NEXER

FROM BOTTLENECKS TO BREAKTHROUGHS

BUILDING A DATA-DRIVEN PLATFORM FOR ENERGY INNOVATION

BACKGROUND/INTRODUCTION

A leading Swedish energy company depended on an analytics system using Data Vault methodology on Azure SQL Database, supported by data marts and Power BI. However, as data demands grew, the company struggled to maintain the system due to limited in-house Data Vault expertise. This led to data inconsistencies and extra maintenance, as teams were forced to create their own data marts from raw data, compromising system reliability. It became clear that a more scalable, robust solution was essential to keep up with increasing data needs and regulatory requirements.

By 2023

96%

of new solar and wind power installations were more cost-competitive than traditional coal and gas plants. As the business case for renewables strengthens, utilities are increasingly relying on data platforms to optimise operations and manage energy transitions efficiently[1].

AT A GLANCE

Industry: Utilities

Employees: 200 - 500

Objectives:

- Add specialised support to manage complex data
- Move to a platform that grows with data demands
- Adapt to reporting needs for regulatory assurance
- Integrate cloud and on-premise storage for efficiency

Products:

- Azure Databricks
- Azure Data Lake Storage Gen2
- Azure Data Factory
- MS SQL Server
- Azure DevOps
- Power BI

CHALLENGES

The company faced a series of technical and operational roadblocks in its quest for seamless, data-driven insights:

- **Technical Limitations:** The lack of Data Vault expertise made troubleshooting difficult and undermined confidence in analytics accuracy.
- **Scalability Bottlenecks:** Although cloud-hosted, the platform lacked Massively Parallel Processing (MPP), resulting in performance slowdowns and storage constraints.
- **Compliance Risks:** New regulations required data reporting at 15-minute intervals instead of hourly, resulting in a fourfold increase in data volume.
- **Hybrid Storage Needs:** Certain datasets needed to stay on-premise due to compliance, creating an additional layer of complexity.

The goal was to create a scalable, future-proof platform that seamlessly integrated cloud and on-premise storage, enabled high-performance data processing, and easily adapted to regulatory changes.

SOLUTIONS

Nexer introduced a future-ready, lakehouse-based data platform built on scalable MPP technology to overcome these challenges. This platform supports everything from standard reporting to advanced AI/ML applications.

- **Modernised Architecture:** Azure Databricks and Azure Data Lake Storage Gen2 provide a scalable foundation, allowing seamless handling of massive datasets.
- **Custom On-Premise Storage:** A SQL Server solution was deployed for data that needed to be stored on-site, with filtered data uploaded to the cloud.
- **Streamlined Development:** Separate environments (dev, test, and production), code repositories, and CI/CD pipelines through Azure DevOps ensured smooth operations.
- **Simplified Transition:** Power BI reports were gradually migrated, allowing the company to phase out the old platform without service interruptions.
- **Centralised Data Warehouse:** Key data was centralised in a normalised model, making it easier for teams to build resilient, tailored data marts for reporting.

95%

The renewable energy share of global electricity generation is set to exceed 42% by 2028, with solar and wind driving 95% of this growth[1].

BENEFITS & RESULTS

The new platform drove significant operational improvements and enabled strategic flexibility:

- **Unmatched Performance:** MPP technology ensured smooth processing of vast data volumes, eliminating bottlenecks.
- **Real-Time Compliance:** IoT solution enabled 10-15 minute meter readings, processing millions of rows daily to meet evolving regulatory standards.
- **Smarter Analytics:** ML models improved predictive maintenance and electricity load forecasting, generating significant cost savings.

> We've empowered our client with a scalable, future-proof data platform that enhances performance, ensures compliance, and integrates cloud and on-premise storage. This platform enables more informed, data-driven decisions and sets the stage for future growth.

- Mats Stuhrmann Commercial Business Manager, Nexer Insight

CONCLUSION

Nexer successfully transformed the company's analytics landscape by implementing a flexible, scalable platform that positions them for a data-driven future.

With this modern foundation, the company can pursue high-value analytics opportunities, from daily business intelligence to advanced AI/ML initiatives—unlocking insights that were previously out of reach.

Find out how Nexer Insight can help your organisation:

MATS STUHRMANN
Commercial Business Manager
mats.stuhrmann@nexergroup.com
+46734082739

https://www2.deloitte.com/us/en/insights/industry/power-and-utilities/power-and-utilities-industry-outlook.html [1]

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