

Critical success factors for public sector information systems are well known: top management support, clear purpose, identifiable stakeholders, and realistic cost and benefit measures are just a few that contribute to a successful system. These factors are well known, but not easily achieved, even in systems that lie inside the boundaries of a single organization. Add the complexity of multiple organizations and networking technologies that offer the promise of integrated customer-focused services and system initiation, design, development, and operation become far more difficult. Systems that connect state and local government are a case in point.

A massive amount of information exchange occurs between state and local governments. Since there has been little coordination among agencies in how data is represented, processed, and exchanged, however, these interfaces between governments often lack standardization and can waste time and resources. To address these issues, the New York State Governor's Task Force on Information Resource Management, formed in 1996, established a local government standing committee to work on ways to standardize and simplify how state and local governments interact. The Task Force Standing Committee on Local Government has taken two actions to address these problems.

First, the Task Force released a Technology Policy about how state and local government agencies should work together when creating joint systems. Second, a Special Work Group on State-Local Information Systems was established and charged with the responsibility of generating a best practices document to guide future state-local collaborations on systems that integrate both levels of government into a single service delivery environment. The Center for Technology in Government undertook a project on behalf of the Special Work Group to document state and local government practices that lead to successful intergovernmental information systems.

## Current Environment

Coordinated state-local information systems offer the hope of integrated services to citizens and streamlined operations within government. Many government and professional organizations are searching for ways to make these essential systems more successful. The Council for Excellence in Government, a nonprofit, nonpartisan research organization, is identifying exemplary intergovernmental programs that involve city, county, and tribal governments as well as state agencies. Public Technology Inc. (PTI), a nonprofit group sponsored by the National League of Cities, the National Association of Counties, and the International City/County Management Association is researching local priorities for intergovernmental IT projects and policies.

NASIRE, the National Association of State Information Resource Executives, maintains an intergovernmental relations committee and recommends policies and technologies that help state governments streamline their operations. Recently, the Industry Advisory Council, a private sector group formed by the Federation of Government Information Processing Councils to advise federal agencies in their information systems efforts, established a committee to discuss intergovernmental projects. Other groups searching for best practices in intergovernmental systems include the National Governors Association, the National Telecommunications and Information Administration, and the National Newspaper Association (Federal Computer Week, February, 1997).

Since governments all over the country often conduct similar programs, there is great interest in effective ways to carry out common public services. In Florida, for example, hunting and fishing licenses are now available online via the Internet. Some states, such as Minnesota, have been thinking about state-local information systems for a long time. Minnesota established the Intergovernmental Information System Advisory Committee (IIAC) in 1974, and since then it has been encouraging local and state agencies to share data in an integrated way. The IIAC has offered grants to localities as well as technical assistance that enables local governments to transfer information more easily to state agencies.

Integration in human service delivery depends on a coordinated, integrated information system. In Oregon, Clackamas County has integrated the referral and eligibility screening service for welfare clients in the Pathways project (Newcombe, 1996). Rather than requiring clients to go to a particular agency for intake and eligibility screening, they can walk into any one of several state or local agencies to receive service. In San Diego, the New Beginnings project provides comprehensive service delivery, including medical care and housing, in a project that required cooperation among city and county governments, a school district, a housing commission, health center, nonprofit agencies and state agencies. Implementation of the integrated case management information system overcame barriers of intra- and inter-institutional communication in order to deliver effective services to families (Marzke et. al., 1994).

Reducing crime and tracking criminal activity is a concern of most states and local criminal justice agencies. In New York, CRIMNET offers a model of integrated criminal information that is moving forward to become a comprehensive database on the World Wide Web. Developed originally to support client/server computer

architecture, CRIMNET allows all criminal justice agencies, from the New York City Police Department to small local authorities and town courts, to locate rap sheets on suspected criminals. Over 300 agencies are now using the state-developed system to do background checks on individuals arrested for any crime.

