CCS GLOBAL TECH

CASE STUDY
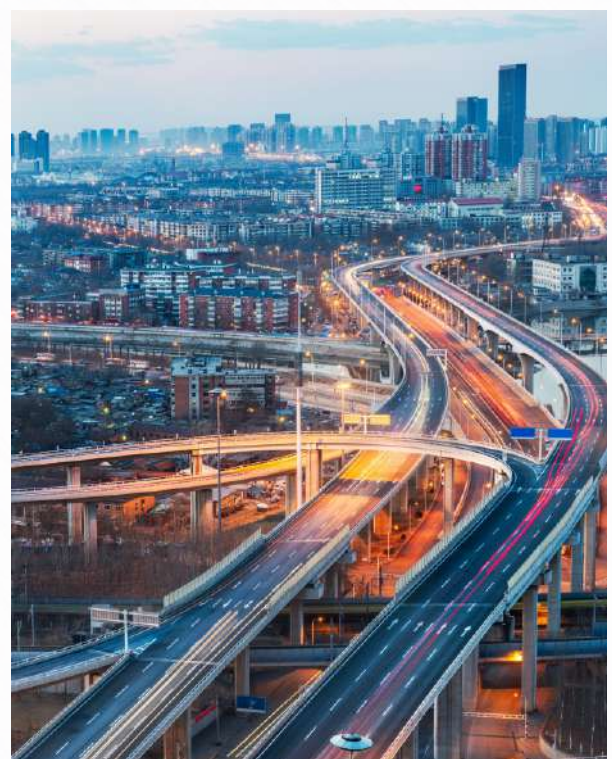
Transportation Authority

Introduction

CCS Global Tech's mission is to empower our clients to make data-driven decisions by delivering critical information through innovative regulatory-compliant visualization solutions, precisely where and when they need it. The purpose of the case study is to showcase how we delivered on our mission for a major transportation authority.

Client Overview

Our client is a public authority entity responsible for providing mass transit service offering bus, rideshare programs, special event services, commuter rail and demand response and innovative mobility options.

The organization provides over 20M rides per year therefore they wanted to develop an enterprise data analytics platform (EDAP) that provides a single source of truth and had the capability to evolve. To stay abreast of their users' growing needs and operate effectively, they realized pulling data from multiple systems and merging the information on their own was time consuming, inefficient and error prone. We were happy to present them with a cost-effective solution that met all their needs and positioned them for future growth.

Our Client's Stated Benefits From CCS' Implementation

Our client, CCS, and another of their partners, submitted a nomination and won a Best of Texas award for the EDAP platform. As part of that submission our client listed the benefits below as part of the nomination process.

→ Replaced its email-based spreadsheet reporting system with a modern platform in which all employees can access, filter, and interact with reports in real-time.

→ Increased data accessibility by 2,000% and has further empowered staff members to produce their own reports.

→ Labor-intensive manual process of extracting data from source systems and readying it for reporting has been automated, improving business analysts' productivity up to 50%.

→ Improved data quality as well and reducing data latency by 96%.

→ Number of locations previously required for data access has been reduced by 85%, making it easier for users to find the information they are looking for when they need it.

The Challenge

Our client's goal was to have a single comprehensive enterprise data analytics platform that provides the organization a centralized source of truth on its most important data assets and makes data accessible and available in a secure, governed environment. They needed help creating an agile data system that supported their vision of a comprehensive enterprise-wide data analytics platform and delivered robust business intelligence (BI) reporting capabilities. The system needed to aggregate internally and externally sourced data and deliver results in an easily digestible form.

Our Solution Needed To Provide The Benefits Below:

→ **Enable Business Insights:** Enable the business to unlock insights to drive strategic priorities, improve operational efficiency, control, and monitoring.

→ **Centralized Source Of Truth:** Harmonize and connect the disparate data assets. Break down data silos and enhance accessibility and availability of data.

→ **Enhanced Analytics Capabilities:** Leverage state-of-the-art technology to equip the organization with the tools to extract insights.

→ **Cost Reduction And Decreased Time To Insight:** through automation of data extraction and transformation, improve bottom-line impacts and provide more timely access to data. Minimize time, and effort required to maintain the enterprise data analytics platform solution.

→ **Scalability And Flexibility:** Move to a robust and modern cloud-based infrastructure enabling our client to handle new data volumes and requirements as they grow and expand their services.

→ **Manage And Govern Data:** Correctly manage and govern all the organization's data assets and apply the organization's data security and retention policies.

What We Did

We initiated the project by collaborating with our client's executive leadership to:

→ Define their preferred and prioritized key performance indicators (KPIs),

→ Determine the relevant calculations for these indicators,

→ Identify the source systems containing the required data,

→ Establish a plan to implement the KPIs, and

→ Establish acceptance criteria to confirm the KPIs were successfully implemented.

