POWER OF THE PLATFORM

How the City of Columbus is leveraging Microsoft D365 Finance, Dual write & Power Platform for publishing open bids and promoting public transparency



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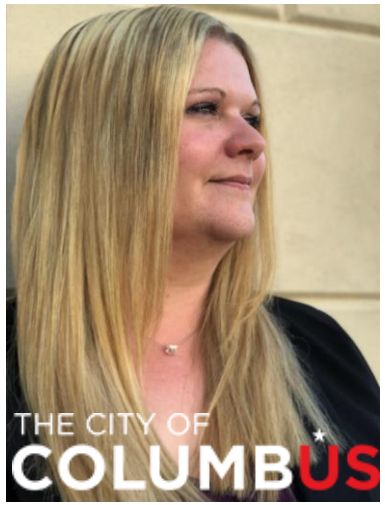
DYNAMICS USER GROUP

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Agenda DUG4GOV March 28, 2023

- Introductions
- Columbus Vendor Services/Dual Write
  - Goal
  - Solution
  - Things to know/Lessons learned
- Transparency Portal
  - Publicly sharing visualizations for Revenue, Expenses, POs & Payments
  - Offering data sets for download for common public records requests
  - Using a Chatbot to help answer questions about the site and its contents

Introduction to Today's Presenters



Cheryl Reed

Dynamics Solution Manager



Tom Noorkah

Director of Financial Systems



Priyaroop Singh

Lead Technical Architect











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CITY AUDITOR

Columbus Vendor Services

Columbus Vendor Services Goals – Why did we build it?

Provide a public facing site for vendors and constituents to view:

1. Open request for quotations (including attachments)
2. Closed request for quotations (including attachments)
3. View bid tabulations for closed request for quotations.

In addition, provide ability to:

1. Sign up to be a vendor with the City of Columbus (fully automated)
2. Log in (to Vendor Collaboration)
   - Sealed bidding for RFQs, view PO confirmations, update vendor information, view payment information, etc…
3. Provide links to self-service help, videos, user guides, contact information

***** The City only accepts online bids for RFQs, no paper**

Columbus Vendor Services (Public page-no login)



128

Open Requests for Quotations

5534

Closed Requests for Quotations

Welcome to City of Columbus Vendor Services. Our goal is to make it easy for vendors to locate and participate in procurement opportunities while ensuring that the City receives high-quality goods and services at the best price and quality. Vendor Services will help you find procurement opportunities, submit bids and manage vendor information.

Announcements

Columbus Vendor Services (Public page –no login)

General Details

Solicitation #
RFQ024397

Solicitation Type
INF

Document Title
CPH - CARE Awards 2023

Delivery Date
4/27/2023

Requesting Department
HEALTH

Expiry Date Time (ET)
3/23/2023, 9:00:00 AM

Delivery Name
City of Columbus, Columbus Health Department

Attachment
Yes

Delivery Address
240 S. Parsons AveColumbus, OH 43215 USA

Description

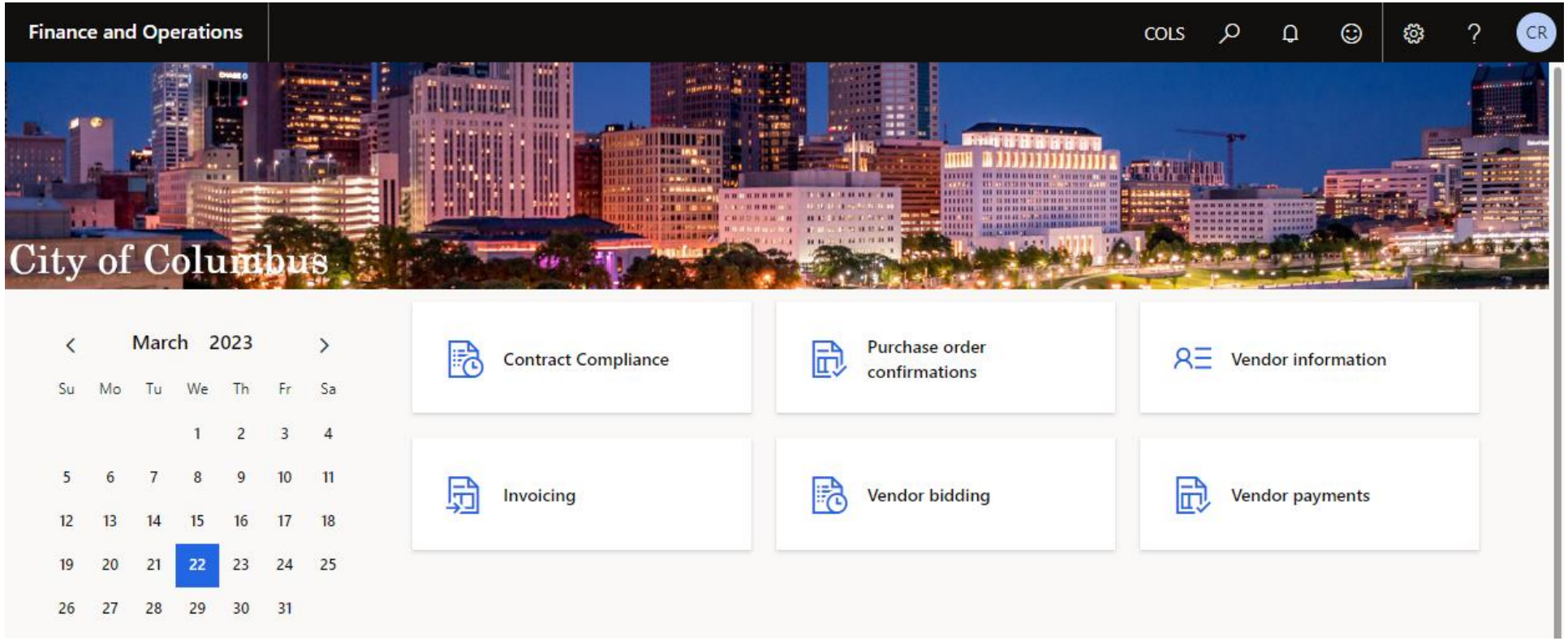
Attachments

File Name	Download Link
CPH - CARE Awards 2023 Specs	https://vcdocuattachments.blob.core.windows.net/vcdocumentsprod/8628A2C8-D1FC-4798-9597-D667A9414DB8.docx
Care Award 3-2023 Engraving Text	https://vcdocuattachments.blob.core.windows.net/vcdocumentsprod/0E1D7F2E-EF5D-4CCE-9E99-9B9D166E0F05.docx

