

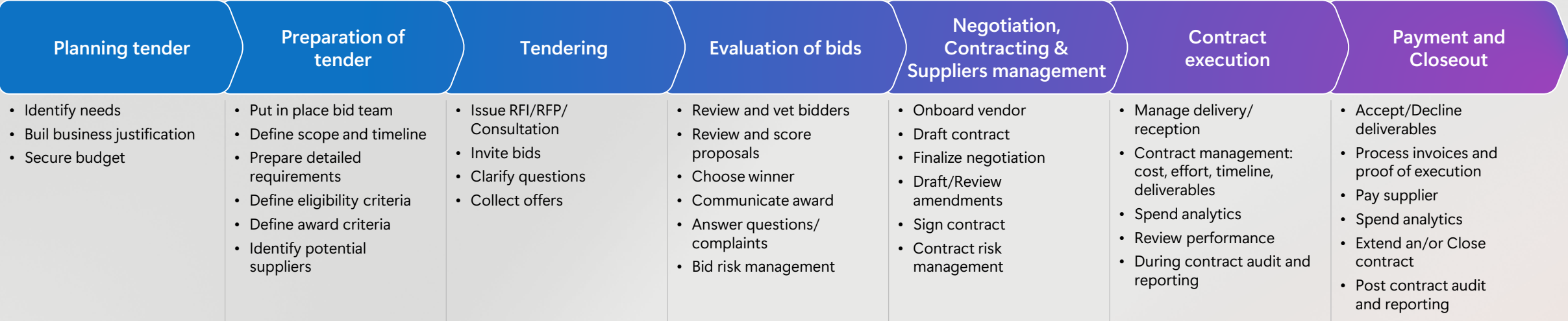


# Automate procurement and contracts management with AI

Reference Architecture




# Public Procurement Process Flow



## AI Innovation Hotspots

<p><b>Demand prediction:</b> Predict annual government demand for products</p> <p><b>Price analysis:</b></p> <ul style="list-style-type: none"> <li>Searchable database of historical prices</li> <li>AI applications for cost engineering and analysis</li> </ul> <p><b>Data linkage</b> and Cross Gov Procurement/Spending analysis</p>	<p><b>Process automation:</b></p> <ul style="list-style-type: none"> <li>Supply market summary creation</li> <li>Requirements AI generator based on scope &amp; goals</li> </ul>	<p><b>Suppliers AI Agent</b> Virtual assistant for Suppliers' inquiries</p> <p><b>Sentiment analysis</b> of buyers and suppliers</p> <p><b>User behavior analysis</b></p> <p><b>Anti corruption integrity tool:</b> Clusters suppliers to analyze unobvious connections between them or with public companies, potential fraud and hidden trends</p>	<p><b>Process automation:</b></p> <ul style="list-style-type: none"> <li>AI Agent for bids processing for evaluation</li> <li>AI Agents for Responsibility determination and Red flags vetting</li> </ul> <p><b>Multi-language processing and interaction</b></p> <p><b>RFx Dashboards</b></p> <p><b>Scoring of risk events</b></p>	<p><b>Transparency Reporting</b> Open Contracting Data Standard (OCDS) Transformation and Analytics</p> <p><b>Process automation</b></p> <ul style="list-style-type: none"> <li>Contract drafting</li> <li>Supplier registry maintenance.</li> <li>Contract summarization</li> <li>Supplier comms</li> <li>Dynamic payment term generation</li> </ul> <p><b>Scenario analysis &amp; Scoring of risk events</b></p>	<p><b>Spend categorization:</b></p> <ul style="list-style-type: none"> <li>E-Invoicing data classification based on UNSPSC+ publish on open data portal – Explore State Spending – to provide spending transparency</li> <li>Products/Services code prediction: Classification</li> </ul> <p><b>Automated Approval Routing</b></p> <p><b>Suppliers AI Agent</b></p> <ul style="list-style-type: none"> <li>Suppliers' inquiries</li> </ul> <p><b>Spend analysis and simulation</b></p>	<p><b>Process automation</b> Invoices processing</p> <p><b>Automated risk-indicator engine scans</b> all tenders for non-compliance and irregularities. Risky transactions are selected for further monitoring</p> <p><b>Performance management</b></p> <p><b>Spend simulations &amp; Predictive analytics</b></p>
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Supplier  
Beneficiary  
Procuring Authority  
Audit Authority**User experience**

