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# **Tying a Sensible Knot**

**A Practical Guide to  
State-Local Information Systems**

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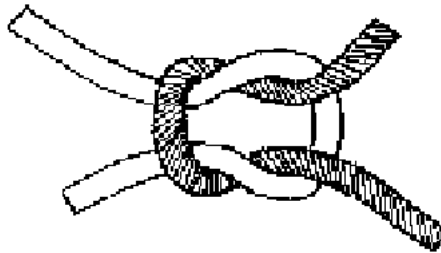
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# Tying a Sensible Knot



## A Practical Guide to State-Local Information Systems

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Intergovernmental Information Systems Project IIS-1

June 1997

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## Acknowledgments

This book is a result of a special collaboration among many members of the government community in New York State sponsored by the Governor's Task Force on Information Resource Management. It reflects the best thinking of scores of public managers about principles and practices for conducting state-local information systems projects in an environment of devolution and boundary-spanning policy and program initiatives.

The core of this book was drawn from the experiences of eleven state-local information systems projects underway in New York State during the first half of 1997. These projects were represented in the study by 150 individuals from 67 state, county, and municipal agencies as well as a number of non-profit organizations and professional associations. The Center for Technology in Government (CTG) gathered information from these project teams through group brainstorming sessions, a formal survey, and a series of focus group interviews. This book is a compilation of many insights, experiences, and recommendations regarding effective intergovernmental information systems projects. The specific projects are:

- Aging Network Client Based Service Management Project (CBS)
- Electronic Filing of Local Government Annual Financial Reports
- Electronic Death Certificates
- Electronic Transfer of Dog Licenses
- Hunting and Fishing Licenses
- Immunization Reporting and Tracking System
- Probation Automation Project
- Real Property System Version 4 Project
- SALESNET
- Local Social Services District Imaging Project
- Electronic Voter Registration

This book also benefited greatly from review by a wide variety of readers. Two sub-units of the Governor's Task Force on Information Resource Management, the Standing Subcommittee on Local Government and the Special Work Group on Intergovernmental Information Systems, provided guidance on the overall study and on the structure and focus of this document. In addition, the members of the Special Work Group participated in the identification of a set of ideal characteristics for intergovernmental information systems which provided the guiding framework for effort. We are grateful to all, and particularly recognize the leadership of the

Special Work Group co-chairs, Thomas Griffen, Executive Director of the NYS Office of Real Property Services and Stanley France, Director of Data Processing, Schoharie County.

Our search for best practices also led us outside New York State to experts in many other parts of the country. Many organizations shared their experiences in intergovernmental systems endeavors. We wish to thank:

Preston N. Barton, Interagency Coordinator/Planner, State of Kansas  
Kendra Briechle, International City/County Management  
Association

Dell Kinlaw and Pete Bailey, State Office of Information  
Resources, South Carolina

Jim Krautkremer, Intergovernmental Information Systems Advisory  
Council, State of Minnesota

Paul Nelson, Department of Administration, State of Wisconsin

Robert Olson, Coordinator, Sharing Environmental Education  
Knowledge, State of Minnesota

Dr. Costis Toregas, Public Technology Inc.

Margaret Theibert, Office of Information Technology, Ohio  
Department of Administrative Services

Special thanks goes to Robert Greeves of the Council for Excellence in Government for sharing his work and reviewing ours.

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## Executive Summary

State-local information systems operate in an environment of almost stunning complexity. They must recognize and account for enormous diversity of community settings, organizational cultures, structures, and staff. To be successful, they must deal with mismatched fiscal years; a range of hierarchical, team, and matrix management styles; and program-driven versus process-driven versus customer-driven work environments. They need to be meshed into the fabric of ongoing business processes and working relationships and relate to other information systems at both the state and local levels. They are clearly *not* “business as usual.”

We define a state-local information system as one that links state and local agencies together in a coherent service delivery or administrative environment. Such a system facilitates information sharing for the achievement of mutual program or administrative goals. These systems address both individual and common needs and result from ongoing discourse among state and local participants.

This book was written to help state and local governments work more effectively in this challenging environment. It presents both principles and practices, based on documented experience, that can lead to successful state-local information systems. The material is drawn from a cooperative project sponsored by the New York State Governor’s Task Force on Information Resource Management to identify and promote the practices that lead to effective state-local systems. The project involved more than 150 state and local officials engaged in eleven such projects. The participants helped document current issues, defined the characteristics of ideal systems, and, through surveys and interviews, shared their good and bad experiences.

### The ideal state-local information system

Project participants identified dozens of characteristics that they would expect to find in the “ideal” state-local information system project. These characteristics fell into four categories: objectives, project management methods, design features, and user support features.

- The objectives of a state-local system project set the stage for all subsequent activity and evaluation. They drive all the investments of all stakeholders. Clear compelling objectives make these investments pay off.

- State-local systems projects involve a variety of players in different organizations, at different levels of government, in different locations, and sometimes in both the public and private or non-profit sectors. An ideal project management process takes all this into account.
- Systems that connect state and local government usually affect work already underway in both places. Ideally, such systems integrate with processes, information flows, technologies, and staff capabilities already in place.
- State-local systems are implemented in a wide variety of organizational settings and used by staff with a range of skills and experience. The system will only be as successful as its users can make it. User support services are a key to that success.

## Barriers to achieving ideal intergovernmental systems

The project participants also noted that state-local system projects face important barriers to success. Among them are:

- A general lack of education and information about both technology and programs
- Lack of a shared, reliable computing and network infrastructure
- Goals that are too ambitious for the resources available to achieve them
- Human and organizational resistance to change
- Unrealistic time frames
- Organizational, programmatic, technological, and legal complexity
- Changing priorities
- Overlapping or conflicting missions among the participating organizations

## Working in the state-local environment

Nine fundamental principles to guide state-local information system initiatives emerged from this study of eleven existing efforts. These principles support shared vision and commitment – vision of what is to be achieved and commitment to a collaborative way of achieving it.

- 1. Understand the full range of local and state conditions.** In order for state and local levels of government to work toward the same or complementary goals, they need to understand and appreciate one another's abilities, strengths, and limitations.