Line Details

Line Number	Line Type	Procurement Category	Item Number	Product Name	Quantity	Purch Unit	Currency
1	Category	Plaques		CARE Awards	6	EA	USD

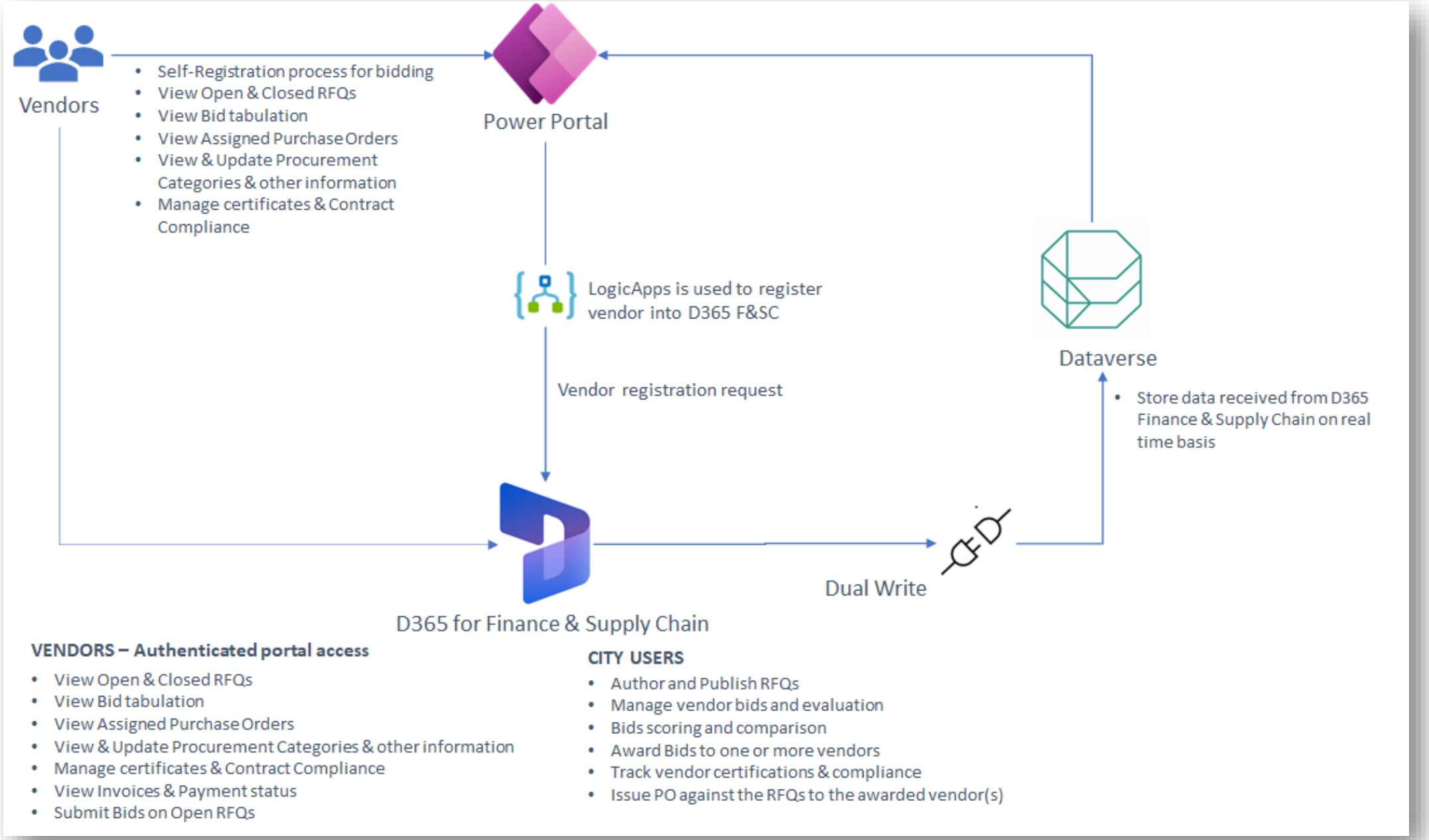
Vendor Collaboration (Authenticated, D365)



Columbus Vendor Services – Overall Solution

- Power Portal Page (Columbus Vendor Services)
- LogicApps (Vendor Registration)
- Dataverse (D365 data) (RFQs for Vendor Services)
- Dual Write (Tightly coupled, bidirectional integration between finance and operations apps and Dataverse. Near real time.)
- D365 Vendor Collaboration

Solution Overview



Dual Write – Things to know /Lessons Learned

- **Expect Challenges**
- **Have a Comprehensive Test Plan**
- **Work with your Fast Track Architect to review your proposed solution – Their feedback is valuable.**

Dual Write – Things to know/Lessons Learned

- **Know your data volume per outbound call**
  - Dual Write designed/intended for short bursts of data
  - In our case that was understanding if we on average send 1000 RFQ lines per RFQ or 20 lines.

- **Use Table Map Health Check Option for analysis**
  - Provides MS recommendations as Information, Warnings and errors

Dual Write – Things to know/Lessons Learned

- **Know/Analyze your data**
  - We encountered fields in D365 that allowed entry of more characters than the Dataverse allowed
  - Ensure only relevant fields and data sources are part of the entities participating in dual write transmissions (keep it streamlined, don't send data that isn't needed)
    - Filtering Data Sources is recommended to ensure only relevant records are triggered for the Dual Write transmission from D365 to Dataverse.

Dual Write – Things to know /Lessons Learned

- **Understand Dual Write Timeout and potential impact on data**
  - Outbound calls typically timeout after 2 minutes
  - Cannot be configured by end user
- **User Browser Closure**
  - User closes the browser prior to the Dual Write outbound call completion.
- The above two scenarios cause inconsistencies between Data in F&O and Dataverse.