Chat

Dashboards

Apps

**Generative AI**

Agents

Tools

Orchestration

**Processing & enrichment**

ERP

Anomaly detection

Entity &amp; context extraction

Predictive modelling

Risk management

**Ingestion****Structured & unstructured data sources (upstream & downstream)**

Document repository &amp; archive

Suppliers registry

Budget system

Payment system

Vendor portal

ERP

**Foundational services**

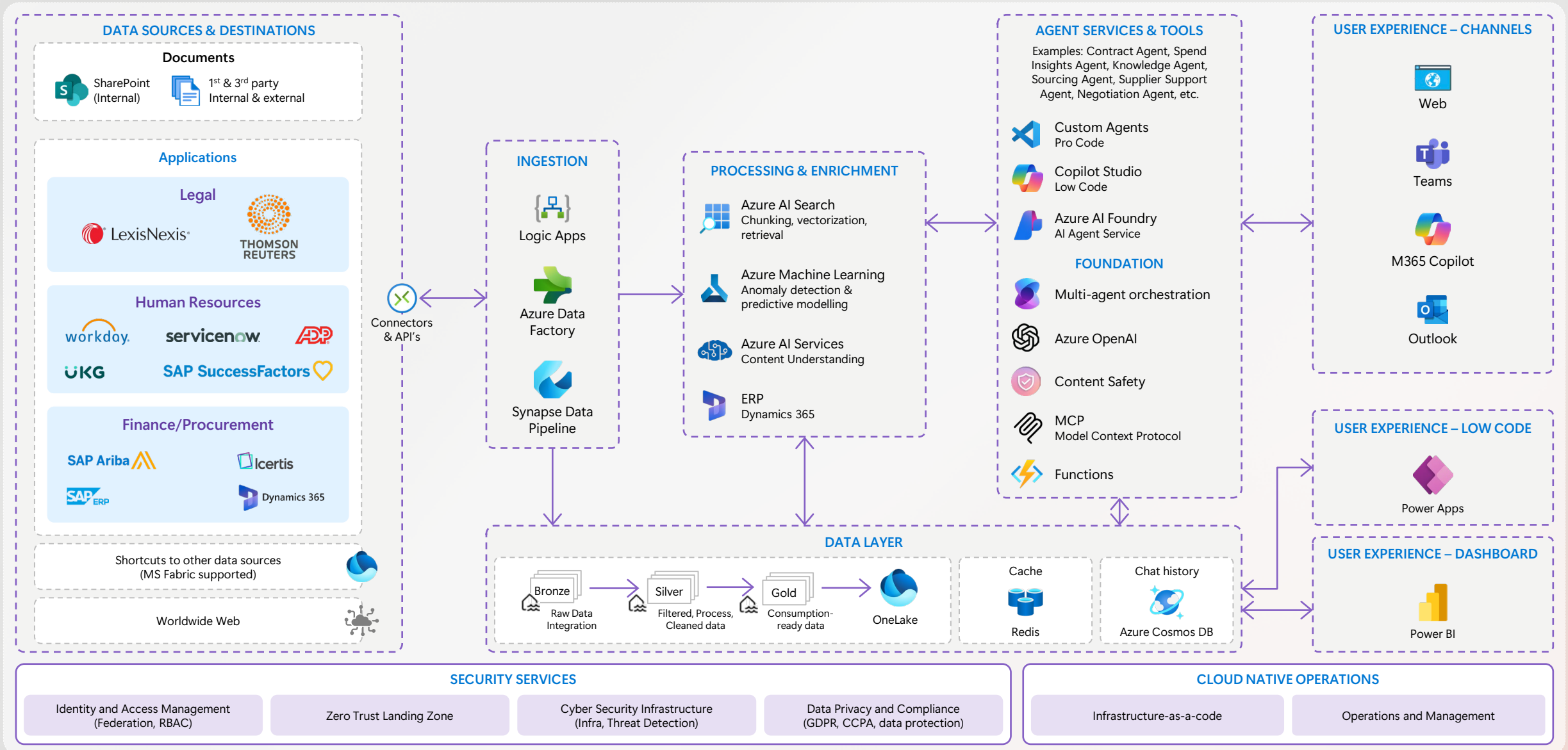
Identity

Security

Operations

# Conceptual Architecture – Capabilities & Building Blocks

# Logical/Component Architecture – Technology Mapping





Cosmos DB  
Azure OpenAI Service  
Azure Kubernetes

# Document Knowledge Mining

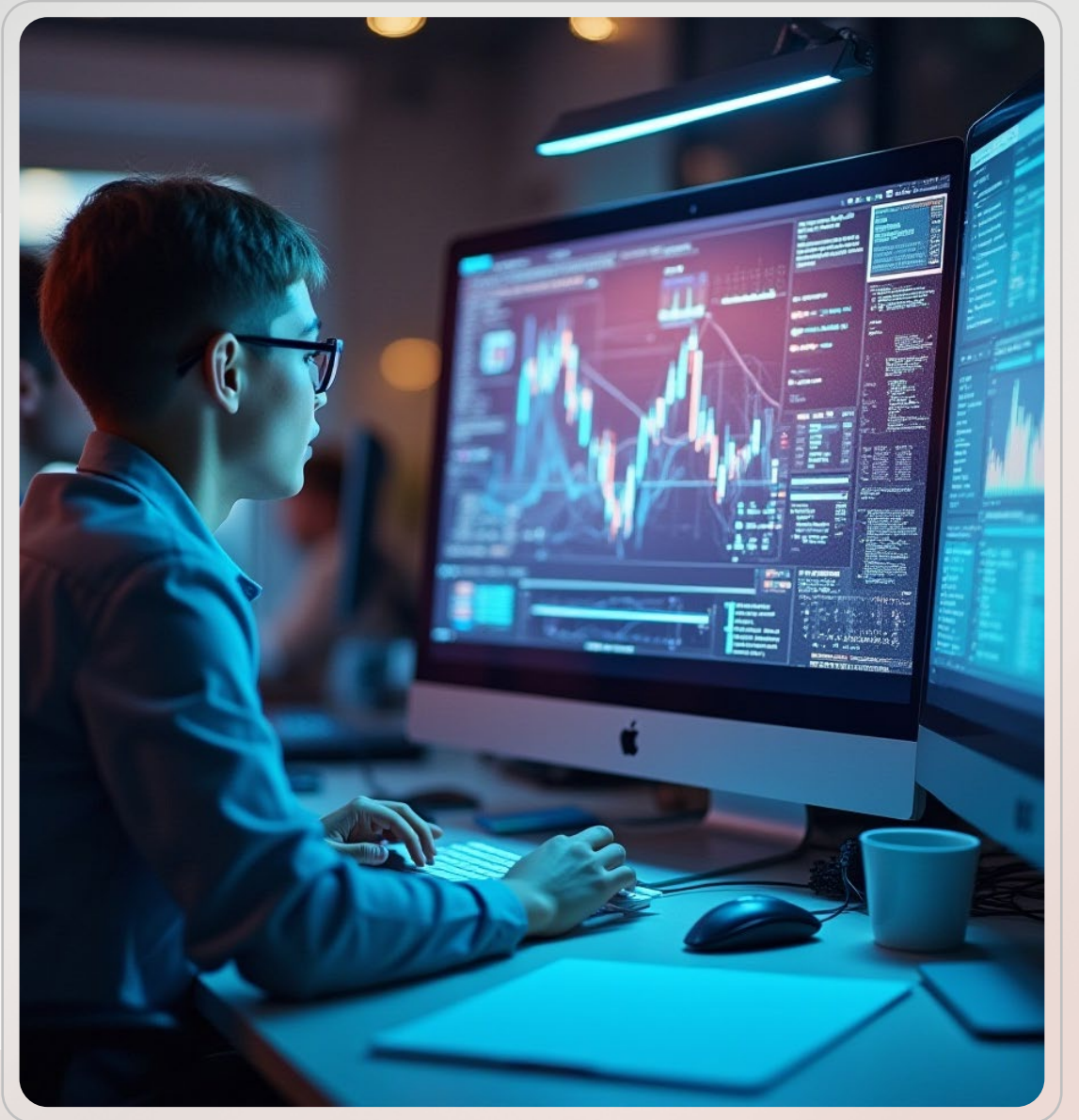
Solution Accelerator



# Overview

AI asset intelligence that analyzes various content types to quickly understand context across multiple assets and discover insights easily with natural language.

The Document Knowledge Mining Solution Accelerator ingests, extracts, and classifies content from a high volume of assets to gain deeper insights and generate relevant suggestions for quick and easy reasoning. Users can analyze, compare, and summarize content with multi-modal processing of documents, handwritten text, charts, graphs, tables, and form fields.



# Customer challenges



## Inaccessible data pipeline

Inability to extract data from documents leads to limited access to information and hinders insight discovery



## High volume of unprocessed documents

Dealing with high volumes of documents and having, at the same time, low workforce capacity to handle them results in low productivity



## Lack of relevant context

Inability to directly compare, contrast and synthesize content in different formats leads to low contextual clarity and comprehension



## Limited ability to analyze data

Inability to reason through data pipeline and identify business specific key words and phrases to provide relevant guidance



## Content accuracy and automation

Failure to extract useful information from images, charts, and tables limits access to key data needed for informed insight generation

# Key features

## Ingest and extract real-world entities

Process and extract information unique to your ingested data pipeline such as people, products, events, places, or behaviors. Used to populate filters

## Chat-based insights discovery

Choose to chat with all indexed assets, a single asset, select a set of assets, or chat with a generated list of assets based on a user-led keyword search

## Text and document data analysis

Analyze, compare, and synthesize materials into deep insights, making content accessible through natural language prompting

## Prompt suggestion guidance

Suggest a next best set of questions based on the prompt inquiry to guide deeper avenues of user-led discovery

## Multi-modal information processing

Ingest and extract knowledge from multiple content types and various format types. Enhance with scanned images, handwritten forms, and text-based tables

# Business outcomes



## Automate content processing

Process and extract essential details unique to your ingested data pipeline such as people, products, events, places, or behaviors to quickly streamline document review and analysis



