Harness the Power of External Data Sources in Power Platform

UDAY ADHIKARI

GEETHA SIVASAILAM

Room: Premier Ballroom 319
Session Code: PPC26

Whova

The official event app for the **Microsoft Power Platform Conference – Fall 2023**

Whova

Scan this code for the link to download Whova from the App Store and Google Play.

Event Invitation Code: PPCFall2023

Download on the **App Store** GET IT ON **Google Play**

Join the event app to access:

→ Event announcements

→ Personalized agenda, session details

→ Speaker & attendee profiles

→ Networking, meet-ups, messages

→ Event documents

Event Invitation Code: PPCFall2023

GEETHA SIVASAILAM

LANTERN

Power Platform Practice Lead
Dallas, Texas
#PowerAddict

MVP Business Applications

BLOG https://svaghub.wordpress.com/

X @GSiVed

in Geetha Sivasailam

UDAY ADHIKARI

Power Platform Practice Lead
Accenture – North America

MVP Business Applications

X @UnsuspendUday

in https://aka.ms/Uday

Recording.....
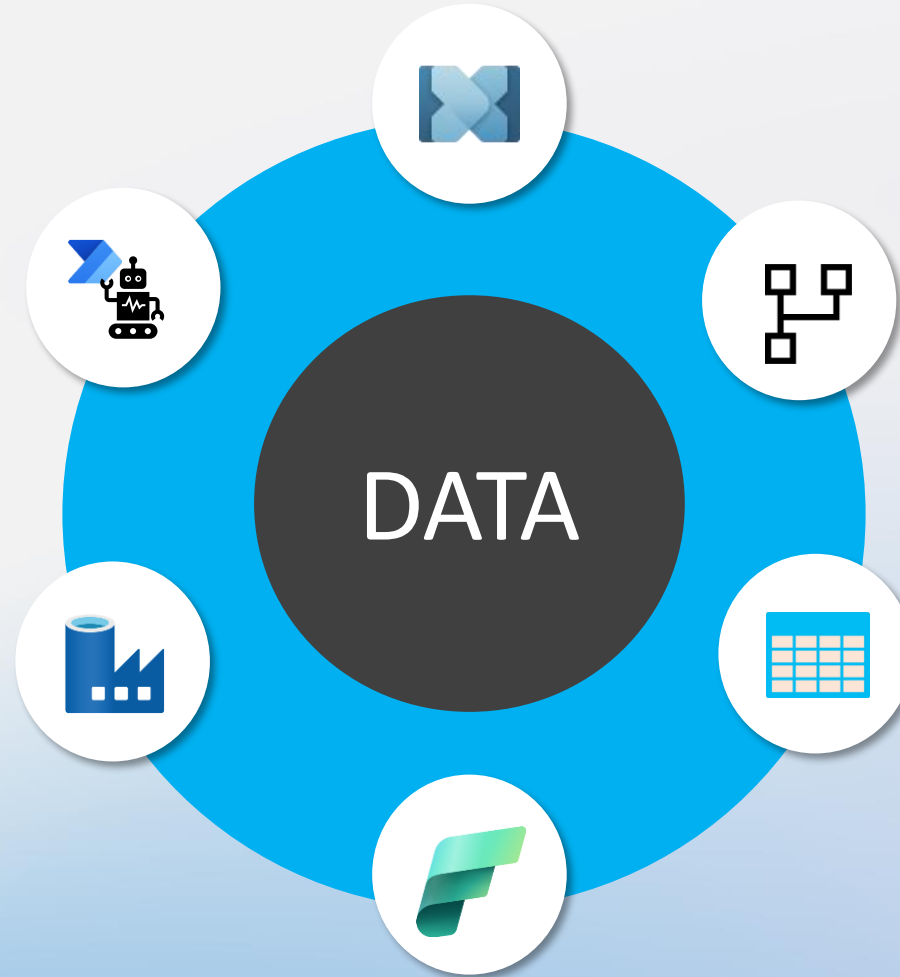
Powerful alone. Better together.