Resources

- Sealed Bidding
- Sealed Bidding for RFQs
- Integrate data into Microsoft Dataverse - Power Platform | Microsoft Learn
- Dual-write home page - Finance & Operations | Dynamics 365 | Microsoft Learn
- Dual-write overview - Finance & Operations | Dynamics 365 | Microsoft Learn
- Vendor Collaboration Security Roles
- Columbus Vendor Services
- What is Azure Logic Apps?









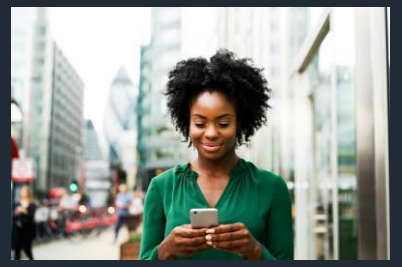


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Transparency Portal

Introduction





Web Portal For Citizens



Near Time Access – Public Data



Intuitive Reports & Visuals



Download Data : Data Hub



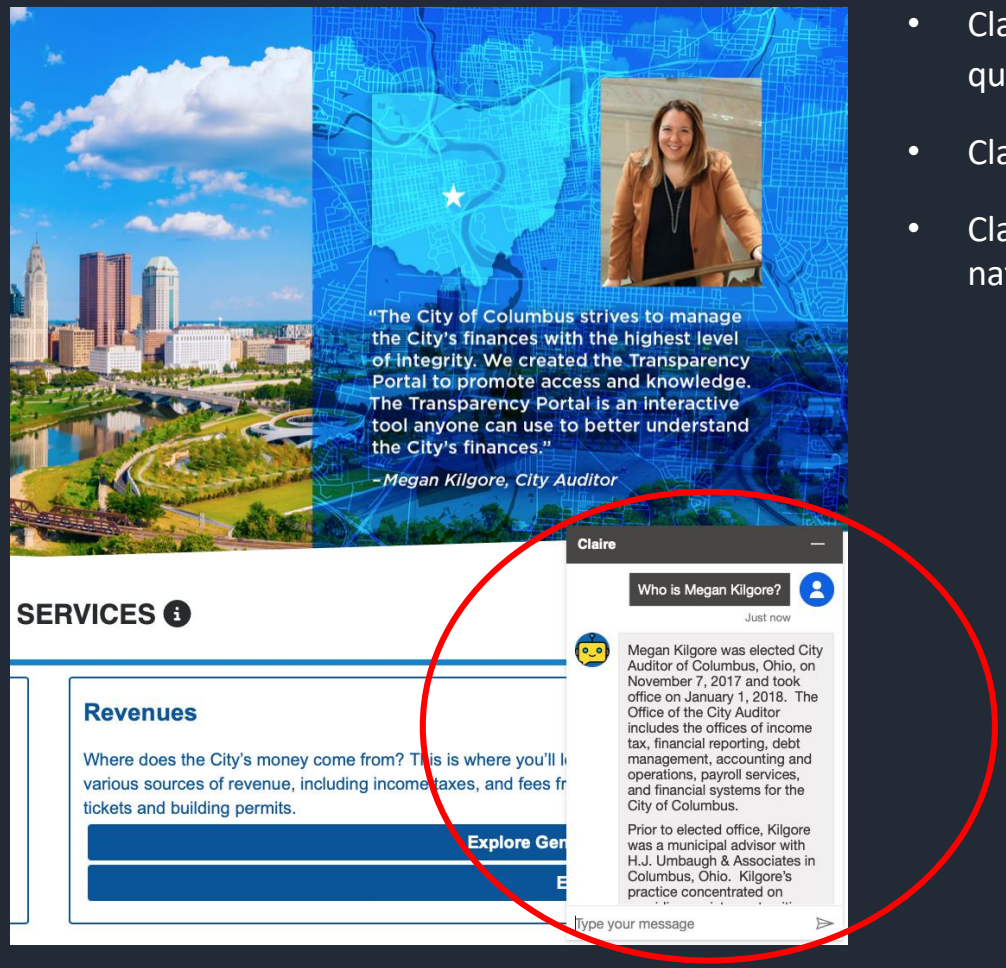
Scalable with Power Platform



Secure & Accessible from any device

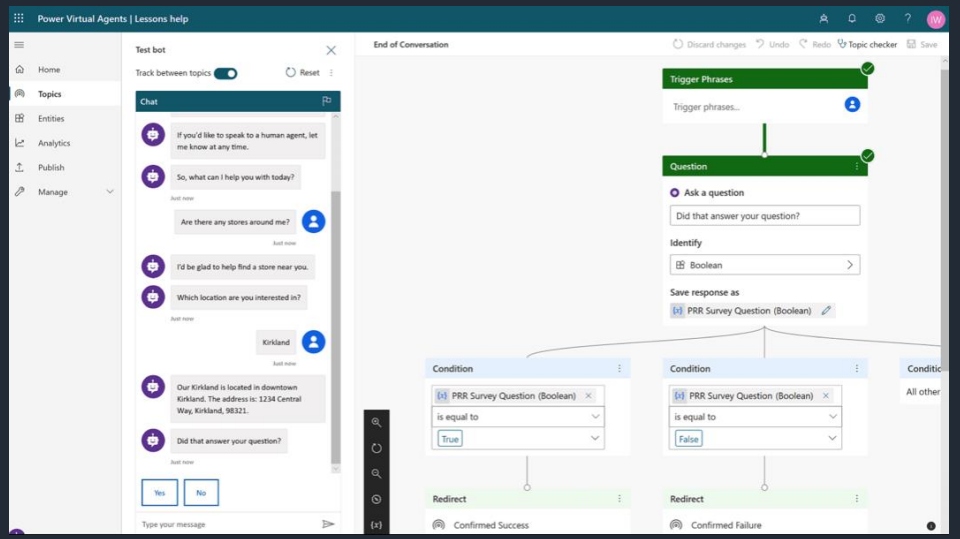
Key Features of Transparency Portal

Chat Bot - Claire



- Transparency Platform has Claire which is an intelligent bot. This is built using Microsoft Power Virtual Agent.
- Claire is an AI-powered bots for a range of requests—from providing simple answers to common questions to resolving issues requiring complex conversations.
- Claire can answer your queries and can learn from you over time.
- Claire automatically tracks critical KPIs and identify future bot topics, plus let self-learning AI with natural language processing continuously improve itself.

