POLESTAR GENRATIVE AI

Database query with Generative AI embedded to MS Teams
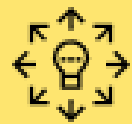
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Problem & Challenges

Due to the reliance on complex tools and technical expertise, accessing and analyzing valuable data can be time-consuming and error-prone with limited accessibility. These lead to:

Increased complexities — Users find the need to understand complex data schemas or write error prone queries

Lack of scalability — Not accommodating the needs of a large, diverse user base with varying technical skillsets

Dependency for insights — Non-technical users lack the necessary SQL knowledge leading to bottlenecks

5-Step LLM-based solution framework

User Input
Users can ask their questions in natural language directly in a chat or channel within Teams.

Preprocessing
Initial preprocessing is performed to identify and resolve any short forms or aliases used in the query.

Natural Language to SQL Conversion
The processed natural language query is then sent to Azure OpenAI, a powerful AI service, for conversion into an optimized SQL query

Query Execution and Result Display
The generated SQL query is executed against the target database. The results are displayed directly within Teams in a user-friendly format

Intelligent Visualization
For queries requesting insight into trends or relationships, it can automatically generate a relevant plot (e.g., a trend chart) instead of simply presenting the raw data, based on the input provided.

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Solution Stack & Process

Tech Stack

Tech Stack Interactions & Flow

Microsoft Teams
User Inputs their relevant query into Teams interface

Power Virtual Agent
The query is sent to PVA via Power Automate and routed to container apps. The results obtained from the container apps are also sent back to Teams.

Power Automate
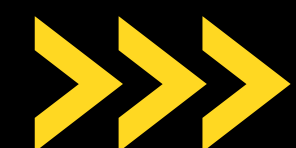Acts as the middleware to transport data with the help of APIs

Container Apps
Contains the core python script to consume the user query from teams.
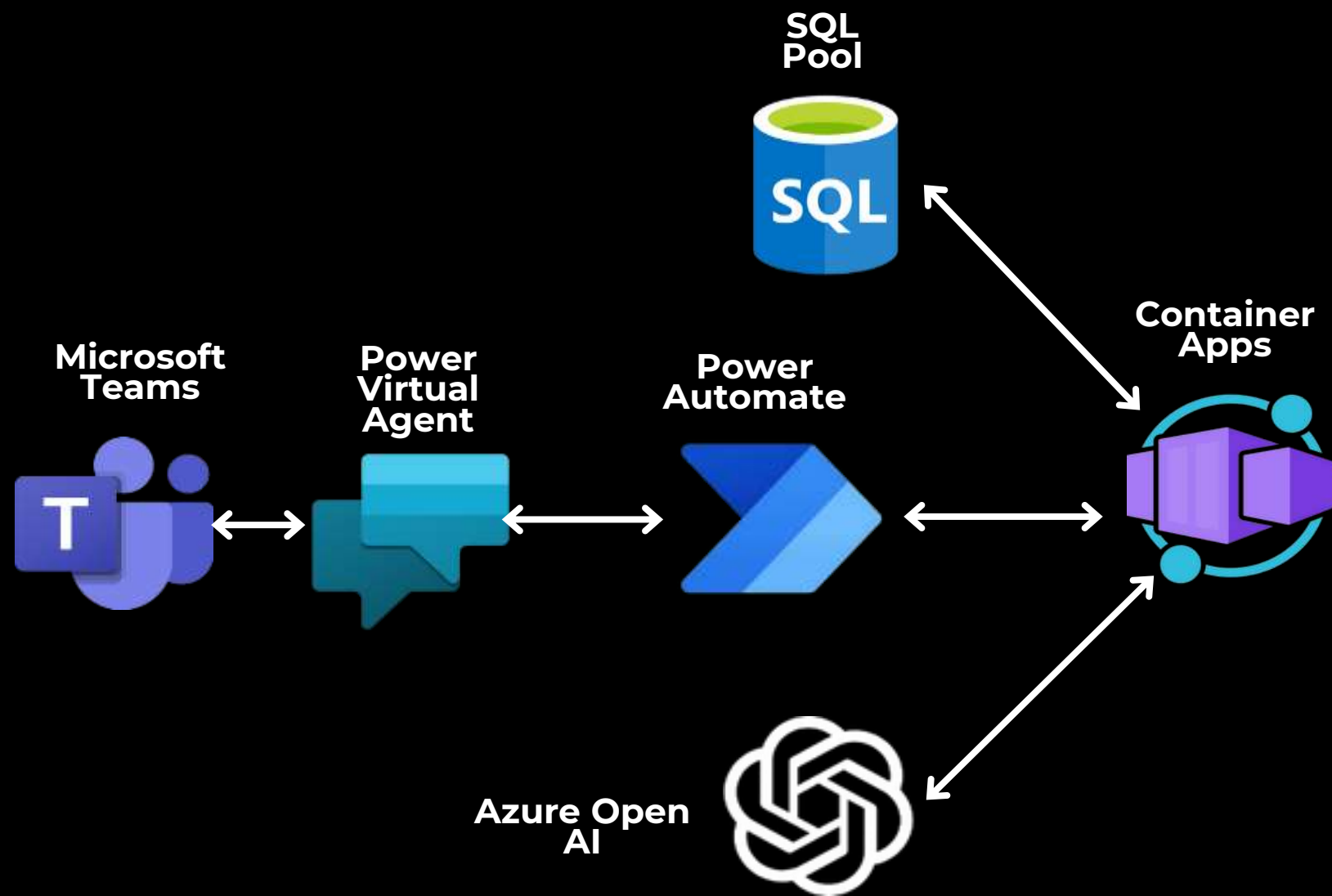
Azure Open AI
Azure OpenAI setup and configured in Python script will be used to get the context of the question and parse the relevant data to generate the answer

