

Case Study

Building Products Leader Accelerates Insights with Microsoft Fabric-based Data Modernization Solution



Customer Overview

Customer

Residential and commercial building products leader committed to building a sustainable future through material innovation

Profile

Develops and produces insulation, roofing, and fiberglass composites and related products

Industry

Manufacturing

Services

Data Platform Modernization

Business Need

The building manufacturer faced numerous challenges with its legacy, on-premises data mart solution. Maintaining the legacy on-premises infrastructure was expensive and required a dedicated team to manage hardware, software, and network configurations and lacked scalability to match the increasing data volumes. The client also faced several operational inefficiencies due to reliance on manual processes.

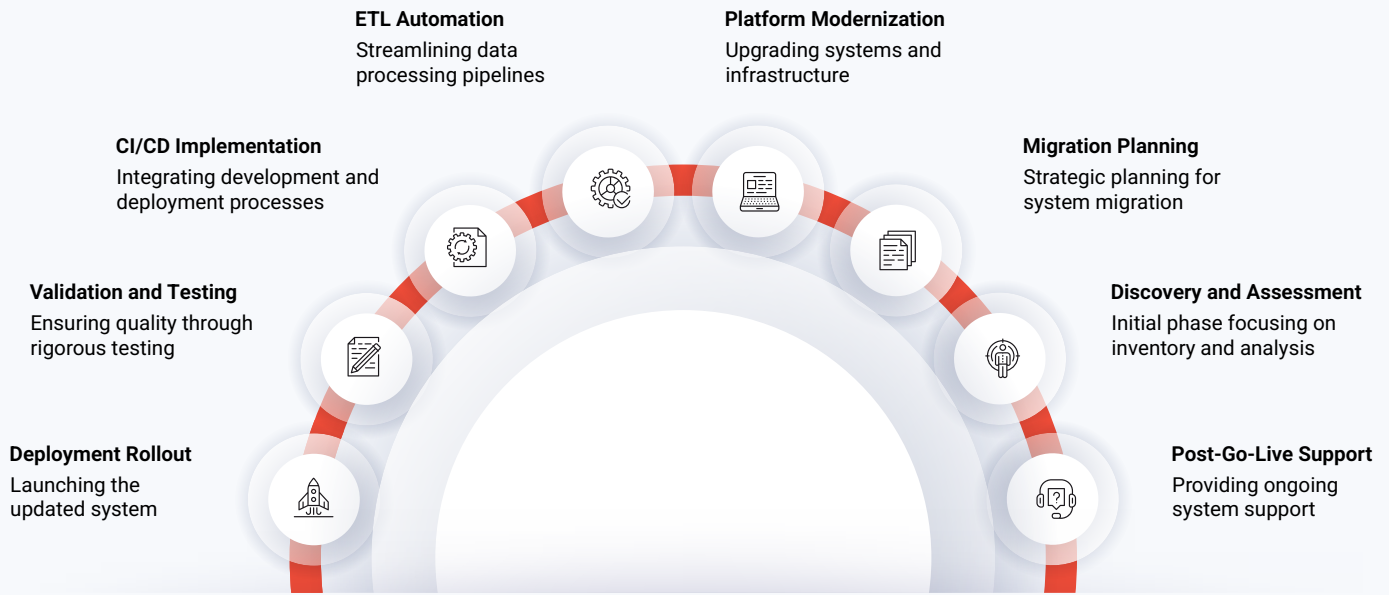
Faced with the challenges of a rapidly evolving market, the client required a data-centric, modern infrastructure to support informed decision-making and enable scalability.

To overcome the limitations of its legacy data mart, the client sought to migrate to a modern, cloud platform that:

- Provides scalability to handle increasing data volumes
- Reduces the operational overhead associated with maintaining legacy systems.
- Leverages the capabilities of Microsoft Fabric for advanced data engineering, warehousing, and analytics.
- Consolidates data from on-premises databases and ensures seamless integration with existing systems such as Dynamics 365, SAP HANA, Power BI, Microsoft SQL Server, and custom file systems.
- Reduces operational costs: By migrating to Microsoft Fabric, the client aimed to reduce infrastructure costs with a pay-as-you-go model and minimize the need for manual interventions and operational overhead.