Behind the scenes – MS Power Virtual Agent



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Key Features of Transparency Portal

Advanced AI features of Power Virtual Agent

Topic overlap detection

Topic overlap detection helps improve topic triggering accuracy by finding overlaps between topics. Resolving topic overlaps can help reduce the need for the bot to ask clarifying questions before triggering a topic.

Conversation personalization

When this feature is enabled, the bot reuses information from Microsoft Graph and Azure Active Directory (Azure AD) throughout the conversation. This feature allows the bot to use already existing information to enhance and personalize future conversations



Automatic triggering improvements

Once enabled, the automatic triggering feature improves intent triggering by using AI to automatically generate new trigger phrases by analyzing previous bot traffic.

With the continuous learning in Power Virtual Agents provided by this feature, each conversation will make the next one better - using reinforcement learning and signals from responses.

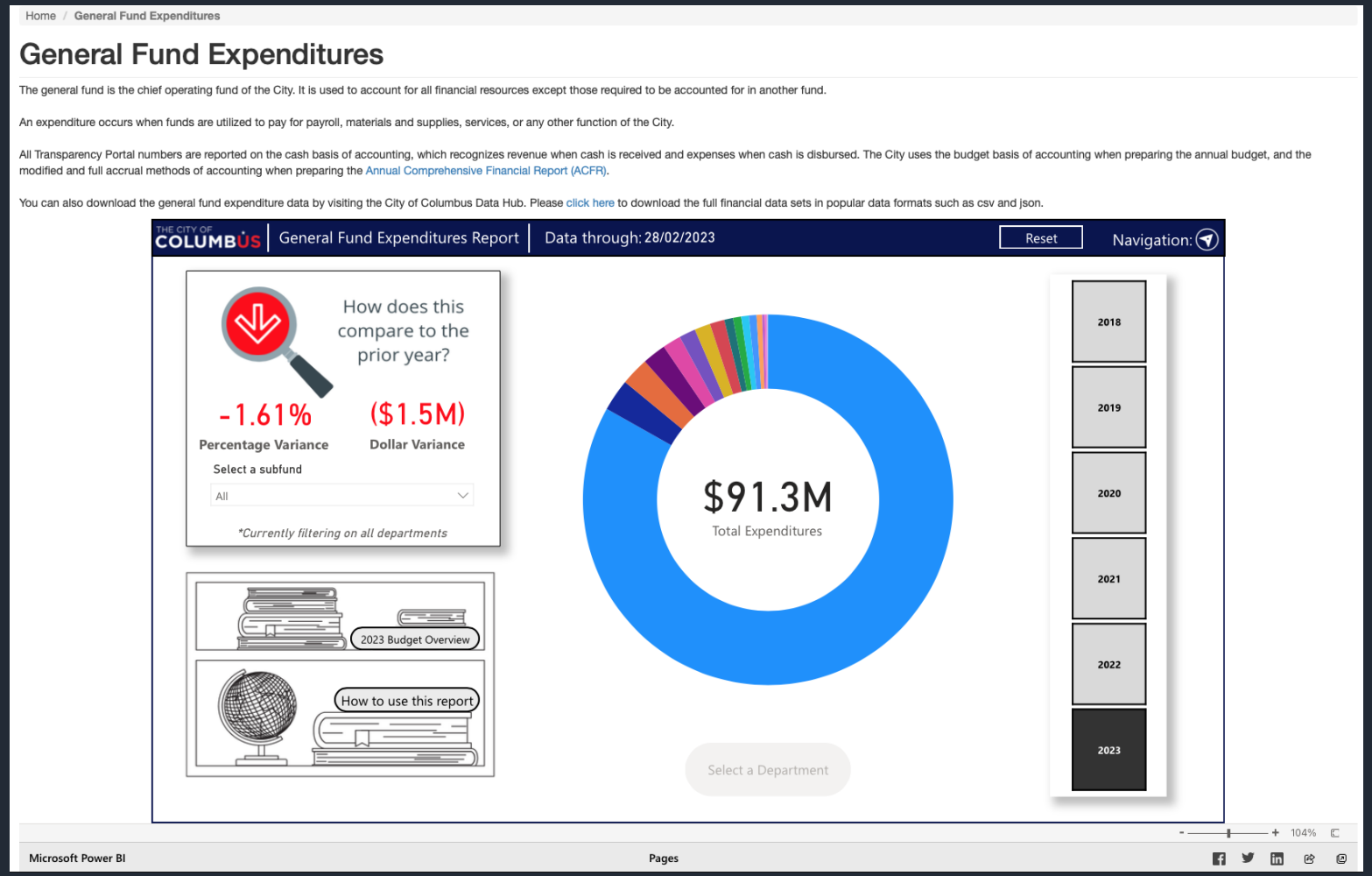
Over time, as users interact and talk to the bot, it will get better and better.

Topic suggestion from chat transcripts

This feature analyzes sessions between your bot and users and surfaces suggestions for you based on unmatched user input. The topic suggestion analyzer automatically runs once every one to two hours. It scans through all new queries made since the analyzer last ran, groups together queries to which it couldn't match an existing topic, and presents them in the list

