INTECH's Data Warehouse Solution Boosts Efficiency by 75% for a Logistics Leader

Summary

A leading global logistics provider turned to INTECH to resolve inefficiencies caused by fragmented data systems. INTECH delivered a centralized data warehouse solution that streamlined operations and enhanced decision-making. As a result, the provider achieved a 75% increase in operational efficiency, a 60% improvement in yard utilization, and a 35% reduction in container moves.

About the Client

The client is a leading global logistics company headquartered in Dubai, specializing in cargo logistics, port terminal operations, and maritime services. With a presence in over 40 countries and 57 terminals worldwide, the client manages international trade and drives global container traffic.

However, the client faced significant operational inefficiencies that hindered visibility and slowed decision-making across its network.

Client Challenges: Data Fragmentation & Operational Inefficiencies

Despite their global presence, the client faced significant operational inefficiencies due to fragmented data systems. They lacked real-time visibility, struggled to coordinate activities across terminals, and had limited access to actionable insights for data-driven decision-making.

The key issues included:

Inefficient Yard Space Management

The operations team struggled to track and allocate yard space. This caused terminal congestion and slow container handling. As a result, operations were delayed and efficiency dropped.

Complex Truck Visit Scheduling

Manual scheduling led to slow and error-prone truck visits. Truck arrivals were delayed, which increased turnaround times. This limited the number of containers processed and slowed overall operations.

Inaccurate Cargo Tracking

Disconnected data streams led to delays and inaccuracies in cargo tracking. This caused customer dissatisfaction and missed delivery deadlines.

Billing Errors

Fragmented data systems caused discrepancies in billing. The lack of system alignment caused financial errors, straining client relationships, and creating inconsistencies.

Uncoordinated Operations

Without consistent data governance, processes across different terminals were misaligned, leading to inefficiencies. This slowed decision-making and increased operational complexity.

The client needed a solution to centralize their data, streamline operations, and improve both customer satisfaction and financial performance.

INTECH's Solution: Data Warehouse & Analytics for Smarter Decisions

INTECH developed a robust, centralized data warehouse and analytics solution tailored to the scale and complexity of global logistics operations. We took a strategic and collaborative approach, working closely with the client's team.

The focus was on building a unified, intelligent data environment that would empower smarter decision-making, enhance operational efficiency, and support long-term scalability.

Here are the key features:

Data Integration

▶ We consolidated data from disparate systems, including SAP for enterprise resource planning, Oracle for financial management, Terminal Operating Systems (TOS) for operational control, and eCommerce platforms for customer transactions.

▶ INTECH eliminated data silos and created a consistent, reliable source of truth across the organization. This provided comprehensive insights and ensured that all teams work from the same data set.

Data Lake Storage

▶ We implemented Azure Data Lake Storage, a highly flexible platform designed to handle large volumes of both structured and unstructured data. This provided a secure, hierarchical storage system that could efficiently store vast amounts of data while ensuring compliance with security and privacy standards.

▶ This could scale with the client's growing data needs, ensuring that as their operations expanded globally, the storage solution would handle the increased volume without performance degradation.

Advanced Analytics

▶ To provide real-time data insights and empower data-driven decision-making, INTECH deployed Azure Databricks. This allowed for the seamless processing of large data sets in real time, enabling the client to run analytics on their operational data. This empowered the client to make data-driven decisions, identify trends, and optimize operations.

Real-Time Dashboards

▶ INTECH also implemented Power BI to provide the client with real-time dashboards that offered clear visibility into critical operational metrics. These dashboards met the specific needs of various stakeholders, from terminal managers to senior executives. They could easily track yard utilization, container throughput, and equipment usage in real-time, enabling stakeholders to make quick, informed decisions.

▶ This level of visibility was critical for the client, as it enabled them to respond quickly to operational challenges and continuously optimize performance.

User-Friendly Access

▶ We used PowerApps to create an intuitive interface for easy data access. This allowed the operations team to easily access the data they needed, without requiring technical expertise.

▶ With PowerApps, the client's team could quickly generate reports, track KPIs, and make on-the-ground decisions about yard management, container movement, and other day-to-day operations.

This data warehouse and analytics solution improved the team's decision-making and operational efficiency.

Once the solution was designed, we focused on its implementation.

Implementation Process

INTECH followed a stepwise approach to ensure the successful deployment of the data warehouse and analytics solution. We ensured minimal disruption to day-to-day operations while delivering a scalable, enterprise-grade solution tailored to the client's complex global environment.

Here is how we did it:

1 **Requirement Analysis**
We began by engaging closely with key stakeholders to understand their business objectives, operational challenges, and existing data infrastructure. Through a series of technical assessments, we identified pain points, data silos, and integration challenges. We also defined clear success criteria to ensure the solution aligned with both short-term operational needs and long-term strategic goals.

2 **System Integration Planning**

With a deep understanding of the client's data landscape, we mapped out the integration of critical systems, including SAP, Oracle, Terminal Operating Systems (TOS), and eCommerce platforms. The integration plan was designed to ensure seamless data flow, eliminate silos, and prepare the foundation for centralized data access and analysis.

3 **Data Warehouse Architecture & Design**

Next, we designed a secure, scalable data warehouse tailored to the client's current data volume and future growth. The architecture supported real-time access to operational and strategic insights, with a clear data model and schema design that facilitated quick, reliable data retrieval. The system was optimized for performance and ease of use for everyone.

4 **Data Management Framework**

To ensure ongoing data quality and consistency, we implemented a robust management framework. This included protocols for data validation, lineage tracking, security, and compliance. A governance model was established to define roles, responsibilities, and access controls across business units and global terminals, reducing errors and ensuring trust in the data.

5 **Testing & Validation**

Before deployment, we carried out extensive system and user acceptance testing (UAT). This included validating the integration with existing workflows, verifying the accuracy and completeness of the data, and ensuring all components of the solution performed reliably under realistic load conditions.

6 **Deployment & User Enablement**

The final solution was rolled out in a phased manner across multiple ports and terminals to ensure operational continuity. INTECH provided comprehensive training and documentation tailored to the team. This ensured high adoption rates and empowered the client's teams to fully leverage the new capabilities.

Key Outcomes

The centralized data warehouse solution delivered impressive, measurable improvements for the client's global operations:

Operational efficiency increased by 75% through streamlined data processing and improved coordination between terminals.	**Delays were reduced by 35%** as real-time insights enabled faster, more informed decision-making.	**Yard space utilization improved by 60%,** thanks to enhanced visibility and data-driven planning.

Tools and Technologies Used

To deliver a seamless, efficient solution, INTECH leveraged the following tools:

- **BryteFlow:** Allows seamless data migration and synchronization across systems. It automates data extraction, transformation, and loading (ETL), ensuring smooth data flow between different platforms.

- **Azure Databricks:** An Advanced data analytics platform provides a collaborative environment to process and analyze large datasets. It also generates actionable insights that enable smarter decision-making.

- **PowerApps:** Builds user-friendly business applications to create interactive dashboards without needing extensive programming knowledge.

- **Azure Data Factory:** Automates the data movement and conversion, ensuring it is structured and accessible across systems. This helps the data engineering team streamline data pipelines and maintain consistency across platforms.

- **Azure Data Lake Storage (ADLS):** Ensures reliable, cost-effective storage for structured and unstructured data. It provides a centralized repository for data while maintaining consistent data flow across systems.

- **Power BI:** Creates interactive and engaging data visualizations, giving real-time access to KPIs and performance metrics. This helps in strategic planning and enables data-driven decision-making at all levels.