## Enhance insight discovery

User-led insight discovery is enabled through indexed, single, and multi-asset selection, including user generated asset lists used to contextualize, compare and synthesize materials into deep insights



## Increase user productivity

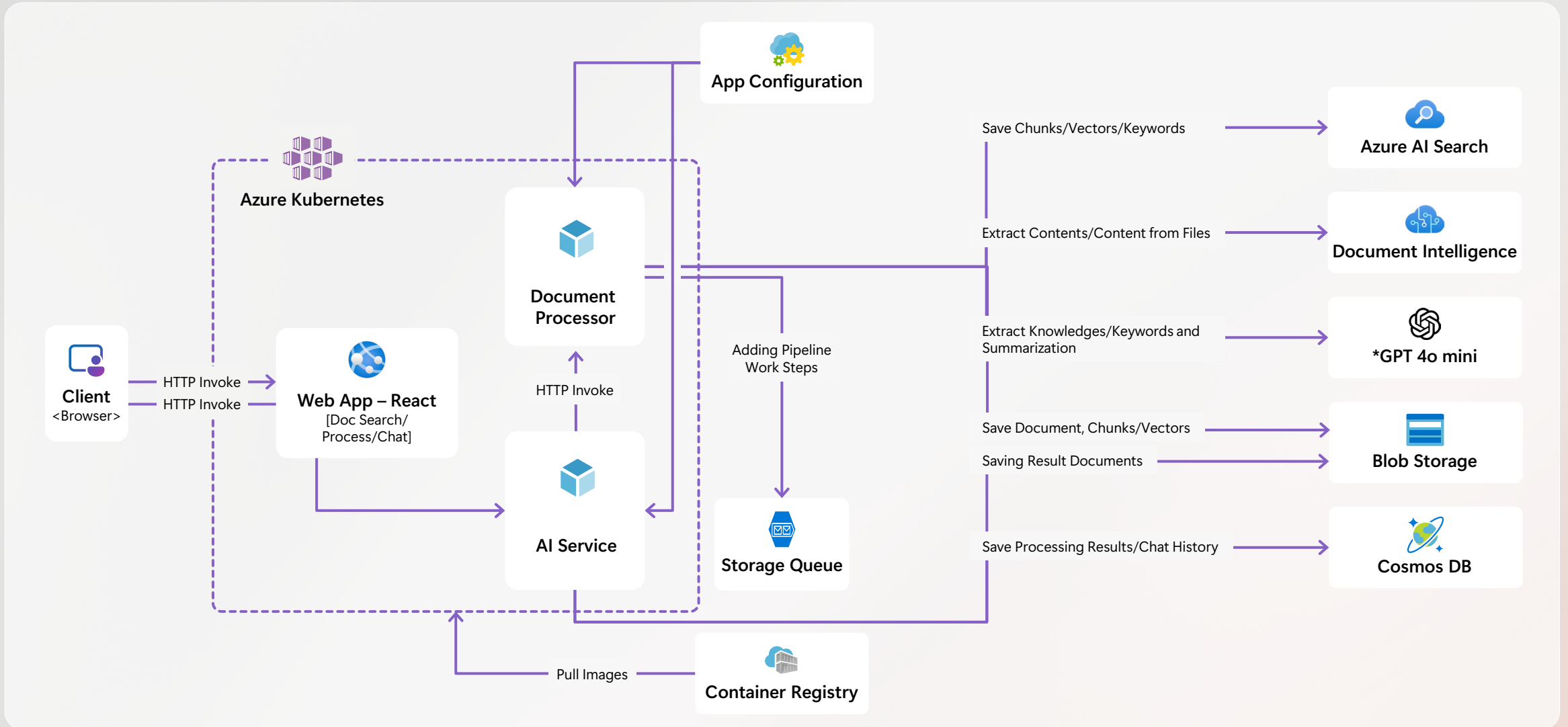
Improve productivity with natural language prompting and next best query suggestion, including reference materials and automated filter generation, to guide deeper avenues of user-lead discovery



## Surface multi-modal insights

Data ingested from multiple content types, such as images, handwritten forms, and text-based tables, is extracted and analyzed to surface key insights in conversational context

# Accelerator architecture



# GitHub repo

Access the GitHub repo to deploy this solution accelerator

[GitHub Repo](#)



## Document Knowledge Mining Accelerator

MENU: [USER STORY](#) | [QUICK DEPLOY](#) | [SUPPORTING DOCUMENTS](#) | [CUSTOMER TRUTH](#)



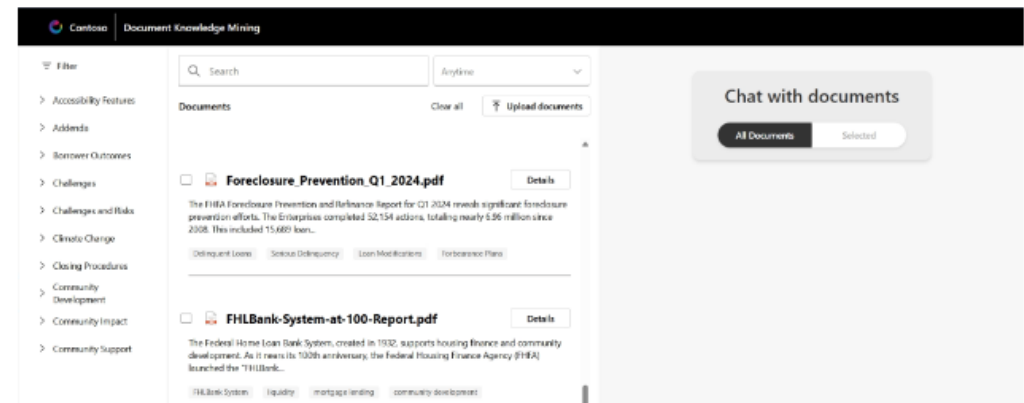
### User story

#### Solution accelerator overview

This solution accelerator helps you ingest, extract, and classify content from a high volume of assets to gain deeper insights and generate relevant suggestions for quick and easy reasoning. It allows you to analyze, compare, and summarize content with multi-modal processing of documents, handwritten text, charts, graphs, tables, and form fields. It leverages Azure OpenAI and Azure AI Document Intelligence in a hybrid approach by combining Optical Character Recognition (OCR) and multi-modal Large Language Model (LLM) to extract information from documents to provide insights without pre-training.

#### Key features

- **Ingest and extract real-world entities:** Process and extract information unique to your ingested data pipeline such as people, products, events, places, or behaviors. Used to populate filters.
- **Chat-based insights discovery:** Choose to chat with all indexed assets, a single asset, select a set of assets, or chat with a generated list of assets from a based on a user-led keyword search.
- **Text and document data analysis:** Analyze, compare, and synthesize materials into deep insights, making content accessible through natural language prompting.
- **Prompt suggestion guidance:** Suggest a next best set of questions based on the prompt inquiry. Include referenced materials to guide deeper avenues of user-led discovery.
- **Multi-modal information processing:** Ingest and extract knowledge from multiple content types and various format types. Enhance with scanned images, handwritten forms, and text-based tables.