We evaluated their existing system and identified several areas for improvement, and these were addressed, including:

→ **Data Sources:** Client's data visualization systems relied on individual data sources, which hindered stakeholders' ability to use business intelligence tools effectively and make data-driven management decisions.

→ **Limited Advanced Analytics And Data Visualization Tools:** Client's analytics and visualization tools were challenging to update due to the data residing in disparate systems. Without these applications, using BI data strategically was laborious and time-consuming.

→ **Lack Of End-to-End View Of Information And Data Consumption:** Client's fragmented data infrastructure made it challenging for leaders to view data and consumption details holistically, making it difficult to make timely decisions.

→ **Opportunity To Update Data Governance Policies:** All data sources and KPIs were evaluated during the implementation of the enterprise data analytics platform, leading to updated data governance policies and documents to improve the organization's overall quality systems.

→ **American Disability Act (ADA) Requirements:** The team worked with our client's accessibility experts to ensure the data visualizations implemented with Microsoft's Power BI met ADA requirements.
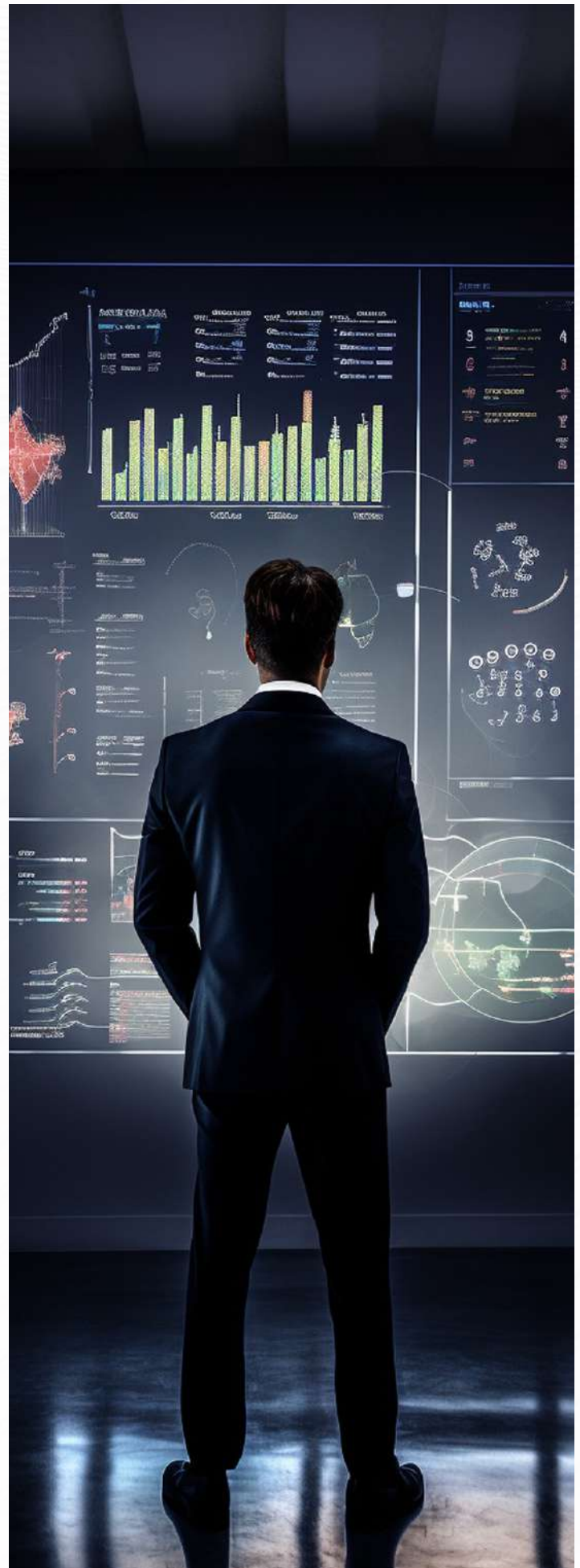
We utilized several key applications in our system architecture to address our client's data management challenges. First, we employed Snowflake for data warehousing, a cloud-based infrastructure that enables efficient data collection, cleaning, storage, and retrieval. To support seamless data integration from various sources, we also deployed Azure Data Factory (ADF), which integrates with both on-premises and cloud-based data sources and features no-code tools for building and monitoring workflow pipelines.

For real-time data integration, we chose Snowpipe, which listens asynchronously for new data arriving in the Azure cloud storage environment and loads it into the data warehouse. In addition, we built a pipeline using Azure Event Hubs for real-time data sources that are not natively integrated with Snowpipe.

