DataAgility

CFA

Driving fire safety and prevention with advanced analytics

Central analytics platform

Timely decision-making and efficient reporting

'I wanted to take a moment to express our gratitude for the efforts and contributions the Data Agility team have provided throughout our engagement in relation to the DataHub project. Your teams dedication, expertise and commitment have been invaluable to the success of the Project."
Ryan Lewis - Senior Manager CFA

Challenges

- Legacy reporting solution
- Needed real-time data
- Highly complex volunteer management

Results

- Modern, agile and scalable platform
- Effective workforce planning and dispatch
- Real time incident management
- New fire analytics and predictive capability, empowered data scientists

Background

The 21st century is seeing increased incidences of major rural fire events. In the past 20 years Victoria has been devastated by the deadly fire events such as Black Saturday and the Black Summer bushfires.

The Country Fire Authority (CFA) is Victoria's volunteer fire service. With 1000 permanent staff and 50,000 volunteers they are the front-line dedicated to reducing the occurrence and impact of fires and other emergencies across the state. The nature of rural fires and specifically bushfires means that the operational setting is often highly complex.

In addition to their primary mission, the CFA offers various services and programs, including education, advocacy, and community management.

Efficient reporting is a critical component of the CFA's operations. Leaders require real-time data on district incidents, including fire locations, response teams, equipment usage, and casualty figures. Coordinating the diverse workforce and compiling and reporting information from all CFA branches, particularly rural ones, posed a significant challenge. The CFA recognised the need for a new, centralised data platform to enhance their analytics and reporting capabilities.

Challenge

Established in the 1940's, CFA has seen significant evolution of its firefighting equipment, vehicles and safety procedures but its data capabilities had barely moved for in the 21st century:

- The 20-year-old data warehouse was inefficient, hampering its ability to process and analyse data effectively
- Compiling real-time data from various sources into a centralised system was challenging
- Managing data from a widespread volunteer workforce added complexity
- New reporting metrics and strict security regulations required a modern solution
- There was a strong desire to improve the quality and timeliness of relevant scientific data to improve prediction

To radically improve operations and analysis CFA wanted to build foundational capability for a contemporary data infrastructure and analytics platform with leading design, infrastructure, analytics and governance.

Solution

Data Agility developed an enterprise data platform that consolidated all CFA data from existing source systems into a central hub and contained all the capabilities CFA required. The work applied the Data Agility Azure Framework. The framework is specifically aimed to deploy and manage a data platform solution within the Microsoft Azure product suite. It applies Microsoft and industry best practice. The framework contains all the required activities for a successful implementation as well as the required tools and templates to reduce risk, implementation effort and cost. It includes:

- A standard approach for the implementation of data platforms in Azure
- Specialist Data Agility templates for capturing requirements and solution design
- Specialist Data Agility data architecture patterns for design of data stores and associated data models
- An ETL/ELT framework for ingesting, processing and transforming data
- A security model aligned with best practice
- Capability to build and run predictive models on large datasets
- Enhanced analytics and data modelling capabilities, providing deeper insights and more accurate reporting.

To ensure the CFA could sustain and scale the platform, Data Agility worked collaboratively with CFA business intelligence analysts and data engineers to provide them with the necessary tools and knowledge for internal development.

Results: Making an impact in the real world

These capabilities enable CFA to operate in a much more data-driven and decisive manner improving fire response together with community and fire-fighter safety. This together with the improved scientific capabilities means the organisation is more joined-up than ever before. The integrated platform enables:

- Effective workforce planning and dispatch
- Real-time fire analysis and response
- A scientific data platform enabling improved prediction and prevention
- CFA personnel being despatched to the right place at the right time with accurate timely information improving firefighting outcomes and firefighter safety
- Enhanced fire information being broadcast to the community improving safety and enabling individual decisions
- Improved forest and agricultural land and wild and domestic animal management outcomes through improve fire management

DataAgility

Data Agility are specialists in Data Analytics and Information Management. We support our clients to improve performance and resolve business issues through the effective application of their data.

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