

Global retailer moves SAP data to Google Cloud to get real-time, digestible Tableau dashboards

Industry

Retail, Apparel Manufacturing

Location(s)

HQ in Richardson, Texas, with global distribution and retail outlets

Technologies

- Google Cloud
- Google BigQuery
- Google Cloud Storage
- Google Cloud Composer
- Google Cloud Dataflow
- Tableau
- SAP
- SAP ERP Central Component (ECC)
- SAP Data Services

Overview

This global retailer needed near-real-time access to order processing data in its European warehouse. Pythian developed data modeling for SAP, implemented an ETL process for data extraction to Google Cloud, used Cloud Composer to manipulate the data, created views in BigQuery, and designed easily digestible reports in a Tableau dashboard. Now, data flows into Google Cloud every 15 minutes, and the data is easier to access, share and analyze.

A global retailer with a large ecommerce channel moved its data from the SAP ERP Central Component (ECC) system to Google Cloud, and then into Google's BigQuery. The data was used to set up daily, near real-time feeds from SAP to Google Cloud, creating easy-to-read Tableau dashboards. This gave the retailer critically important access to accurate order processing and shipping data through analytics, enabling more informed decisions during critical peak times.

When this apparel retailer was founded, it was a small wholesale business; now, it sells a range of accessories and its profit comes from more than 30,000 distribution points, including ecommerce websites, wholesale merchandising and 450 stores. During peak business days, the company processes between 20,000 to 30,000 orders per day while manufacturing private-label items for numerous other brands.

Due to explosive growth from its ecommerce channel, this company implemented enhancements to its European warehouse to make picking, packing and shipping activities more efficient. This project allowed the company to automate data collection for orders at every stage, so updated reports are available every 15 minutes. These reports previously took hours to complete. Additional ecommerce websites have since been rolled out across the globe, adding to the company's reporting and analytics demands. As the company moves forward, its leadership is focused on advancing and scaling the company's digital capabilities as well as strengthening its end-to-end supply chain.

Reports took hours to generate, were out of date immediately, and were presented in a hard-to-read fashion—all of which prevented the business from using its data to make timely decisions

A global retailer:

- Manually tracked every data point on thousands of orders
- Spent hours pulling reports that were outdated immediately
- Viewed the data in a legacy spreadsheet presentation layer

A need for real-time data for two major reports

This global retailer needed a reporting solution for its European warehouse. Although the brand is often associated with brick and mortar retail stores, a substantial portion of its profit also comes from online transactions. The company manages thousands of daily orders from ecommerce giants like Amazon and eBay. As the ecommerce channels grew, data volumes also increased and reports often took hours to complete. To keep pace with customer demand, this company needed real-time data on:

- All open deliveries that are waiting to ship
- Shipping history

For the open deliveries, the warehouse team needed to see the current workload, including every open delivery and its station in the warehouse. For the shipping history, management wanted to know how many orders were shipped to which customers. This company also wanted better visibility around lead times, volumes and which items were shipping to stay abreast of inventory turnover.

Manually tracked data stored in SAP

For every order that came through, the global retailer needed to know the status. For example:

- What product was ordered?
- Has the order been picked?
- Has the order been packaged?
- Was the order shipped on time?
- Was the order delivered on time?

All of these data points were manually tracked and then stored in SAP, the company's core ERP system. However, whenever team members wanted to run a report to get data from the SAP, it took one to two hours. Because operations in the warehouse moved so quickly, the data in the report was outdated almost as soon as it was pulled.

An outdated, hard-to-read view of data

Before engaging Pythian, the retailer used a legacy spreadsheet presentation to extract its data from SAP. The data was downloaded into Excel, which was time-consuming and introduced risk of error.

Without easy access to these numbers, the retailer was unable to see whether it was meeting its service-level agreements. More importantly, its leaders had no way to use the business-critical data.

