

The Federal government is the largest producer of information in the world and its information dissemination programs and products serve individual citizens, local governments, educational communities, and the business and industry sectors. One type of government-produced information that is essential to the decisions made by businesses, government agencies at all levels, and individual citizens is statistical information. Economic, health, and other statistical data is collected and distributed by dozens of government agencies but until recently this data has been mainly used by specialists who know how to find and interpret it. The development of world-wide web sites for statistical data, including the highly successful Fedstats site has made statistical data more accessible to ordinary citizens. Retrieving, displaying, understanding, and using this data requires good user interfaces. Building good interfaces requires strong models of how people process and use statistical data.

This project focuses on developing user interfaces that help citizens understand and use an essential statistical representation—data tables. A consortium of researchers from three universities and several Federal agencies will address two key problems related to this goal. First, the consortium will build upon previous work done by participants to determine how citizens understand and use tabular data in electronic form. This will entail empirical investigations with end users as well as usability testing of interface designs created throughout the project. Second, the consortium will create and test interface prototypes that allow users to display large tables and manipulate data within those tables. These designs will use direct manipulation and data visualization principles to minimize scrolling and mouse clicking and allow users to see specific data at several levels of context.

The basic research and development in these areas will be used in cooperation with government agency technical teams to create practical interface designs that allow citizens with different statistical experience to retrieve, understand, and use the wealth of statistical data provided by Federal agencies to make better decisions and to better understand their world. The results of these investigations will: a) broaden information-seeking and use theory beyond text-based repositories, b) inform the development of other systems for disseminating statistical information, and c) contribute novel interface techniques to the repertoire of designers of statistical repositories.