Solution Stack & Process

Solution Architecture

SQL Pool

Microsoft Teams

Power Virtual Agent

Power Automate

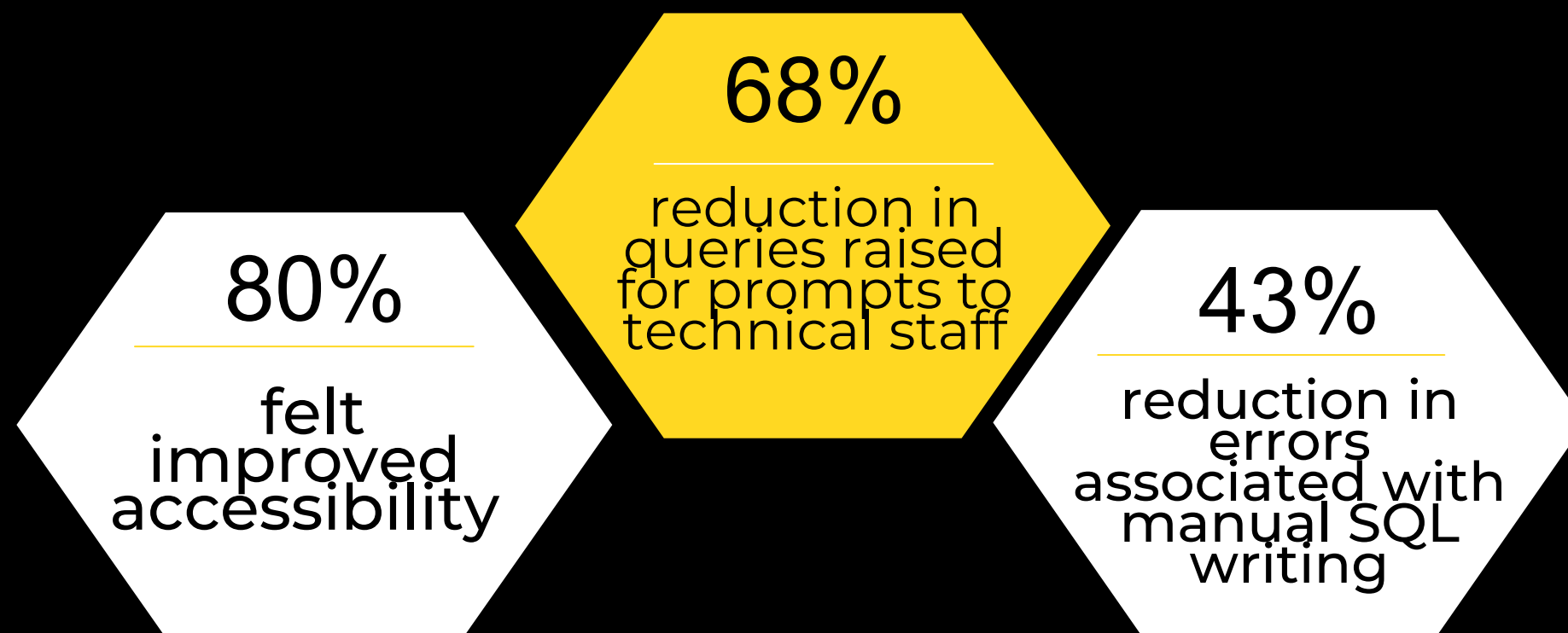**Container Apps**

Azure Open AI

Key Outputs

With the help of our LLM-based chatbot, users were able to access, read, and understand data easily. Some of the key outcomes from the chatbot include gathering and understanding data from:

- **SQL Data warehouse**

- **Documents (PDF/ Doc)**

- **API (with relevant authentication token key, id & passwords, secrets etc.)**
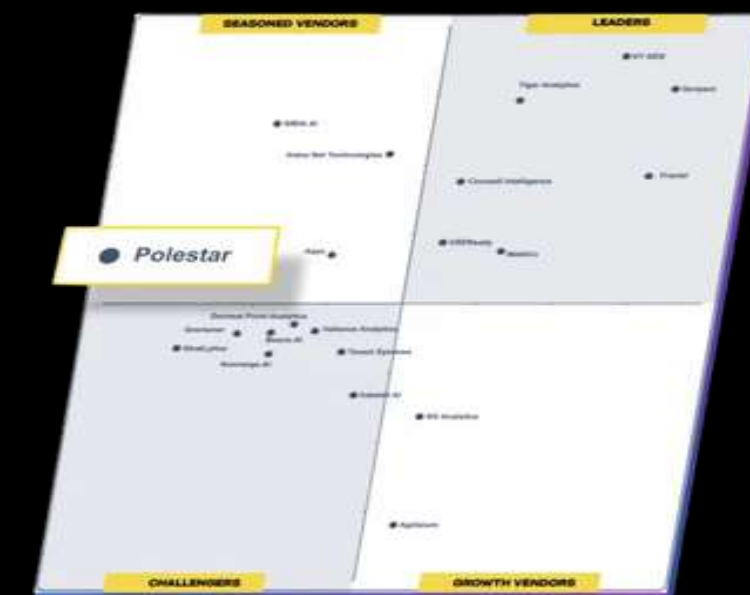
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Business Impact

Our solution enabled our clients to effortlessly obtain information from the database by posing natural language questions, reducing time and effort to access and interpret data, empowering a broader range of users, and promoting efficient decision-making. Some of the benefits include:

68%
reduction in queries raised for prompts to technical staff

80%
felt improved accessibility

43%
reduction in errors associated with manual SQL writing

About Polestar Solutions

Featured in the first PeMa Quadrant for the Top Generative AI & vendors as seasoned vendors, our AI and analytics team helps bring out the most sophisticated insights from our customer data in a value-oriented manner.

From analytics foundation to analytics innovation initiatives, we offer a comprehensive range of services that help businesses succeed with data.