The screenshot shows the user interface of the Document Knowledge Mining Accelerator. The top navigation bar includes the Cortana logo and the title "Document Knowledge Mining". Below the navigation bar, there is a search bar with a search icon and a dropdown menu set to "Anytime". To the right of the search bar, there are buttons for "Clear all" and "Upload documents". The main content area is divided into two columns. The left column contains a sidebar with a "Filter" section and a list of categories: Accessibility Features, Addends, Borrower Outcomes, Challenges, Challenges and Risks, Client Change, Closing Procedures, Community Development, Community Impact, and Community Support. The right column displays a list of documents. The first document is "Foreclosure Prevention Q1 2024.pdf" with a "Details" button. Below the title is a summary: "The FHFA Foreclosure Prevention and Refinance Report for Q1 2024 reveals significant foreclosure prevention efforts. The Enterprises completed 52,154 actions, totaling nearly \$.96 million since 2008. This included 15,689 loans." Below the summary are tags: "Delinquent Loans", "Serious Delinquency", "Loan Modifications", and "Forbearance Plans". The second document is "FHLBank-System-at-100-Report.pdf" with a "Details" button. Below the title is a summary: "The Federal Home Loan Bank System, created in 1932, supports housing finance and community development. As it nears its 100th anniversary, the Federal Housing Finance Agency (FHFA) launched the 'FHLBank...". Below the summary are tags: "FHLBank System", "liquidity", "mortgage lending", and "community development". On the far right, there is a "Chat with documents" section with a button labeled "All Documents" and a "Selected" button.



Azure Open AI Service  
Azure AI Search  
Microsoft Fabric

# Document Generation Copilot

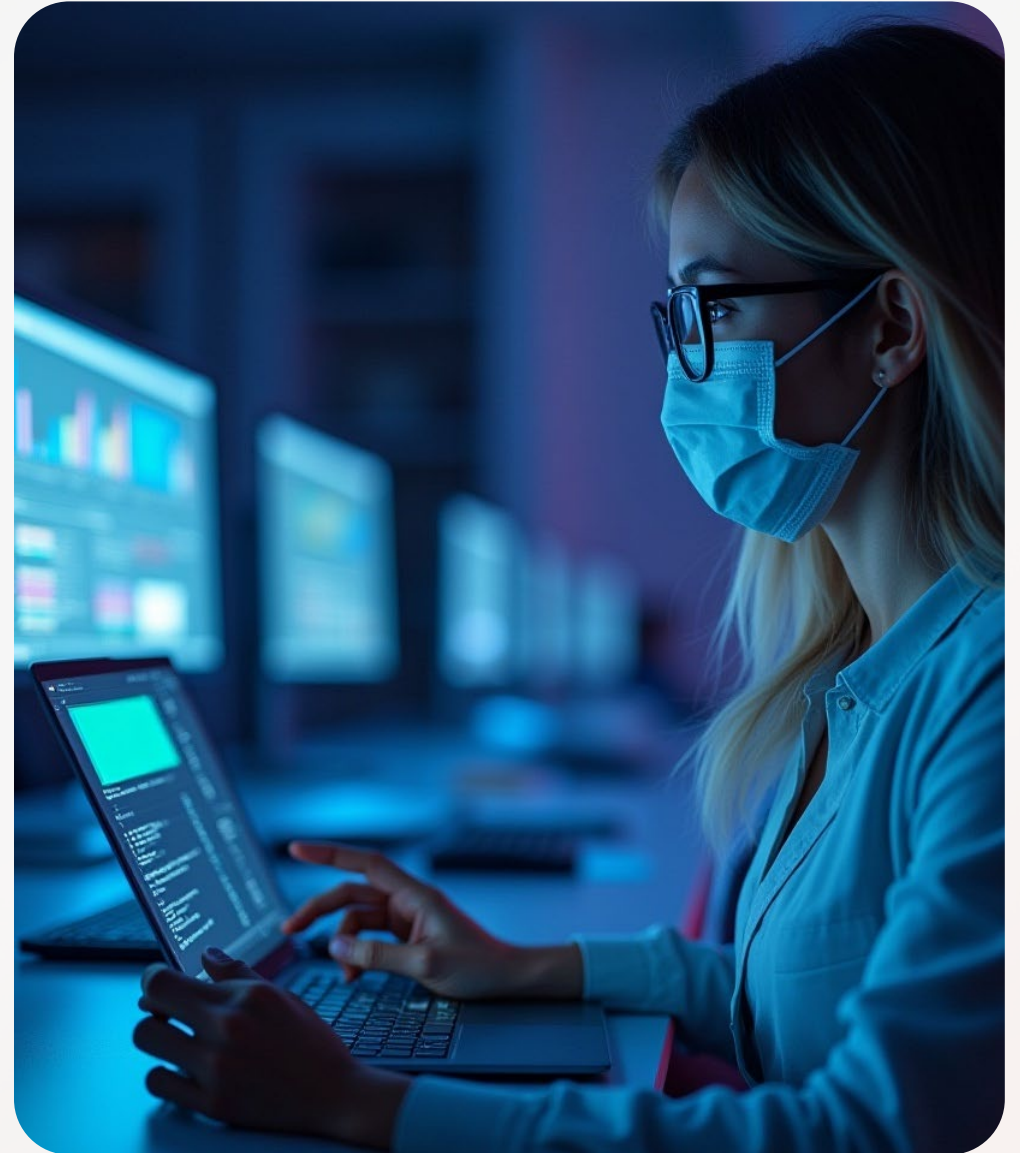
Solution Accelerator





## Overview

The Build your own copilot Solution Accelerator allows users to use their own unstructured data to create draft documents by combining Azure AI Search and Large Language Models (LLMs). Many different documents can be made, and the main restriction is the data source that can be provided. There is a web app that users can create in their own subscription with security and authentication.



# Drafting challenges



## Creating a document from a blank page is hard

Starting without context can make it hard to recall all elements of a document and know where to start. Without references or a draft to start from gathering resources for reference can take time.



## Creating a draft document is a low skill task

The start of creating a document can be a low skill task. Broad structure, making sure a document meets minimum requirements, and common formatting doesn't take a lot of expertise and may not be the best place to spend expert time.



## But finishing a document requires experts

Making sure a document is completely ready and final on the other hand does require people with experience and a developed knowledge set. This is where you want expert review and authoring.

# Technical Key Features

This custom copilot saves time drafting documents. It takes existing data and creates draft documents that can be worked from by experts.



## Generate drafts quickly

Quickly start documents without having to stare at a blank page.



## Share with your team with one click

Drafts can be shared with your team or coauthors to start collaboration quickly.



## Natural language interaction to edit your drafts

Quickly change your document with simple language to speed up creation.



## Chat with your data to find key sources

Use natural statements to find the files you need in your own language.

# Business outcomes



## Draft quickly

Put your data to work to create any kind of document that is supported by a large data library.



## Share

Share with coauthors, contributors and approvers quickly.



## Contextualize information

Provide context using natural language. Primary and secondary queries allow for access to supplemental detail – reducing cognitive load, increasing efficiency, and enabling focus on higher value work.



## Gain confidence in responses

Trust responses to queries by customizing how data is referenced and returned to users, reducing the risk of hallucinated responses.