Key Features of Transparency Portal

Data Insights

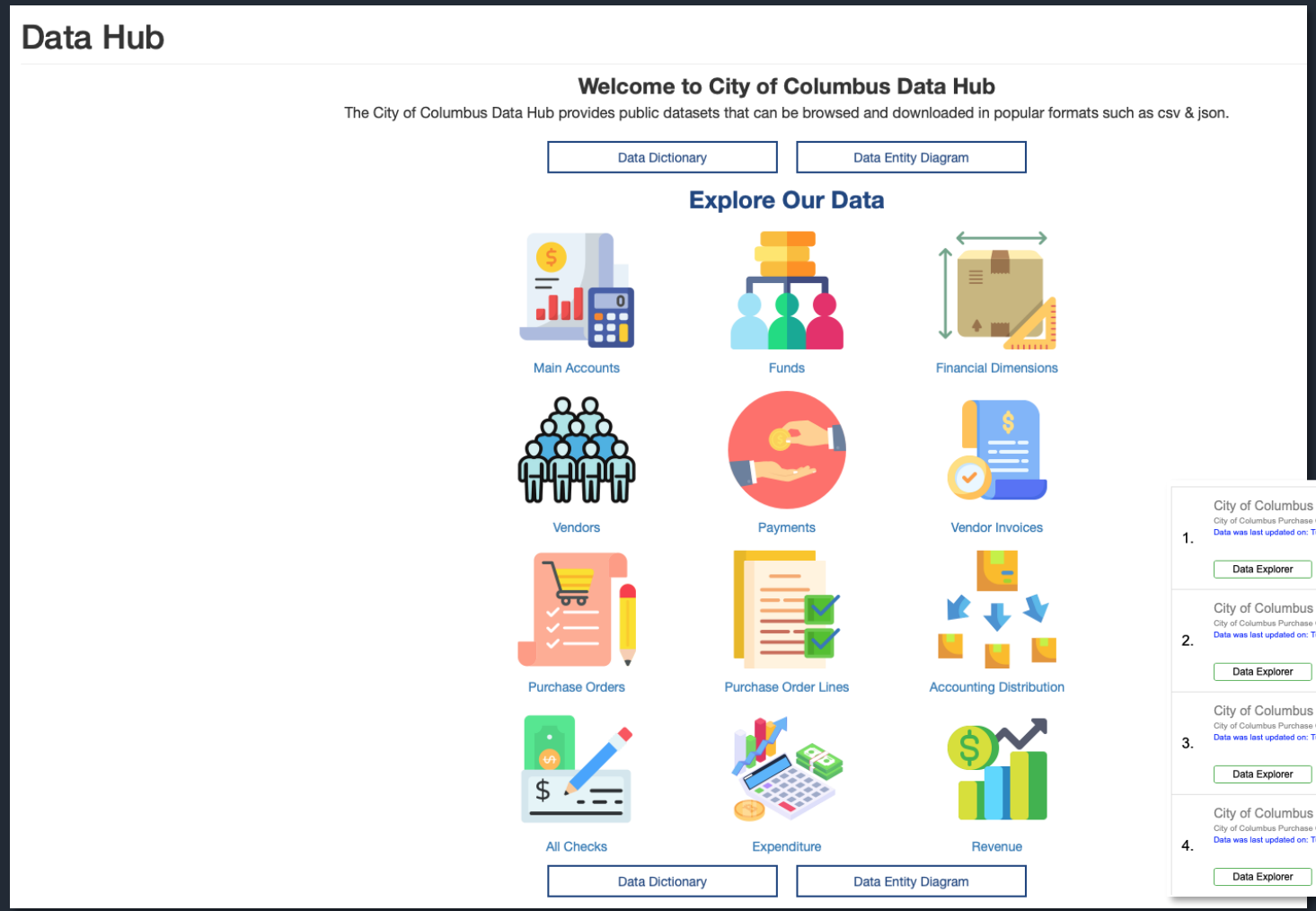


Data Insights and Dashboards

- Data is exposed as key Dashboards, KPIs, Insights.
- You can use native Power BI functionality to publically publish the visualization, create filters, tabs, links to other information.
- You can draw meaningful insights from these dashboard or download the data sets from the Data Hub and draw your own insights.

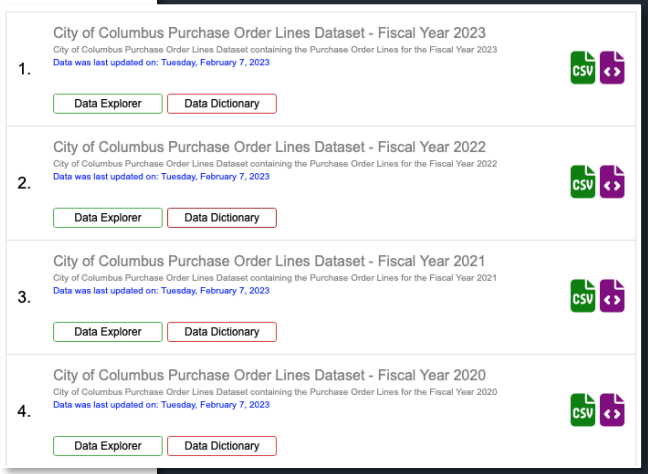
Key Features of Transparency Portal

Data Hub



- **Data Hub** – List of all data sets provided by City of Columbus for download
- **Data Dictionary** – A comprehensive explanation of all the fields in the data sets (i.e. MetaData)
- **ER Diagram** – Relationship diagram to understand how all the data sets relate to each other.