2. **Have a clear purpose and realistic, measurable expectations.** Common understanding of a shared and clearly articulated purpose is crucial in state-local initiatives. Realistic, measurable expectations about achieving that purpose are equally important.
3. **Commit to serious partnerships.** Active, trustful partnerships focus on common goals and support healthy interdependence.
4. **Choose the right people for the jobs that need to be done.** State-local system projects demand a full range of management, programmatic, administrative, technical, and customer service skills.
5. **Expect to assemble a mixture of resources.** Most state-local systems are supported by a variety of funding and in-kind resources contributed by different organizations, with different rules of accountability.
6. **Communicate as if your survival depends on it.** Open interchange of concerns and ideas means an ongoing flow of complete, appropriate, timely, and accurate information tailored to the needs of each audience.
7. **Design a system that integrates with your business.** A new or revised system should take account of, link with, and enhance existing operations.
8. **Demonstrate and refine ideas before you implement.** Prototypes and demonstrations make ideas tangible to users and open to improvement throughout the design process.
9. **Let common sense guide you to workable solutions.** Trust the experience and good sense of participants to define needs and uncover practical ways to meet them.

## Best practices

The eleven projects demonstrated many effective ways to put the foregoing principles into practice. Through surveys, interviews, and project documents we identified nineteen best practices that should go into the design, development, and operation of any state-local information system. The individual projects provided many illustrations of how good managers adapted these practices to the needs of their specific projects.

- Define purpose and scope
- Choose a well-skilled and respected project leader

- Recruit the right project team
- Sell the project to decision makers
- Communicate often and clearly with stakeholders
- Finance creatively
- Adopt tools and techniques that can manage complexity
- Look for existing models
- Understand and improve processes before you apply technology
- Match the technology to the job
- Use industry standard technology
- Adopt and abide by data standards
- Integrate with related processes and practices
- Use prototypes to ensure understanding and agreement about design
- Choose a capable pilot site
- Make the best use of vendors
- Train thoroughly
- Support users
- Review and evaluate performance

# Chapter 1. Understanding the State-Local Environment

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Critical success factors for public sector information systems are no secret: top management support, clear purpose, committed 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.

Today's public management environment is becoming ever more complex. The interdependent nature of most new programs means complexity beyond anything we have experienced in any one organization, no matter how large. This is a time of cultural change in which much responsibility for public services is being "devolved" from the federal government to the states; states are trying to avoid placing "unfunded mandates" on local governments; and local officials are trying to serve citizens at lower cost but with greater attention to customer service and convenience. Add to this the complexity of working across multiple organizations at more than one level of government. And add new computing and networking technologies that promise, but don't guarantee, integrated customer-focused services. And remember that no single participant can afford to cover all the costs of this new way of doing business. Under these conditions, information systems that support public services are far more difficult to design, build, and operate.

This book was written to help state and local governments work more effectively in this challenging environment. It presents both principles and practices, based on documented experience, that can lead to successful state-local information systems. The material we present is drawn from a cooperative project sponsored by the New York State Governor's Task Force on Information Resource Management to identify and promote the practices that lead to effective state-local systems. The project involved more than 150 state and local officials engaged in eleven such projects. The participants helped us document current issues, defined the characteristics of ideal systems, and, through surveys and interviews, shared with us their good and bad experiences. The result is the advice and examples which follow.

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## The fundamentals of state-local relations

The state-local context for information systems is complicated and often poorly understood. State agency staff tend to think of local governments as more or less similar operations. They are not. Local officials tend to view state agencies as organizations with independent authority to make decisions and act. They are not. Not long ago, local government participation in state initiatives was often mandated by state law. Today that participation is more likely to be voluntary. Once, state regional offices covered the landscape and were stepping stones on the career ladder for both state and local officials. Today, state agency presence in localities is greatly reduced as is the likelihood that a person will have both state and local work experience.

### Enormous variation in local conditions

It is easy to think of local government as a single kind of public entity operating in our communities. Nothing could be further from the truth. There are many different kinds of general purpose local jurisdictions. New York has 57 counties stretched from Lake Erie on the Canadian border, to the isolated tip of Long Island; 62 cities ranging from little Sherrill with a population of 2,864 to mammoth New York City, and 932 towns that are home to as few as 47 and as many as 725,605 New Yorkers. There are also thousands of special districts that manage schools, fire protection, sewers and water systems, transportation services, and other specialized activities. Within each kind of local jurisdiction there is an infinite variety of specific conditions:

- physical size and geography
- population size, density, and demographic characteristics
- degree of and trends in urbanization
- types of businesses and educational institutions
- economic conditions
- volume of service transactions
- mix of state and local services offered
- kind, number, and specialization of staff
- kind, amount, and sophistication of information technology
- degree of formalization in organizational structure and functions
- the way these characteristics combine and interact to produce specific local conditions

In terms of mission, it is simplistic, but useful, to think of local government agencies as falling into three categories:

- **general purpose public service agencies** (e.g., County, Town, Village, and City Clerks) offering well-defined routine transactions initiated by citizens (e.g., County Clerks recording real property transactions, Town Clerks issuing fishing licenses).
- **specialized program agencies** (e.g., County Health Departments, City Assessors, Highway Departments, Local Social Services Districts) carrying out a dynamic set of related services that often involve ongoing relationships with customers (e.g., conducting public health clinics, maintaining road systems, preparing the city assessment rolls, determining eligibility for Food Stamps).
- **administrative support offices** (e.g., County Data Processing Departments, City Purchasing Offices) conducting a variety of centralized support and oversight functions (e.g., developing and operating various information systems or conducting centralized procurement).

In addition, local agencies respond to an array of elected officials, some of whom are department heads (such as the Clerks) and others who are responsible for overall executive and legislative functions (such as Mayors, County Executives, County Legislators, and Town Council Members). New York's strong traditions of local autonomy and "home rule" mean that these officials take seriously their authority to act independently of the State or to exercise the options that state programs provide.

