PAYLOAD Accelerates Business Velocity After Implementing a Modern Cloud Data Analytics Stack

About Payload

PAYLOAD is an easy-to-use cloud-based solution to digitizing field tickets and shipping manifests. By connecting the field to the office in real-time, clients using PAYLOAD gain greater visibility into their entire business cycle.

Chris Lambert, CEO

Iain Letourneau, BI Lead & DevOps Analyst

ROI Highlights

- 7x faster report delivery times
- $8,000+ cost savings per report
- 50% BI resource savings
- Report load times down from 1 hour to 10 seconds
- Snowflake deployment in just 2 weeks
- Up and running with Sigma in 24 hours

The Challenge: A Limited Application Database with Reporting Extracts

PAYLOAD's logistics and supply chain management application (eTicket) collects vast amounts of various data, including real-time coordinate capture, field ticket data for pickup and delivery, events that occur along a route, and much more. Customers and internal decision-makers alike were hungry to get their hands on this data to integrate it with other systems and generate key business insights.

However, because the company was using Heroku and performing queries directly against a Postgres follower database, data imports, exports, integrations, and reporting were a challenge. "Using the same database for our application and reporting needs meant that our BI and dev teams were in constant conflict," says PAYLOAD CEO Chris Lambert. "BI would build queries that taxed the database and slowed it down, so dev would have to get involved."

Development was spending hours each week updating database schemas for new reports, indexing the database to improve performance, creating fresh views for customers to export, and fixing any application errors these activities caused. The team also faced additional infrastructure costs and slow reporting response times, with some reports taking up to an hour to load.

At the same time, customers were looking for direct access to their data while maintaining PAYLOAD's high security standards. Extracts that had to be restructured before customers could use them wasn't enough. "It was frustrating," says Chris. "We had to find a way to effectively support both internal and external requests, maintain high security standards, and increase our overall velocity as a business."

The Solution: A Modern Data Analytics Stack Built for the Cloud

The first step toward getting data insights into the hands of PAYLOAD customers and employees was separating development and BI workloads, enabling the BI team to structure and integrate application data without negatively impacting development infrastructure. PAYLOAD explored deploying a traditional enterprise data warehouse (EDW) and even considered building their own solution. Ultimately, they decided that Snowflake's Data Cloud was the best choice.

"We chose Snowflake because while we're a small team, we have very high security, scalability, and performance requirements," shares Chris. "We also wanted more than a data warehouse, and Snowflake gives us the ability to securely share each customer's individual data with them in its entirety using a multi-tenant approach. They can access this data using their own data lakes or analytics."

Once Snowflake was up and running — a process that took only two weeks — PAYLOAD needed a way to stitch together data from across sources and port it into Snowflake. After evaluating several data pipeline tools, the team chose Fivetran. "Fivetran worked right out of the box," says Chris. "Many pipeline tools copy records from the database, which causes version control issues when records get deleted. But Fivetran uses database logs to synchronize data, so it always accurately reflects what's in the database."

Next, it was time to replace the team's traditional BI tool with a modern, cloud-native solution that allows both internal and external stakeholders to harness the full power of this data. "We wanted a solution that minimizes data extracts and really takes advantage of the accessibility, speed, and scale the first two layers of the stack offer," explains Chris.

"We chose Sigma because its spreadsheet-like interface gives everyone the power of SQL without having to know code," says Iain Letourneau, BI Lead & DevOps Analyst at PAYLOAD. "We were up and running reports in Sigma on day one because it was so easy. Now our employees can self-serve and get answers to ad hoc questions without having to wait on the BI team to model data and build reports in an overly-complex, proprietary language."

Sigma's Embedded Analytics functionality also offered PAYLOAD a more cost-effective and straight-forward approach to building an analytics solution into the PAYLOAD application. "We simply embed Sigma dashboards into PAYLOAD and authenticate our customers through our own application," explains Chris.

The Results: Faster Performance, Fully-integrated Data, and Real-time Insights for All

PAYLOAD's logistics and supply chain management application (eTicket) collects vast amounts of a variety of data, including real-time coordinate capture, field ticket data for pickup and delivery, events that occur along a route, and much more. Customers and internal decision-makers alike were hungry to get their hands on this data to integrate it with other systems and generate key business insights.

Adopting this modern cloud data analytics stack has resulted in a number of benefits for PAYLOAD, its employees, and its customers. "Reports that used to take up to an hour to load using our previous infrastructure now take less than ten seconds — and that's without any query optimization," says Chris. "With Snowflake, I don't even have to think about performance or scalability during peak times or as we plan for growth."

Data from the PAYLOAD app and other business applications are now seamlessly integrated to give decision-makers a more holistic and accurate view of business performance. "Manually handling data normalization, source changes, and schema updates is a major headache and something no growing business has time for," says Chris. "Tools like Fivetran are invaluable for automating these processes and helping companies establish the single source of truth they need to make sound decisions."

Sigma has eliminated BI request queues and data extracts by giving non-technical domain experts direct, governed access to the live data inside Snowflake. "Report lead times went from 4-6 days with our previous BI tool to 4-6 hours with Sigma," shares Iain. "Business users who had never seen Sigma before were able

to jump right in, start analyzing billions of rows of data, and create their own reports, whereby with our previous tool I had to train them for weeks just to be able to do basic edits to the proprietary code."

Building an analytics solution into the PAYLOAD application was originally projected to take 2 full-time employees 6 months. "If you add up the time and the manpower we needed to generate standardized customer reports, each report came out to about $9,500 to build, test, and deploy," calculated Chris. "Sigma has brought that number down to $1,400 per report. That's over 600% cost savings."

Sigma's Embedded Analytics has made it possible for PAYLOAD to provide customers actionable insights into wait times, vehicle speeds and safety, carbon footprint, and more. The ability for anyone in the organization to quickly create up-to-the-minute reports, visualizations, and dashboards that meet customers' needs has had a positive impact on customer satisfaction and business performance.

"Adopting a modern cloud data analytics stack was a game-changer for PAYLOAD," says Chris. "It allows us to harness the full, unbridled power of our data, and the results we've seen from a business velocity perspective speak for themselves."