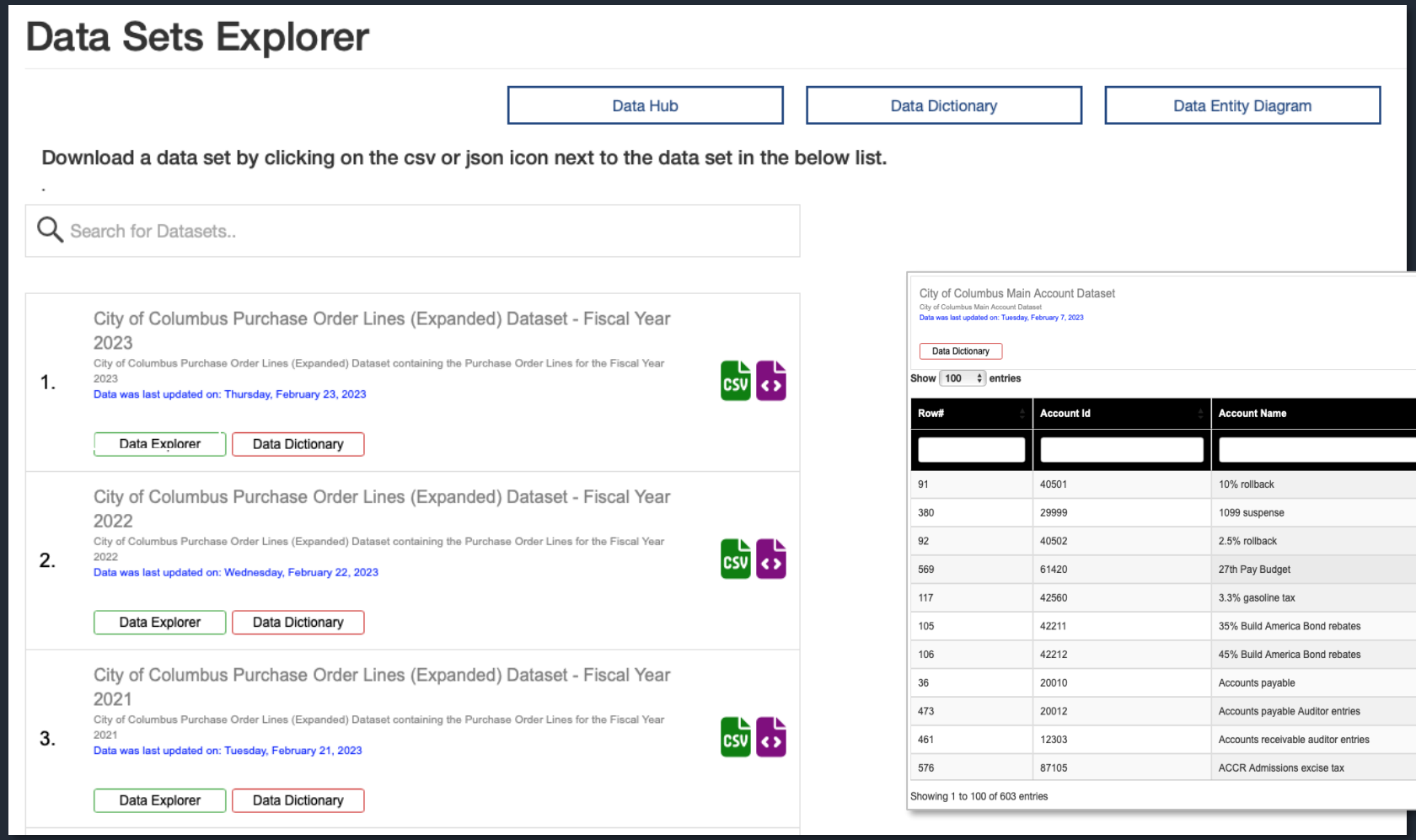
Note: *Data sets are available for download in csv and json format. Each data set has been published year-wise.*

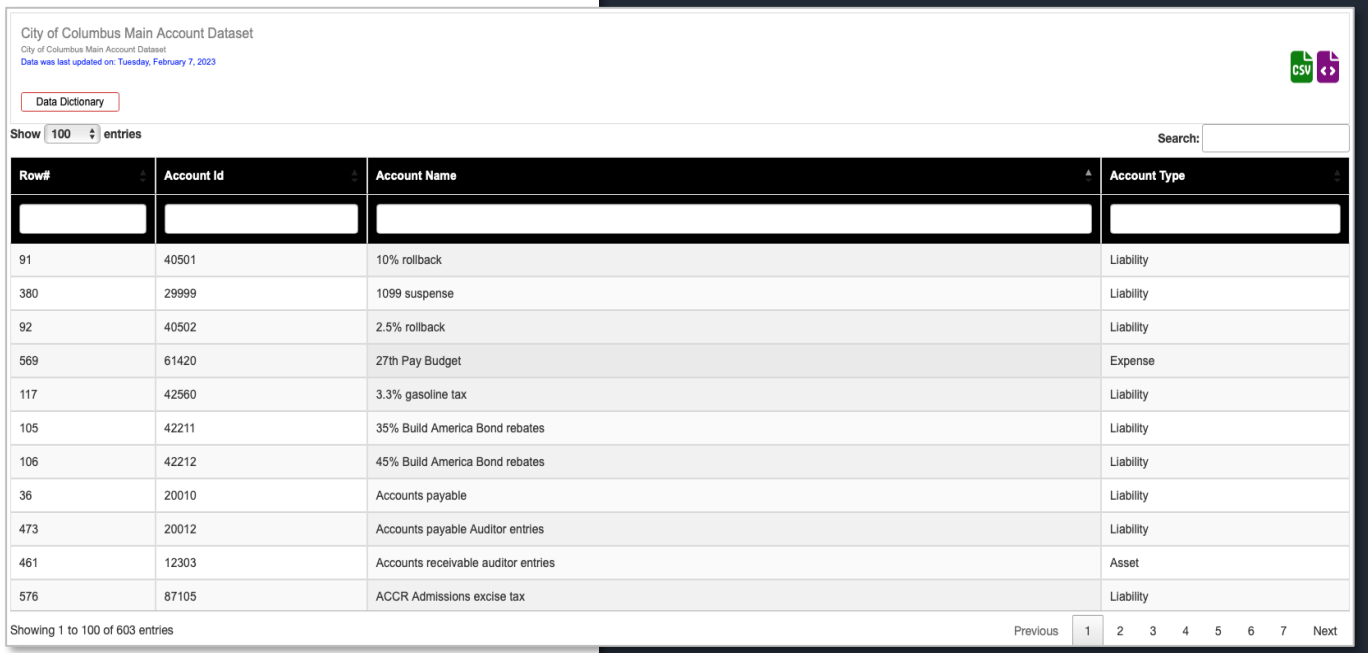


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Key Features of Transparency Portal

CSV & Json Downloads



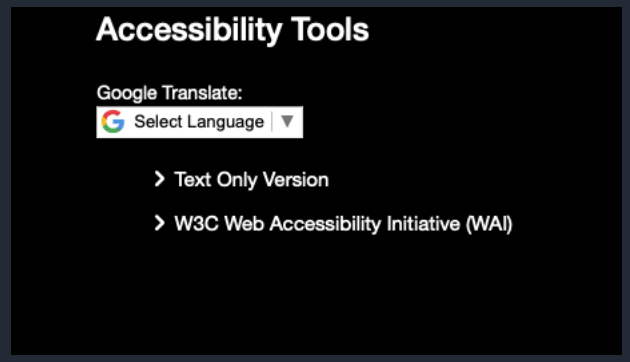


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Key Features of Transparency Portal

