

Improving Intelligence Analysis Through Cloud Analytics

A U.S. Government client had a legacy IT system that could not scale to meet the rapidly increasing size and complexity of incoming cyber attack data. This issue put mission success at risk as long indexing and querying times crippled the client's ability to provide real-time information for cyber defense. Booz Allen Hamilton helped develop a Cloud Analytics solution that increased data volume processing by a factor of six, enabling the client to analyze tremendous data volumes and decrease query times from up to an hour to seconds—all while greatly improving the quality of actionable analysis.

Data Volumes Outstrip Analysis Capabilities

In recent years, the client had seen existing data sets and new ones grow larger and faster than its legacy relational database could handle. Cyber data sets are large, often unstructured, and grow at exponential rates, making detection increasingly difficult. Long indexing and querying times crippled the ability to provide real-time information: Indexing 24 hours' worth of data could take up to 36 hours, large queries could take 45 minutes or more, and even small queries could take minutes. The legacy system's computational speed and design parameters also made it increasingly difficult to scale new and existing analytics to execute against growing datasets.

The lack of speed and actionable insight presented unacceptable opportunity costs because the client's

high-speed operations tempo required near-real-time results (e.g., knowing whether to stop someone about to board a U.S.-bound plane). The client needed a secure, scalable, and automated solution that would more quickly and precisely sift through growing mountains of data, thereby helping ensure that analysts' pipeline of prioritized, actionable information would meet current and future needs.

Cloud Analytics Overcomes Obstacles

The U.S. Government client called on Booz Allen to help improve mission performance while leveraging existing infrastructure. The solution called for advanced analytics, specifically predictive analytics to forecast potential events from existing data and anomaly detection to extract potentially significant information and patterns from normal background data. It also required cloud computing to apply the improvements across the client's huge volumes of structured and unstructured data in myriad formats.

Although most of the industry is focused on gaining IT efficiencies using cloud technology as the infrastructure, Booz Allen is focused more distinctively on applying Cloud Analytics and our in-depth understanding of client operational and mission needs to extract more value faster from massive data sets. Booz Allen recognized that dealing with such large, complex data volumes required various ways of approaching the client's problems

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and determining which solutions to provide. Without such insight, the client later would have risked even greater obstacles when the new systems could not adapt to changing needs.

In spring 2009, Booz Allen started building a secure private cloud that enabled our client to leverage more of its computing resources for advanced analytics. Reflecting Booz Allen's expertise in advanced analytics and data science, the final product combined sophistication with scalability to move from humans stitching together sparse bits of data to distilling real-time, actionable information from all data collected.

The new cloud solution provided immediate and striking improvements. Processing capabilities sextupled—from 50 gigabytes (GB) of new data per day to more than 300 GB per day—making new data available in minutes. Indexing of new data dropped to seconds, small queries took only nanoseconds, and even the largest queries had a maximum length fewer than 4 minutes. The new cloud solution provided immediate and striking improvements. By implementing aggressive indexing techniques, on-demand analytics, and pre-computed results for common analytics, the solution improved data quality and significantly reduced the amount of data that analysts needed to review.

Helping the U.S. Government Be Ready for What's Next

The cloud analytics solution that Booz Allen helped develop is now accessible throughout the client's organization and is part of a larger set of advanced analytics solutions that Booz Allen is providing. The success of this project has led other federal

agencies to express interest in adapting the solution for their own needs. These needs will only grow in the future. The White House Office of Management and Budget has dictated that federal agencies must strengthen their analytic capabilities to improve policy and operational decisions, lower costs, and improve mission effectiveness. This cloud analytics solution also can be used as a platform for future innovation. The client's analytical needs will change over time in often unforeseen ways, but the solution is flexible enough to support future evolution without reengineering the underlying IT architecture.

Ready to Help You

Our work with the U.S. Government is only one example of how Booz Allen's global strategy and technology consultants can help government organizations use advanced analytics techniques to improve processes and achieve vital mission goals. To learn more about the know-how behind this project's success and how it can help your team be ready for what's next, visit www.boozallen.com/analytics.

About Booz Allen

Booz Allen Hamilton has been at the forefront of strategy and technology consulting for nearly a century. Booz Allen is committed to delivering results that endure. To learn more, visit www.boozallen.com. (NYSE: BAH)

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