

PopChart Helps the Bureau of Transportation Statistics Visualize Transportation Information

In 1998, Congress gave the Bureau of Transportation Statistics (BTS) a broad mandate to make it easier for government agencies and their constituencies to access and use transportation-related information.

Leaders in Congress made it clear to BTS that they and their constituencies were perpetually frustrated by how difficult it was to gather relevant transportation data; they had to search through several Web sites, contact many different agencies, and wade through thick bureaucracies to find what they were seeking. And once they obtained data, they had to sort through it and integrate it from various sources for analysis.

“Congress told BTS to provide a solution to this problem,” said Jeff Butler, Assistant Director, Office of Statistical Computing in the Bureau of Transportation Statistics, U.S. Department of Transportation. “First, Congress wanted us to consolidate transportation data across subjects, agencies and modes (including aviation, maritime, highway, transit, rail, pipeline, bike/pedestrian and others). Second, we were told to gather and report in a timely manner more complete information on the state of inter-modal transportation. For instance, what percent of people drive a passenger car to get to a different mode of travel such as rail, air or ferry to get to work? Lastly, we were required to develop a system that makes appropriate links to various pieces of information as quickly as possible, which would allow individuals and agencies to rapidly access data to answer their queries.”

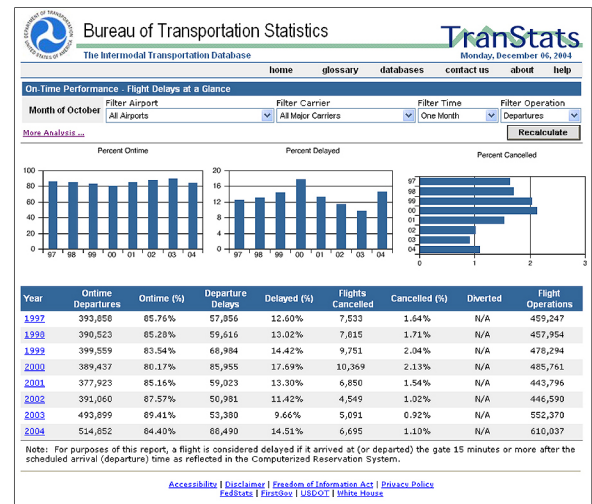
In response to this mandate, BTS developed TranStats, a new Web site designed as the ultimate location for research and analysis of transportation data.

The Business of Collecting Transportation Data

Through TranStats and the technology it incorporates, BTS collects, reviews and disseminates understandable transportation information for the United States Department of Transportation.

“A lot of intensive work goes into collecting and qualifying data for TranStats,” Butler said. “We have data sharing partnerships with virtually all agencies within U.S. DOT, as well as other federal agencies involved in collecting transportation-related data, including the Census Bureau, Energy Information Administration, Bureau of Labor Statistics, and U.S. Army Corps of Engineers”.

Key users of TranStats include universities; trade associations; transportation research institutes and consulting concerns; metropolitan and local planning organizations; U.S. Department of Transportation agencies; state Departments of Transportation; the U.S. Congress; other federal agencies that use transportation data; the media; and the public at large.



Careful Consideration of Top Technology

Drawing from this massive collaborative effort, BTS organized more than 100 databases in a way that allows users to enjoy efficient searching and retrieval of information, as well as interactive analysis.

“We’ve had several people ask us who we hired to be the outside consultant to organize the different technologies to make them work so well together,” Butler said. “We are flattered to say that we did it all ourselves.”

Some of the technology involved in this solution included iForce reference Architecture from Sun and Sybase. iForce combines SunFire Servers from Sun Microsystems with Sybase database technology. TranStats developed web pages from a combination of HTML, Java Script, ASP and XML.



Faced with this massive data collection, TranStats needed to find a way for users to clearly and concisely visualize the data—this need was met with PopChart 5.0 from CORDA Technologies.

Transforming Data Into Information

TranStats uses PopChart 5.0 to deliver interactive charts and graphs from any of its databases and web application servers to any browser quickly and easily. When a person queries the databases, all the resulting charts and graphs are generated dynamically on the fly—there are no pre-generated reports. After a query is received, the databases are searched in real-time and the relevant data is collected and sent to PopChart which displays the data in a variety of easy-to-understand chart and graph styles, such as bar charts, pie charts, line charts and others.. PopChart also allows TranStats users to click on a chart and drill down to view more detailed sets of data.

Section 508 Compliance

“Because we are a federal agency, our Web site has to be compliant with a law commonly known as Section 508, which means being able to support persons with disabilities, including the visually impaired. But we are also a statistical agency, and data visualization is critical to meeting the needs of our customers,” Butler said. Section 508 applies to all Federal agencies when they develop, procure, maintain, or use electronic and information technology. Under Section 508 (29 U.S.C. ‘794d), agencies must give disabled employees and members of the public access to information that is comparable to the information accessed by those without disabilities. Each of the graphs and charts generated by PopChart is Section 508 compliant. When TranStats displays a chart or graph, PopChart automatically generates text that clearly describes the chart or graph. Those who are visually impaired can have the text read to them by a screen reader. This feature saves BTS large amounts of both time and money because it is automatic.

Your Tax Dollars at Work

One example of TranStats’ capabilities can be found when a person wants information about flight delays at a given airport. TranStats provides the ability to query databases on flight delays by using tables, charts and graphs. Users can find trends in flight delays, airline rankings, or the worst time of day is for delays at a given airport—PopChart generates and displays all this useful and important information dynamically, as it is requested.

“I think we have seen a tremendous return on our investment thanks to the companies and the technologies we have chosen to implement for TranStats,” Butler said. “We are able to provide a major cost reduction in retrieving transportation data through streamlining information into a single portal. And in the spirit of E-Gov, TranStats helps people, including those with disabilities, get closer to their government and it saves a great deal of time and energy by efficiently reducing bureaucracy.”

Not only does TranStats save individuals and agencies time, money, and energy by delivering relevant information through a single portal, it also uses web-enabled technologies that provide greater functionality through charts, maps and other means of visualization that help turn data into information.

Even though TranStats came to fruition as a result of a Congressional mandate, as a federal statistical agency, BTS accepts the responsibility to help make sense of complex and disparate data. By collaborating with other agencies and implementing appropriate technologies, TranStats aims to be the “one-stop shop” for transportation data, and ultimately its goal is to help build a better transportation system through more timely, informed, and data-driven decisions.