Accessibility Features

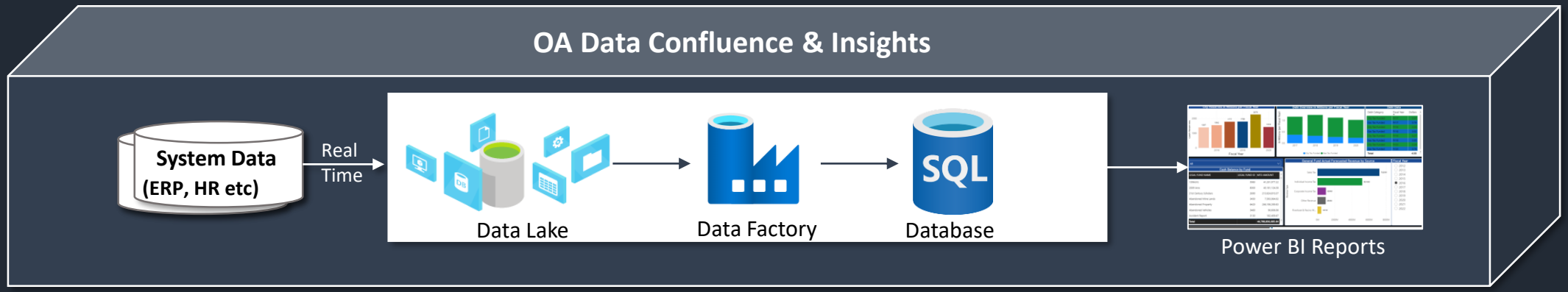


1. **Google Translate –** Translate the website to any language of your choosing.
2. **Text Only Version** – Do you find images & text colors distracting. Open the website in a text only version.
3. **Firefox –** Used browser features Inspect Accessibility properties and Color vision simulation for testing.

›Select Language	›Belarusian	›Croatian	›French	›Hebrew	›Javanese	›Lao	›Malayalam	›Oromo	›Scots Gaelic	›Sundanese	›Turkmen	›Zulu
›Afrikaans	›Bengali	›Czech	›Frisian	›Hindi	›Kannada	›Latin	›Maltese	›Pashto	›Sepedi	›Swahili	›Twi	
›Albanian	›Bhojpuri	›Danish	›Galician	›Hmong	›Kazakh	›Latvian	›Maori	›Persian	›Serbian	›Swedish	›Ukrainian	
›Amharic	›Bosnian	›Dhivehi	›Georgian	›Hungarian	›Khmer	›Lingala	›Marathi	›Polish	›Sesotho	›Tajik	›Urdu	
›Arabic	›Bulgarian	›Dogri	›German	›Icelandic	›Kinyarwanda	›Lithuanian	›Meiteilon (Manipuri)	›Portuguese	›Shona	›Tamil	›Uyghur	
›Armenian	›Catalan	›Dutch	›Greek	›Igbo	›Konkani	›Luganda	›Mizo	›Punjabi	›Sindhi	›Tatar	›Uzbek	
›Assamese	›Cebuano	›Esperanto	›Guarani	›Ilocano	›Korean	›Luxembourgish	›Mongolian	›Quechua	›Sinhala	›Telugu	›Vietnamese	
›Aymara	›Chichewa	›Estonian	›Gujarati	›Indonesian	›Krio	›Macedonian	›Myanmar (Burmese)	›Romanian	›Slovak	›Thai	›Welsh	
›Azerbaijani	›Chinese (Simplified)	›Ewe	›Haitian Creole	›Irish	›Kurdish (Kurmanji)	›Maithili	›Nepali	›Russian	›Slovenian	›Tigrinya	›Xhosa	
›Bambara	›Chinese (Traditional)	›Filipino	›Hausa	›Italian	›Kurdish (Sorani)	›Malagasy	›Norwegian	›Samoan	›Somali	›Tsonga	›Yiddish	
›Basque	›Corsican	›Finnish	›Hawaiian	›Japanese	›Kyrgyz	›Malay	›Odia (Oriya)	›Sanskrit	›Spanish	›Turkish	›Yoruba	

Transparency Portal – Behind The Scene





Transparency Portal – Behind The Scene

Key Actions being taken on D365 & on Data Lake for this solution to work.

D365 F&SC

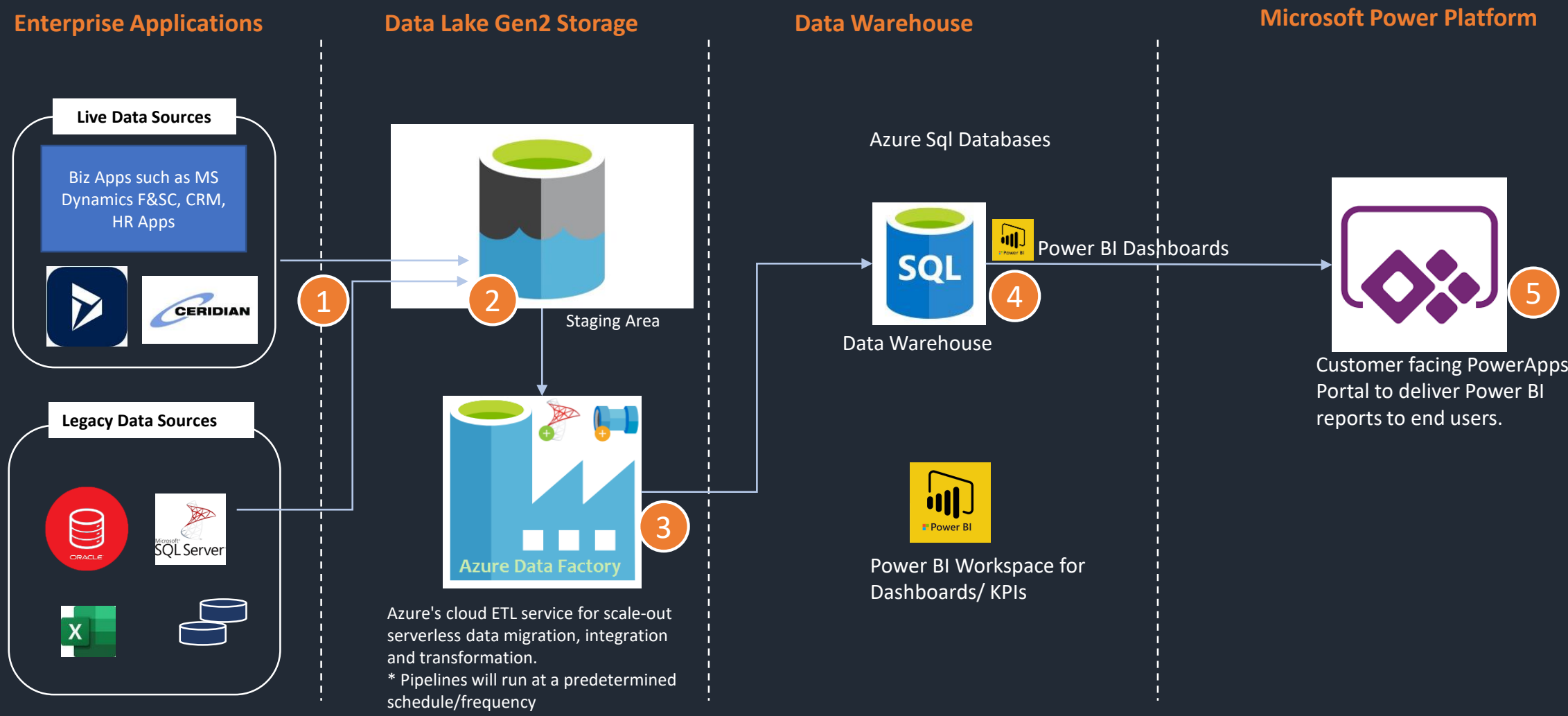
- Enable “Export to Data lake” plug-in in LCS.
- Identify Tables to be exported and activate them for export.
- Wait for activation status to change from “Initialization” to “running”.
- All future change feeds are pushed to Data Lake almost on a real time basis.

