Azure OpenAI Data Analytics Bot Helps Darnytsia Drive Ad-hoc BI Insights

GenAI-powered Analytics Bot Empowers Darnytsia with an Unparalleled Speed-to-insight

Industry: Pharmaceuticals   **Location: Ukraine**   **Employees: 1,000+**

Client Background

**Website:**
https://darnytsia.ua/en

Pharmaceutical Company "Darnytsia" is Ukraine's largest producer of medicinal products, having long-standing pharmaceutical traditions. With 90+ years of history, Darnytsia takes the leading position in the domestic pharmaceutical market by volume for more than 20 years, which proves to be true by year-to-year indicators of the industrial and market activity of the enterprise, as well as authoritative branch ratings. Darnytsia shows significant progress within the process of digital transformation, succeeding in the implementation of market-leading technologies.

Executive Summary

Goals

Darnytsia aimed to relieve its corporate data analytics department from an intense workload, optimize the costs for creating and maintaining BI reports, and enable company-wide access to ad-hoc insights
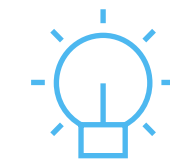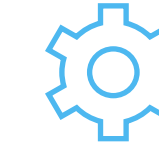
Solution

Infopulse developed a custom Data Analytics Bot, built on the Azure OpenAI GPT, which delivers precise on-demand data analytics to the users in near real-time.

Benefits

The GenAI solution empowered Darnytsia with extraordinary speed-to-insight, democratized data analytics, and significantly optimized BI costs.

Services delivered

Custom Software Development, AL/ML, Microsoft Azure

Business Challenge_

As one of Ukraine's leading pharmaceutical enterprises, Darnytsia has to deal with vast volumes of data and prepare BI reports regarding the company's operations, supply and demand planning, sales analytics, competitive intelligence, and more. The company's corporate data analytics department struggled to find the time and resources to address the ever-growing demand for BI insights from other business divisions.

For this reason, our client started searching for an intelligent solution that would:

○ Democratize access to data analytics across the company

○ Rapidly address a large pool of internal data analytics requests

○ Optimize the time, resources, and costs required to prepare BI reports

Initially, Darnytsia considered the implementation of Microsoft Power BI Copilot. Yet, the organization-wide adoption of Power BI Copilot at that time turned out to be less cost-efficient for the client, as the requested analytics reports varied in types, complexity, and timeframes. Thus, it was essential to find a solution with the perfect cost and capabilities ratio that would deliver swift ad-hoc BI insights for Darnytsia.

Looking back at the long-term cooperation with Infopulse that includes numerous successful projects, such as a holistic IT infrastructure transformation with Microsoft 365 and a large-scale SAP on Azure migration, Darnytsia approached us with a request to develop a GenAI-based data analytics solution.

