

## IMPLEMENTATION OF THE CENTRALIZED DATA WAREHOUSE, REPORTING SOLUTION, AND AUTOMATED REPORTS

for INVESTIKA, investiční společnost, a.s.

### PROJECT IMPLEMENTATION

#### - Development of the Data Warehouse and Reporting Platform:

- ✓ The project's objective was to build a centralized data warehouse serving as the single source of truth for generating and utilizing automated reports. These reports support the sales department in evaluating the distribution performance of individual funds in INVESTIKA's key business activities. Additionally, the data warehouse acts as the main data source for the company's new CRM system. Both platforms communicate on a regular basis, with the CRM system frequently utilizing data from the data warehouse.
- ✓ The company's core structure consists of five major investment funds, whose reporting was previously managed manually using MS Excel. By transitioning to the new Microsoft Power BI platform, users benefit from significant improvements and efficiencies.



### SOLUTION ARCHITECTURE

#### - The proposed architecture includes the following layers:

##### DATA LAYER

- Database Server

##### APPLICATION LAYER

- ETL Server

##### PRESENTATION LAYER

- Reporting Tool

- ✓ An Oracle database was implemented on the database server for the data warehouse (DWH), managing data and storage. This database includes data from the production database and records from two additional data sources.
- ✓ On the application server, essential ETL tools were installed to perform all operations and calculations according to the defined requirements. This includes data ingestion, data model transformation, and ETL processes (Pentaho tool), as well as job scheduling and execution (Jenkins tool). Furthermore, the Power BI Gateway security bridge was installed and configured, ensuring connectivity between the data warehouse and the MS Power BI cloud reporting tool.
- ✓ MS Power BI by Microsoft was selected as the reporting tool, offering data presentation through various visualizations. The cloud variant, connected to the on-premise database via MS Power BI Gateway, enables easy publication of reports to the cloud storage, from where reports can be managed and accessed seamlessly across all devices (from mobile phones to desktop computers) by authorized users.



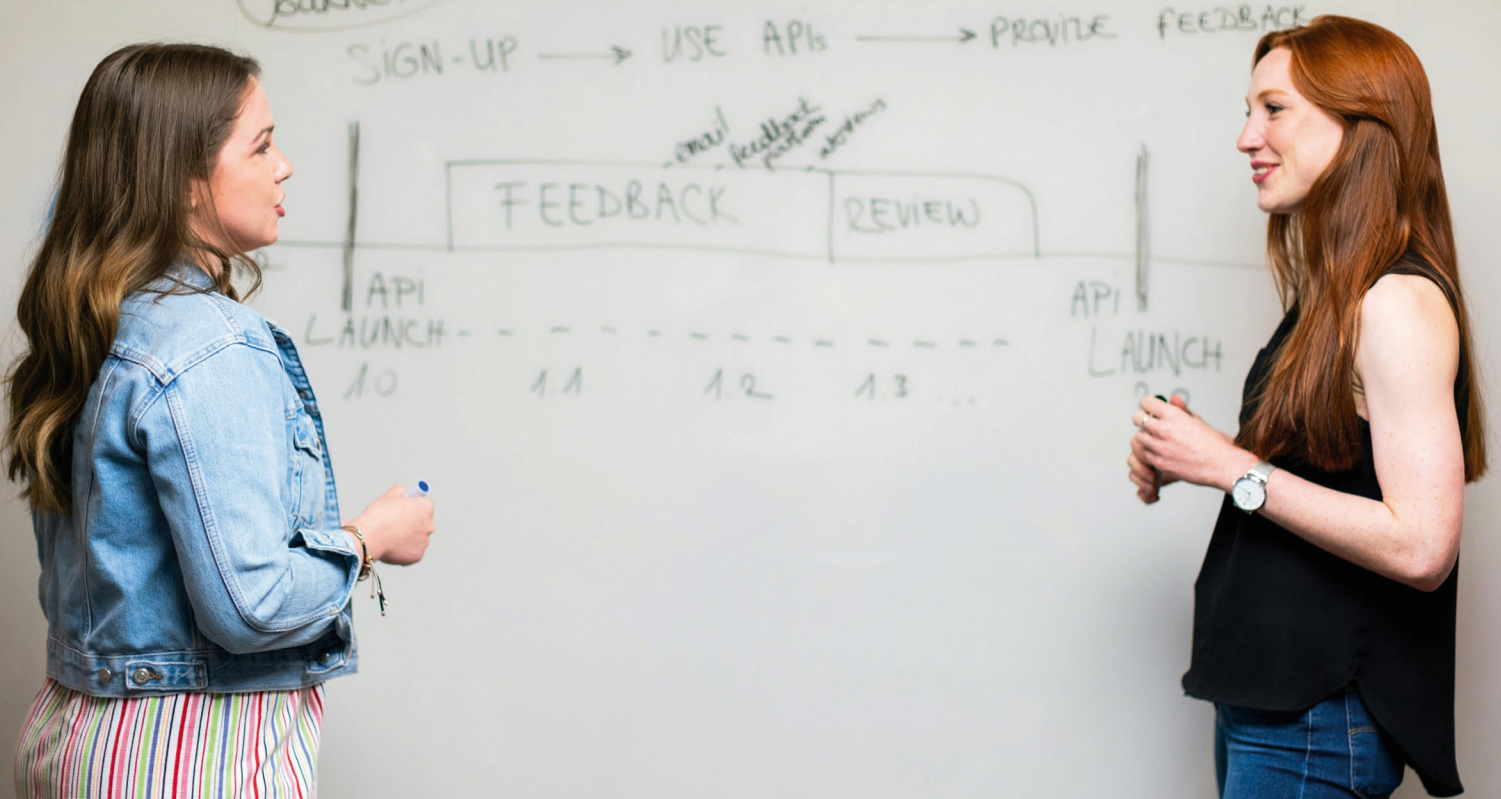
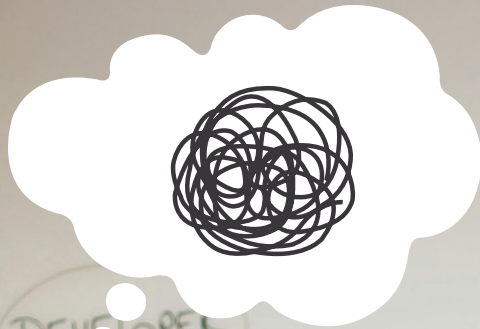
## ADVANTAGES OF THE NEW SOLUTION:

- ✓ The new data warehouse is fully automated and does not require knowledge of ETL programming logic for its management. The client's DWH administrator only needs SQL knowledge to:



- ✓ Create and modify new L0 tables from current data sources
- ✓ Create and modify core DWH tables (L1 layer)
- ✓ Prepare datasets for presentation (L2 layer)

- ✓ The ETL process (Extract, Transform, Load) is a key mechanism for data integration and forms the foundation of data warehouses, Business Intelligence (BI), and other data analytics applications. ETL programming logic includes specific code and algorithms that implement this process.



## THE NEW REPORTING PLATFORM PROVIDES SEVERAL BENEFITS FOR USERS:

- ✓ Real-time data retrieval with automatic updates at predefined intervals.
- ✓ Fully automated report generation without the need for manual inputs.
- ✓ A wide variety of visualizations (tables, diagrams, charts, maps, etc.) with easy switching between types.
- ✓ Filter options for entire reports as well as individual elements.
- ✓ Integration with Czech National Bank exchange rate tables as of the last business day of each month.
- ✓ Multi-month selection functionality.
- ✓ Automatic calculation of cumulative sums in both EUR and CZK in both directions.
- ✓ Easy sharing of reports (including user-defined filters) in a cloud environment with other users.
- ✓ Export and data analysis options in MS Excel, Adobe PDF, and MS PowerPoint formats.
- ✓ Ability to use published datasets for new reports via live connection.
- ✓ Option to add additional data sources to expand the data model and enhance reports (Microsoft Power BI supports many connectors).



### TECHNOLOGIES USED:

Oracle DB, Pentaho DI, Microsoft Power BI cloud, Jenkins CI/CD, Git, Atlassian Confluence, Microsoft Power BI Gateway

### IMPLEMENTATION TIMELINE:

January 2023 – July 2024

### ABOUT THE CLIENT – INVESTIKA:

INVESTIKA, investiční společnost, a.s. is a Czech investment company with extensive experience in the investment sector. Its portfolio of investment funds enables both retail and sophisticated investors to invest easily and securely. Clients can create tailor-made investment plans based on the simple characteristics of each fund. In addition to investment products, INVESTIKA offers a comprehensive range of professional investment services for all types of investors.