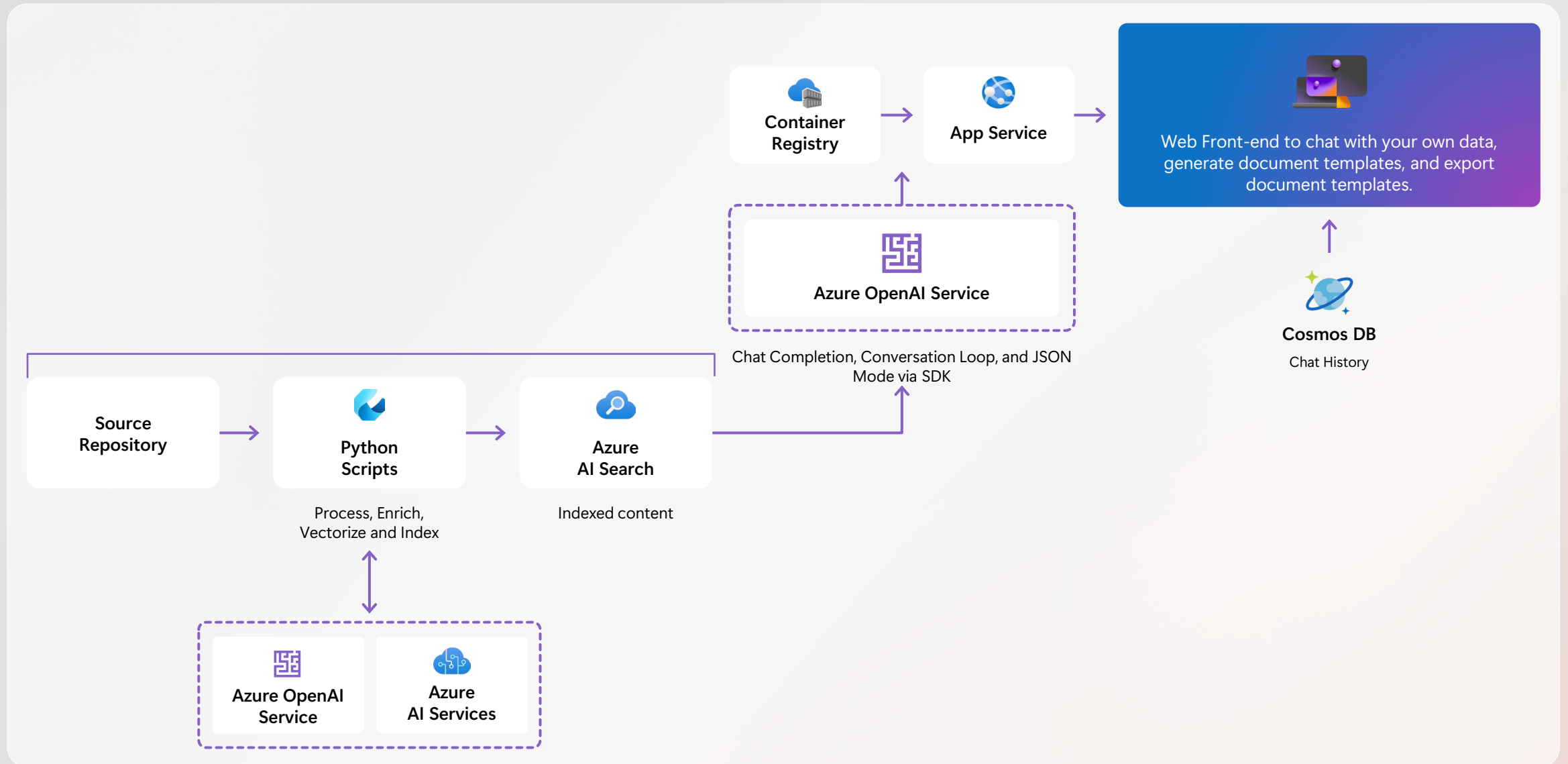
Access reference documents in the same chat window to get more detail and confirm accuracy.



## Secure data and responsible AI for innovation

Improve data security to minimize breaches, fostering a culture of responsible AI adoption, maximize innovation opportunities, and sustain competitive edge.

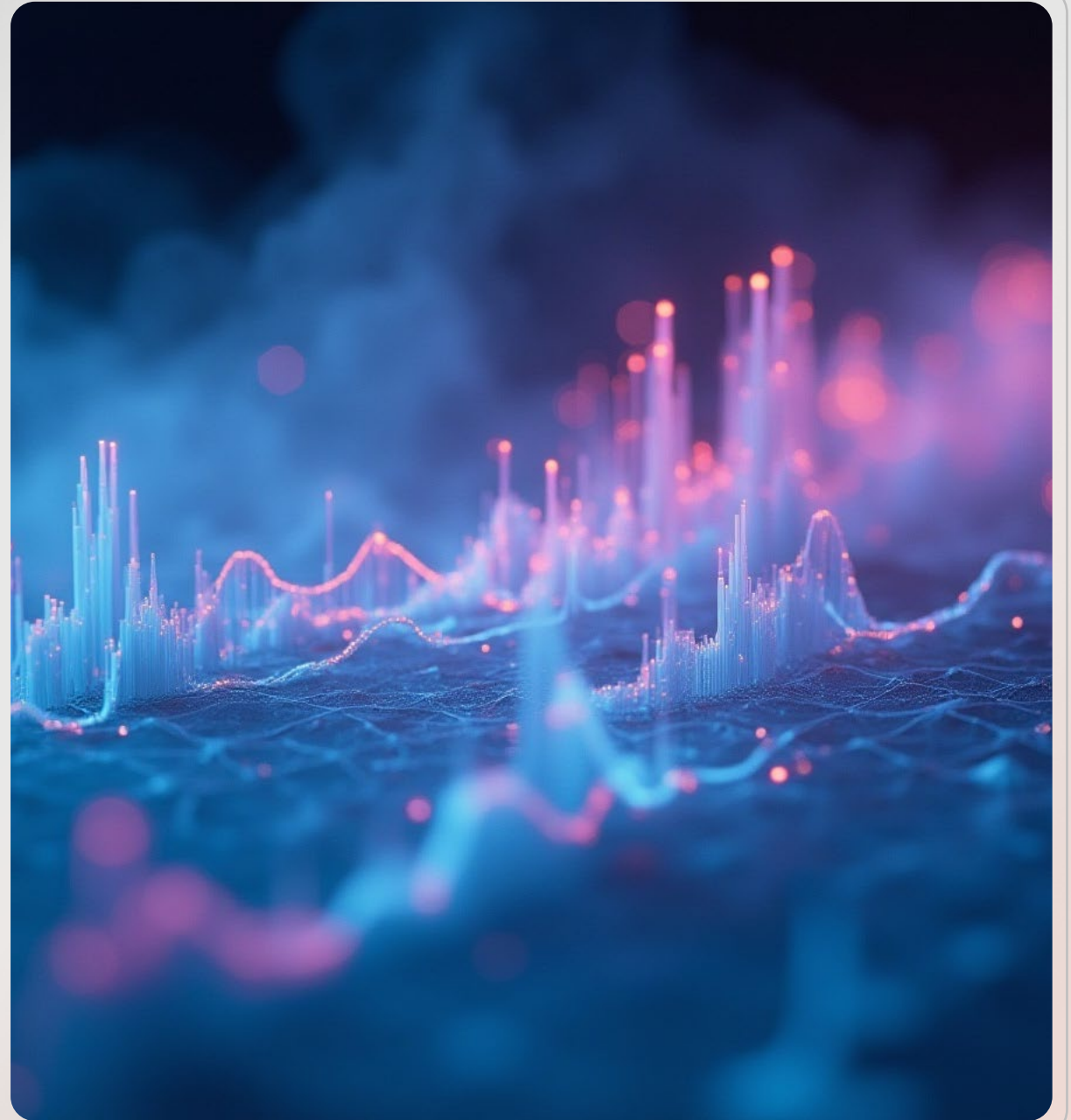
# Solution accelerator architecture



# GitHub repo

Access the GitHub repo to deploy this solution accelerator

[GitHub repo](#)



