

## Federal Government Data Agency

Data Access and Dissemination (DADS) Project

### Business Challenge

In 1998 a federal government data agency launched a study into feasibility of automating Census survey cross-tabulations. At the time, the Agency relied solely on staff to produce cross tabulations. Staff analyzed the results and eliminated data that presented a confidentiality disclosure risk before releasing the tabulations to the public. The increased use of the Internet to access Census data spurred the search for automated solutions that could create tabulations on-the-fly while enforcing disclosure limitations normally imposed by statisticians.

### The Solution

Acumen Solutions provided MicroStrategy 7i application design, database modeling and data migration expertise to extend a self service Census reporting tool available via the Internet. OLAP cubes were discarded in favor of on-the-fly SQL generation in order to accommodate the huge number of combinations in demographic variables available to construct reports. The star-schema database was tuned to run queries in parallel across 24 processors in order to decrease the mean query execution time.

**100% success rate on  
the data deployments**

**Huge increase in  
website visitors  
interacting with the  
information**

In order to meet the client's need to automate disclosure business rules, compound metrics were built using vendor supplied statistical functions and custom built functions. These metrics were configured into filter objects that caused the MicroStrategy analytic engine to recognize and remove sensitive data from reports.

Using MicroStrategy Desktop Designer, reports and user accounts were configured to allow report caching, pivoting, and extraction into a variety of formats including Excel and PDF. In addition, Acumen Solutions used its knowledge and background with MicroStrategy database architecture to provide the Agency with customized metrics describing how its users were exercising the application. For example, the Agency was able to identify how many reports its State Data Centers executed within a given time period, what demographics people were most interested in and how often requests were denied due to disclosure rules. Business intelligence about the BI system itself helped the organization fine tune its rules and user training.

During the application's life cycle, the client decided to move from a DB2 database environment to an Oracle environment. Acumen solutions assisted in the planning and execution of the migration to ensure the application

functioned as expected following the move. The MicroStrategy metadata repository was migrated using MicroStrategy's Object Manager to automate datatype conversion, while the data warehouse was migrating using Informatica. MicroStrategy Intelligence Server was reconfigured to handle Oracle integration issues including differences between the way DB2 and Oracle handle temporary tables and Group By clauses.

### **Technical/Business Expertise**

- Database Architecture
- MicroStrategy solutions
- Oracle
- SQL

### **Return on Investment**

Acumen Solutions accomplished the following results for this client:

- Significant increase in the timeliness and accuracy of their data releases
- 100% success rate on the data deployments, meaning no data has been recalled due to data loading errors
- New data is now deployed to the site on a weekly basis, as opposed to quarterly
- The data dissemination web site experienced an increase in users from approximately 200,000 a month to a reported 1,000,000 visitors