Power BI
Business analytics

Power Apps
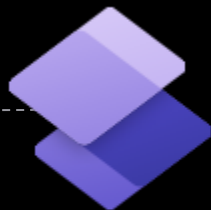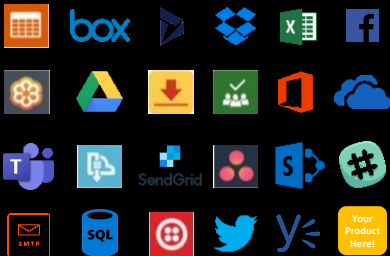Application development

Power Automate
Process automation

Power Virtual Agents
Intelligent virtual agents

Power Pages
External websites

Data connectors

AI Builder

Dataverse

Other Cloud Platforms

Azure PaaS & IaaS Services (Pro-Dev Tools)

| VMs | Azure SQL | Data Warehouse | Data Lake | Cosmos DB | API Mgmt | Logic Apps | Functions | Cognitive Svcs | Kubernetes |

Connectors?

CONNECTORS

- The most widely used and core feature of Power Platform
- Includes different types of connectors to connect to variety of cloud services, content services, databases etc.:
  - Standard Connectors
  - Premium Connectors
  - Custom Connectors
  - Independent Publisher Connectors

- Seamless hybrid connectivity via the on-premises data gateway
- Custom connectors as building blocks for citizen developers

BENEFITS

- In just a few clicks, you can connect to data sources and start building app/flow etc.
- Enables low code

THINGS TO CONSIDER

- Secure authentication methods
- Control actions at connector level. Use environment isolation strategy
- Be mindful of API limits – varies by connector
- Use service principle or Power Automate per flow license for higher throughput

Over **1,000** Power Platform data connectors

https://aka.ms/ppc by Nicolas Kirrmann

Azure OpenAI Custom Connector Demo

Contoso Apparels has a help desk Power App for internal employees to submit help desk tickets. They want to leverage Azure OpenAI to provide first tier suggestions or DIY recommendations on service requests. We will use a custom connector to pass a question to Azure OpenAI and provide the results on the Power App.

