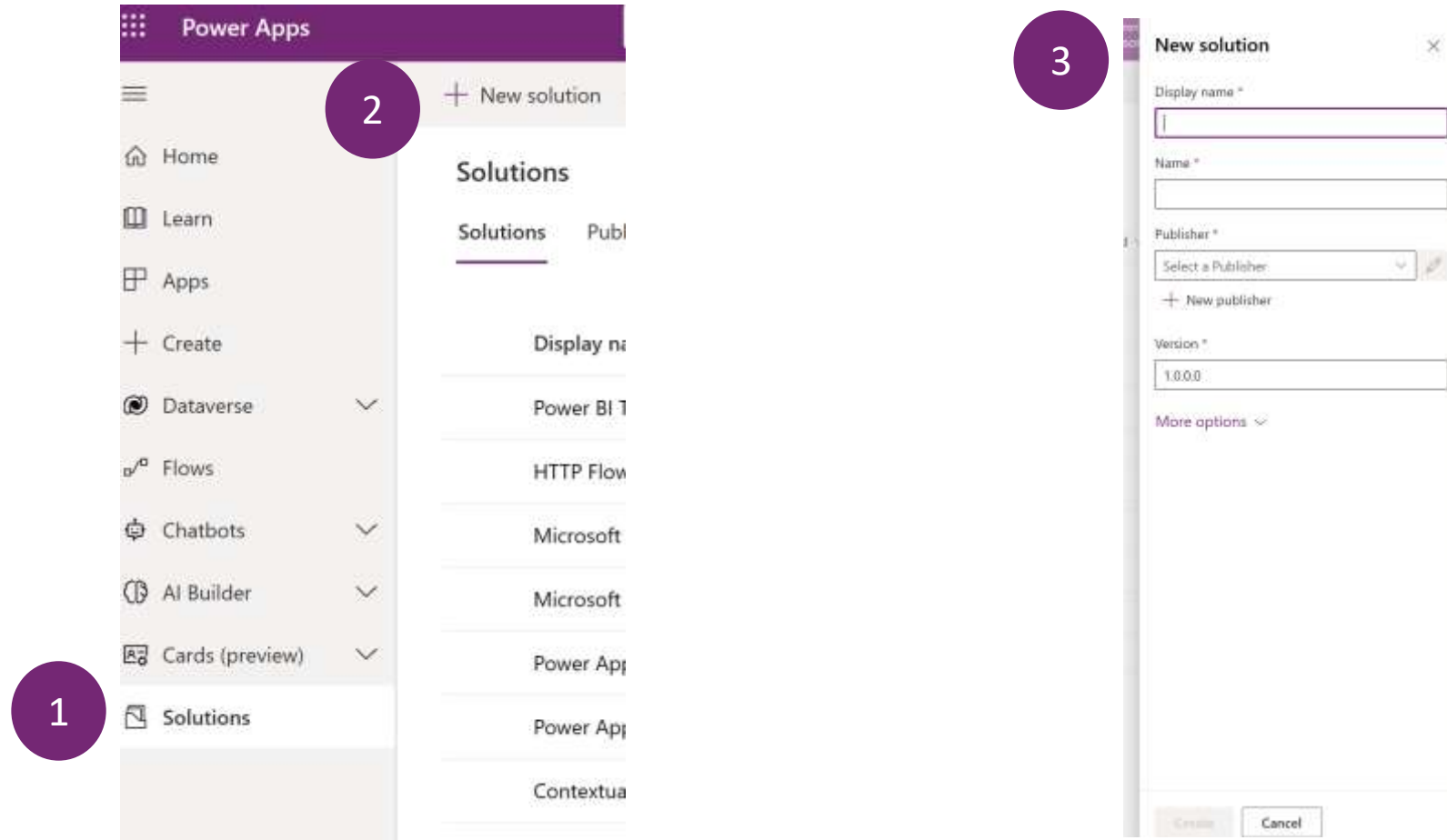


# Share Power BI dashboards





# Embed your report in Power Apps



# Embed your report in Power Apps

Solutions

Solutions Publishers History

| Display name ▾  | Name ▾      | Created ↓ ▾ | Version ▾ | Managed ▾ | Publisher ▾      | Solution check  |
|-----------------|-------------|-------------|-----------|-----------|------------------|-----------------|
| 1 Power BI Test | PowerBITest | 3 hours ago | 1.0.0.0   | No        | Power Platfor... | Hasn't been run |

Power Apps

Search

Environment: Personal Productivity (d...)

Objects

Search

All (0)

Apps (0)

Chatbots (0)

Cloud flows (0)

Tables (0)

+ New ▾ Add existing ▾ Publish all customizations ▾

App >

Automation >

Chatbot

Dashboard >

Report >

Security >

Table >

More >

2-Column overview

3-Column overview

3-Column overview (varied width)

4-Column overview

Power BI embedded

4

We didn't find anything to show here



# Embed your report in Power Apps

Solutions

Solutions Publishers History

| Display name ▾  |   | Name ▾      | Created ↓ ▾ | Version ▾ | Managed ▾ | Publisher ▾      | Solution check  |
|-----------------|---|-------------|-------------|-----------|-----------|------------------|-----------------|
| 1 Power BI Test | ⋮ | PowerBITest | 3 hours ago | 1.0.0.0   | No        | Power Platfor... | Hasn't been run |

Power Apps

2

3

4

Objects

Search

All (0)

Apps (0)

Chatbots (0)

Cloud flows (0)

Tables (0)

New ▾ Add existing ▾ Publish all customizations ...

AI Model

Analytics >

App >

Automation >

Chatbot

Dashboard

Report

Security >

Table

More >

Power BI Dataset

Power BI Report

type ▾ Managed ▾ Last Modif... ▾ Owner ▾ Status

We didn't find anything to show here

# Resources



## Power BI

<https://aka.ms/PL100/PowerBI>

<https://aka.ms/PL100/PowerBIDesktop>

<https://aka.ms/PL100/PowerBIDataverse>

<https://aka.ms/PL100/ReportInPowerApps>

# AI Builder

The screenshot displays the Microsoft Power Automate AI Builder interface. The left sidebar contains navigation options: Home, Approvals, My flows, Create, Templates, Connectors, Data, Monitor, AI Builder, Explore, Models, Document automation, Process advisor, Solutions, and Learn. The main area is titled "Extract information from receipts" and includes a description of the receipt processing prebuilt model. Below the description, there is a section for uploading receipts, showing a sample receipt from "Contoso" with extracted fields like Merchant name, address, phone number, transaction date, time, and items. The interface also features buttons for "View documentation", "Use in a flow", and "Use in an app".

**Extract information from receipts**

The receipt processing prebuilt model extracts key information from receipts. The model will extract information such as the merchant name, address, phone number, the list of purchased items and [more](#). Check out our [learn module](#) to get started with using a receipt processing model in a flow or an app.

To recognize information that's specific to your business, create a [Document processing custom model](#).

**Extracted information**

- Merchant name**  
Contoso
- Merchant address**  
123 Main Street Redmond, WA 98052
- Merchant phone number**  
987-654-3218
- Transaction date**  
6/18/2019
- Transaction time**  
13:59
- Purchased items**  
1 Surface Pro 6 \$999.00

[View documentation](#) [Use in a flow](#) [Use in an app](#)

# Add intelligence to your business with AI Builder



Use **pre-built** AI models or build **custom models** for your business need in minutes without code or data scientists



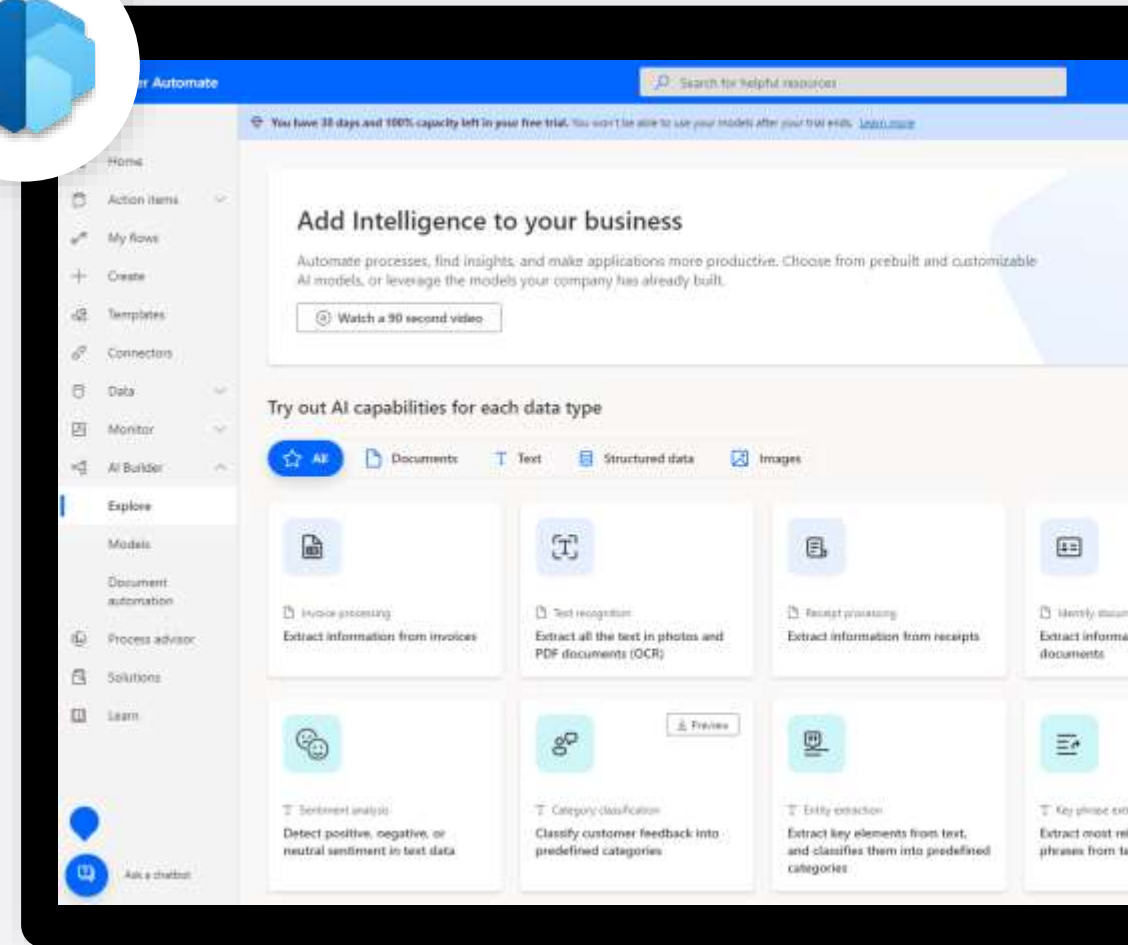
**Govern the AI model lifecycle** for your enterprise