## **State agencies operate as specialists in the middle of the federal system**

State agencies have some common characteristics, but also many variations. They all belong in some way to the Executive Branch of state government. With a few exceptions, such as the separately elected State Comptroller, their chief executives are usually appointed by the Governor, and most staff are appointed and compensated under the laws of the Civil Service system. Their missions and programs are defined in state law, but many are decisively shaped by federal requirements. Their budgets come from the annual appropriations process in which the entire state budget is divided into many portions according to the policy agreements made between the Governor and the Legislature. Some have special authority to generate revenue through fees or other methods.

A number of state agencies carry out programs that place them squarely in the middle of the federal system. Their programs are strongly influenced, if not wholly defined, by federal laws and regulations. They turn federal requirements into statewide policies, programs and procedures that have to work in all corners of the state – urban and rural; affluent and poor; industrial and agricultural. They usually manage statewide implementation through local governments as their agents. Each state agency tends to deal with one or very few kinds of local counterparts throughout the state (the State Health Department deals mostly with County Health Departments, the Office of Real Property Services deals mostly with City and Town Assessors and County Real Property Directors). Few state agencies deal with local jurisdictions in their totality.

State agency staff tend to be highly specialized in their professions. Although all agencies have a cadre of general administrators and support staff, they are mostly made up of people with specialized skills and training. They are somewhat removed from the “street level” implications of programs, but highly focused on the statewide policy implications of their decisions. In addition, state agency staff work in an environment of great political and philosophical diversity and need to understand and deal with a wide variety of competing preferences for how state programs are carried out.

## **Changes in the nature of intergovernmental authority and activities**

Three trends are reshaping the nature of intergovernmental relations: public demand for services that make sense and operate at reasonable cost, the shift of authority away from the federal government to the states and localities, and movement away from mandated programs to optional ones.

- **Public demands for sensible, cost-effective services.** Increasingly, citizens and businesses demand that government programs make sense, work predictably and efficiently, and show a consistent, intelligent face to the public. They expect one-stop, same-day, customized services instead of the fragmented, duplicative, and lengthy processes that have often characterized government operations. Often, separate programs serve the same people, but without regard for the fact that they require the same information, or impose conflicting requirements, or result in costly duplication of effort. Programs that meet public demands for quality and effectiveness often require coordination, collaboration, and integration among multiple units of state and local government as well as private industry and non-profit service providers.



- **Devolution of authority.** Our recent political history has seen a dramatic shift of focus away from Washington toward state capitals in such critical public programs as Medicaid and Welfare Reform. These are the largest program devolutions in a line of actions stemming from Model Cities and Revenue Sharing in the 1960s and 70s to the block grants of the 1980s. The shift of authority for programs and services toward states in many cases means a shift of responsibility to localities. As states redesign their welfare programs, for example, they often give local governments a number of local program options. This is an attempt to customize programs to local conditions at either the state or local level or both. One effect is more local control. Another is even greater complexity due to local variations in statewide programs.
- **Mandates vs. voluntary local participation.** As states take up the responsibility of newly “devolved” programs, they are mindful of traditional and growing local opposition to unfunded mandates. It is now common for local participation in state initiatives to be voluntary in whole or in part. This philosophy has positive effects on the localities and encourages the state to be more creative and responsive to local conditions in order to attract local participation. However, voluntary participation also leads to expensive parallel programs when some localities are willing to adopt a new way of working while others stay with the old way.

## Changes in the technology tools of public management

The decade of the 1980s introduced powerful new computing and communications technologies to government operations. Today at the end of the 1990s, the old, rigidly structured, inflexible technologies and systems of earlier decades are beginning to be joined or replaced by more flexible systems that rely on networks, new methods of electronic communication, industry and international standards, and very powerful hardware and software tools. Technologies such as electronic imaging, electronic workflow, e-mail, electronic data interchange, and the World Wide Web make it possible to share and transport information in ways that could not be imagined in the 1970s. These tools now make integrated programs technically feasible, although by no means easy to design, implement, and operate. However, the electronic revolution has not reached into every corner of our society or every government office that serves local communities. The wide discrepancies in technical capacity from one place to another severely limits the degree to which these new tools can be applied to program management and information sharing goals.

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## What exactly is a state-local information system?

We define a state-local information system as one that links state and local agencies together in a coherent service delivery or administrative environment. They facilitate information sharing for the achievement of mutual program or administrative goals. These systems address both individual and common needs and result from ongoing discourse among state and local participants.

Coordination among the staff and objectives of different government units presents special challenges because it is not “business as usual.” This coordination effort must recognize and account for the diversity of organizational cultures, structures, and budgetary processes found in the range of government units affected. A successful coordination effort must deal with mismatched fiscal years; a range of hierarchical, team, and matrix management styles; and program-driven versus process-driven vs. customer-driven work environments. And these are just a few of the factors that contribute to the enormous complexity of state-local systems projects.

To overcome the fragmentation that often exists because of this complexity, state-local information systems must meet the critical needs of all the participants, and provide services within an integrated framework that includes shared goals, shared technical and physical infrastructure, and shared financial and human resources. One expert says, “the boundary-spanning aspect of intergovernmental information systems implies a high degree of coordination and mutual respect among managers, planning teams, and implementation efforts” (Kumar, *MIS Quarterly*, 1996). We couldn’t agree more.

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## In search of the ideal state-local information system

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 is identifying exemplary intergovernmental programs that involve city, county, and tribal governments as well as state agencies. Public Technology Inc. (PTI), a non-profit 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, formed 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 (Varon, FCW Government Technology Group, 1997).

In New York State, the Governor's Task Force on Information Resource Management Standing Committee on Local Government formed a Special Work Group on Intergovernmental Information Systems in 1996 to work toward this goal. The Work Group developed a set of characteristics that exemplify an "ideal" state-local information system project. The Center for Technology in Government used these characteristics in a study of existing projects in the state to identify those practices that were leading to success in a variety of areas. Some of the most important ideal characteristics are presented in four broad categories below:

## Characteristics of ideally formulated project objectives

The objectives of a state-local information system project set the stage for all subsequent activity and evaluation. They drive all the investments of all stakeholders, and therefore should have these characteristics:

- System goals are based on well defined program or business needs.
- All participants in the project agree about how the system will serve the needs of citizens.
- The system objectives are reasonable given the resources available to support it.
- The system objectives have the support of elected officials and top management.
- The objectives include performance measures and a post-implementation evaluation.