🔗 aka.ms/connectors – AzureOpenAIService Customer Connector by
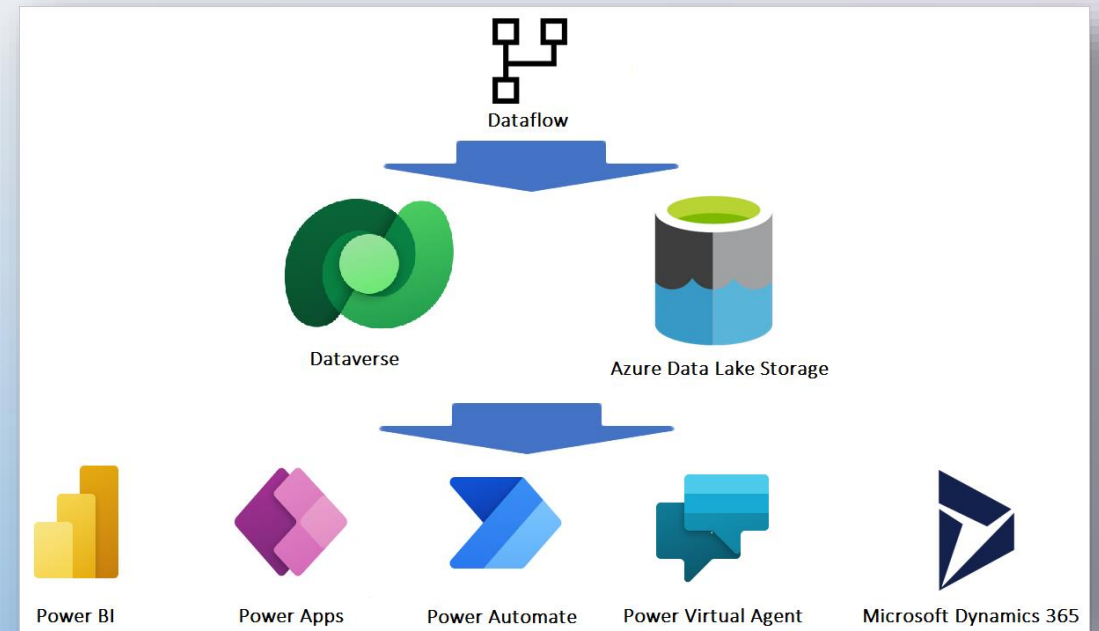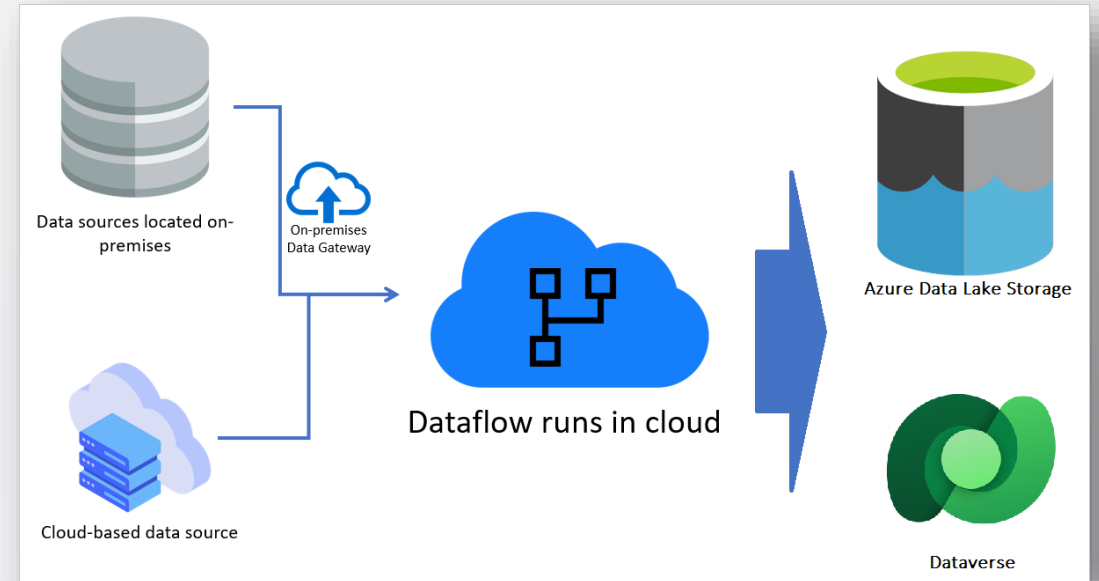**Daniel Laskewitz, Andrew Coates & Robin Rosegrün**

DATAFLOWS

- Self-service, cloud-based, data preparation technology
  - Power BI Dataflows
  - Power Platform Dataflows
  - Dynamics 365 Customer Insights
- Enable customers to ingest, transform, and load data into Microsoft Dataverse environments, Power BI workspaces, or Azure Data Lake Storage account.

BENEFITS

- Dataflows promote reusability of underlying data elements, preventing the need to create separate connections with your cloud or on-premises data sources.
  - Create a single source of truth
  - Curated from raw data using industry standard definition
  - Limit access to underlying data sources
  - Scale more efficiently and tap into a wide range of cloud and on-premise sources

THINGS TO CONSIDER

- Cannot use environment variables
- Define key(s) for truncate and upsert scenarios
- Vnet support via Gateway
- Only one owner can edit dataflow (person who created it)

Data sources located on-premises

On-premises Data Gateway

Cloud-based data source

Dataflow runs in cloud

Azure Data Lake Storage

Dataverse

Dataflow

Dataverse

Azure Data Lake Storage

Power BI   Power Apps   Power Automate   Power Virtual Agent   Microsoft Dynamics 365

Premium

Dataflows Demo

Contoso Apparels has a list of Support Technicians managed by a legacy system. They want to build an app that routes customer requests to technicians based on request type. We will use a dataflow to bring technician data in-house in Dataverse via rest API endpoint for the Power Platform based application to integrate for routing purposes.