Data Lake Gen2 Storage & Beyond



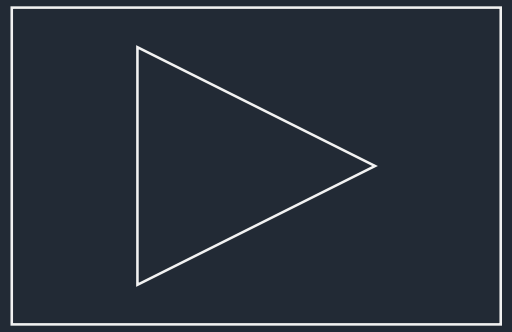
- Data of the tables start getting ingested in JSON (metadata) /CSV (table data) format in the container.
- Data Pipelines are written using Azure Data Factory for Transformation.
- Pipelines are run on a periodic basis, as needed.
- Transformed data is pushed into Azure SQL DWH.

Data Confluence and Insights – Architecture



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Transparency Platform – Demo



Questions?

How to reach us:

- Tom Noorkah (trnoorkah@columbus.gov)
- Cheryl Reed (careed@columbus.gov)
- Priyaroop Singh (Priyaroop.Singh@onactuate.com)

Site URLs:

- https:\\vendors.columbus.gov
- https:\\columbusauditor.org (launches in April)

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Resources – What do you need to do this?

SR#	Item Description	Comments	Is Mandatory?
1	a. Power Apps Portal in Microsoft Power Platform b. Power BI Professional	Power Apps portals documentation - Power Apps | Microsoft Learn Publish to web from Power BI - Power BI | Microsoft Learn	
2	Azure services for ingesting D365 data into Data warehouse – a. Azure Data Lake Storage Gen2 (ADLS Gen 2) b. Azure Data Factory (ADF) c. Azure SQL database	**Note**: For integration with additional applications, the Azure data services required will be the same as mentioned here. Some additional services may also be required. Data Lake | Microsoft Azure Introduction to Azure Data Factory - Azure Data Factory | Microsoft Learn	Yes
3	Google Translate	How To Google Translate (w3schools.com)	
4	Microsoft Power Virtual Agent	Overview of Power Virtual Agents web app - Power Virtual Agents | Microsoft Learn	

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Resources - Bill Of Material

SR#	Azure Services	Comments
1	Storage Accounts (Azure Data Lake)	• Data Lake Storage Gen2, Standard, LRS Redundancy, Hot Access Tier, Flat Namespace File Structure, • 1,024 GB Capacity - Pay as you go, • Write operations: 4 MB x 100,000 operations, Read operations: 4 MB x 100,000 operations, 100,000 Iterative read operations, 100,000 Iterative write operations, 100,000 Other operations. • 1,000 GB Data Retrieval, 1,000 GB Data Write
2	Data Factory	• Azure Data Factory V2 Type, Data Pipeline Service Type • Data Flow: 1 x 16 General Purpose vCores x 8 Hours, 0 x 8 Memory Optimized vCores x 730 Hours, Data Factory Operations: 0 x 50,000 Read/Write operation(s), 0 x 50,000 Monitoring operation(s)
3	Azure SQL Database	• Single Database, vCore, RA-GRS Backup Storage, • General Purpose, Provisioned, Standard-series (Gen 5), Local Redundancy, • 1 - 8 vCore instance(s) x 730 Hours, 1,024 GB Storage, 0 GB Backup Storage

https://azure.microsoft.com/en-us/pricing/calculator

About OnActuate

2012

We are a 10-year-old organization specializing in the Microsoft Dynamics ecosystem and related technologies.

150 Team

Headquartered in Vancouver with offices in U.S. Canada, India, Panama and Singapore, we have ~150 people across 8 locations.

60 Countries

We have customers in more than 60 countries using Dynamics solution and our value-added services to support the solution.



5500+ ERP & CRM Users

Our team supports more than 5500 ERP and CRM users globally manage their business operations.

$100B Customer's Revenue

We manage over 100 Billion USD of our customer's revenue.

6 Fortune 500 Companies

Currently we serve six Fortune 500 companies and have helped them in their Digital Transformation journey.

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- **Dynamics 365**
  Finance & Supply Chain
- **Dynamics 365**
  Sales, Marketing, Customer Service
- **Dynamics 365**
  Business Central
- **Power Apps & Power BI**
- **Ceridian Dayforce**

Solutions

- **Public Sector Solutions**
  Vendor Portal, Cashiering, Budgeting
- **Manufacturing**
  OA Bottling
- **Cloud & Mobility**
  Citizen Information System, Field Force Manager, OA Warranty
- **Analytics**
  CAFR, Reporting
- **Security**
  Fraud Protection

Services

- **Implementation**
  ERP and CRM
- **D365 Support Factory**
  Application Maintenance
- **Version Upgrade**
  Core Development
- **DevOps**

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Thank You DUG4GOV!

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