# Accelerator

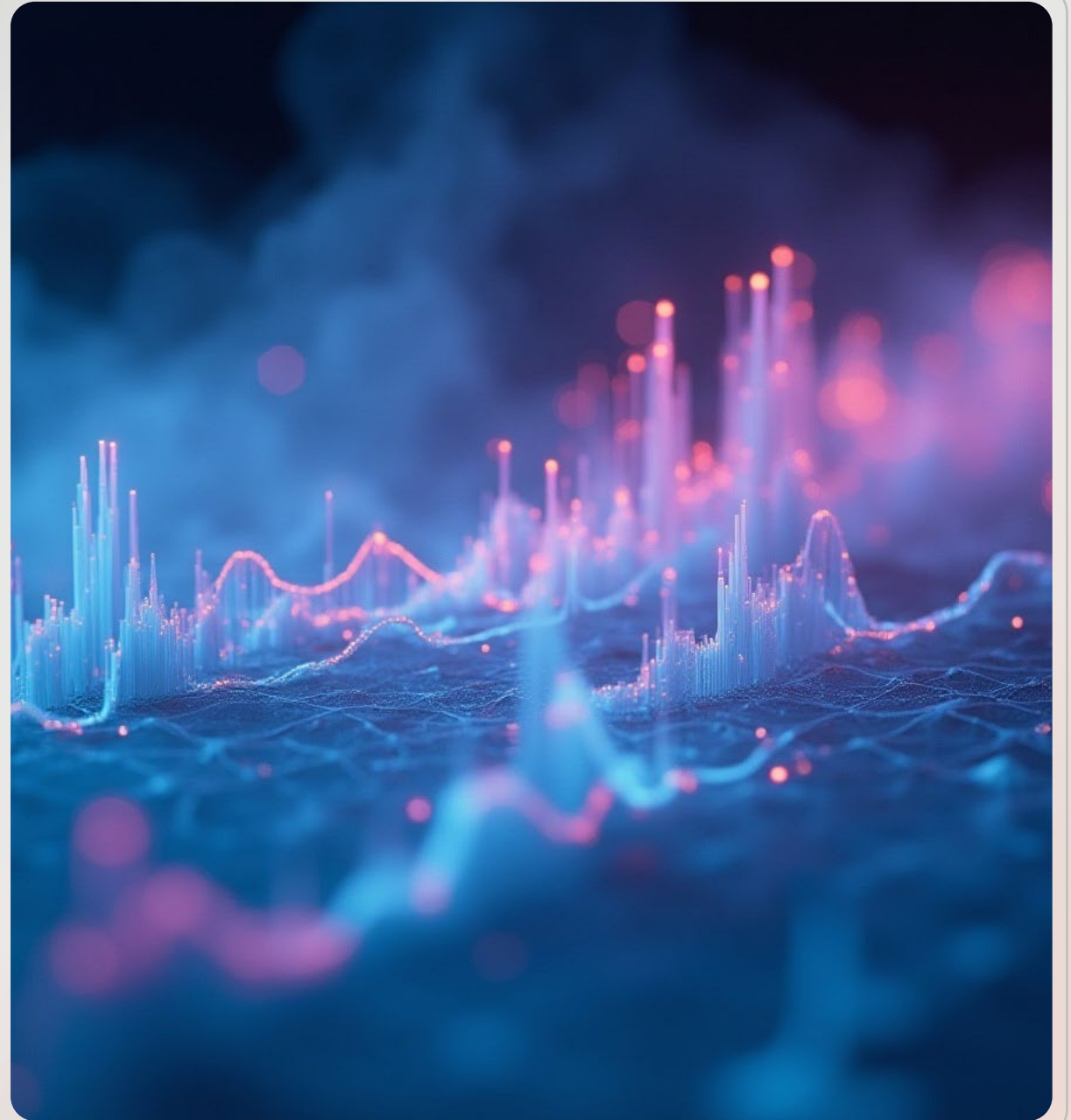
## RFP Accelerator - Transform Your Organization's Proposal Process

Responding to a Request for Proposal (RFP) or Request for Information (RFI) is a common task in a corporate setting. For most organizations, this is currently a cumbersome and time-consuming process involving multiple teams coordinating for weeks or even months at a time.

Generative AI has the ability to transform the proposal response process from start to finish.

The RFP Accelerator is an application that allows various operations to be performed against RFPs, leveraging the power of Generative AI to streamline and enhance the proposal process.

[Repo link](#)