VIRTUAL TABLES

- A **virtual** representation of **external data** as a table in **Dataverse**
- OData provider installed by Virtual Table feature by default which support SharePoint and SQL Server at the moment.

BENEFITS

- Avoids **duplication of data** and supports CRUD in destination data source
- Simplifies Data manipulation – parent/child relationship
- Solution aware and supports ALM

THINGS TO CONSIDER

- Not all data types are supported
- New fields do not get added to the virtual table automatically
- Not supported:
    - Audit Log, Calculated, Rollup fields, Search etc. since data is not persistent.

[Create and edit virtual tables with Microsoft Dataverse - Power Apps | Microsoft Learn](#)

Virtual Tables Demo

Contoso Apparels has a legacy inventory system with dependency on a SharePoint list which has security restrictions. We will use a Virtual table to get data into Dataverse so user can access inventory.

MICROSOFT FABRIC (Preview)

- SaaS that brings together Power BI, Azure Synapse, and Azure Data Factory into a single integrated environment
- Power BI is a unified, scalable platform for self-service and enterprise business intelligence (BI).
- Bridge the gap between data & decision making
- Dataset: Contains information about the data source, data source credentials & subset of data from source
- Data source: The data in a dataset comes from a data source.

BENEFITS

- (Fabric) A unified data lake that allows you to retain the data where it is while using your preferred analytics tools.
- (Fabric) Centralized administration and governance across all experiences.
- (Fabric) Developers can easily access and reuse all assets.
- (PBI) Interactive data visualization software suite that helps businesses aggregate, organize, and analyze data.
- (PBI) Wide range of visualizations & customization options
- (PBI) Supports multiple data sources & formats
- (PBI) Power Apps visual for write-back capability
- (PBI) Power Automate visual with Power BI contextual data to automate processes.

THINGS TO CONSIDER

- (PBI) Max columns allowed across all tables is 16k
- Max data sources allowed per user in 1000. Limit applies only to PBI service
- 1 million row limit when using direct query
- Max # records passed from PBI to Power Apps and Power Automate visual is 1000
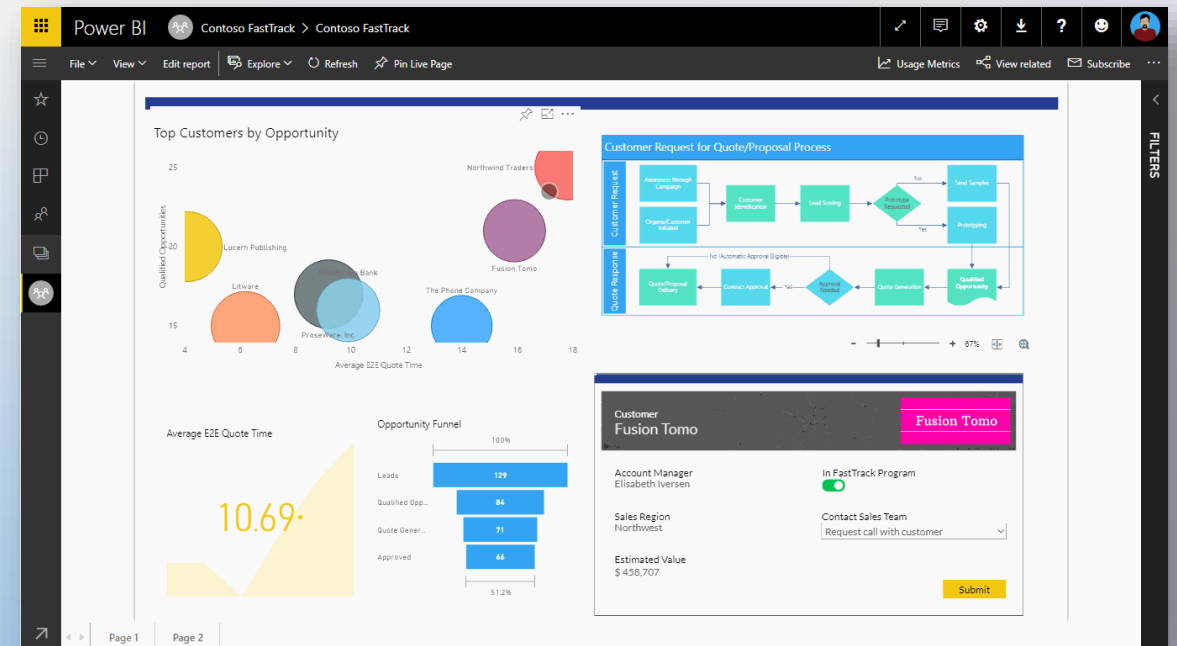
ROBOTIC PROCESS AUTOMATION (RPA)

