Customer Case Study

Queensland Fire and Rescue Service

Service uses PASW Statistics to analyze data and predict potentially dangerous situations faster.

Situation

Queensland Fire and Rescue Service in Australia oversees the fire and safety practices that cover the state's 3.5 million people. The service's urban brigades cover approximately 83 per cent of the state's population while the remaining areas of the state are serviced by the authority's Rural Fire Service.

Critical issue

Until about 1998, the Queensland Fire and Rescue Service was tracking urban brigade information on fires, fire safety, and fire practices in a legacy database that was quickly becoming overloaded. The service did not have a fast, user-friendly method of obtaining data from its database to help it improve its fire-fighting practices and overall community safety. The organization needed to:

- Retrieve and analyze data quickly
- Enable the fire service to be proactive rather than reactive
- Complete statistical analysis automatically

Solution

Queensland Fire and Rescue Service turned to PASW Statistics to reduce the amount of time it took to retrieve and analyze the vital incident report statistics accumulated in more than 400,000 record files.

Results

- Extracted data from more than 400,000 consolidated record files in seconds rather than hours
- Reduced analysis time from three months to just a few minutes
- Saved the service more than $100,000 annually in human resource costs
- Enabled the service to measure success and place resources where needed

Until 1998, the Queensland Fire and Rescue Service relied on a legacy database called the Australasian Incident Recording System (AIRS). AIRS tracked details such as the time, date, and address of fires; the amount of property lost; the cause and cost of the fire; and the number of casualties—all with the goal of improving the fire fighting and emergency services provided to the public.

* *PASW Statistics, formerly called SPSS Statistics, is part of SPSS Inc.'s Predictive Analytics Software portfolio.*

At a glance

Country: Australia
Industry: Public sector
Founded: 1997
Company type: Public safety
Area served: 1.72 million square km. (1.1 million square miles)
Employees:
- 2,275 permanent firefighters
- 2,044 auxiliary firefighters
- 44,134 volunteer firefighters

Application

Process improvement

Solutions used

PASW® Statistics*

Unfortunately, the system was difficult to use, and thus the service completed very little analysis to help improve its performance. In order to improve fire and emergency operations throughout Queensland, the service needed to reduce the time it took to generate analysis as well as simplify its highly complex data extractions and analysis process.

Extracted data from more than 400,000 consolidated record files in seconds rather than hours

The service's statistician turned to PASW Statistics to consolidate the data files, increase the user friendliness of the system, and reduce the time it took to complete data analysis. Today, using the SPSS Inc. software, the service's statistician can now extract data from files in a matter of seconds—where previously the same process could have taken hours or even days.

Reduced analysis from three months to just a few minutes

Once that data is extracted, analyzing it now takes just minutes—and full reports can be generated in less than a day.

"Major detailed analysis of trends in incidents and response time—which would either have taken months or would have been impossible to complete prior to the application of PASW Statistics—are now possible," says Brian Maclachlan, principal adviser, statistical research and analysis, at Queensland Fire and Rescue Service. "Using PASW Statistics, one particular incident trend analysis that used to take us several months to complete can now be repeated and ready for publication in less than a day."

In addition, the service's monthly performance statistics—which measure performance such as emergency response times for each station in the state—can now be completed in less than two hours. The reports used to take a minimum of three days to complete.

"We now have people walk in and say, 'I need an analysis of how many fires there were in a certain region in a certain time period,' and it takes longer to print the analysis than it does to run it," Maclachlan says. "Prior to implementing PASW Statistics, I would have said 'Come back in a few months and we'll have it for you.' "

"Using PASW Statistics, one particular incident trend analysis that used to take us several months to complete can now be repeated and ready for publication in less than a day."

– Brian C. Maclachlan
Principal Adviser, Statistical Research and Analysis
Queensland Fire and Rescue Service

Saved authority more than $100,000 annually in human resource costs

Maclachlan estimates that the small cost of the statistics software saves the service approximately $100,000 annually, mainly through reduced human resource costs. "With the level of analysis that we do, if we did not have the PASW Statistics software, we would need more staff, and at least one more statistician—if not two," he says. "We can now run an analysis before we leave, and in the morning when we come in, it's all there. It's like having someone working for you—but you don't have to pay for it."

Enabled the authority to measure success and place resources where needed

"With PASW Statistics, I can focus on areas of analysis that have been ignored in the past. We're now actually using the data we're collecting," Maclachlan says. For instance, the service is using the data it collects to determine if the service's fire stations are operating in the right locations; to develop community safety programs in areas of high risk; and to determine what type of equipment—such as ladders versus medical equipment—is needed at which stations.

"We now look at internal processes such as forecasting in more detail. With a comprehensive overview of incident location and rate of occurrence, we can plan ahead for vital systems and equipment as well as predict potentially dangerous situations and do something about them before they become trouble spots," says Maclachlan. "We believe that if you can mine your records and get the findings to the relevant people quickly, the performance of your organization can only get better."

For more customer stories, visit www.spss.com/success.