## Characteristics of an ideal project management process

State-local systems projects involve a variety of players in different organizations, at different levels of government, in different locations, and sometimes in both the public and private or non-profit sectors. An ideal project management process takes all this into account and has these features:

- All participants are treated as equals and have a substantial stake in the project's success.
- All participants understand the project management process and the roles and responsibilities of all the players.
- Available financial resources are invested where they are most needed.
- Information about project status is shared frequently.
- The participants engage in joint problem identification and problem solving.
- Collectively, the project team has the skills needed to carry out a successful system project.

## Ideal design features

Systems that connect state and local government are usually systems that affect work already underway in both places. They involve processes, information flows, technologies, and staff capabilities already in place. An ideal design therefore has these characteristics:

- The system is designed to integrate with the related systems and business processes of the affected organizations.
- Standard definitions of key data are used by all participants.
- The system is designed to support information sharing across organizations and programs.
- Built-in safeguards assure system security and the confidentiality of sensitive or personal information.
- The design adheres to commonly accepted industry standards and does not rely on proprietary technologies.
- There is no need for parallel or supplemental systems or procedures to support the service or business functions that the system is designed to meet.
- Built-in features reduce human effort and minimize duplication.
- The design takes into account the current technical capabilities of the participating organizations.

## Ideal user support features

State-local systems are implemented in a wide variety of organizational settings and used by staff with a range of skills and experience. The system will only be as successful as its users can make it. These user support features are therefore part of the ideal system:

- Complete user documentation (e.g., manuals, troubleshooting guide) is available.
- Continuing, up-to-date, and accessible user training is offered.
- Ongoing, adequate technical support services are available for system maintenance and enhancement.
- An ongoing, adequate “help desk” supports users.
- There are built-in data management and analysis capabilities for users including access to local, regional, and statewide databases for planning and evaluation purposes.
- Some provision is made for local modification based on local needs, including low-tech and no-tech options where local conditions do not support high-tech solutions.

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## Barriers to achieving ideal intergovernmental systems

These ideals are difficult to achieve because there are significant barriers to overcome. The Special Work Group identified many problems that state-local projects encounter. Among the top ranking barriers are:

- **A general lack of education and information about both technology and programs.** Technology has rapidly permeated our society and most of our institutions, but government organizations often lag behind others. Government staff are often ill-informed and poorly trained in how to use information technology effectively. This is particularly true of the newest technical tools and platforms. Public employees, both users and technicians, seldom have ready access to skills training or professional development that continuously upgrades their knowledge and skills. Conversely, technical staff typically have few opportunities or incentives to learn the goals and operational realities of service programs and therefore tend to focus too sharply on the technical tools and too little on the programmatic reasons for new systems.
- **Lack of a shared, reliable computing and network infrastructure.** Existing state-local systems suffer from the lack of a ubiquitous, consistent computing and communications infrastructure. This makes it difficult or impossible to operate technology supported programs in a consistent way from place to place and organization to organization. It also slows and complicates communication among state and local staff involved in joint programs. New York State is currently embarking on a statewide networking strategy called the NYT that will help solve this problem for future systems.
- **Goals that are too ambitious for the resources available to achieve them.** Project goals are often laudably comprehensive, but the staff, equipment, and dollars allotted to achieve them are often underestimated. Projects that could succeed on a smaller or incremental scale, fail to achieve success when their goals and resources are played out on different scales.
- **Human and organizational resistance to change.** In some cases, new state-local initiatives threaten a comfortable status quo. They promise big changes that not every participant is eager to see. Fear and resistance to change exist even in the best planned and managed projects. A new way of doing business threatens existing personal, organizational, programmatic, and political conditions by rearranging authority, influence, power, resources, and information. This natural

resistance is exacerbated when new programs arrive with too little advance information, weak leadership support, inadequate user participation, too little funding, and less than comprehensive training and orientation.

- **Unrealistic time frames.** Many information systems projects take considerably longer than originally planned. State-local projects, with their added layers of legal and organizational complexity are especially vulnerable to this problem. Since so many different organizations are affected by them, time delays lead to serious difficulties in planning for and adjusting to changes in operations.
- **Organizational, programmatic, technological, and legal complexity.** The state-local environment is extraordinarily complex on a number of dimensions: organizational size, number of organizations, number and skills of staff, size of budget, financial practices, legal authority, programmatic focus, and geographic dispersion. Existing systems are an important complicating factor. Only so much change is possible in an environment that depends on information systems already in place – especially ones that were designed and implemented using older technologies. There is little that can be done to simplify this environment, making it essential that project participants have a good understanding of how it will affect their activities.
- **Changing priorities.** Any project that lasts more than a few months is subject to changing priorities for time, money, and attention. This problem is multiplied in state-local projects since each participating organization is likely to be working in circumstances and with responsibilities and priorities that are unique to its own situation.
- **Overlapping or conflicting missions among the participating organizations.** Government organizations at both the state and local level have public service and public accountability goals that can overlap or conflict, even when they are engaged in a joint project. For example, a state agency manager may have the role of project leader which implies facilitation, collaboration, and support for other participants. At the same time, that person's agency may have oversight responsibility and financial and other regulatory means of compelling local compliance with state requirements. In other projects, non-profit service providers may be project participants sitting at the same table with state or local officials who license and inspect their programs. These roles are all legitimate but can conflict and become a source of difficulty in sorting out the working relationships within the project team.

The barriers are undeniable. But the potential benefits of successful systems are compelling reasons to go forward with well-designed state-local initiatives. Table 1 shows how the participants in the eleven projects we studied characterize the benefits of the systems they are developing.

| <b>Table 1.<br/>Expected Benefits of Eleven State-Local Information Systems Projects</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 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>* Less time required for review of data by OSC, more accurate information sooner</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 the 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 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 available to agency staff and local assessment officials in 6 vs. 123 days</li> </ul>  |
| Local DSS 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 record storage</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 Election, and the State Departments of Motor Vehicles and Health</li> </ul>   |



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## How this book can help

This guide was written to support public sector managers at both the state and local levels who are participating in intergovernmental information systems projects. These officials are responsible for defining, delivering, and managing information systems that connect different levels of government in a single service delivery channel or an integrated administrative process. We have tried to design the guide to be useful to management, program, and technical staff in all phases of project activities.