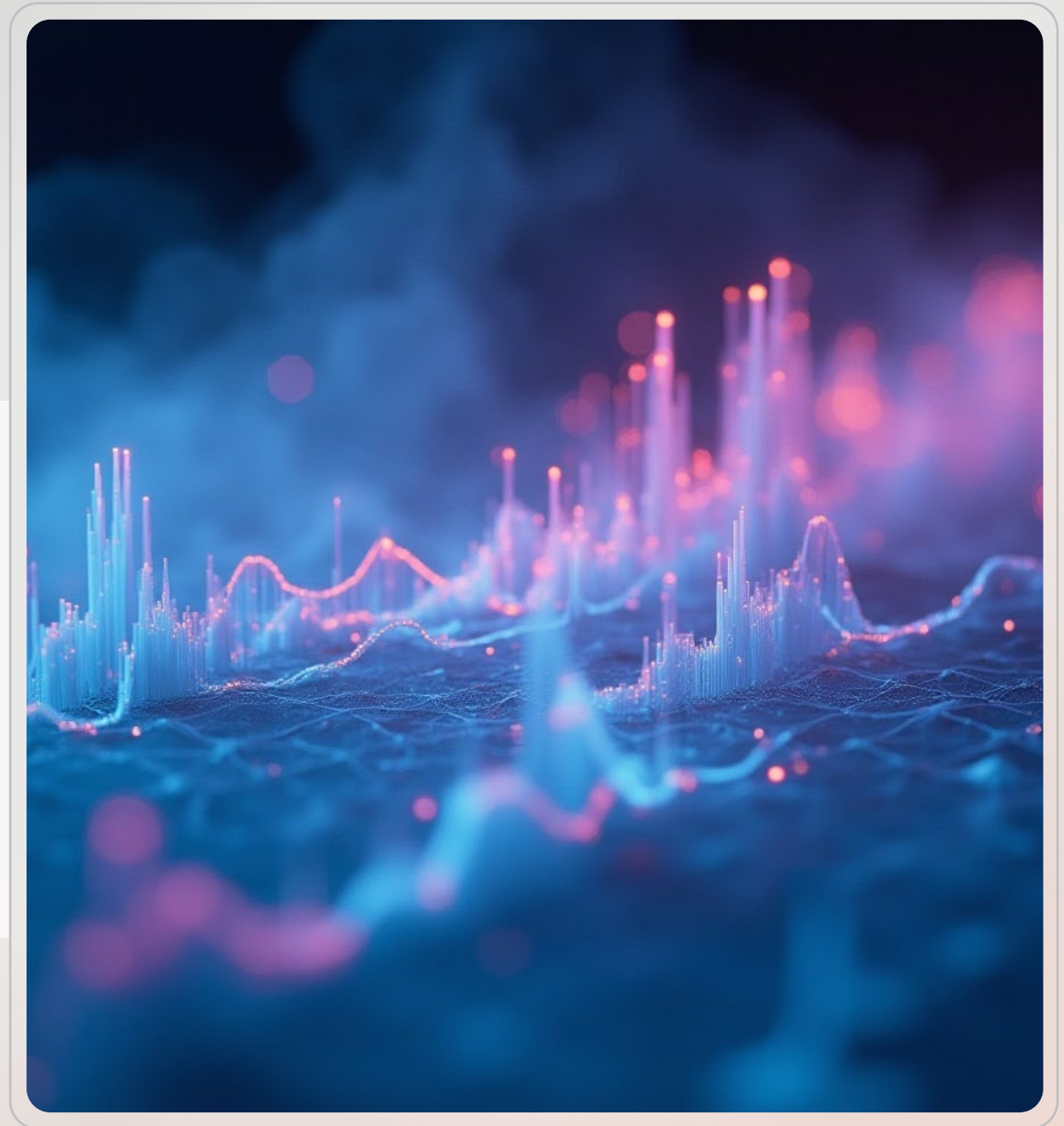


# Demo

## Improve Procurement officer productivity with Microsoft 365 Copilot

Microsoft Copilot experiences for government provide AI-powered assistance across all your Microsoft 365 productivity tools. Using Microsoft 365 Copilot, procurement officers can generate insights and content within the everyday flow of work, save time and effort, and communicate more effectively to prevent and remediate compliance issues.

[Demo link](#)



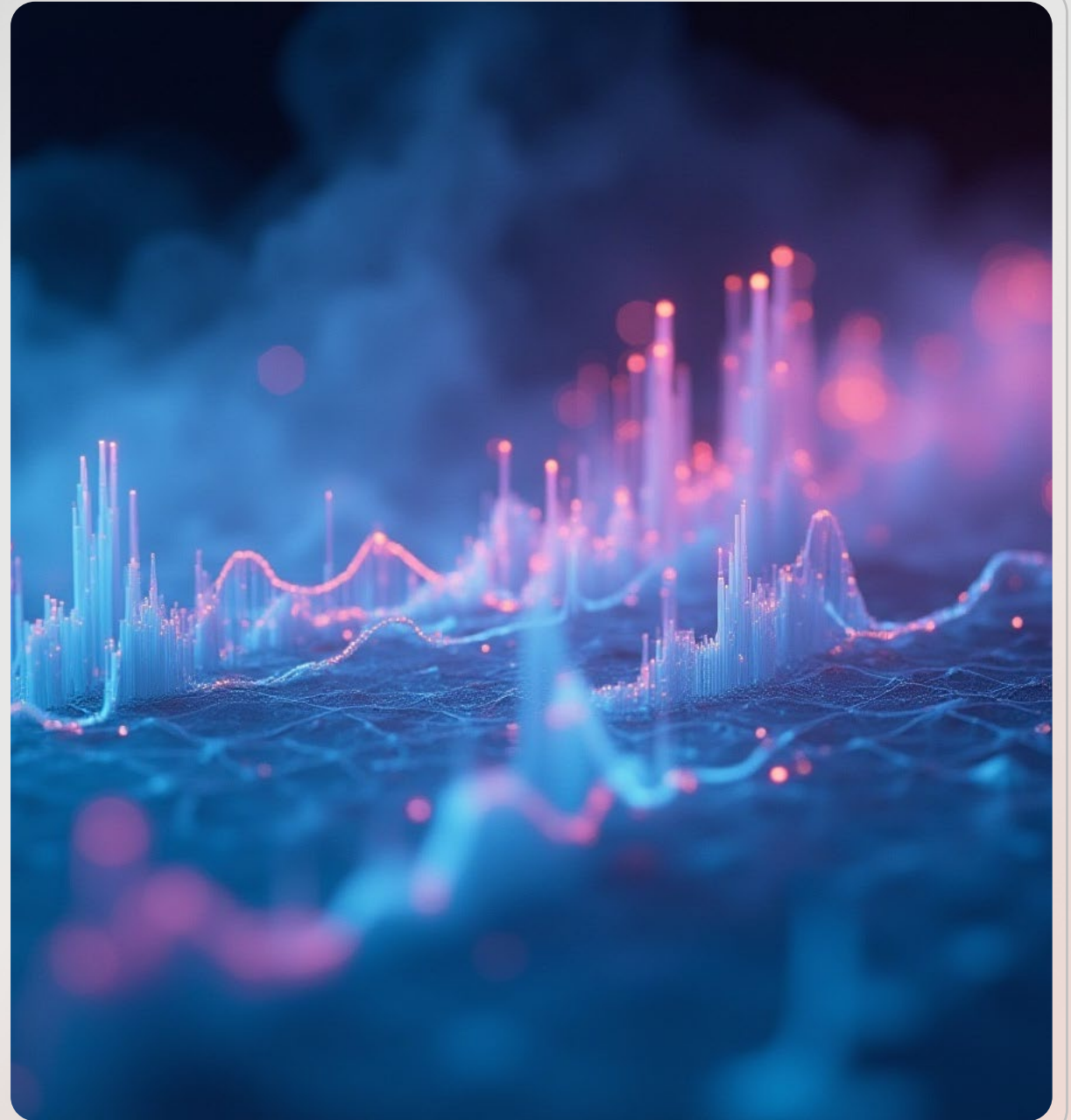
# Demo

## Expense Agent in Dynamics 365

In this demo we will see how a financial analyst works with the Account Reconciliation Agent to close the books at month end, ensuring finance leaders have timely insights to make critical business decisions.

The agent streamlines the process of reconciling the general ledger with the subledger, automating transaction matching and using previous actions to learn and recommend discrepancy mitigations.

[Demo link](#)