Industry leading **enterprise grade AI Technology** backed by Azure AI



Integrated in the Power Platform so makers can use AI to **build more intelligent apps and workflows.**



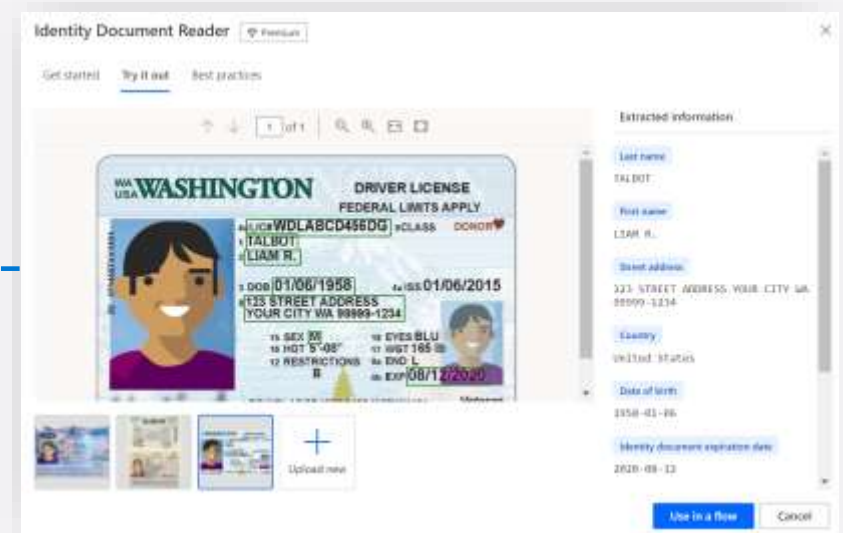
# Custom vs. Prebuilt AI Models



**Pre-built AI Models** are ready to use out of the box and don't require any training.

You can invoke them directly from Power Automate or Power Apps to build intelligent apps and workflows.

Ex: Process an ID document

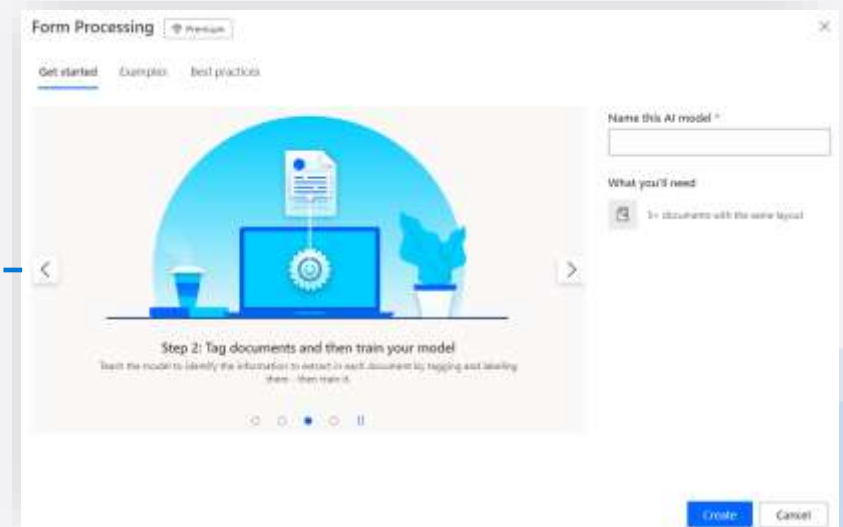


**Custom AI models** require training to be able to understand company specific information.

Before using them, makers need to train the model for a specific need, by submitting historical data and teaching the model how to understand it.

A no-code wizard guides the maker during this process.

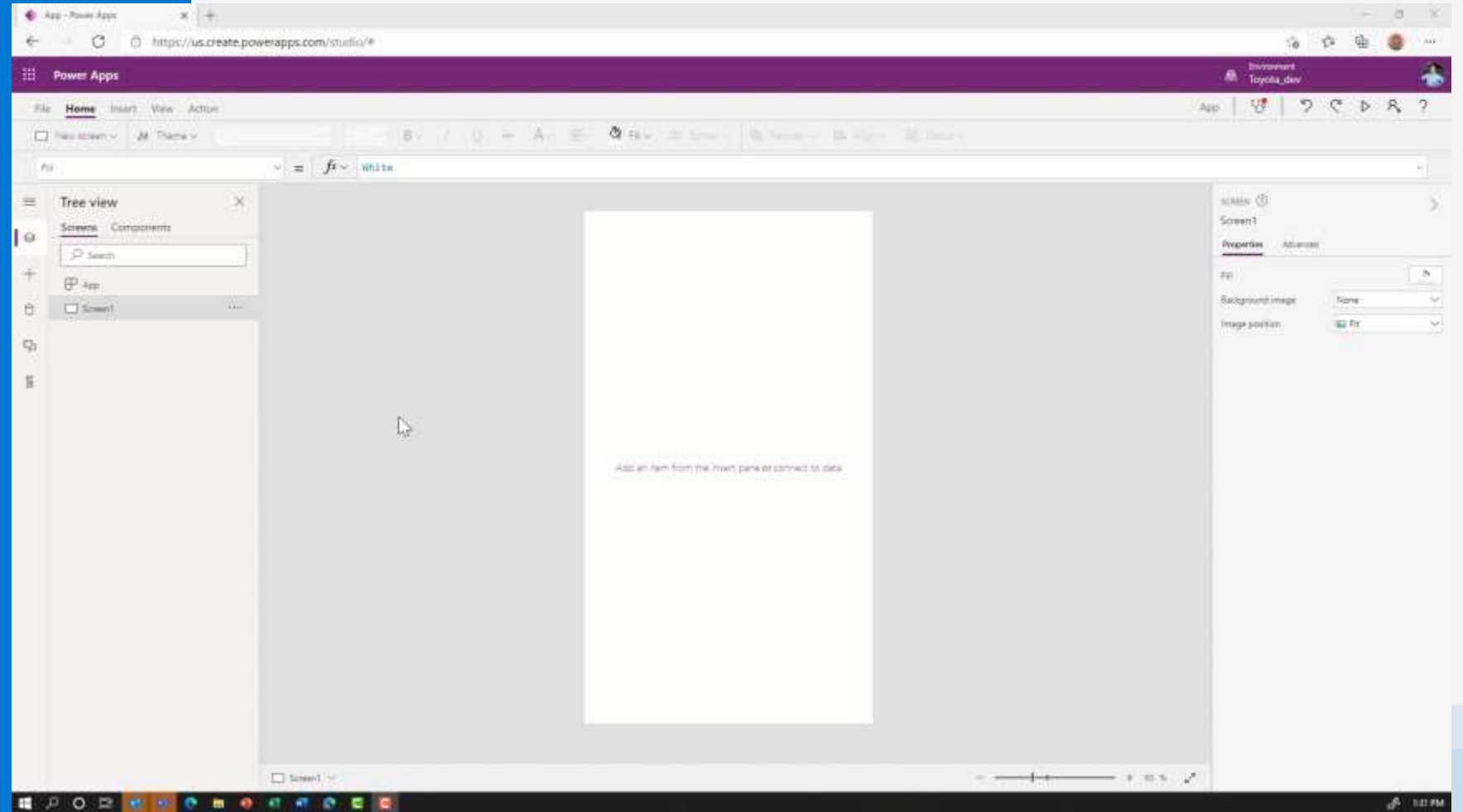
Ex: Understand a specific company template to process purchase orders