This first chapter and Appendix A set the context for what follows. Appendix A contains brief project summaries and comparisons of the eleven projects we studied. We encourage you to review them now before proceeding to the discussions in Chapters two and three which present principles and practices based on these project experiences. These are presented in rough logical order, but they are meant to be used iteratively. There is no single “recipe” for success in these complex projects. Instead, there are some overarching considerations (we call them principles) that define the context for these projects; and there are a variety of techniques (we call them best practices) that can be used in different situations.

Chapter 2 presents nine fundamental principles that managers of state-local projects should understand and follow. Chapter 3 presents 19 practices that have good track records for success. For each practice, we present two or three vignettes from the New York State projects we studied that illustrate how good managers are adapting these ideas to real-life situations. The appendices contain brief summaries and comparisons of the eleven projects, an annotated bibliography of related reference material, and a list of World Wide Web sites that contain more information on intergovernmental topics.

# Chapter 2. Principles for Working in the State-Local Environment

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This chapter presents a set of nine fundamental principles to guide state-local information system initiatives. These principles support shared vision and commitment – vision of what is to be achieved and commitment to a collaborative way of achieving it. Sometimes the pressure to design and establish a system quickly leads us to forget or downplay some of these principles. However, our best practices research clearly shows that each one is important to success.

## **Principles to Guide State-Local Information Systems**

**Understand the full range of local and state conditions**  
**Have a clear purpose and realistic, measurable expectations**  
**Commit to serious partnerships**  
**Choose the right people for the jobs that need to be done**  
**Expect to assemble a mixture of resources**  
**Communicate as if your survival depends on it**  
**Design a system that integrates with your business**  
**Demonstrate and refine ideas before you implement**  
**Let common sense guide you to workable solutions**

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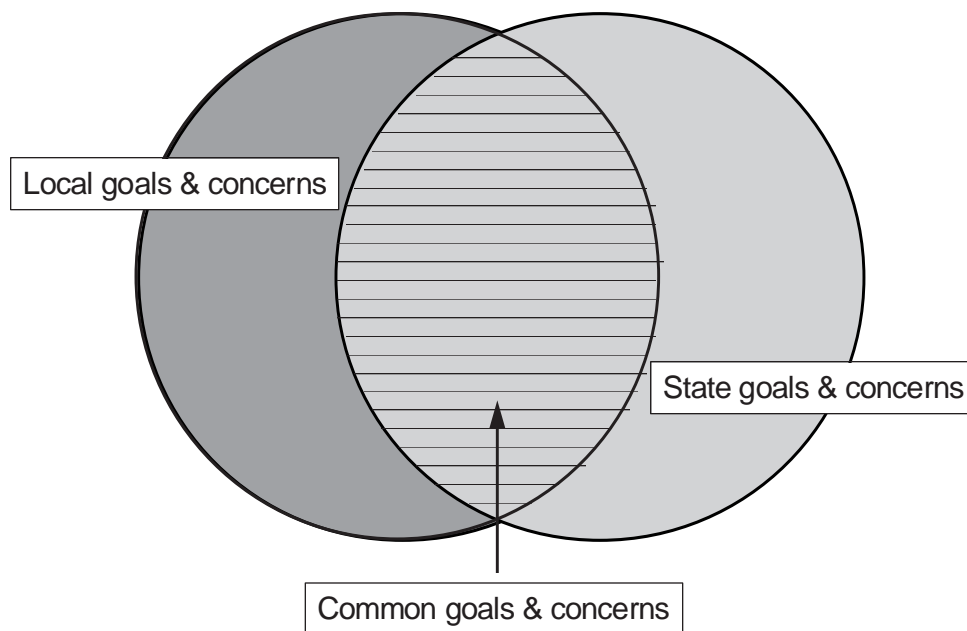
## **Understand the full range of local and state conditions**

*In order for state and local levels of government to work toward the same or complementary goals, they need to understand and appreciate one another's abilities, strengths, and limitations.*

Local and state governments deal with overlapping goals and concerns. A successful state-local project requires an understanding of the conditions under which both state agencies and local governments operate. Since the system will connect two or more levels of government and is likely to be in operation all over the state, its designers need a deep appreciation for the full range of issues that both kinds of participants face.

It may be fair to say that there are as many unique local conditions in the State of New York as there are local governments. Nevertheless, there are several areas where almost all local governments share common concerns. These include:

- **A generalist's point of view.** Only in the larger local jurisdictions will groups of individuals be found concentrating on or specializing in a single function. More often one person or only a few people must handle many issues. As such, they have a keen appreciation for integration, coordination, and functionality in information systems and other business activities. They are less impressed with a particular technology than with what it can do to support sensible operations.
- **Proximity to customers and constituents.** There is an immediacy in the connection between local government employees and their customers that seldom exists at the state level. Local officials live with those they serve. The same person buying a fishing license or applying for a building permit is also the person they see at school and social functions. In addition, local officials are often elected officials themselves or work directly with elected office holders.
- **Operations that respond to local conditions.** Geographic location, population demographics, and the conditions and characteristics of the local economy all lead to big differences in the demand for various services. Local governments are also affected by their proximity to state borders, urban centers, and recreation destinations. The techniques that are suitable in one place may be very unsuited to another.



State level concerns are often different from local ones, but they are equally legitimate.

