

Consolidating ERP and BI Systems for International Logistics



Client

Leading European parcel service provider

Background

Our client is the leading delivery service provider in Hungary and functions as a regional headquarters in Eastern Europe. Accordingly, business decisions and IT developments will affect companies in six countries. Thanks to continuous business development — by introducing new services, ensuring high service quality — and industry growth in customer demand for delivery services, our client experienced a rapid rise in the number of parcels to be delivered.

International logistics, including the need for international coordination of deliveries and the increase in parcel quantities placed considerable demands on the client's data and BI infrastructure and revealed the inefficiency of having separate ERP system instances and reporting solutions for each country.

Challenges

- Consolidating disparate ERP and reporting solutions across six business areas
- Data warehouse to serve over 300 predefined and ad hoc reports
- Parallel ERP system replacement and BI development
- Introduction of self-service BI

Business Impact

- Improved ERP system capacity
- Improved BI capacity
- Streamlined, self-service BI reporting

Technologies

- Airflow
- Docker
- MSSQL
- Power BI

Challenge

To ensure deep, accurate and timely insights for decision-makers, our client identified three critical areas for development: creating a unified operational framework, consolidated management and reportability of international financial accounts and the rapid and uninterrupted flow of information to cross-border support areas.

Our client needed to replace their fragmented, country-specific ERP and reporting environment with an integrated ERP service and build a comprehensive BI solution, complete with self-service capabilities, upon the new ERP foundation. To ensure accurate tracking of the entire delivery process for every package, the BI solution needed to be in line with the end-to-end processes in the centralized ERP.

The client also required a new data warehouse to provide consolidated delivery data to all six countries, serve more than 300 reports and support ad hoc instances in addition to predefined reports. Finally, historical data had to be available for each country, with segregated visibility and availability of business data at the country and organizational unit level.

Solution

The Starschema team analyzed each business area's reporting requirements and mapped the source system operation and data model in parallel. We designed and engineered an on-premises data warehouse with a data lake to provide centralized, cost-effective storage of data from multiple systems and a data mart tailored to the client's environment.

The solution enables the daily loading of new data from the source systems into the data warehouse and improves data load scheduling and monitoring by leveraging Airflow technology. With Airflow, the client can continuously load data into the data lake layer of their data warehousing solution, even in the event of a change in the source systems' data model, such as the introduction of a new table. This improves the BI system's ability to serve new reporting needs. In addition to setting up data sourcing for the new BI solution, we migrated all historical data from the previous ERP environment.

To further improve the solution's longevity and accommodate ad hoc reporting, our client chose to implement Tabular models. Compared to "native" report development, Tabular models enable more flexible querying of data with lower response times by pre-calculating dimensions, hierarchies and measures.

Compared to pulling data directly from a data lake or a data warehouse, the data mart provides optimal performance by aggregating data to serve a specific reporting need.

Airflow is a highly flexible application by The Apache Software Foundation for scheduling and managing data loading, which enables the user to schedule chosen workflows and set up dependencies between them.

To promote the adoption of an in-house standard reporting tool and prepare the client's analysts to transition to self-service reporting, Starschema's business analysts developed the required reports and dashboards, organized a series of data model presentations and conducted Power BI training for core users at both the headquarters and the other regions.

Outcome

The project introduced a comprehensive upgrade to our client's existing BI environment, with a unified ERP and reporting solution. Over 300 reports and multiple dashboards were ready for business use from day one. The solution enables the daily loading of accurate, granular data from the six countries into the data lake layer and provides access to comprehensive historical data from the last two years.

The BI training, coaching and support services helped key users to perform tasks autonomously — following self-service BI principles — and resulted in more effective reporting, supported by both the new Tabular models and the custom data mart. After the project's conclusion, the client extended their engagement with Starschema to further develop and optimize the solution.

Go Further

Find out how Starschema can help you can realize business value through end-to-end development, optimization and operation of automated reporting, data lakes and related software platforms

Tell me more:
starsche.ma/ngn

TALK TO AN EXPERT



Viktor Magony Delivery Manager at Starschema

Viktor Magony is a Delivery Manager at Starschema. He has 14 years of experience delivering development projects in finance, logistics and retail fields as a consultant, business analyst and project manager. He and his project team custom-build highly performant data warehousing solutions and enterprise data lakes for clients to ensure quick and reliable data for BI and reporting needs.

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COMPANY

At Starschema we believe that data has the power to change the world and data-driven organizations are leading the way. We help organizations use data to make better business decisions, build smarter products, and deliver more value for their customers, employees and investors. We dig into our customers toughest business problems, design solutions and build the technology needed to compete and profit in a data-driven world.

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