## Demo: Train and use AI Builder Models

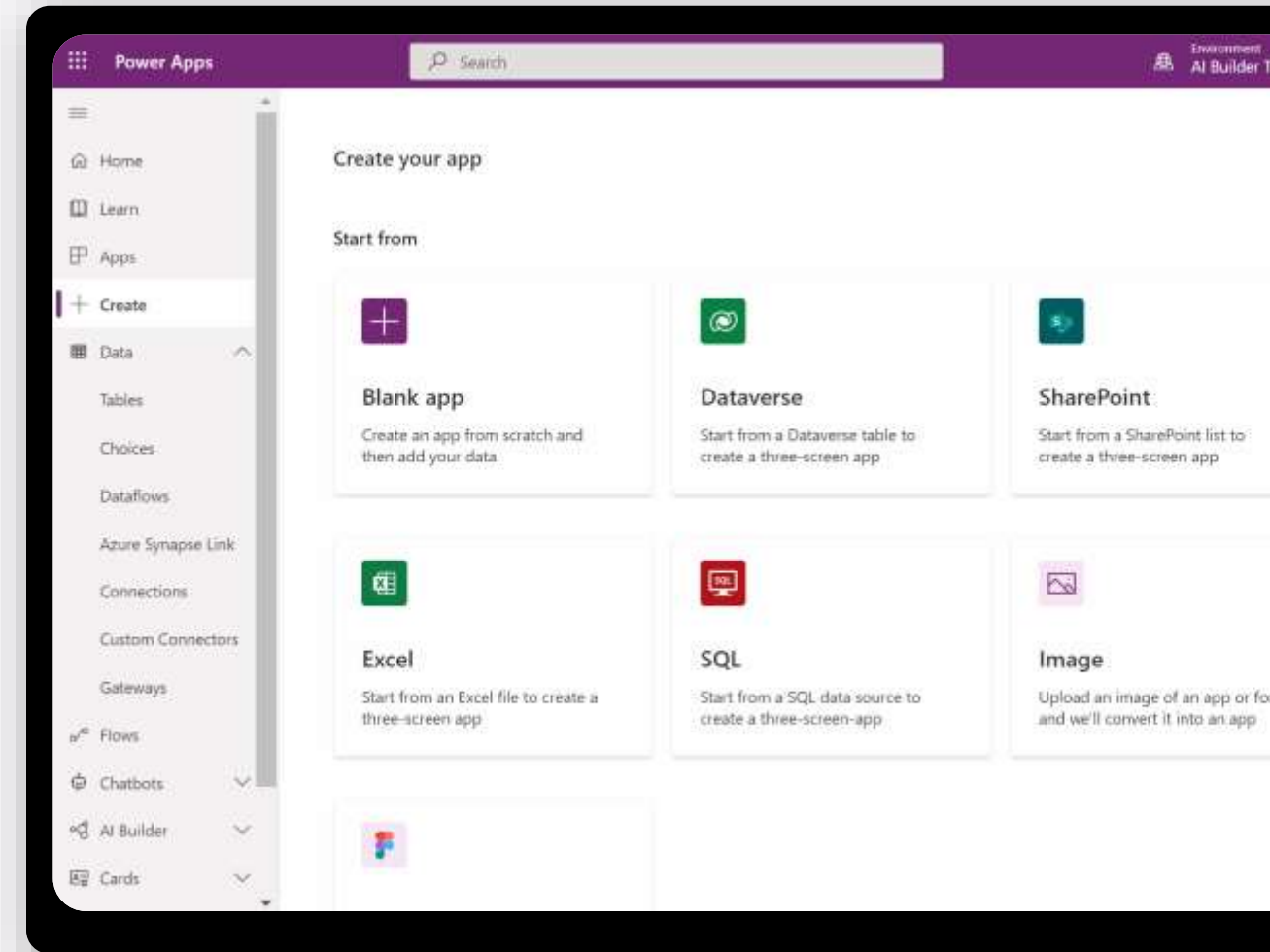
# Power Apps



# Power Apps

Empower everyone to create apps

- Use Power Apps to rapidly create web and mobile front ends using a drag and drop UI.
- Build once and deploy apps in one click across iOS, Android, Windows, and Web.
- Customize every detail of an app to optimize for specific tasks, roles, and industries.
- Enable pro developers to create re-usable components to share with citizen developers.
- Connect to data using pre-built or custom connectors.







## Demo: Create and Manage Canvas Apps

# Dataverse

The screenshot displays the Microsoft Power Apps web interface. The left sidebar shows the navigation menu with options like Home, Learn, Apps, Create, and Dataverse. The 'Dataverse' section is expanded, showing 'Tables' and 'Choices'. The main area is titled 'Tables > Account'. It includes a 'Table properties' section with details like Name (Account), Type (Standard), and Last modified (1 min ago). Below this is the 'Account columns and data' table, which lists various data points with columns for Account name, Description, Status, MVP, Owning user, and Created on. The table shows 10 rows of data, including 'Creation modal', 'Simple property pane for controls', 'Advanced property pane for controls', 'Control drawer', 'Allow adding new controls', 'Delete controls', 'Resizing controls', 'Drag-and-drop for controls', 'Data drawer', and 'Allow adding new table'. The interface also features a search bar at the top and a bottom taskbar with Windows icons.

Power Apps

Search

Environment: Production

Tables > Account

Table properties

Name: Account  
Type: Standard  
Last modified: 1 min ago

Owner: Wanda Howard  
Primary column: Name  
Description: Business that represents a customer or potential customer. The company that is billed in business transactions.

Schema

- Columns (12)
- Relationships (4)
- Keys (1)

Data experiences

- Forms (1)
- Views (1)
- Charts (1)
- Dashboards (2)

Customizations

- Business rules (3)
- Commands (1)
- Inline plugins (1)
- Messages (2)

Account columns and data

| Account name                        | Description                             | Status  | MVP | Owning user  | Created on |
|-------------------------------------|---|---------|-----|--------------|------------|
| Creation modal                      | Allow users to create a new widget      | Started | Yes | Kris Richard | 02/01/20   |
| Simple property pane for controls   | Allows the user to set the position ... | Started | Yes | Kris Richard | 02/01/20   |
| Advanced property pane for contr... | Allow the users to provide formula...   | New     | Yes | Kris Richard | 04/01/20   |
| Control drawer                      | Showing the controls that users ca...   | Started | No  | Kris Richard | 02/01/20   |
| Allow adding new controls           | Allow controls to be added to a wi...   | Done    | Yes | Kris Richard | 03/01/20   |
| Delete controls                     | Remove controls from the widget         | Done    | Yes | Kris Richard | 03/01/20   |
| Resizing controls                   | Allow controls to be enlarged or m...   | New     | Yes | Kris Richard | 03/01/20   |
| Drag-and-drop for controls          | Instead of coding the location of th... | New     | No  | Kris Richard | 04/01/20   |
| Data drawer                         | Show the list of data that the widg...  | Started | Yes | Kris Richard | 02/01/20   |
| Allow adding new table              | Allow a user to create a new table ...  | New     | Yes | Kris Richard | 03/01/20   |

57 additional rows

1:58 PM 8/24/2022

# What is Dataverse?



Dataverse **easily structures a variety of data and business logic** to support **interconnected applications and processes in a secure and compliant** manner

# Why Dataverse?



Data is responsible for **application performance** and can inform deep insights on **user behavior**.

Dataverse offers **powerful, scalable solutions** for your data, leveraging the security and connectivity across Microsoft and the Power Platform so that you can **fully control, automate, and strengthen your business**.

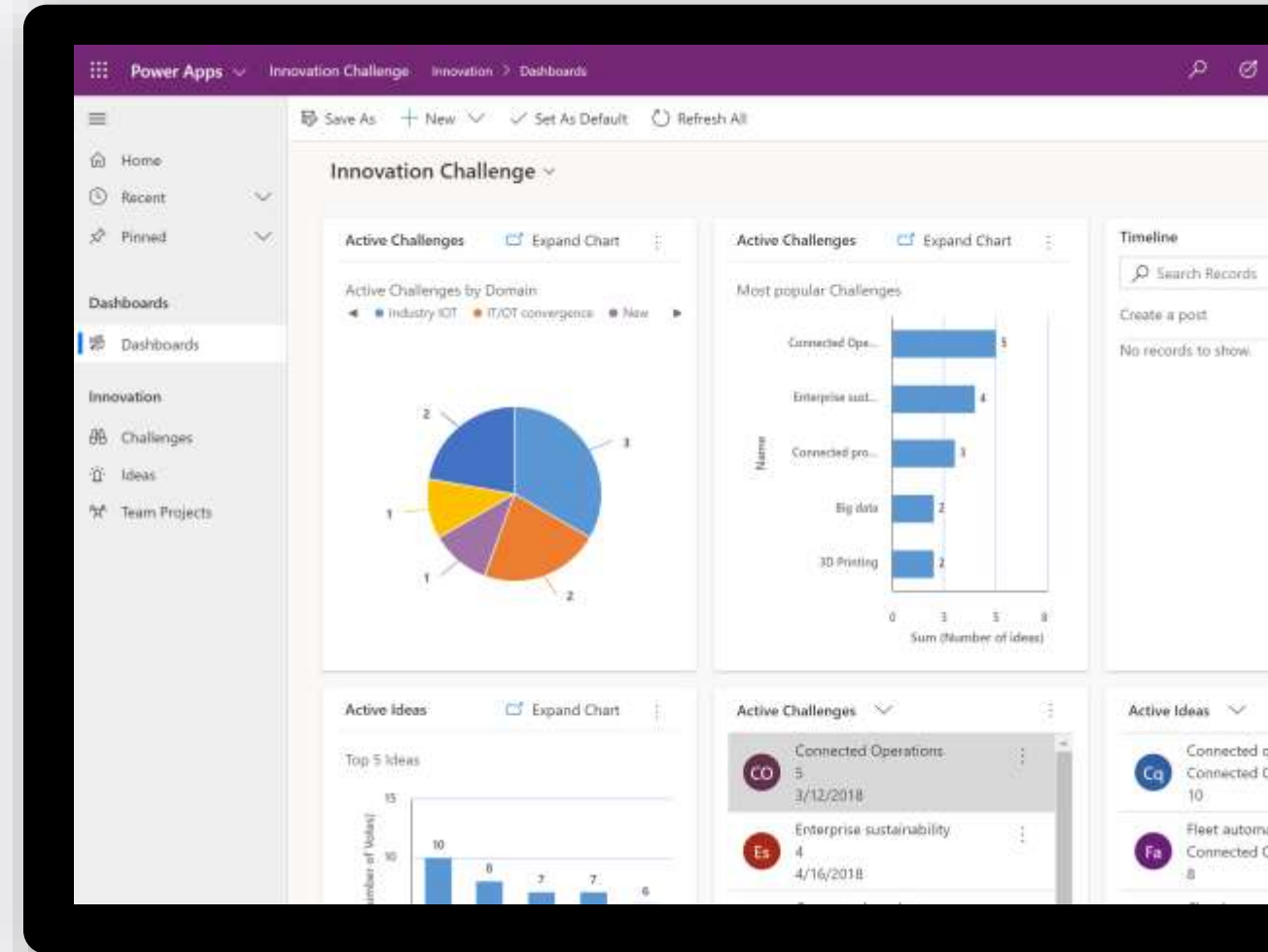


## Demo: Configure Microsoft Dataverse

# Model-Driven Apps

Empower everyone to create apps

- Leverage your data model, relationships, and business processes to automatically generate immersive, responsive applications
- Create apps around forms and processes
- Design sophisticated table forms quickly
- Rich, responsive client experiences
- Enables easy reuse across multiple apps
- Easily add business rules and business process flows to model your business processes





