

Electronics manufacturer optimizes global logistics with cloud data solution

Background

A global provider of electronic components and solutions needed a cloud data lake and data warehouse solution to optimize the movement and transportation costs of more than 100,000 products.

Manual data and analytics leave unanswered questions

With a manual data collection and analysis process, this client strained to answer questions about its supply chain logistics. From simple questions, such as, “How long does it take a shipment to get from point A to point B?” to more complex network analysis, the right data was not available fast enough, nor was it accurate or up to date.

The company ships and stores tens of thousands of incoming raw materials and finished products around the world. That means moving materials from warehouses to manufacturing facilities and tracking them through the manufacturing process. Finished products are shipped to the company’s warehouses worldwide and then to final destinations by planes, trucks, trains, and ocean vessels. It’s a complex juggling act to keep track of thousands of products, shipments, and vendors.

Company executives wanted to get real-time answers that would allow them to optimize the cost and logistics of moving these materials within their own global network and among shipping vendors. This meant that they needed a high-performance data management solution to integrate data from internal SAP systems and external shipping vendors and make it available to analysts for exploration and reporting.

Consolidated data powers logistics reporting and analytics

The company worked with Wavicle to develop a solution to replace its current Excel-based reporting and analytics. We had already built a cloud data architecture and infrastructure for the client's procurement organization. We leveraged this Amazon Web Services (AWS) environment to develop a logistics data lake on S3 and a data warehouse using Amazon RedShift. We used Talend for data integration.

This solution allows the company to integrate data from multiple internal SAP systems, shipping vendors, and third-party logistics companies (3PLs), as well as Infor Nexus, which tracks and reports on the location of vessels. End users now have the data they need to do reporting and analytics using Microsoft's Power BI. Additionally, they will load data from the data warehouse to Llamasoft for supply chain modeling, optimization and simulation.

Optimizing logistics around the globe

This solution gives the client's logistics organization fast access to accurate, updated information to evaluate vendor cost, service, and speed; identify logistical inefficiencies; negotiate with vendors; and optimize their global network. The combination of a data lake and data warehouse allows the client to perform enterprise reporting on an aggregated data set and explore a complete set of raw data for more complex, open-ended inquiries. They are now able to quickly answer questions such as:

- Which carriers should we use to ship goods from one location to another?
- What is the average cost per shipped item per trip?
- Are each carrier's actual shipping costs in line with negotiated rates?
- Where are my goods, when will they likely arrive to the next location, and will they be on time?
- Relative to my manufacturing facilities and customers, where should my warehouses be located? In addition, what products should be stored in each warehouse and what is my safety stock?

About Wavicle

Wavicle's team of consultants, data architects, and cloud engineers work with global organizations to build a roadmap to success with unmatched technology expertise, creative innovation, and superior customer service. Our toolkit of proprietary accelerators helps clients deliver world-class data analytics solutions in record time. From data management services and cloud migration consulting to dashboard development and data analytics consulting, our professionals enable and empower data-driven enterprises.