

Theresa Pardo, project director, Center for Technology in Government

Theresa provided the audience with an overview of how decision support tools have allowed UIG project teams to use information more effectively and robustly in UIG projects. Her observations about these tools and skill sets come out of mid-course outcomes in the program, which is continuing now with a second round of projects.

Data repositories have been in use since the 1960s. The model, which involves a repository of data that serves as input to decision support tools for analysis designed to inform business management processes, has remained the same. The questions that we need the data to answer are what have become increasingly complex. "We're all inundated with the pressures to pull together data to support decision making and to use data better and more effectively," Theresa said. Today, decision support systems and data warehouses are considered the most important technologies in the world (according to a 1997 survey of 1,443 CIOs by Deloitte & Touche).

There are several policy and technology trends driving the changes in the nature of and feasibility of large data repositories to support decision making. In terms of policies, the public sector is transitioning to outcome-based measures and budgeting processes. For example, in CTG's Homeless Information Management System (HIMS) project, New York State's Bureau of Housing Services needs to track how services are affecting the homeless population. A simple head count is no longer sufficient; today the agency needs to find out not only how many people are in the system and the types of services they receive, but also if those services are helping them break out of the cycle of homelessness. Theresa noted that customer-focused marketing is also finding its way into the public sector. This process finds patterns that enable government programs to do a better job of marketing their services to the public. This type of analysis requires large volumes of data. Technology trends include: high-volume transaction systems, scaleable information technology, parallelism, memory enhancements, the World Wide Web, client/server networks, and relational online analytical processing.

There are a number of opportunities, as well as risks, associated with the use of large volume data repositories, she said. Half of all data warehousing projects fail, most often because of a lack of understanding about why access to integrated information is valuable and how this combined information will be used. The data that populates warehouses has to be appropriate, usable, and clean. Theresa shared an anecdote about one private company that spent five years and \$15 million building a data warehouse, which ultimately sat dormant because the data was dirty. As Theresa said, "The data is a critical part of the process."

In the Using Information in Government Program, CTG spends a lot of time teaching system users to understand just how important it is to get usable forms of data, which will then help them do their jobs. The barriers to using government data for planning, operations, evaluation, and decision making are the focus of UIG investigations. Some of those barriers include:

- Lack of information use skills on how to search, assess, analyze, and present data;
- Lack of definition of managers' roles with no incentive to broaden their skills base;
- Lack of management support and incentives for government managers to become competent data users; and
- Lack of end users' understanding of the process and benefits.

And to add more difficulty to the situation, public sector managers have to deal with IT workforce shortages. "Not only are we asking people to use data differently, we're also asking them to do it using smaller IT staffs," Theresa said. Managers have to make choices about IT staffing and training and decide which new skills have to be made available to their staffs. Organizations must conduct strategic thinking and planning in order to ensure their program, research, and IT staffs have the required information-related competencies. Managers must make training, education, support and hiring strategies for acquiring and maintaining information use skills a priority.

Theresa described some of the information use issues CTG has encountered in the UIG projects. While technology is a focus of each project, the core work often involves examining existing business processes and policies and developing new ones. Organizations have to know what questions they want answered in order to determine what information is important in a system. "This is not technology; it's new thinking. This is a lengthy and tedious process. It's not the IT people, but the program people who can say which data is important and should be included in the system," Theresa said. Agencies have to create standard definitions of their services and data in order to get usable and authentic results out of it. Confidentiality policies have to be constructed to protect the people to whom the data refers.

All in all, new skills are required throughout the process:

- Users need to see the value in the use of the data
- Facilitators have to draw out business models
- Managers need to map business models to data sources
- Designers must draw out and capture new data models
- Developers have to work with new design models and tools
- Users have to get value out of the result
- Everyone must provide and assess feedback at every step

Theresa reiterated that the data repository model of using information to feed into decision support tools that affect management processes is still valid. "The model has not changed. But, the skills needed to do this kind of work are changing very, very rapidly," she said.