Similarly, integrating health care information has become a prominent concern in states and among local health care providers throughout the country since more emphasis is being placed on the well-being of children and families, and since managed care has become the order of the day. Managed care requires coordination if the client is to be well-served. The primary care giver needs to communicate with other health care providers and often with multiple agencies to provide the best preventive care and the most effective overall health treatments. The New York State Office of Mental Health has cooperated with a county mental health center in Ulster County and the University at Albany to develop a decision support system that tracks clinician productivity within an environment of managed health care. The system allows administrators to track face-to-face time with clients, other clinician activities, and the overall picture of providing health care. They can find the root causes of financial difficulty and intervene before problems become severe. The mental health care center was able to leverage the information system to improve management practices.

Despite these examples, there is very little reliable information about what makes state-local projects succeed or fail. This study is one of the first attempts in the US to analyze and document practices that lead to success.

### The Project at the Center for Technology in Government

In the fall of 1996, the Governor's Task Force on Information Resource Management Standing Committee on Local Government asked CTG to conduct a brief "reconnaissance study" that involved field visits and telephone interviews with various local government agencies to better understand the information flows and working relationships between state and local governments. The results showed that there was a very wide range of conditions and experiences to consider. Among the key issues were indications that state-supplied software systems often did not take local needs into account and were seldom coordinated or integrated with either state or local practices and existing systems. Based on these findings and a descriptive inventory of existing and future projects developed by Stanley France of Schoharie County, a Special Work Group on State-Local Information Systems was created and the project focus was sharpened in an effort to identify, document, and disseminate information about existing "best practices." Eleven existing system projects agreed to participate in the study.

The eleven projects are briefly summarized in Table 1.

<b>Table 1. Eleven State-Local Information Systems Projects and Their Goals</b>	
Aging Network Client Based Service Management System Project	<ul style="list-style-type: none"> <li>• Single application and screening process for multiple benefits</li> <li>• Electronically link older persons and their caregivers with programs and services that preserve independence</li> <li>• Reduce administrative and service delivery costs</li> <li>• Satisfy multiple reporting and management needs</li> </ul>
Electronic Filing of Local Government Annual Financial Reports	<ul style="list-style-type: none"> <li>• Reduce local staff time and effort to prepare AFR</li> <li>• Reduce time for review of data by OSC</li> <li>• Increase accuracy and timeliness of data</li> <li>• More consistent data for interpretation and trend analysis</li> </ul>
Electronic Death Certificate Project	<ul style="list-style-type: none"> <li>• Reduce delayed and inaccurate death certificates and burial permits</li> <li>• Remote submission of information by authorized parties</li> <li>• Remote authorization of certificate through electronic signatures</li> <li>• Reduce data entry costs and errors</li> <li>• Immediate access to information</li> <li>• Reduce overhead for funeral directors</li> </ul>
Electronic Transfer of Dog License Data	<ul style="list-style-type: none"> <li>• 14% savings in processing, data entry, and corrections costs for a slight increase in management costs</li> <li>• Provide faster, more accurate, complete dog identification data to participating municipalities</li> <li>• Eliminate duplication and data entry errors</li> </ul>
Hunting and Fishing Licenses	<ul style="list-style-type: none"> <li>• Faster, one-stop, 24 hour, license shopping for customers</li> <li>• Eliminate accountables such as license validation stamps and decrease paper recordkeeping</li> <li>• Increase assurances that valid licenses are being sold</li> <li>• Increase the accessibility of data and facilitate marketing capability to increase revenue to the Conservation Fund and recruit and retain licensees</li> </ul>
Immunization Information Systems Project	<ul style="list-style-type: none"> <li>• Increased rates of fully immunized children in NYS</li> <li>• Improve medical record charting and information processing to help health care providers ensure</li> </ul>