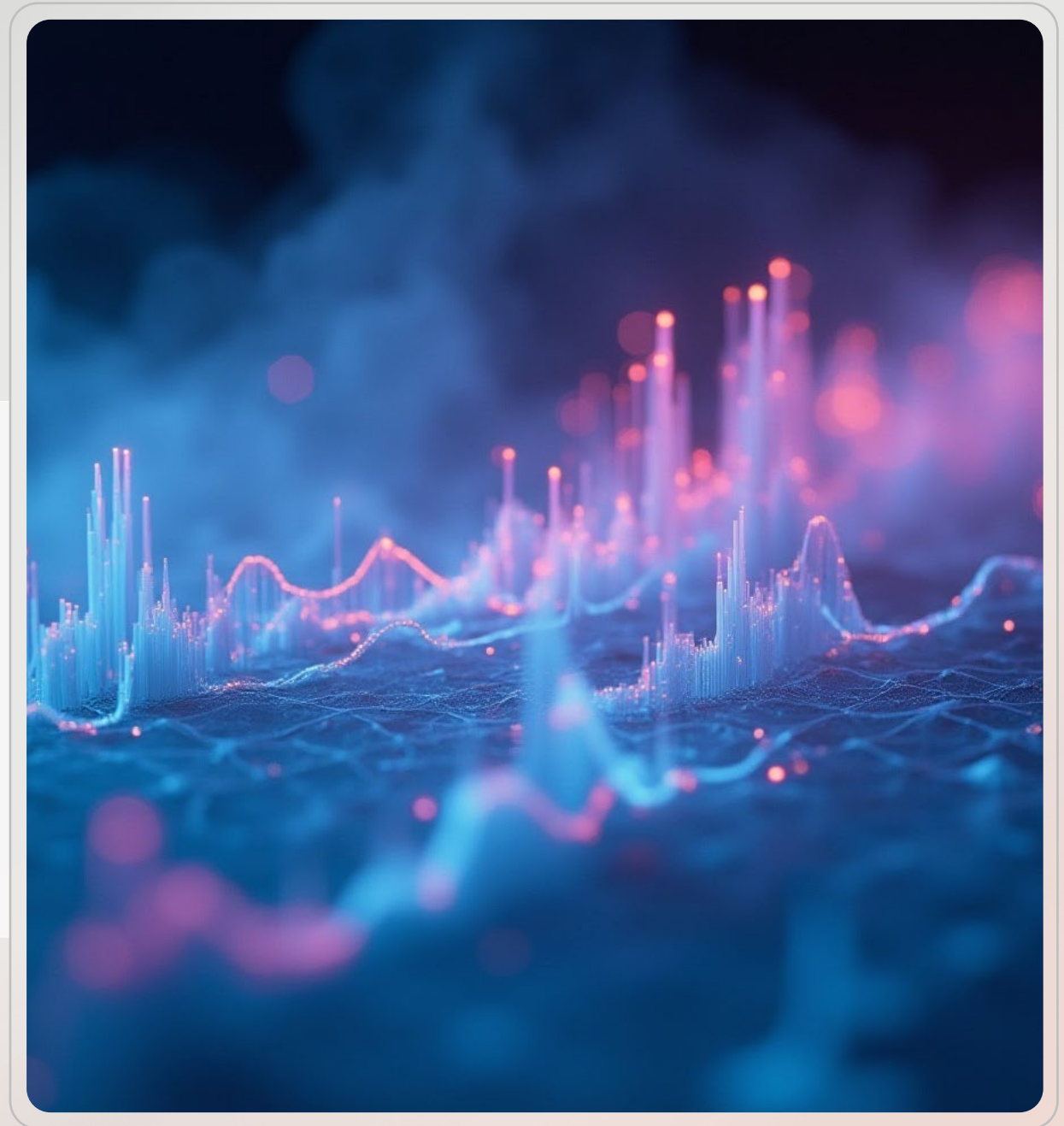


# Demo

## Payables Agent

The Payables Agent demo shows how an agent assists accounts payable teams to process vendor invoices and ensures accurate invoice entry and recording in Dynamics 365 Business Central.

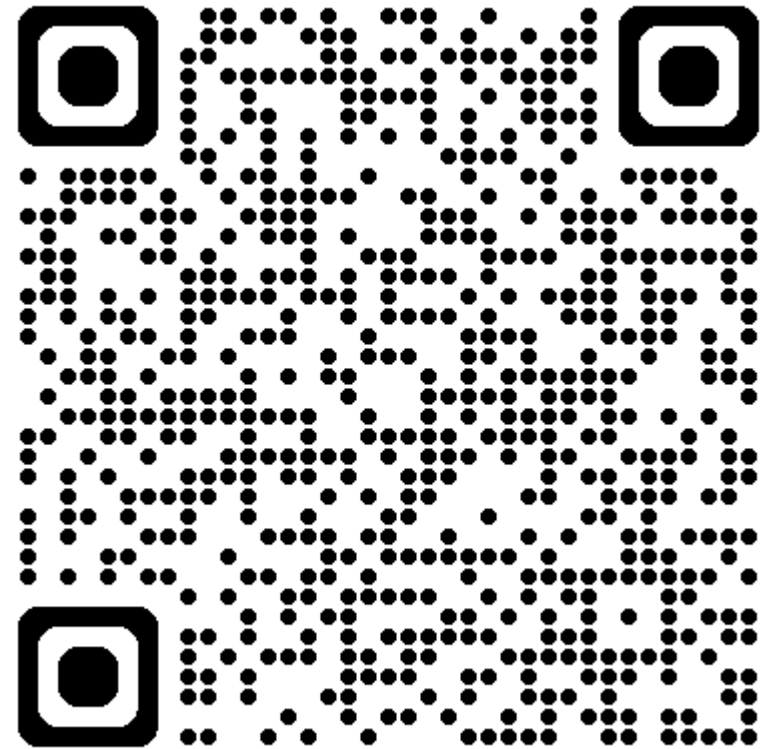
[Demo link](#)



# Public Sector Skilling Resources

## Interactive demo: Improve procurement officer productivity with Microsoft 365 Copilot

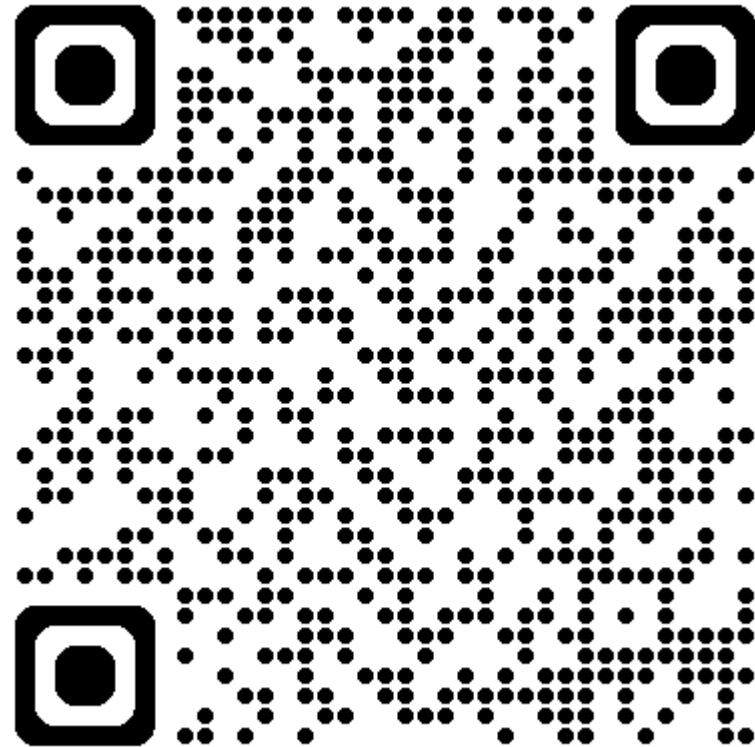
Public sector procurement officers manage heavy workloads, including numerous contracts and compliance challenges, while facing budget and accountability pressures. Advanced AI can assist by automating repetitive tasks and offering data-driven insights. Watch this demo to see how Microsoft 365 Copilot enhances procurement productivity.



# Public Sector Skilling Resources

## Public Sector Center of Expertise and Digital Skills

Tools and insights to drive digital innovation within the public sector. Discover valuable lessons, expert insights, skill-building resources, and best practices designed to accelerate your AI and digital transformation journey.





**Thank you**