## Demo: Create and Manage Model-Driven Apps

# Resources



## AI Builder

<https://aka.ms/PL100/AIBuilder>



## Canvas Apps

<https://aka.ms/PL100/CanvasApps>

<https://aka.ms/PL100/CanvasAppsControls>

<https://aka.ms/PL100/CanvasAppsUI>

<https://aka.ms/PL100/CanvasAppsNavigation>



## Dataverse

<https://aka.ms/PL100/DataverseTables>

<https://aka.ms/PL100/DataverseColumns>

<https://aka.ms/PL100/DataverseSecurityRoles>



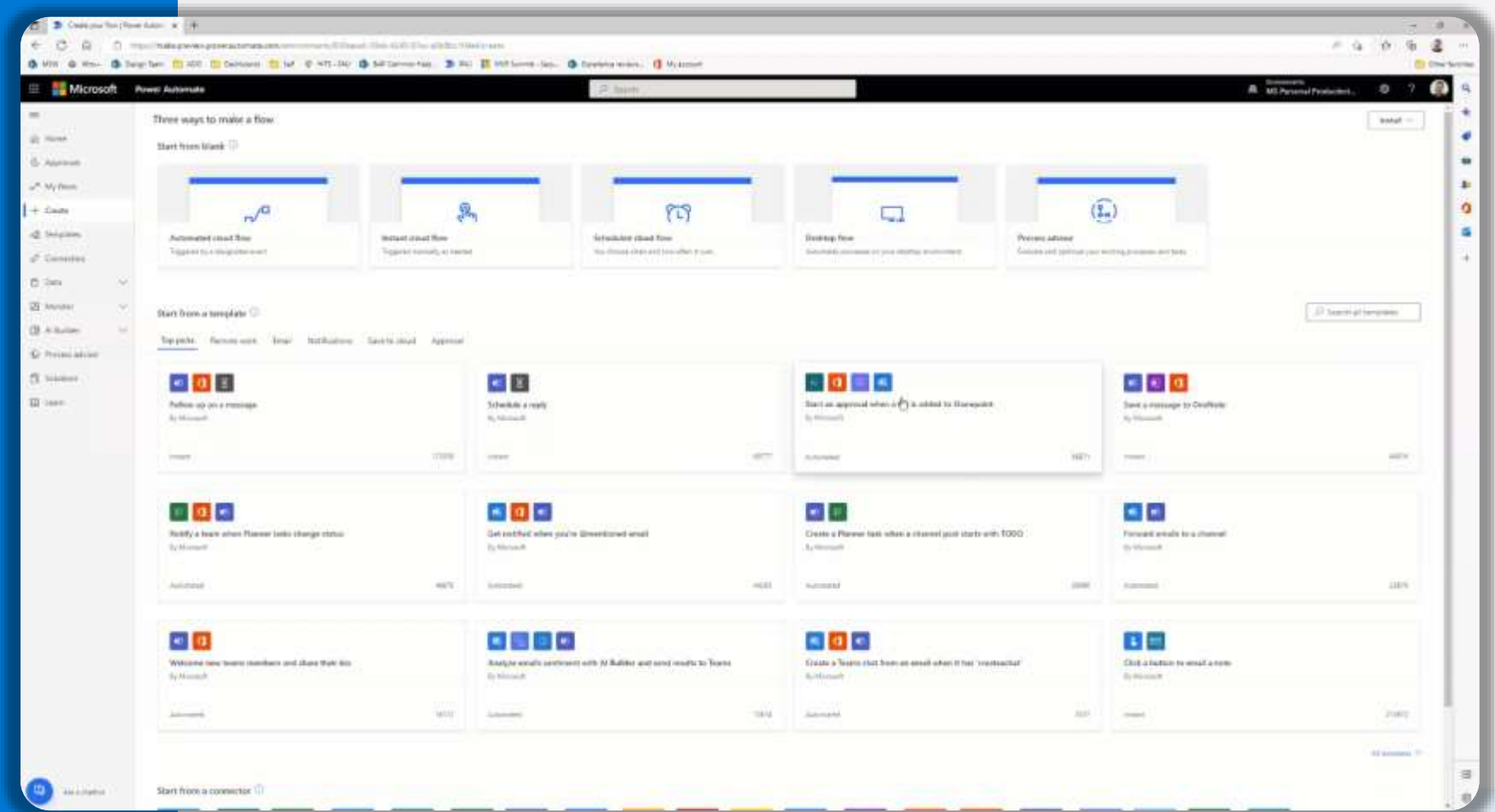
## Model-Driven Apps

<https://aka.ms/PL100/ModelDrivenApps>



Power  
Automate

# Power Automate



# Hyper automation, all in one place



Low-Code Applications



Enterprise Applications



Secured Web Portals



Mixed Reality Experiences



Intelligent Chatbots



Self-Service Analytics



Communication Tools



Core Business Applications



Collaboration Tools



Robotic Process Automation (RPA)



Digital Process Automation (DPA)



Artificial Intelligence

User Experiences

Process Automation

Data and Services



Business Process Management (BPM)



Process Mining



Task Mining



Productivity Suite Data



Core Business Data



Cloud Services and Storage



Legacy On-Premises Data



Modern Data Service

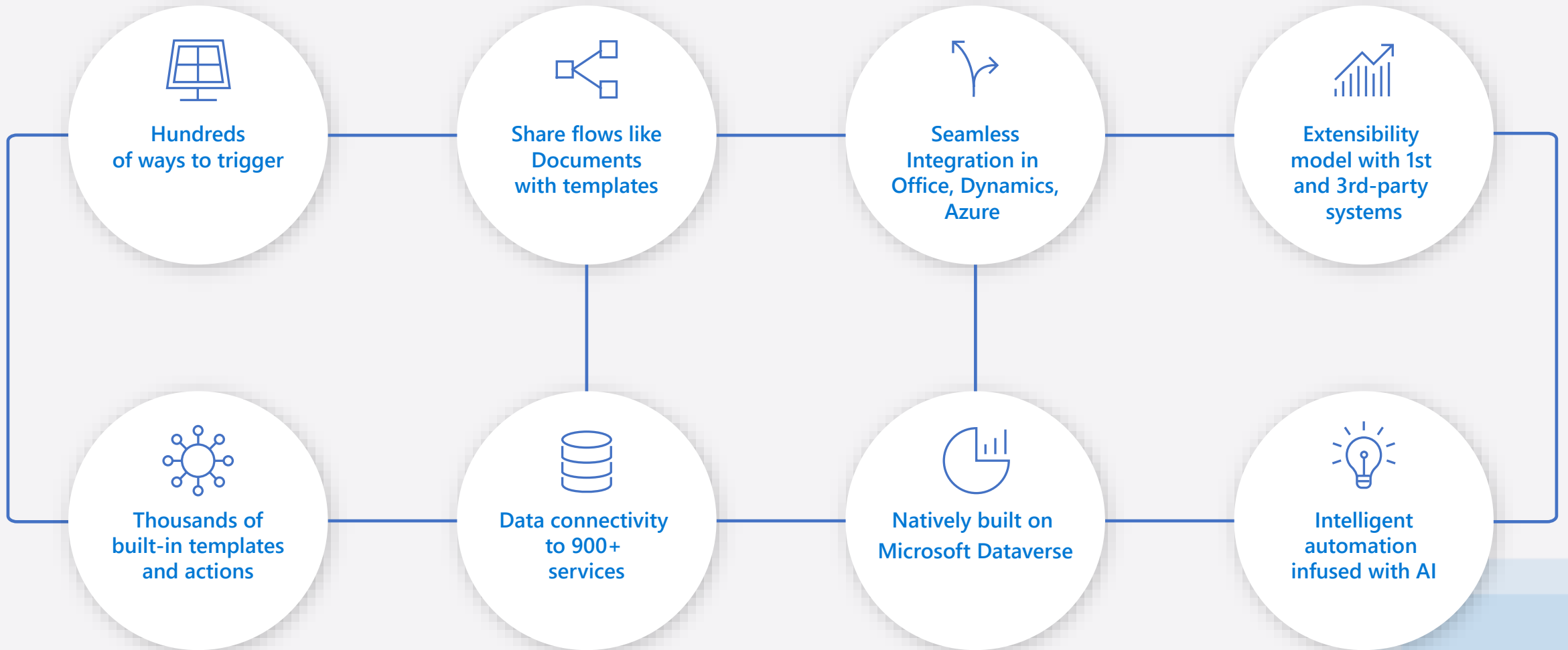


800+ Connectors



Microsoft  
Power Automate

# Why Power Automate?



# Create flows

Start from blank ⓘ



## Automated cloud flow

Triggered by a designated event.



## Instant cloud flow

Triggered manually as needed.



## Scheduled cloud flow

You choose when and how often it runs.



## You describe it, AI builds it

Transforms your words into a cloud flow like magic. (Preview)



## Desktop flow

Automates processes on your desktop environment.