An ecommerce boom

A few years ago, the company invested heavily in its ecommerce channels. Part of this initiative included releasing numerous ecommerce sites, which provided differentiated pricing and products for various regions around the world. Global sales generated by these digital channels has grown from 20 percent of total sales in 2019 to more than 40 percent in 2021. This tremendous growth revealed massive challenges with the manual, outdated reporting processes.

The retailer had achieved its initial goal of growing its ecommerce presence, but without reliable reporting, fulfillment for this channel was at risk. In anticipation of the additional surge that would come during the holiday season, the retailer contacted Pythian.

The global retailer manually tracked every data point and then spent up to two hours pulling reports, only to review data that was outdated as soon as it was created. And when they needed to analyze the data, they had to decipher pages of spreadsheets in legacy software.

Providing real-time access to every data point

To provide access to real-time data, Pythian:

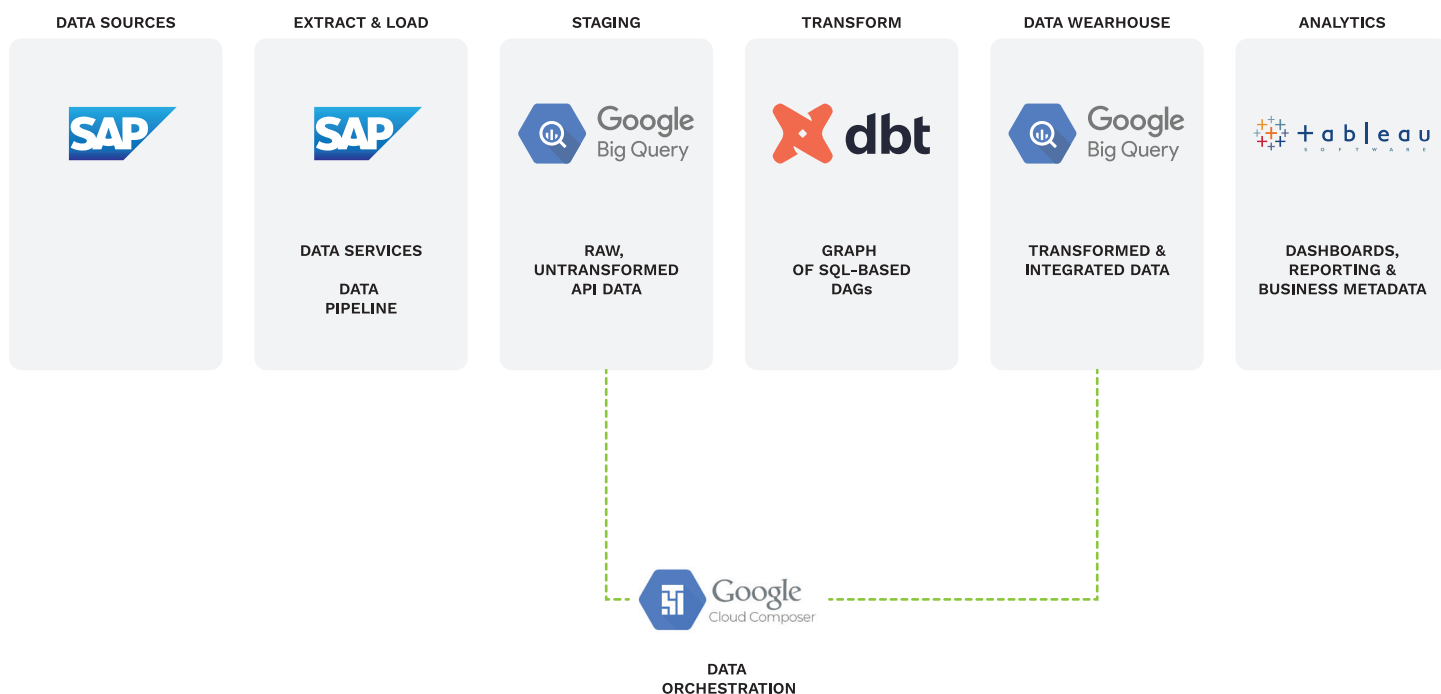
- Developed a solution and data modeling for an SAP source system
- Developed an ETL process for data extraction and loaded into Google Cloud Storage
- Used Google Cloud Orchestrator to schedule data loads
- Created views and data models in Google BigQuery for analysis
- Developed easily digestible reports in a Tableau dashboard