- Also known as Desktop Flow

- Streamlines **repetitive tasks** especially in legacy applications where connector, API do not exist and **re-focus attention where it is needed**

- Two types of RPA: **Attended and Unattended. Unattended has option to run in hosted machine or your own machine/VM**

- **Many ways to automate** – extracting data from webpages, recording manual UI mouse-clicks on pages etc.

Benefits

- Automates **routine, mundane tasks** avoiding human error

- **Attended** RPA bot is **free for all Windows 10 & 11 users in Default** environment. License is required when you want to integrate with Power Automate cloud version (flow.Microsoft.com) or deploy to another environment.

Things to consider

- Modern web site with captcha are not supported (there is a work around with AI but may not work in all scenarios)

- Plan licensing and hardware costs early

- Build a plan for Citizen development automation vs hyperscale

- High potential for errors with incorrect or incomplete information.

- Granular DLP policy does not exists – like block specific sites
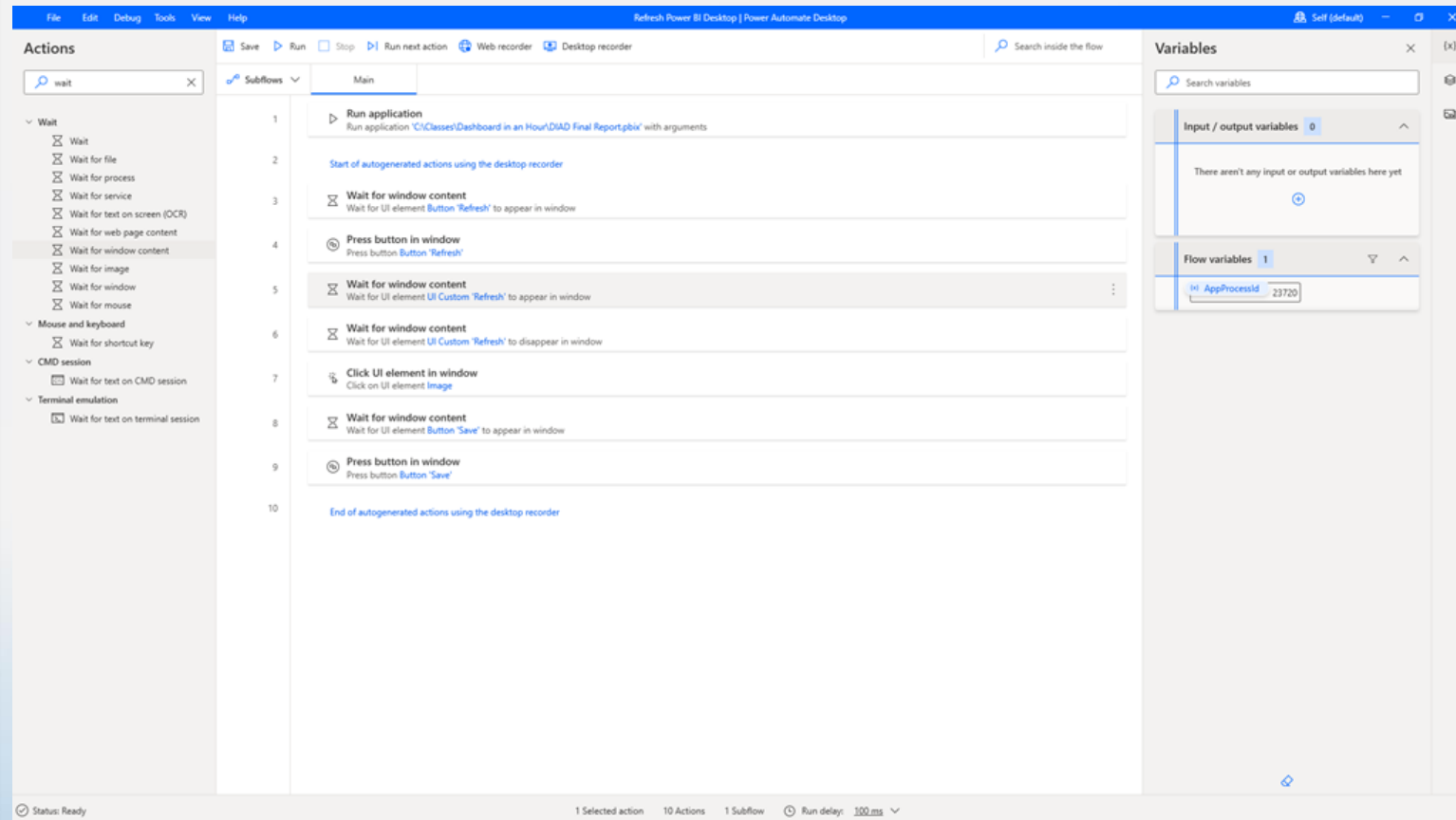
AZURE DATA FACTORY