# Triggers and actions

## Example: Notification flow

**Trigger**—the event that kicks off the flow:

- Manual via button or Power Apps
- On a schedule
- On an event in the cloud

**Actions**—what the flow does  
*Uses data from the trigger*

The screenshot displays a Power Automate flow configuration interface. The top section, titled "When a row is added, modified or deleted", is the trigger. It includes fields for "Change type" (set to "Create or Update"), "Table name" (set to "Accounts"), and "Scope" (set to "Organization"). Below these fields is a "Show advanced options" link. A plus sign icon with a downward arrow indicates the flow continues to the next step. The second section, titled "Send an email notification (V3)", is the action. It includes fields for "To" (set to "Email x"), "Subject" (set to "Account information changed"), and "Body". The "Body" field is a rich text editor showing the text "Your account (Account Name x) information has been changed." Below the body field is another "Show advanced options" link. Two lines from the text on the left point to the trigger and action sections respectively.

# Types of triggers



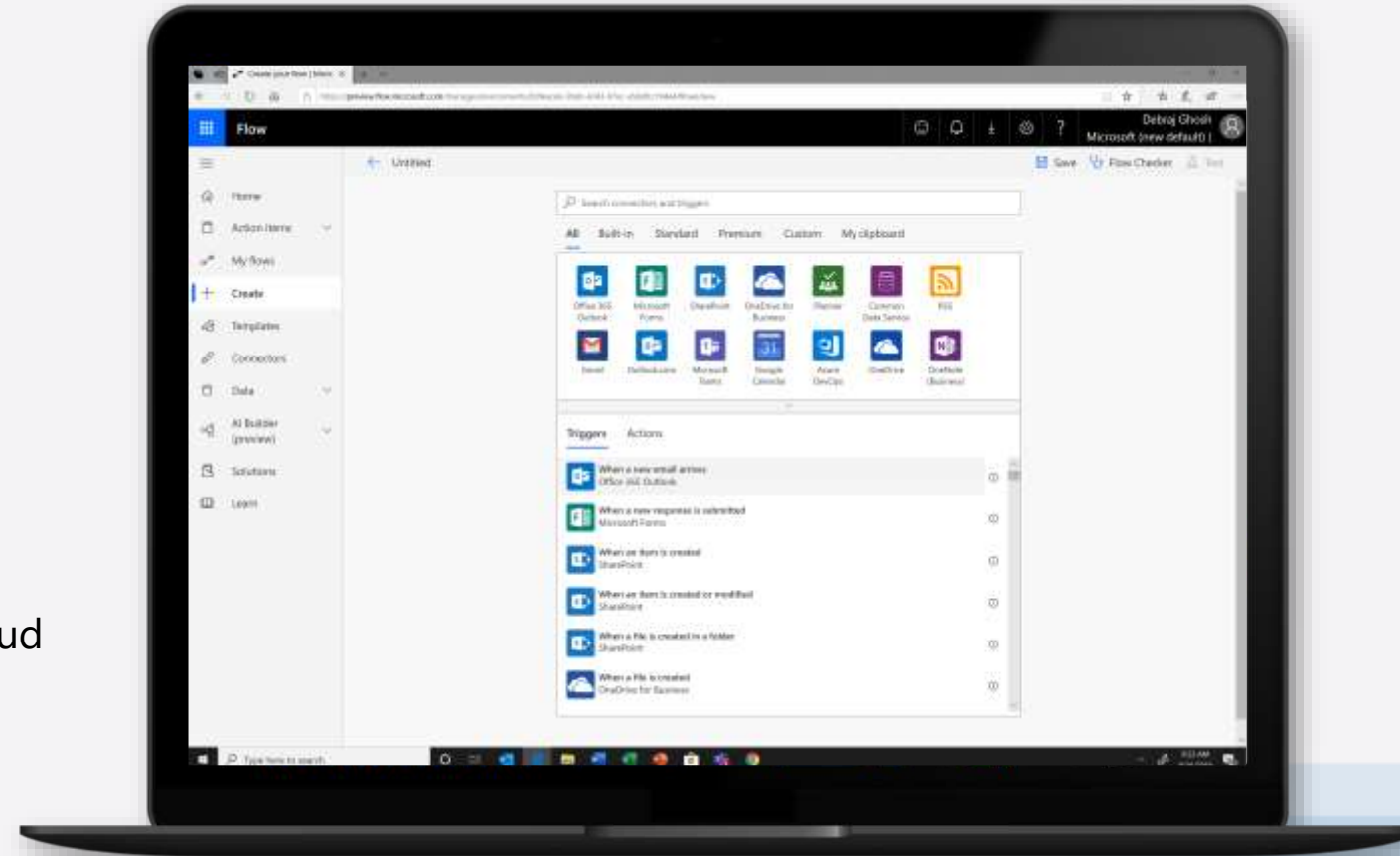
Manual Action



Run on a Schedule



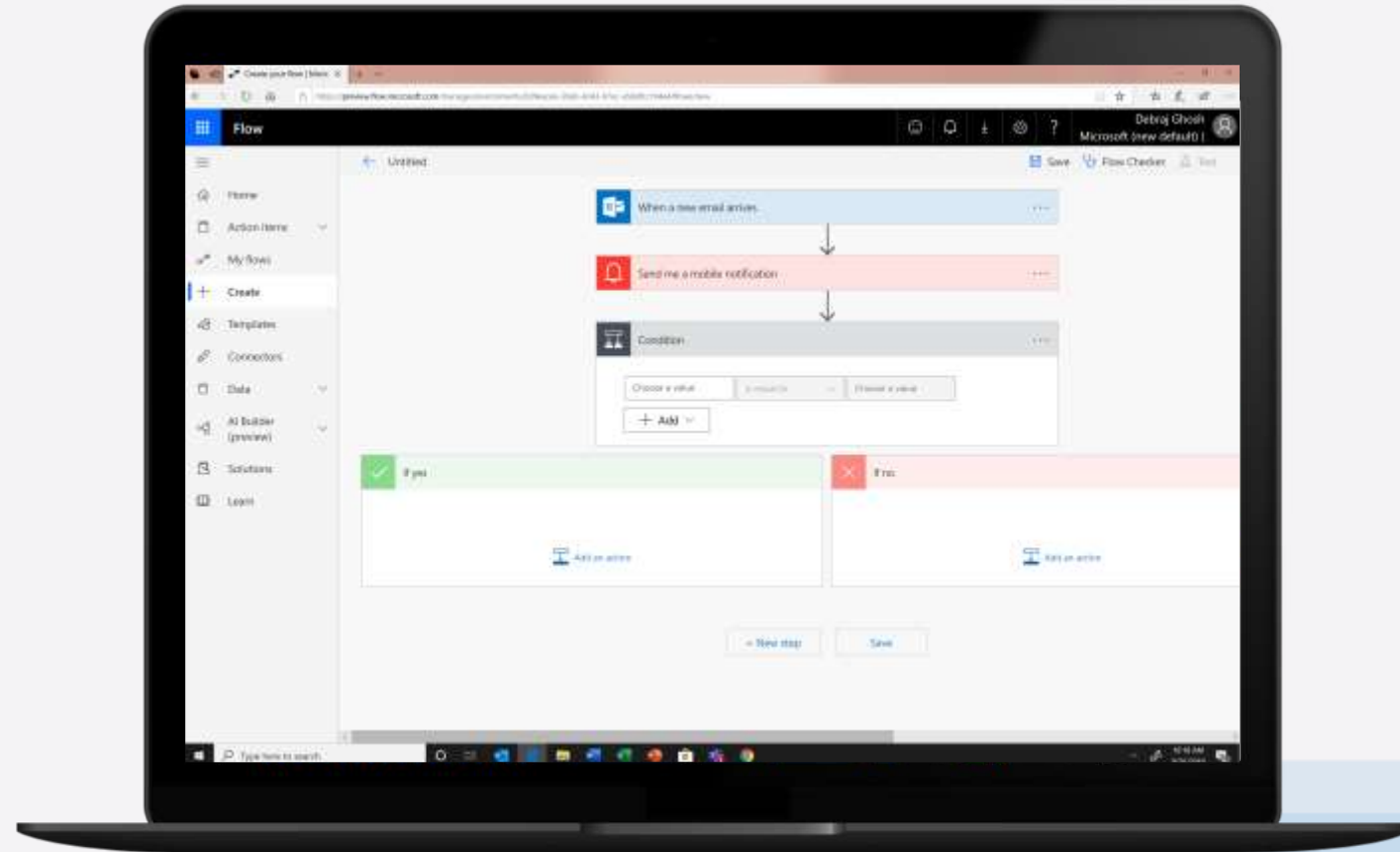
Run based on an event that happens in a cloud or on-prem service



# Conditional logic



Conditional logic enables automated decisions based on a given scenario.