Solution & Business Value
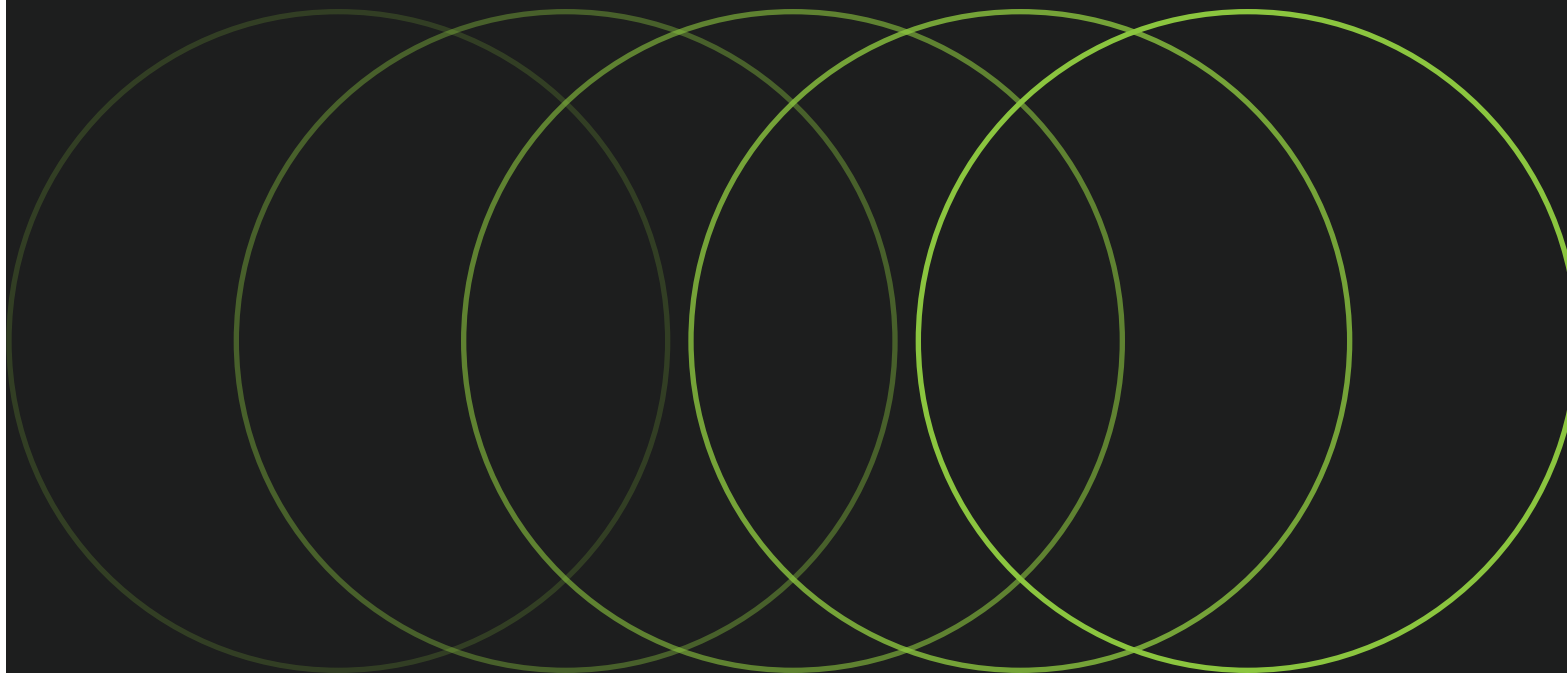
Infopulse developed a **Data Analytics Bot** powered by the Azure OpenAI service, which serves as a smart and intuitive corporate GenAI assistant, providing swift on-demand analytics to any company employee. As a result, the solution has brought the following benefits for Darnytsia:

○ **Unprecedented speed-to-insight** – the data analytics delivery time was reduced **from weeks** to **mere seconds**

○ **Optimized the time and efforts of the analytics team**, who can now focus on valuable strategic tasks instead of covering an array of internal ad-hoc requests

○ **Near real-time insights at the client's fingertips** – the solution was deployed as a corporate chatbot that is available in desktop and mobile versions of Microsoft Teams

○ **Democratized access to data analytics** – there's no need for advanced Power BI or SQL knowledge – any employee can use the Bot and request the analytics they need via simple text prompts

○ **Significantly reduced costs** for creating and maintaining **BI reports,** along with a **cost-efficient pay-as-you-go pricing model** of the solution

○ **Language-agnostic Analytics Bot** that perfectly understands human intent and responds accordingly

○ **Reinforced data security and privacy,** as Azure OpenAI does not apply customer data for model training and improvement

Infopulse deployed the Data Analytics Bot for Darnytsia in just **2 weeks**, and currently our team provides **ongoing support** services to help the Bot learn, minimize errors, and improve its overall performance.

Being satisfied with the project outcomes, Darnytsia decided to take a step forward and requested to engineer **a mobile version** of the Analytics Bot with **speech recognition capabilities.** Infopulse continues the project with Darnytsia to integrate **voice-based commands** and **seamless verbal responses** to the solution, aimed at enabling convenient **on-the-go access** to ad-hoc insights for the client.