Using Tableau to create reports on open deliveries

To give the global retailer real-time access to its data, Pythian extracted data from the SAP API system and put it into Google Cloud, primarily into the Google Cloud Storage buckets. Google Cloud Composer

orchestrates and schedules the data loads from Google Cloud Storage into BigQuery every 15 minutes. In BigQuery, the views are exposed for reporting in Tableau.

During peak shopping days—like Black Friday, Cyber Monday and the Christmas season—there are up to 30,000 orders per day. Without updated automated reporting, teams in the warehouses had to manually track every order. The process was tedious and primed for human error, which posed a significant risk for this retailer as it worked to build a robust online channel with satisfied customers.



Creating reports on shipping history to verify SLAs

After the shipment reports were complete, the global retailer wanted to review its service-level agreements to measure the results. The company tracks multiple data points, including:

- How many orders were shipped?
- Who were the orders shipping to?
- Which countries were orders shipped to?
- Which warehouse did orders ship from?

The newly accessible real-time data provides a historical analysis after the shipments are complete, so that the company's leaders can identify areas where they can make incremental improvements to the order management processes.

Without the updated automated reporting, teams in the warehouses had to manually track every order, which was a tedious process and primed for human error. Now, real-time data is presented in digestible Tableau dashboards.

Creating easily digestible reports, with data updated in near real-time

The Pythian team provided:

- A data flow from Google Cloud every 15 minutes
- Data in modern platforms, like Tableau and BigQuery, making reports easily digestible
- Updated reporting in time for holiday shopping surges
- A consistent, long-term technology partner

Shipment updates every 15 minutes

For the reports on shipping history, the data flowed from Google Cloud every 15 minutes and was then updated in Tableau. Now, when anyone from the global retailer opens Tableau, that person can put in an order number and immediately know that the current status is accurate.

Whether the data is being used to forecast sales or manage inventory levels, employees know they're working with the most current numbers available.

Easily viewable, easily digestible data

Pythian helped this client to modernize its digital platforms with Google BigQuery and Tableau so that personnel can view the SAP data in a more accessible way. This gave employees a way to view updated data in user-friendly tables that previously required hours of manual processing. Now, teams are able to spend their energy improving their numbers, rather than hunting to find and manipulate data from SAP.

Updated reporting in time for the holiday shopping surge

Like many companies, this global retailer's online profits surged during the COVID-19 pandemic. And when the global retailer contacted Pythian in anticipation of the holiday shopping rush, the Pythian team delivered.

Pythian completed a digital release so the retailer could use the new reports on the biggest shopping days of the year—Black Friday and Cyber Monday—and the reports will continue being essential with the ongoing focus on digital growth. The initial digital release was followed by the final release, which will support the retailer in the coming years.

Although the warehouse team was busy filling extra orders during the holiday shopping surge, the retailer had peace of mind knowing its ecommerce environment was stable and its order fulfillment processes were primed for accuracy.

A Pythian client since 2016


For the past seven years, Pythian has supported this client by providing numerous technology upgrades, projects for collaboration solutions such as Google Chrome rollouts, and implementation of infrastructure foundations for Google Cloud and DevOps.

In 2021, Pythian expanded its ERP capabilities to include SAP, so it was a logical next step for the retailer to turn to Pythian for help extending its SAP platform with Google.

By moving the data to modern platforms like Google BigQuery and Tableau, the global retailer was able to view its data in a modern, easy-to-digest format. Now, when anyone from the global retailer opens Tableau, that person can put in an order number and immediately obtain an accurate status of it.

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