- **Size and scope of programs.** New York State is one of the largest governments in the United States. Many state agencies oversee programs and budgets several times larger than many entire state governments. Since New York is geographically and demographically very diverse, there are often variations and options within single programs that make them more complex and difficult to manage and evaluate.
- **A specialist's point of view.** State agencies are very specialized in the work they do and the kinds of staff they employ. While every agency has general administrators and support functions, all are characterized by a particular programmatic focus and professional perspective – you won't find a public health point of view dominating the work of the Tax Department. Nor will you find much of the generalist perspective so common in local governments.
- **Operations that respond to statewide and national conditions.** Some state agencies are constantly under the scrutiny of the federal government as well as a wide variety of well-organized interest groups. A number of state agencies receive a considerable portion of their funding from the federal budget and this often entails a wide array of federal requirements. Further, while their main focus is on the particular mission assigned to them by state law, state agencies are also part of a much larger "organization" called state government. They must deal within a larger political climate including the Governor and the Legislature which together represent constituencies and philosophies that are far more diverse than those faced by most local officials.

Both state and local agencies share much in common as well: a focus on citizen services and public expectations, concerns about workforce size and skills, a need to manage internal operations efficiently and effectively, and the problems of tight budgets, public accountability, competition for tax dollars, and decreasing staff. This area of common concern is large and is a solid basis for collaborative action.

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## Have a clear purpose and realistic, measurable expectations

*Common understanding of a shared and clearly articulated purpose is crucial in state-local initiatives. Realistic, measurable expectations about achieving that purpose are equally important.*

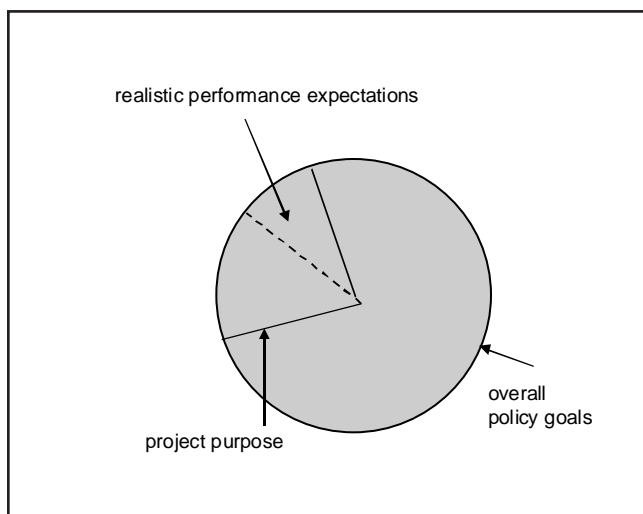
Establishing a clear and common understanding of the purpose for a project is difficult under the most ideal conditions. In state-local information systems projects, it can be an even greater challenge. Establishing common purpose, defining scope, and managing expectations in a state-local project are considerations of the first order. Since there are so many players who see the world from different points of view, confusion about these critical factors can spell serious trouble down the road.

State-local projects are initiated for several reasons: in response to new laws, in response to customer demands, and in response to a changing environment, including new players and new tools. They operate in a broad programmatic or administrative context, but need to be focused on some particular goal. For example, there is great concern in our society about the effectiveness of public education. A project could address any of a hundred purposes within this broad concern: to connect elementary school libraries to the Internet, to help schools prepare students for jobs in today's economy, to make higher education affordable for all who qualify, and so on. No single project can address all (or even many) purposes; we need to agree on a specific focus for each particular effort.

Once a purpose is selected, we move to questions of reasonable expectations given the current situation and the money, time, people, and commitment available to change it. How shall we define and prioritize these expectations? How will we define and measure achievement?

These expectations are sometimes called the “project scope.” The scope is defined by balancing desired goals against available resources and a realistic timeline. The project team must also create an implementation

plan and a project budget which will match good intentions against an actual commitment of people and funds and establish a mechanism for ongoing project management. This process also entails defining outcome measures, setting targets for performance, and building in ways to gather the information needed to conduct performance assessments.



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## Commit to serious partnerships

*Active, trustful partnerships focus on common goals and support healthy interdependence.*

The dictionary defines *partnership* as “two or more people engaged in the same enterprise, sharing its profits and risks, and acting as trusted agents for one another.” When we say partnership, we mean this active, interdependent, trustful relationship.

Governments, like most organizations, have transformed their sense of organizational boundaries and interorganizational relationships. A new level of interdependence among government jurisdictions and agencies is being fostered by public policies that assume a high level of information sharing and interaction. In this environment, old ways of relating to one another are increasingly ineffective.

In the paper-based world, local governments received one-size-fits-all directives, prescriptions, and instructions from state agencies and responded by sending the required reports, forms, and money back into a monolith called “The State.” State agency consideration of local conditions, processes, and technical capability was not an issue. Each local agency worked out its own methods. Everyone was an independent actor. Today, with extensive information sharing requirements built in to most programs, we rely more and more on computerized systems that need to connect to all local jurisdictions. Local operating realities now often clash with state-level system requirements. In order to administer these more complex programs and take advantage of these new tools, both levels of government must view each other as partners in an overall effort to deliver services to the citizen or to improve the administrative functioning of government.

|  |
|--|
| <p><b>Willing engagement in the same enterprise</b><br/><b>Shared benefits &amp; risks</b><br/><b>+ Trustful relationships</b></p> <hr/> <p><b>= Partnership</b></p> |
|--|

The particular need for partnership models in state-local projects stems from their unique nature. For example, in most of the projects we reviewed, the local participation resulted from local motivation to participate in an improvement effort. The local involvement was not mandated and funding was, in general, not provided by the state. Collaborative efforts built on partnership

models of behavior are required to manage this new kind of engagement. The art of identifying appropriate partners, and building and maintaining active, trustful relationships must be practiced in all information systems projects, but particularly in state-local projects. The partnership model is often the best way to engage non-government participants as well: non-profit service agencies, professional associations, and private sector organizations may all be engaged in the partnership.

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## Choose the right people for the jobs that need to be done

*State-local system projects demand a full range of management, programmatic, administrative, technical, and customer service skills.*

A project is only as good as the staff assembled to carry it out. In state-local initiatives it is important that both levels of government be well-represented and assigned appropriate responsibilities. It is equally important that the project team have complementary skills and experience in a variety of areas including management, program, administration, technology, and customer service.