	<ul style="list-style-type: none"><li>children receive age-appropriate vaccines</li><li>• Eliminate wasteful re-administration of expensive vaccines</li><li>• Reduce need for testing for previously administered vaccines</li></ul>
Probation Automation Project	<ul style="list-style-type: none"><li>• Reduce the paperwork load for Probation Officers and return that time to direct services</li><li>• Easier and faster access to criminal histories and pre-sentence investigation reports</li><li>• Eliminate duplicate data storage</li><li>• Access to administrative templates for common functions</li></ul>
Real Property System (RPS) Version 4	<ul style="list-style-type: none"><li>• Faster and more efficient system processing</li><li>• Code maintenance ability enhanced</li><li>• Support user requested enhancements</li><li>• Integration with local functions and commercial systems</li></ul>
SALESNET	<ul style="list-style-type: none"><li>• Eliminate the need for data entry at both state and local levels</li><li>• Reduce corrections resulting from illegible and incomplete forms</li><li>• Verified sales information will be available to agency staff and local assessment officials in 60 rather than 123 days</li></ul>
Local Social Services District Imaging Project	<ul style="list-style-type: none"><li>• Reduce caseworker access to files from days or hours to seconds</li><li>• Potential to redesign case records and workflow based on the functionality of electronic storage technology</li></ul>
Electronic Voter Registration	<ul style="list-style-type: none"><li>• Decrease time needed to register address changes, party enrollment, and voting eligibility</li><li>• Decrease data entry errors due to repetitive manual entry</li><li>• Decrease the flow of paper between local Boards of Elections, the State Department of Motor Vehicles and Health</li></ul>

### Project objective

The objective of this project was to identify and document the practices associated with successful state-local

information systems by studying the experiences of existing initiatives in New York State.

### Project workplan and participant roles

Figure 1 shows the time line for the project, including major phases of work and interim and final deliverables. Information needed to support the project objective was gathered in four ways: a literature and current practice review, an effort to describe the eleven participating projects in a standard way, a survey of both state and local participants in each project, and focus group interviews with the project teams. The Special Work Group served as both a planning and advisory body. Each state-local project designated a contact person who coordinated the participation of both state and local officials involved in their system initiative. CTG's role was to act as integrator and lead investigator.

**Literature and current practice review.** In order to better understand this complex world of intergovernmental exchanges, CTG conducted a literature search and was generally unable to uncover any significant formal research regarding this issue. Various scholars and government agencies have begun talking about the issues relevant to this project but have done very little to expand their theoretical work. The current practice review included a search of the World Wide Web and a series of telephone interviews with officials around the country engaged in state-local initiatives similar to ours. All were at a very early stage of development.

**Project descriptions.** Each state-local project designated a contact person who served a coordinating role including the preparation of a project description that followed a standard outline provided by CTG. These descriptions allowed a first look at the differences and similarities among projects and supplied important background information for the subsequent surveys and interviews.

**Survey.** To establish a framework for the effort, the Special Work Group developed a set of characteristics that exemplify an "ideal" intergovernmental information systems project. The characteristics are organized into four categories: project objectives, project management processes, system characteristics, and user support features. The group also identified barriers to project and system implementation. This work became the basis for a mail survey sent to approximately ten members of each project team. The respondents were divided equally between state and local participants.

### Figure 1. Project Workplan (View larger image)

**Interviews.** The results of the survey were used to construct an interview protocol that was then customized for each project. The intent of the interviews was to explore the survey responses of the project team with special attention to those areas where there was strong agreement between state and local participants about particularly successful elements. We also identified areas where each project differed substantially from the average across all projects. Thus, each group provided in-depth feedback regarding successful planning, design, and implementation strategies and also elaborated on areas where they had encountered particular problems. The interview notes were analyzed and compared across projects in order to identify the kinds of practices that seemed to lead to good results. Examples of each of the identified best practices were described in project-specific vignettes to explain in detail how a given project applied each concept in practice.

The final result of the project is a handbook of best practices called *Tying a Sensible Knot: A Practical Guide to State-Local Information Systems*. The contents of the handbook are summarized in Appendix A.