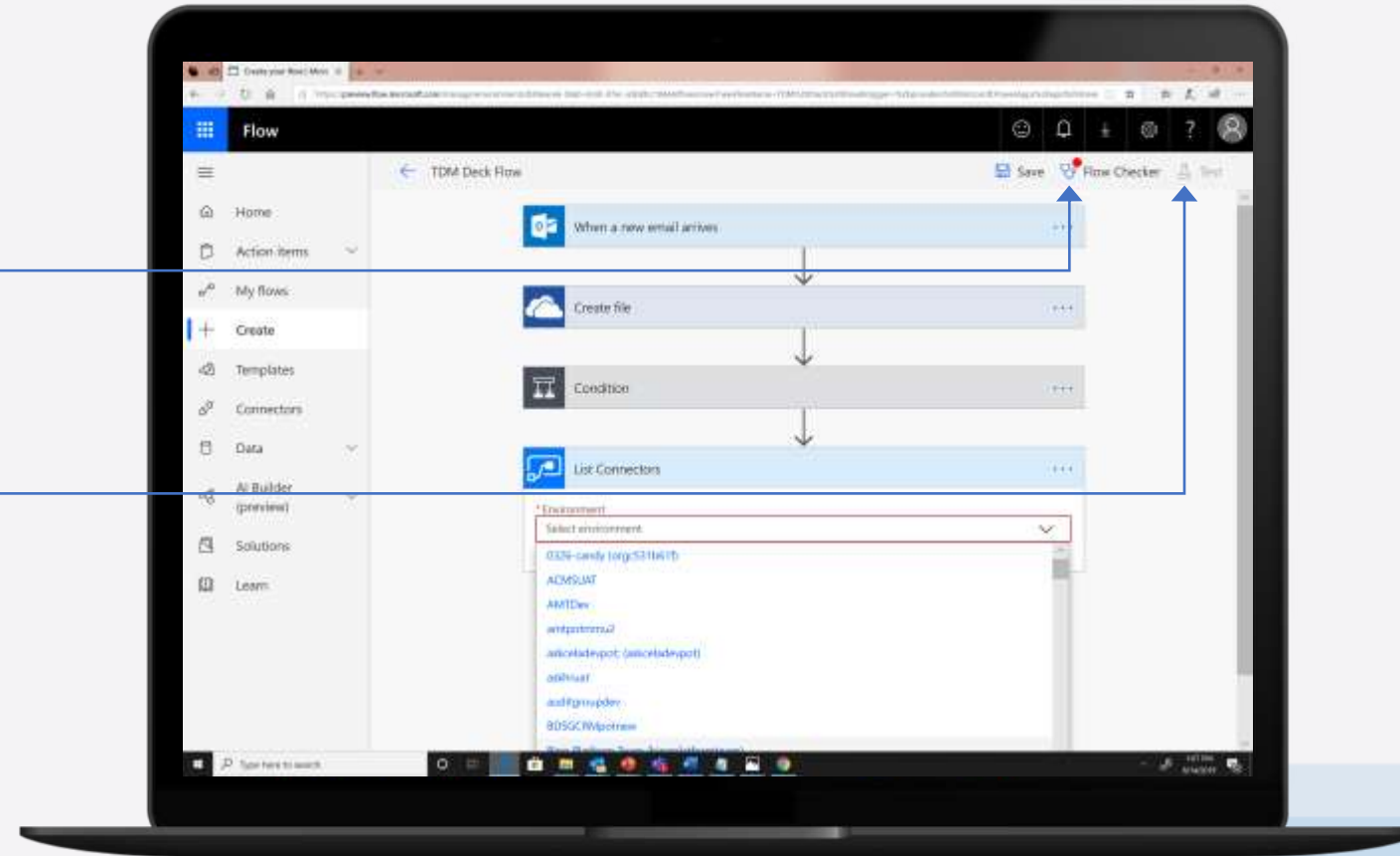




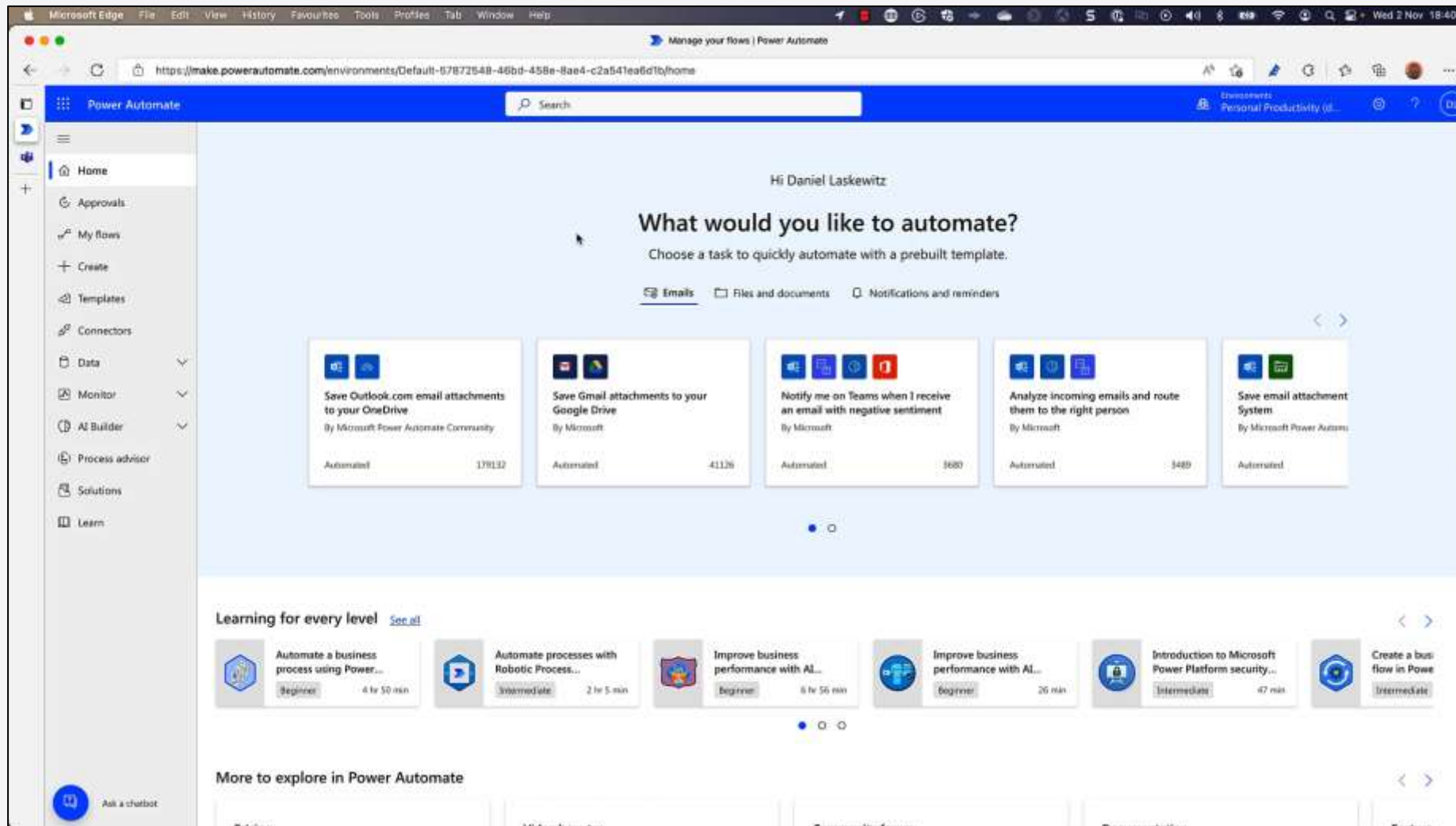
# Test a cloud flow

Flow Checker

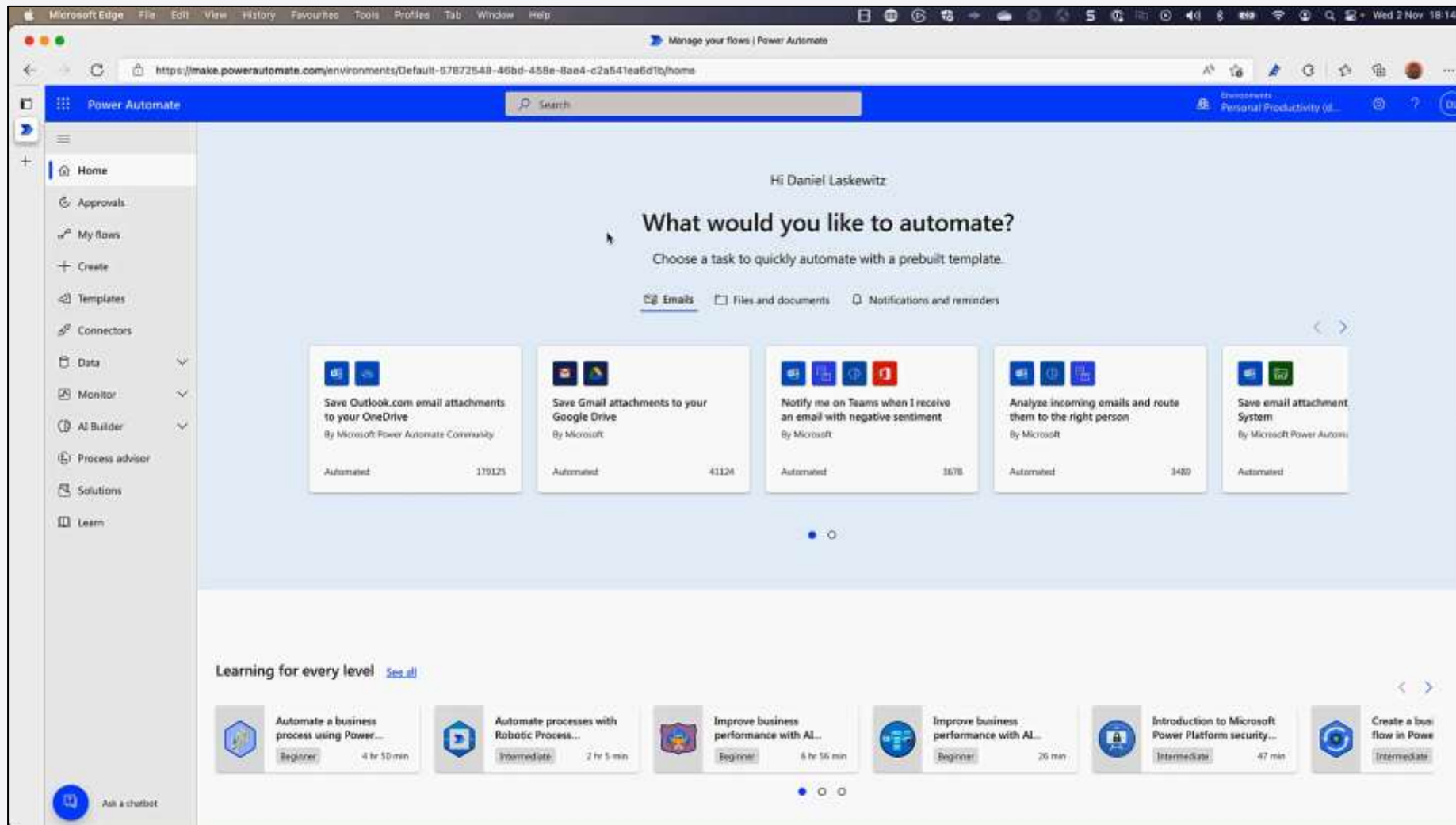
Test



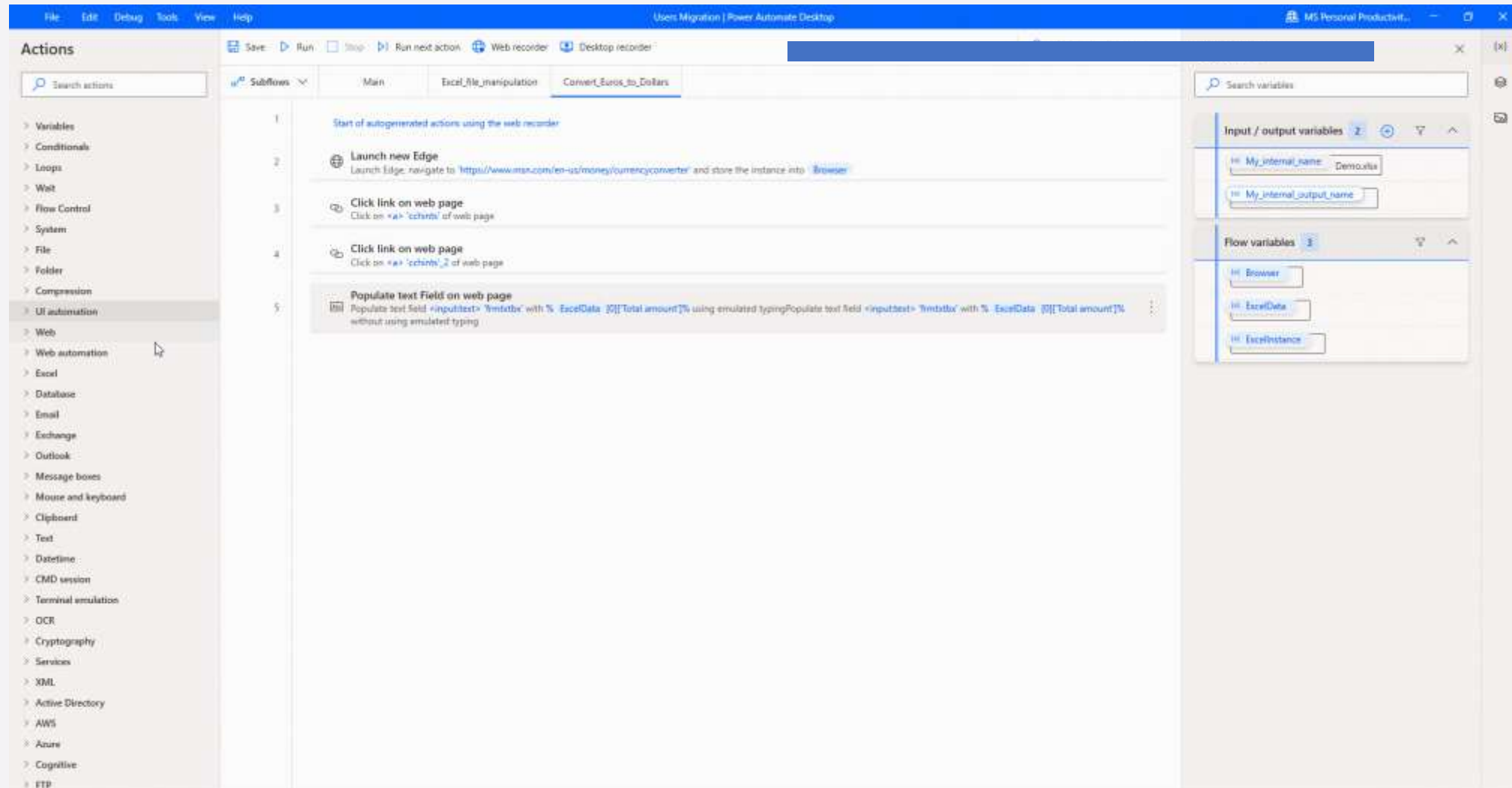
# DEMO - Build a flow by using AI



# DEMO – Create a flow from a template



# DEMO – Create a desktop flow for personal use



# Resources



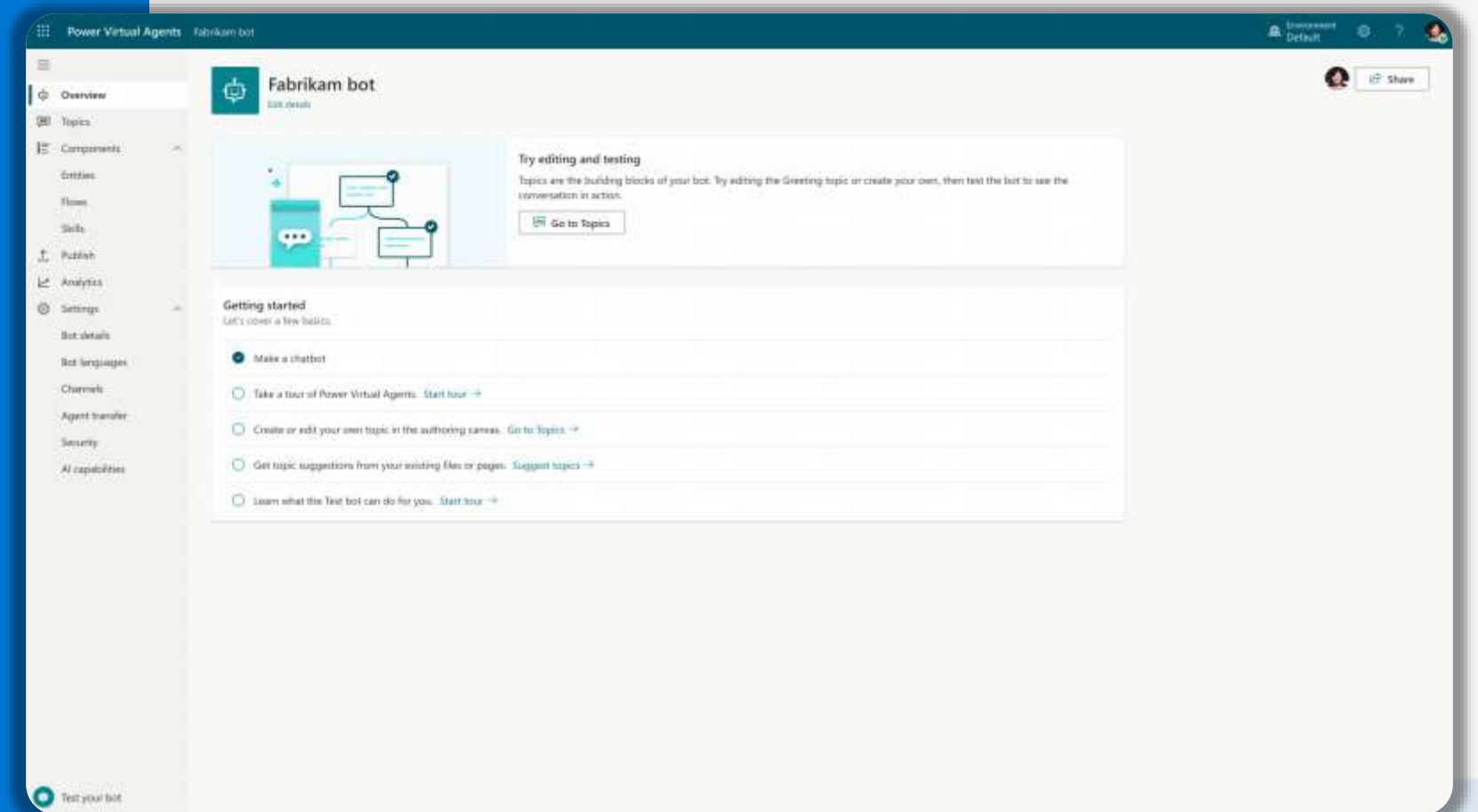
## Power Automate

<https://aka.ms/PL100/PowerAutomate>

<https://aka.ms/PL100/PowerAutomateTeams>

<https://aka.ms/PL100/PowerAutomateAdministration>

# Power Virtual Agents



# What is Power Virtual Agents?



**Empowers everyone** – from citizen to pro developers – to seamlessly **build secure, scalable and intelligent conversational bots** together in a single platform.

# Identify use cases

## Customer Service

Reduce call volume for quick resolutions

Where are you located?

Request a refund

Describe your issue

Centralized FAQs

Support tickets

Pre-screening



## Finance

Save time by automating budget and expense approvals

Check payment status

Update tax information

Submit expenses for approval

Invoices

Payroll

Budget requests



## HR

Improve employee satisfaction and retention

Sign up for healthcare plan

Book time off

Report office issue

Benefits

Leave and absence

Incident reporting



## IT

Optimize employee troubleshooting

Reset my password

How do I reconnect to the VPN?

Refresh my laptop

Support services

Technical FAQs

Equipment requests



## Operations

Improve efficiency by digitizing paper processes

Find case file

Report equipment malfunction

Check order delivery times

Find documents

Employee safety

Manage inventory



## Sales and Marketing

Increase up-sell and conversion opportunities

You're eligible for a free upgrade!