A good rule to follow in considering project team members is to identify all project stakeholders and then establish a team that represents the range of interests on this list. A well-respected leader is a critical ingredient as well. Choose one who can build bridges within this diverse constituency.

Individually, team members should:

- Be committed to achieving project goals
- Understand and be capable of carrying out their roles
- Be able to make the necessary time commitment on a day-to-day basis
- Be available for the long term
- Possess good communication skills
- Be willing to represent both their own points of view and others in the larger community
- Contribute individual expertise to problem-solving while remaining open to a variety of approaches

As a group, the team should:

- Represent all stakeholders
- Possess the needed mix of specialized knowledge (on technical, management and policy topics)
- Possess the needed mix of practical skills (organizational, political, marketing, writing, technical, etc.)
- Be able to work together toward a common goal
- Form a strong cohesive unit capable of working cooperatively to identify and solve problems.

## Expect to assemble a mixture of resources

*Most state-local systems are supported by a variety of funding and in-kind resources contributed by different organizations, with different rules of accountability.*

Some state-local information system projects are funded by a dedicated single budget appropriation, but more often you will need to finance a systems initiative with a more complex mixture of resources. Anyone who has been a recent college student (or parent) is familiar with the “financial aid package.” For most people this means assembling the financial resources to pay for a college education out of some combination of savings, current earnings, grants, loans, and work-study assignments. In the context of state-local information system projects, the “package” may comprise: direct appropriations from either state or local legislatures or both, federal grants or formula matching funds, foundation grants, in-kind efforts, re-deployed existing resources, and private sector partnerships.

The problem for you, as for the college student, is each resource comes with its own rules and requirements. Some can only be used for certain expenses, some can be used for any expense, some require a re-application every year, and others are guaranteed for longer periods of time. This situation demands a high degree of managerial expertise and creativity. Your project goals and milestones need to be linked to the resources that will be available in varying amounts, at various points in time, with different kinds of strings attached.

While a more traditional project budget might look like this on a spreadsheet . . .

| Three-year Project Budget                  |                 |                 |           |          |          |        |            |               |
|--|-----------------|-----------------|-----------|----------|----------|--------|------------|---------------|
| Total State Appropriation: \$2.125 million |                 |                 |           |          |          |        |            |               |
|  | Local Personnel | State Personnel | Equipment | Software | Training | Travel | Consulting | Total by Year |
| Year 1                                     | 50              | 50              | 35        | 75       | 100      | 5      | 40         | 355           |
| Year 2                                     | 200             | 50              | 0         | 50       | 500      | 25     | 100        | 925           |
| Year 3                                     | 200             | 50              | 0         | 50       | 500      | 25     | 20         | 845           |
| <b>Total by Purpose</b>                    | 450             | 150             | 35        | 175      | 1100     | 55     | 160        | 2125          |

. . . your project may look more like this:



| Three-year Project Budget        |                 |                 |           |          |          |        |            |                                |
|----------------------------------|-----------------|-----------------|-----------|----------|----------|--------|------------|--------------------------------|
| Total Available: \$2.125 million |                 |                 |           |          |          |        |            |                                |
| Year & Source                    | Local Personnel | State Personnel | Equipment | Software | Training | Travel | Consulting | Total by Year & funding source |
| <b>Year 1</b>                    | 50              | 50              | 35        | 75       | 100      | 5      | 40         | 355                            |
| <b>State</b>                     |                 | 50              | 25        | 50       | 50       |        | 20         | 195                            |
| <b>XYZ grant</b>                 | 30              |                 | 10        | 25       | 50       | 5      |            | 120                            |
| <b>Local</b>                     | 20              |                 |           |          |          |        | 20         | 40                             |
| <b>Year 2</b>                    | 200             | 50              | 0         | 50       | 500      | 25     | 100        | 925                            |
| <b>State</b>                     |                 | 50              |           | 50       | 250      |        | 80         | 430                            |
| <b>XYZ grant</b>                 | 60              |                 |           |          | 200      | 25     |            | 285                            |
| <b>Local</b>                     | 50              |                 |           |          |          |        | 20         | 70                             |
| <b>ABC grant</b>                 | 90              |                 |           |          | 50       |        |            |                                |
| <b>Year 3</b>                    | 200             | 50              | 0         | 50       | 500      | 25     | 20         | 845                            |
| <b>State</b>                     |                 |                 |           |          | 200      | 25     | 20         | 245                            |
| <b>Local</b>                     | 100             |                 |           |          | 100      |        |            | 200                            |
| <b>ABC grant</b>                 | 100             | 50              |           | 50       | 200      |        |            | 400                            |
| <b>Total by Purpose</b>          | 450             | 150             | 35        | 175      | 1100     | 55     | 160        | 2125                           |

The picture may be even more complicated since the “local” line may actually be made up of many separate local entities, each with its own funding rules and cycles. Some sources of funding (like the XYZ grant) may expire before the project is complete. Others need to be sought before your needs are fully known. As a result, you need people on your project team with the skills to manage this mixed package of resources. They will need to allocate them to various purposes, spend and account for expenses according to the sponsors’ various rules, and accumulate integrated cost information to support any reasonably complete program evaluation.

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## Communicate as if your survival depends on it

*Open interchange of concerns and ideas means an ongoing flow of complete, appropriate, timely, and accurate information tailored to the needs of each audience.*

Effective communication is a critical element of success in any project. Without good communication you foster a project management environment that breeds confusion, poor coordination, and frustration. Communication is both the enabler that allows the exchange of information and ideas among project team members, and the conduit through which information flows.

When we talked with various participants in each of the projects and asked them to identify some of the lessons they had learned from their projects, most answered that good communication was a critical element of success. Moreover, when we asked them to identify some of the problems they had encountered, many of the answers were linked to communication issues. Clearly, communication is one of the most important aspects of any collaboration, and the success or failure of your project may ultimately depend on how well you communicate.

It was apparent from our discussions with the project participants that good communication involves more than just sending and receiving messages. It also involves establishing and maintaining good relationships. Some of the projects we examined demonstrated that positive and supportive relationships among individuals was a key to success. When we asked them to elaborate, participants told us that when they treated one another with respect, equality, and courtesy, communication was not a barrier and it was easier to tackle and solve problems. Often the opportunities for informal discussion while on the road or preparing for a major event led people to get to know and trust one another as individuals, not just as professionals linked by a common work assignment.