Technical Details

The project began with a preliminary assessment of the client's IT infrastructure and databases. Consequently, Infopulse engineered the Data Analytics Bot, which is based on the **retrieval-augmented generation (RAG)** framework and built on the **Azure OpenAI** service.

When the chat session starts, users can enter their **text prompts** that may vary in complexity – from simple *"trends of paracetamol sales in 2023"* to more complex, such as *"compare the sales rates of Darnytsia's key products against five major competitors"*.

Once the prompt is submitted, the Bot instantly **detects the language** to tailor the response accordingly. Next, it generates an SQL query to access the client's database and provides a link to an Excel report with the relevant analytics, which is then

followed by a **concise text-based summary** of the findings. After the analytics are delivered, the Bot asks whether the data needs to be visualized. Users can enter prompts such as "Graph" or "Chart" and the Bot will instantly provide a link to the visual representation of the insights.

The Data Analytics Bot is stored in the **client's Microsoft Azure tenant**, and comprises multiple GPTs, each being responsible for a specific stage of the data analytics flow – from language detection to data visualization.

The **conversational capabilities** of the Bot are limited to the context of the client's databases, meaning that it only provides answers to analytics-related user prompts, and cannot engage in discussions on other topics. If the supplied text prompt is vague, the Bot will provide an extensive reply, and ask for further clarifications from the user. In case of data-related errors and inconsistencies, the developers can check and resolve the issues, as the Bot tracks all of the chat session information, such as time, session/user ID, SQL queries, message index, and the generated reports.

The solution **can be rapidly deployed and scaled** across businesses of any size – the implementation time for small-scale databases requires **just 2 days,** and up to **2 weeks** for complex data warehouses (DWHs).

Furthermore, the Data Analytics Bot features **multiple deployment options** and a range of customizations. In addition to a Microsoft Teams-based chat, the solution can be integrated with Slack, Google Chat, Viber, Telegram, and other messaging apps. The list of custom extensions includes the addition of new databases, an increase of the analytics scope, new styles of visual diagrams, as well as the addition of corporate logos, branding, watermarks, etc.
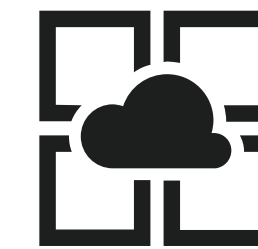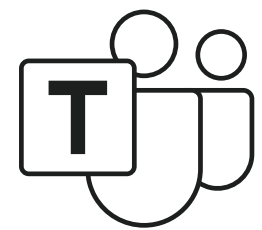
Technologies & Tools_

 Azure OpenAI
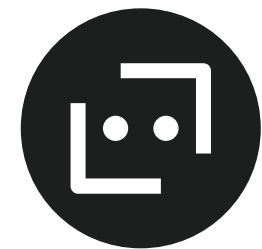
 Azure Bot Service

 Azure SQL Database

 Azure App Services

 Microsoft Teams

About Infopulse

Infopulse's Cognitive Computing Competence Center offers a holistic suite of services and solutions within AI/ML, Natural Language Processing (NLP), Data Science, Deep Learning, Robotic Process Automation (RPA), Computer Vision (CV), Convolutional Neural Networks (CNN), Predictive Analytics, and other cognitive computing domains.

Furthermore, Infopulse has 15+ years of experience in providing end-to-end engineering and support of Business Intelligence systems, Data Platforms, DWHs and Data Lakes, Advanced Data Analytics, and Big Data solutions to empower enterprises with data-driven strategies and decisions. Our expertise is supported by long-term partnerships with Microsoft and AWS and is recognized through Azure Expert MSP Status, as well as Microsoft Gold Partner status and numerous Microsoft Solutions Partner Designations.

Infopulse is trusted by many established brands, such as Allianz Bank, BICS, Bosch, Corteva, Credit Agricole, Delta Wilmar, ING Bank, Microsoft, Metinvest, Offshore Norge, OLX, OTP Bank, Santander, SAP, UKRSIBBANK BNP Paribas Group, Vodafone, Zeppelin, and others.

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