Update your email preferences

Purchase an in-flight meal

Promotions

Email

Upselling





Create bot using simple, graphical interface



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



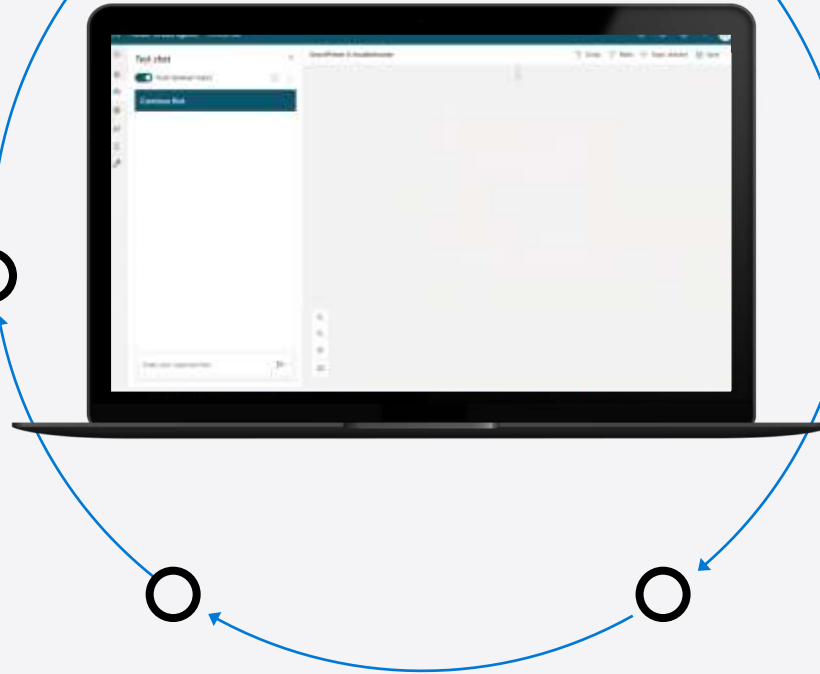
Author topics with powerful  
NL, slot extraction,  
variables, entities –  
no model  
training required



Integrate bot with backend APIs  
using Power Automate



The bot building cycle



Monitor bot  
performance and see  
where to improve



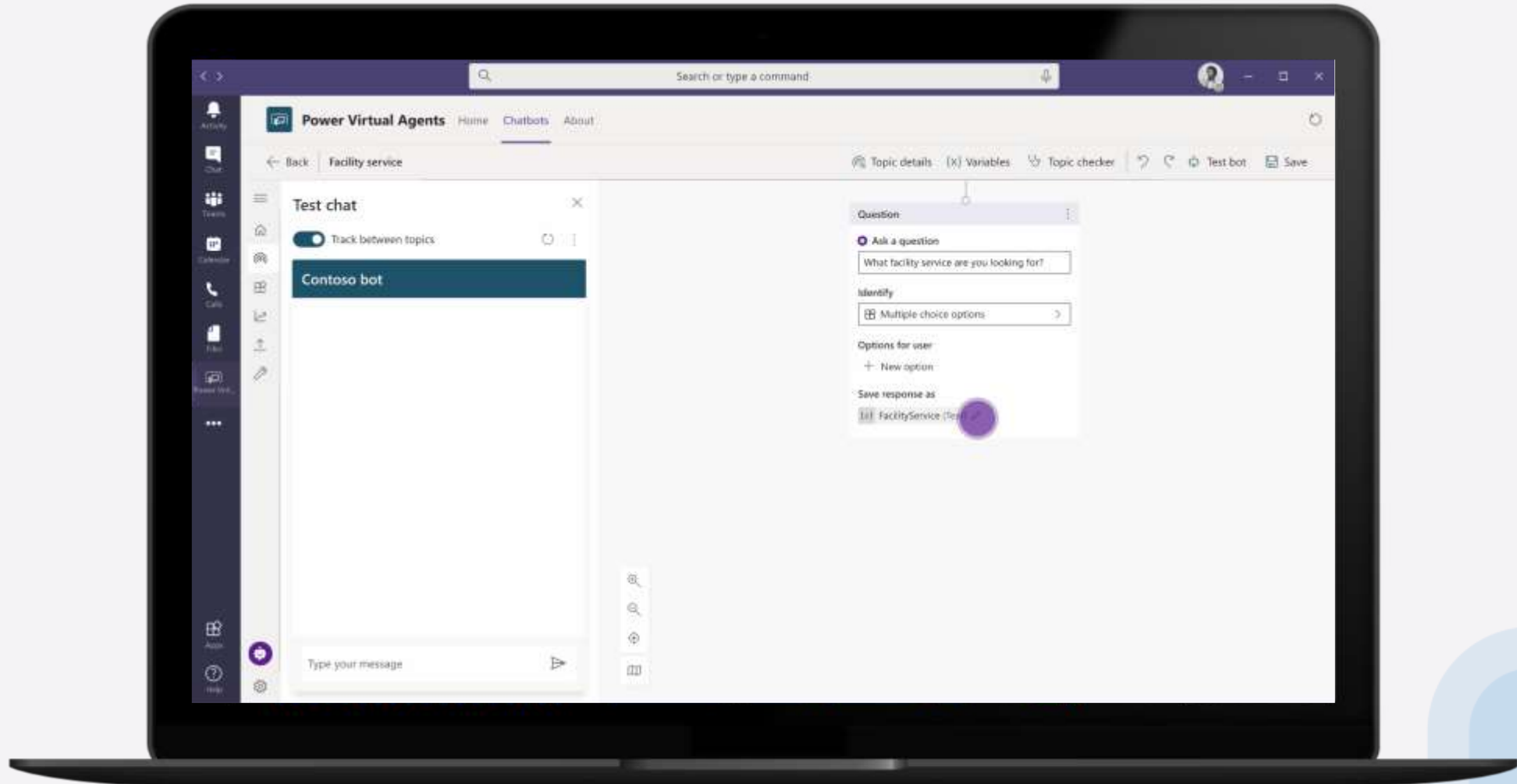
Publish bot to  
the channel of  
your choice



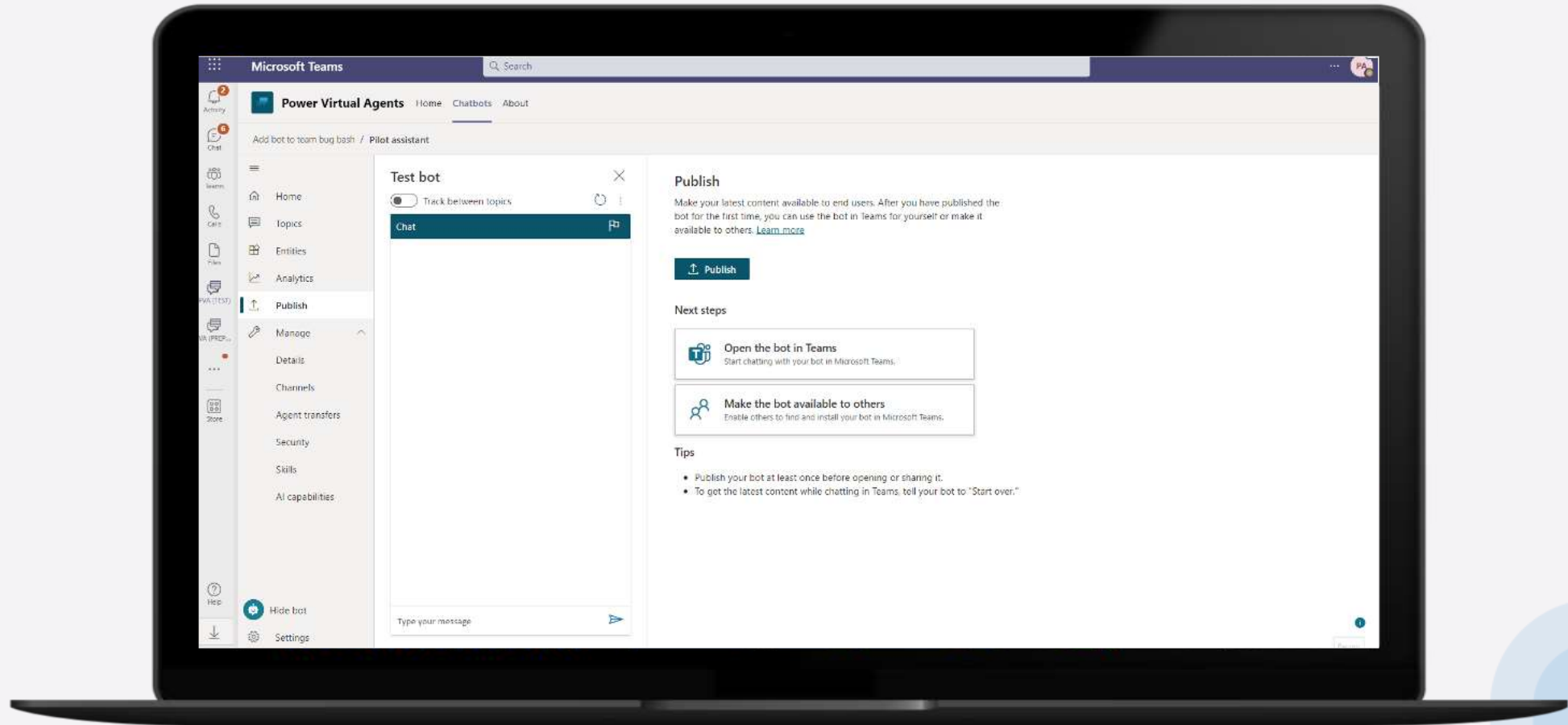
Easily extend  
with BF code for  
complex scenarios



# Create a chatbot that uses topics and trigger phrases



# Publish a chatbot



# Resources



## Power Virtual Agents

<https://aka.ms/PL100/PowerVirtualAgentsTeams>

# Questions