Solution and Approach

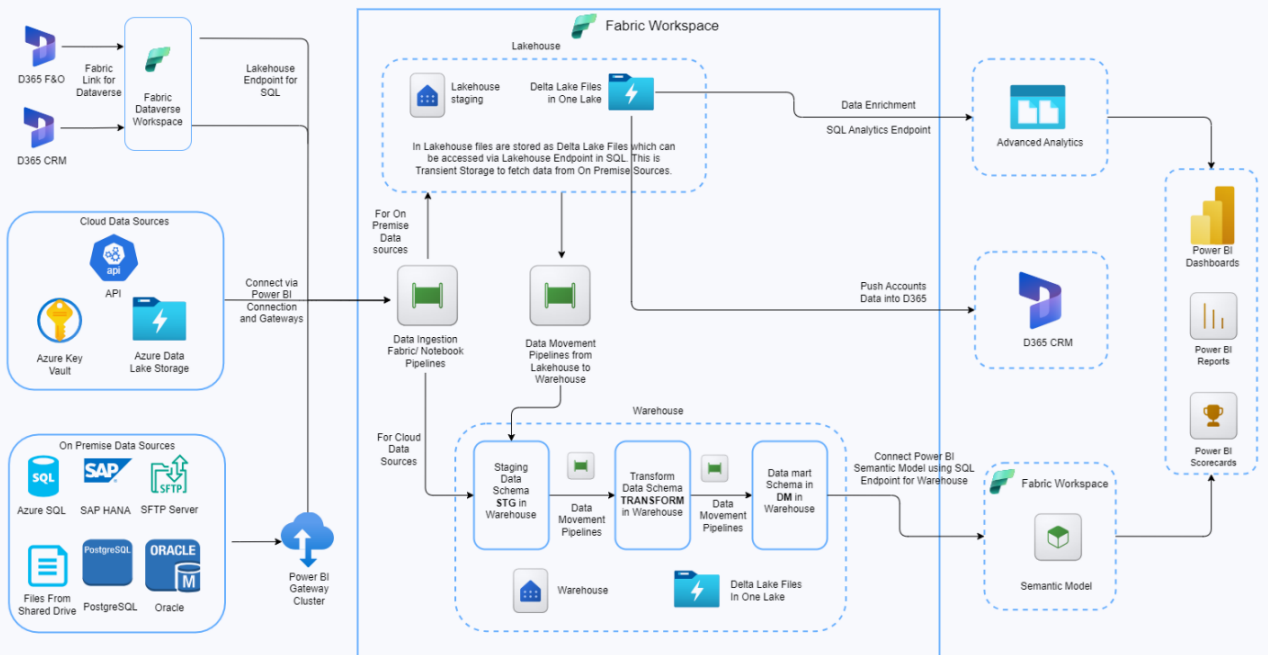
To address the client's business challenges and modernize its on-premises data mart, Synoptek employed a structured, phased approach built around discovery, planning, execution, and continuous collaboration. This ensured a seamless transition to Microsoft Fabric while maintaining operational continuity.



Key features of the modernization solution included:

- 1. Metadata-Driven Data Pipelines:** A metadata-driven pipeline architecture in Microsoft Fabric was implemented. Instead of hardcoding source-to-destination mappings, metadata tables dynamically controlled source connections, file paths, and destination tables and schemas.
- 2. Unified Data Platform:** A centralized and scalable data warehouse was implemented to serve as the single source of truth for analytics and reporting.
- 3. Master Pipeline with Modular Design:** A master pipeline orchestrated end-to-end data ingestion, transformation, and loading workflows.
- 4. Audit Logging and Error Handling:** Integrated audit logging into all pipelines and implemented necessary error-handling mechanisms.
- 5. Partitioned Parquet Storage:** Data was transformed and stored in Parquet format with partitioning based on business keys (e.g., date, region).
- 6. CI/CD Integration:** Azure DevOps pipelines automated deployments across environments (development, testing, production), ensuring efficient DevOps practices.
- 7. Version Control:** Version control ensured all changes were tracked, and rollback mechanisms were implemented for fast recovery.

- 8. **Lakehouse Architecture:** The solution incorporated the flexibility and scalability of a lakehouse architecture to integrate both structured and unstructured data.
- 9. **Real-time Data Processing:** Dynamic pipelines processed data near real-time from sources like Dynamics 365 and SAP HANA, ensuring the latest information was available for decision-making.
- 10. **Cost Optimization:** Migrating to Microsoft Fabric reduced infrastructure costs with a cost-effective pay-as-you-go model while minimizing operational overhead.
- 11. **Third Party Integration tool cost saving:** Fabric enabled direct integration from D365 CRM to one lake and saved cost invested in third party tool used in legacy solution.



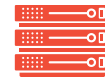
Technology Stack

 <p>Data Platform</p> <p>Microsoft Fabric</p>	 <p>Integration Tools</p> <p>Azure Data Factory Pipelines</p>	 <p>Storage</p> <p>Lakehouse, Parquet files</p>	 <p>Automation</p> <p>Azure DevOps for CI/CD</p>	 <p>Visualization</p> <p>Power BI</p>
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Business Benefits

Synoptek successfully migrated 250+ SSIS packages with diverse transformations to Microsoft Fabric while maintaining data integrity. The data platform modernization resulted in several business benefits for the building manufacturer, including:

- Streamlined data workflows that improved data ingestion, transformation, and loading efficiency.
- Enhanced pipeline reliability with integrated audit logging and error-handling mechanisms.
- Optimized data storage and access with partitioned Parquet format based on business keys.
- Automated deployment processes across environments, reducing manual effort and minimizing errors.
- Access to real-time data for timely decision-making from sources like Dynamics 365 and SAP HANA.
- A unified cloud platform consolidating data, improving data accuracy and accessibility for analytics
- Enhanced scalability and performance through Lakehouse architecture and modern data-centric solutions



40% faster data ingestion and transformation



50% faster query execution time



60% faster deployment time

About Synoptek

Synoptek delivers accelerated business results through advisory-led, transformative full-life-cycle systems integration and managed services. We partner with organizations worldwide to help them navigate the ever-changing business and technology landscape, build solid foundations for their business, and achieve their business goals.