

Giving CA's Transportation System a Direction for Success

The Business Intelligence Roadmap & Strategy



The Challenge



The California Department of Transportation (Caltrans) manages over 50,000 miles of the state's freeways and highways, provides inter-city rail services, issues permits to more than 400 public-use airports and special-use hospital heliports, and works with local agencies. To assist the agency with its endeavors, Senate Bill 1 (SB1), the Road Repair and Accountability Act enacted in April 2017, is designed to invest \$54 billion over the next decade to fix roads, freeways, and bridges throughout the state.

The sharing of transportation information data has proven challenging for the various divisions within Caltrans as some computer systems do not integrate well. Many divisions still rely on disparate data sources and utilize spreadsheets or legacy database tools to manage data. In addition, there were few enterprise data management processes and procedures in place.

This atmosphere has made it difficult to turn data into useful information, particularly in making decisions that will help the Department better meet its strategic, tactical and organizational goals. Recognizing this issue, Caltrans sought assistance to enunciate its vision of better integration and analyzation of data. Implementing business intelligence processes and technologies would help to make actionable information more readily available to managers in their efforts to construct informed business decisions.

BY THE NUMBERS

- ❖ Over the past 43 years the cumulative monthly miles driven by California motorists on the state's freeways has increased by almost 200%
- ❖ In 2017 California roadways have supported an average of 195 billion miles driven each month
- ❖ Caltrans annual budget exceeds \$13 billion
- ❖ The Divisions of Traffic Operations, Maintenance, and of Equipment have a combined statewide operating budget of \$2 billion with 8,500 employees and a fleet with more than 10,000 pieces of equipment

Source: Caltrans

The TrinityTG Solution

Trinity Technology Group (TrinityTG) partnered with Caltrans to construct a comprehensive Business Intelligence (BI) Roadmap and Strategy program. This included:

BI EDUCATION SESSIONS AND AN AS-IS ASSESSMENT: This provided Caltrans with education on what Business Intelligence encompasses and the agency's status regarding its current BI environment.

AN IN-DEPTH, AS-IS ANALYSIS: This was conducted in several key areas including Maintenance, Traffic Operations, Equipment, and the Procurement-Warehouse. An inventory was taken of the existing people, processes, and technologies that were aligned with business intelligence, reporting, and data collection.

GARNERING AN UNDERSTANDING OF THE AGENCY'S GOALS: Caltrans staff members knew they wanted to advance their position in the BI realm, but did not have a clear understanding of the specifics involved. TrinityTG provided guidance so they could identify the particulars of what their future environment could look like. The information was presented in a "Future State Assessment" document.

GAP ANALYSIS: This identified what tasks needed to be performed to align Caltrans with its Business Intelligence Program Goals.

OTHER VITAL COMPONENTS: Staffing Management and Organization Plan; Data Governance Plan; Data Architecture Guide; User Adoption Strategy.

THE TRINITYTG TEAM: This team of data analysts and data scientist, extensively versed in BI concepts, each spoke to both the technical and business aspects of the project. They provided experience and knowledge in creating a well-rounded BI Roadmap and Strategy.

KEY DEVELOPMENT CONCEPTS

- ❖ **DATA INTEGRATION:** Automating the collection of the data, transforming it, and preparing it within a data warehouse so the user validation tools can view the reports and run analytics on the information.
- ❖ **DATA ENGINEERING:** Quickly delivering ad hoc or custom reports allowing users immediate access to data so queries about the information, their consolidation or the production of spreadsheets can be accomplished rapidly.
- ❖ **BUSINESS INTELLIGENCE (BI):** The strategies and technologies used for the data analysis of business information by providing historical, current and predictive views of operations. BI can handle large amounts of both structured and unstructured data to identify, develop and create new strategic operations.
- ❖ **DATA GOVERNANCE:** Inspires confidence the data is accurate; Guarantees the data will be useable in a safe, controlled, and secure manner; Allows for creative BI driven by merging data from cross-divisional areas under a safety net of data integrity.
- ❖ **DATA QUALITY MANAGEMENT:** A set of practices that aim at maintaining high quality information from the acquisition of data, and the implementation of advanced data processes, to an effective distribution of data.
- ❖ **BUSINESS INTELLIGENCE CENTER OF COMPETENCY:** A cross-functional organizational team that has defined tasks, roles, responsibilities and processes for promoting and executing the effective use of BI across an organization.

Key Client Benefits



GREATER EFFICIENCY: Data retrieval and integration are now easier to manage across all areas of the agency.



DATA HAS MORE VALUE: Improved capture processes has led to increased accuracy and speed of reports.



IMPROVED COMMUNICATION: The agency's data sharing efforts will improve among other state agencies.



DATA WAREHOUSE FEATURE: A central repository allowing disparate data sources to be better managed.



SCALABLE: Work can be completed in phases with more advanced BI areas receiving prioritization.



FUTURE WORK: Progress can now more easily be outlined, defined and directed.

Trinity Technology Group has been leveraging automation to solve government business problems for over 20 years. Our talented professionals work hand-in-hand with you to create dependable and extensible solutions.

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