- Data Factory is a cloud-based extract, transform, load (ETL) service that supports many different sources and destination
- Two types of dataflows under this technology:
    - Mapping dataflows: Visually designed data transformations
    - Wrangling dataflows: Uses Power Query Engine for data transformation

BENEFITS

- Supports huge datasets with large volume of rows to be ingested frequently
- Fully managed Azure service & Consumption based pricing
- Scalability & performance
- Easy to migrate ETL workloads from on-premises EDWs and Data Lakes to Azure cloud
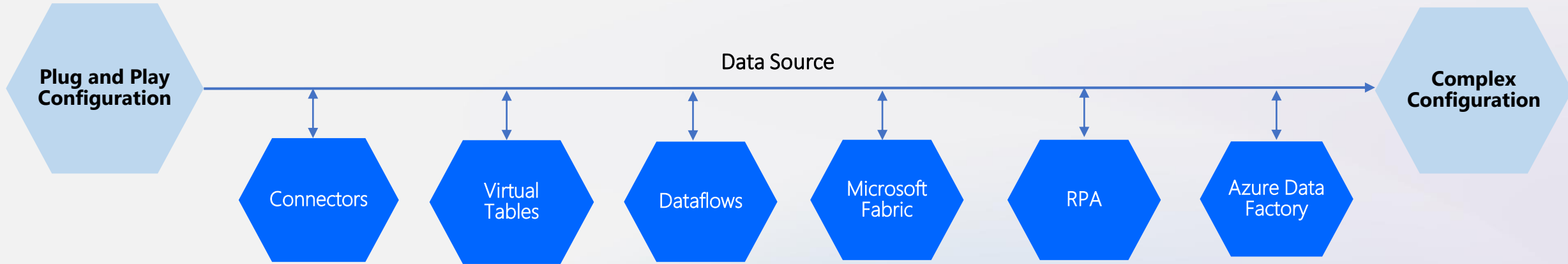
THINGS TO CONSIDER