Finally, we implemented Microsoft Power BI as a data visualization tool to provide our client with an industry-standard, user-friendly, and interactive platform for data analytics and reporting. Accessibility requirements were addressed at the very start of the data visualization process to ensure ADA requirements were met while meeting our client's user interface and experience requirements.

By using these low-maintenance software- and platform-as-a-service (SaaS/PaaS) offerings, our goal was to create a flexible, scalable, and comprehensive data storage, linking, and visualization infrastructure that enables data democratization, promotes data visualization, and improves data quality efforts.

Results

Our solution provided a secure, scalable, and user-friendly platform that centralized their data, enhanced analytics capabilities, enhanced public reporting, reduced costs and time to insights, and ensured effective data management and governance. The system's comprehensive and integrated data management and visualization capabilities support the organization's desire to move to a data-driven management model efficiently and effectively.

Solution Highlights

✶ **Centralized Source Of Truth:** Our solution eliminated data silos and leveraged a cloud-based infrastructure to make disparate data assets easily available to all users. This reduced the number of locations previously required for data access by 85%, making it easier for our client's users to find the information they are looking for when they need it.

✶ **Increased Data Accessibility:** Replacing email-based spreadsheet reporting system with a modern Power BI-based infrastructure that all employees can access, filter, and interact with reports in real-time has increased data accessibility by 2,000% and empowered our client's individual team members to produce their own reports.

✶ **Improved Transparency:** The improved data visualization capabilities provided our client with greater reporting and documentation abilities, which helped boost transparency with their customers.

✕ **Faster Data Manipulation:** Creating a centralized cloud-based system eliminated the labor-intensive manual process of extracting data from source systems and readying it for reporting. The new automated process increased the client's business analysts' productivity by 50% with the added benefit of improving data quality as well and reducing data latency by 96%.

✕ **Managed And Governed Data:** Our solution provided an agile data infrastructure that made managing data easier and established effective governance protocols to foster data security and stability.

✕ **Scalability And Flexibility:** Moving to a cloud-based infrastructure positioned our client for future growth and needs. The system can scale and flex to meet new data sources, volumes, and requirements.

Future Benefits

A data warehouse solution offers a range of benefits to organizations, and its future holds even greater advantages:

→ Advancements in data warehousing will enable faster data processing, real-time decision-making, and more accurate predictive insights.

→ The scalability and agility of data warehouses will improve, with cloud-based solutions allowing seamless expansion and flexibility.

→ Self-service data exploration capabilities will empower non-technical users to access and analyze data independently, fostering a data-driven culture.

→ Real-time data integration will become more efficient, enabling organizations to monitor metrics and respond swiftly to changing conditions.

→ Data governance and compliance will be enhanced, ensuring data quality, privacy, and regulatory adherence.

Overall, the future of data warehousing promises improved decision-making, advanced analytics, scalability, self-service capabilities, real-time integration, and robust data governance. These developments will enable organizations to unlock the full potential of their data and thrive in a rapidly evolving digital landscape.

Customer Feedback

"I think the platform will enable us to build more reports and dashboards in Microsoft Power BI or other tools so that teams across the agency get data they need quickly and easily."

"I'm impressed with data query time. I can retrieve data that I need faster than I could before with other databases. I'm also looking forward that we only need to manage exceptions or adjustments in one place and can also track history of these changes."

"Having most of the data I work with in one database is going to streamline my workflows and make them more efficient. The central data platform will enable us to dive deeper into the data and provide additional insights and analysis across the agency."

"I like that most of the data we work with on a regular basis is now available in the same database. It makes it easier to pull together and analyze the various data components we need. I also like common calculations that we do are now integrated into the platform."

Why They Hired CCS Global Tech

EXPERTISE IN DATA MIGRATION :
We demonstrated our deep knowledge and experience in data migration, including intelligent data discovery, data mapping, data conversion, automated data validation, and conversion reporting. Our client was impressed with our comprehensive approach to data management.

INDUSTRY EXPERTISE:
Our client was impressed by our history of working with numerous organizations on data warehousing projects. We have experience in this field and understand the unique challenges that arise in managing data. This gave our client confidence in our ability to deliver a solution that met their needs.

CUSTOMER SERVICE:
From the outset, we provided exceptional customer service by listening carefully to our client's needs, collaborating closely with their team, and creating a custom solution that exceeded their expectations. Our client appreciated our responsiveness and diligence.

CREATIVE IT SOLUTIONS:
We offered our client innovative IT solutions that were tailored specifically to their situation, timeline, and budget. By providing a customized solution, we were able to address their specific needs and ensure that they received the most value for their investment.
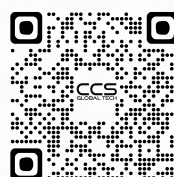
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