Features	Power Platform dataflows	Data Factory wrangling dataflows
Destinations	Dataverse or Azure Data Lake Storage	Many destinations
Power Query transformation	All Power Query functions are supported	A limited set of functions are supported
Sources	Many sources are supported	Only a few sources (Blob, Azure Sql, Synapse, ADLS)
Scalability	Depends on the Premium capacity and the use of the enhanced compute engine	Highly scalable
Persona	Citizen application developer or citizen data analyst	Higher developer learning curve
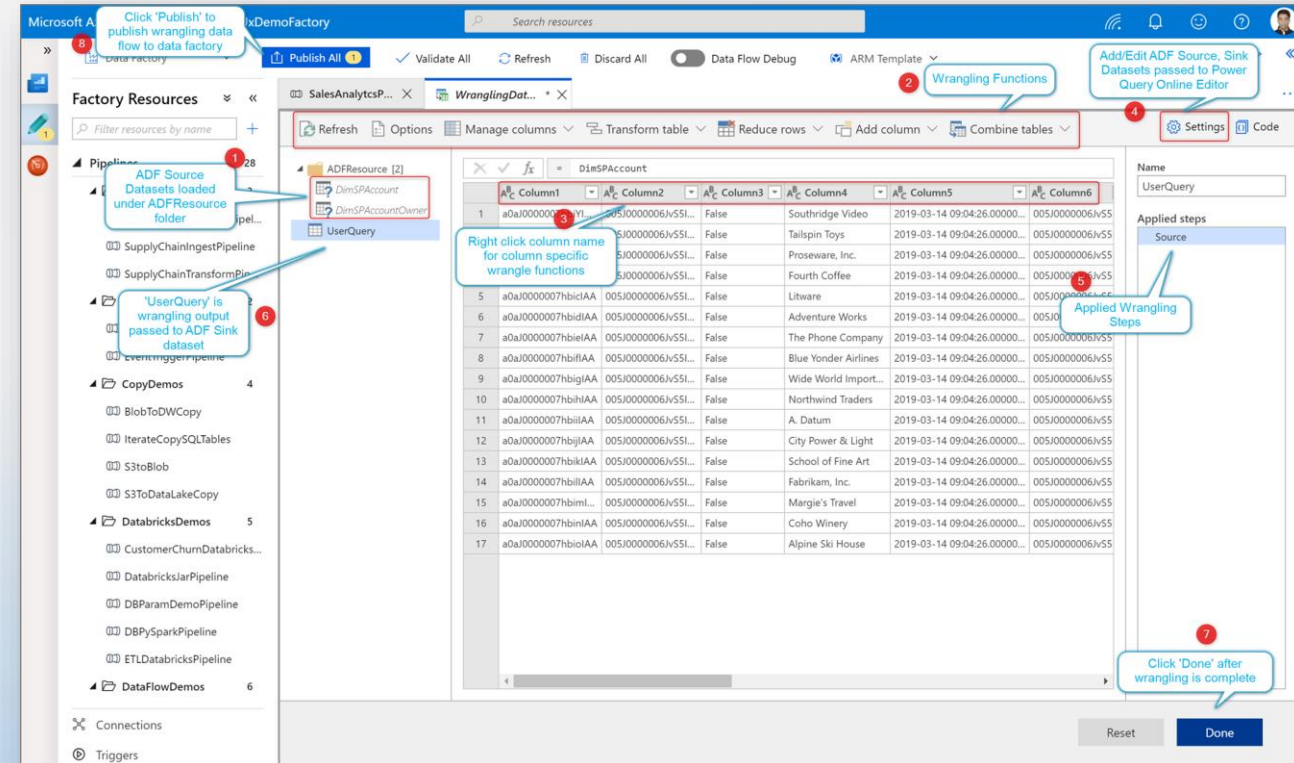
Power Virtual Agents Plugins Demo

Contoso Apparels has a call center to assist customers with shipping issues. They want to build a chatbot to query Knowledge Base maintained in ServiceNow and check status on incidents. We will use a PVA bot so the call center support can search the KT quickly and answer customer question and check status of the incident while still taking the call.

RECAP

Data Source

Plug and Play Configuration

Complex Configuration

| Connectors | Virtual Tables | Dataflows | Microsoft Fabric | RPA | Azure Data Factory |

- M365 Connectors
- Premium Connectors
- Custom Connectors
- Independent Connectors

- Virtual representation of external data source like SQL Server, SharePoint
- Avoids duplication of data

- Large data sets
- Light weight transformation
- Limit to transactional data

- Preview
- Unified data lake
- Easy Access & reusability
- Eliminate data silos

- Automate repetitive tasks
- Use only when connectors or API are not available

- High Volume
- Highly scalable
- Several destination sources supports

RESOURCES

- https://github.com/microsoft/PowerPlatformConnectors/tree/dev/custom-connectors/AzureOpenAIService
- https://learn.microsoft.com/en-us/power-query/dataflows/power-platform-dataflows-and-adf-wrangling-data-flows
- https://learn.microsoft.com/en-us/power-query/dataflows/overview-dataflows-across-power-platform-dynamics-365
- https://learn.microsoft.com/en-us/power-bi/connect-data/
- https://learn.microsoft.com/en-us/power-bi/connect-data/service-get-data
- https://learn.microsoft.com/en-us/fabric/get-started/microsoft-fabric-overview
- aka.ms/LearnPVA
- Create and edit virtual tables with Microsoft Dataverse - Power Apps | Microsoft Learn
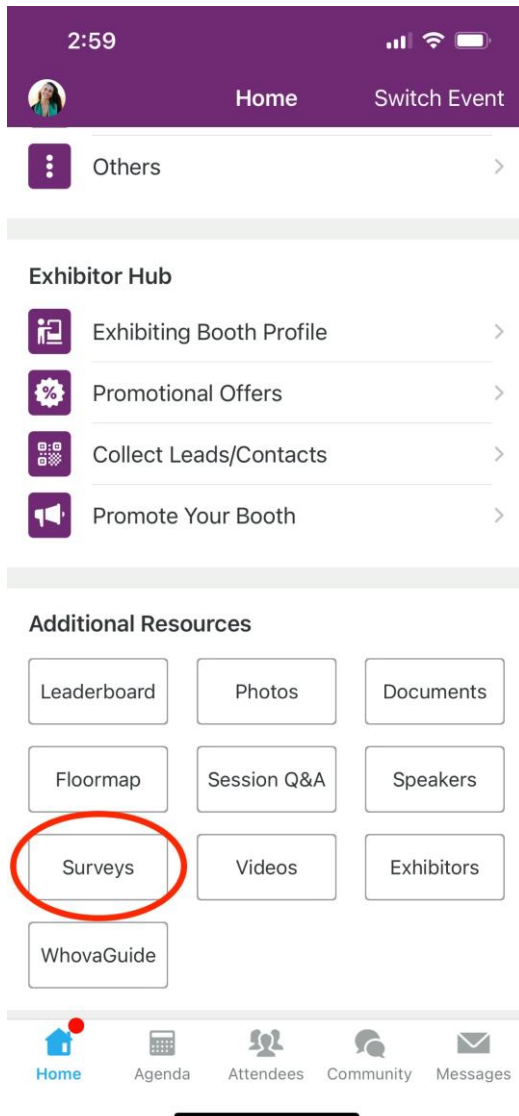
Session Feedback Surveys

We really want to hear from YOU!

In the pursuit of making next year's Microsoft Power Platform Conference even better, we want to hear your feedback about this session.

Here's How -

- *Simply go to the Whova App on your smartphone*
- *Scroll down on the Microsoft Power Platform Conference Homepage to 'Additional Resources' to click "Surveys".*
- *Click Session Feedback.*
- *Scroll down to find this session title.*
- *Complete the session feedback survey.*
- *Finally, click 'Submit'*

It's just that easy!

Questions – Bring it on!!

Thank You!

Microsoft Data & AI
CONFERENCE

Join us in
LAS VEGAS

December 12-14, 2023
Workshops 10, 11 & 15

REGISTER TODAY

🌐 MSDataAIconf.com
𝕏 @MSDataAIconf

ARUN ULAGARATCHAGAN

*Corporate Vice President,
Azure Data, **Microsoft***

AMIR NETZ

*Technical Fellow and CTO of
Microsoft Fabric, **Microsoft***

JESSICA HAWK

*Corporate Vice President Data,
AI, MR Product Marketing,
Microsoft*

ERIC BOYD

*Corporate Vice President AI
Platform, **Microsoft***