Another important aspect of communication is how best to send and receive information among the wider group of stakeholders so that they stay engaged, informed, and enthusiastic about the project. Unfortunately, there is no single formula for accomplishing this, since the goals of every project and the project stakeholders are never the same. You need to understand the nuances of your particular project and set up communication techniques that are tailored to your project's particular circumstances. Spend some time thinking about who your stakeholders are, what their information requirements are, and what techniques can be used to best communicate with them.

For example, if you are establishing a cross-functional project team that consists of customer service and technical staff from local government, and program and technical staff from a state agency, you need to consider the common information requirements for the entire team (such as project timeline information) and the specific information needs of the various stakeholders (such as documentation for the technical staff about updates in software releases). The communication techniques you use to keep the cross-functional team apprised of general project activity will be different from the techniques you use to inform the technical staff of changes to the system software. In the first, you might use periodic team meetings or status reports to keep everyone involved and informed. In the second, you might use formal release notes, memos, e-mail, and telephone calls to discuss the details of software changes as soon as they occur.

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## Design a system that integrates with your business

*A new or revised system should take account of, link with, and enhance existing operations.*

No government information system stands completely on its own. Each system is implemented in a work environment that includes people, processes, organizational relationships, and other systems. State-local system initiatives typically augment or enhance rather than replace existing systems. As a consequence, design teams should aim for systems that recognize (at least) and integrate (at best) with the staff, activities, and existing information systems of both the state and local participants. To do this, the team needs to be aware of the existing components of work, optimistic about the potential for integration, and realistic about the willingness, resources and technical infrastructure that are necessary to change existing processes.

Understanding the user environment and customer expectations and factoring them into the design or re-design of a business process helps ensure that some diversity in these environments can be accommodated. Engaging in a collaborative effort to define standard business requirements and a standard set of data elements are two ways to help assure uniformity of purpose and content while allowing for some customization in implementation. Armed with these commonly developed requirements, local agencies can often work with both state and local resources to implement a sensible system. Local MIS Departments, where they exist, can be valuable partners in working through the issues of integration at the local level. Sometimes local MIS staff are bypassed in the connection between state and local program agencies and this usually means an important point of view and source of expertise has been left out of the equation and local technical staff are then unprepared to support the system locally.

Systems need to be integrated at the state level as well. In our study, we saw many examples of multiple systems created by different units of a single state agency that were developed at different points in time for different programmatic reasons, with no attempt made to connect to existing systems in the same agency. The same problem exists in the need to connect systems across different state agencies.

Government programs and systems also affect people and organizations outside of government. Some programs link government agencies and non-profit service providers or commercial businesses whose own processes need to be harmonized in some way with the government system. If the functional ability of these external players is important to the success of the state-local system or program, they need to be at the table along with their public sector counterparts.

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## Demonstrate and refine ideas before you implement

*Prototypes and demonstrations make ideas tangible to users and open to improvement throughout the design process.*

The admonition “look before you leap” is grounded in practicality and applies to many situations in the realm of system development and project management. Most of the projects we studied have integrated this concept into their practices. When developing a large, integrated system that involves stakeholders with a wide variety of perspectives, it is a good idea to find out how others have approached the same issues. Often other states, localities, or private businesses have experiences to offer as models. Before you choose a single approach and decide to implement it, look closely at similar experiences and devise a set of reasonable alternatives for your system. Look carefully at each possible approach to identify all of its strengths, weaknesses, and implications. Build a paper model or system prototype to show these ideas in more concrete form to users, customers, and other stakeholders. Invite feedback and act on it. In doing this you may uncover problems that you did not see at first, or you will refine your approach, or you may adopt a new approach that is better than the original.

One of the best ways to accomplish this is to use a process improvement method to either understand and improve upon existing processes or create new processes to satisfy business needs. There are many methods to choose from such as business process improvement, business process innovation, information engineering, and prototyping. Each of these techniques, when used correctly, engages designers and users in a focused dialog that yields a great deal of information that helps everyone make better choices. They produce maps, diagrams, small prototypes, and other illustrations that engage groups in a common understanding of the problem, process, or system. In the projects we studied, we saw how effectively these demonstrations could:

- replace many individual mental pictures of the new system with one tangible representation that all can understand in the same way,
- remove some of the fear and resistance to change that comes from simply not knowing what to expect,
- give designers and users a common vocabulary for asking and answering questions and recommending changes and additions,
- encourage people to think not just about the system itself, but about how it will fit into existing operations.

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## Let common sense guide you to workable solutions

*Trust the experience and good sense of participants to define needs and uncover practical ways to meet them.*

The nature of intergovernmental projects provides many opportunities for managing relationships, work, and problems in novel ways. These opportunities can be mined for creative approaches to moving project activities toward successful completion.

Optimal solutions, however, do not always entail the use of the most elaborate technologies or the latest management techniques. You don't necessarily need a "brand name" tool or pre-packaged commercial methodology. Generally the most valuable resources any project possesses are the individuals involved. Often the best solution is found in the common sense and practical experience of the participants. They bring to the table a wealth of knowledge about programs, practices, people, and politics.

Many of the projects we studied involved veteran professionals with a strong sense of what could work in a given situation. They had a deep appreciation for the limits of time, money, staff, and authority, but also had a willingness to try realistic new ideas. Since there are so many local agencies involved in each project, participants often learned from one another and shared their insights with state staff as well. Many project teams understood the critical importance of project planning, process analysis, data definitions and the like because they had encountered these as practical problems in their regular jobs. They knew these were important considerations and usually figured out how to deal with them without the aid of expensive consultants or special project management methodologies or software tools. In projects strapped for resources, this was often the only way to get the job done. Happily, it is often a very effective way.

## A summary of reasonable expectations

The principles outlined above should lead you to well-informed, reasonable expectations about two things: what you should expect from others and what you should be prepared to do yourself to make a state-local project succeed. We've summarized these expectations in the following table:

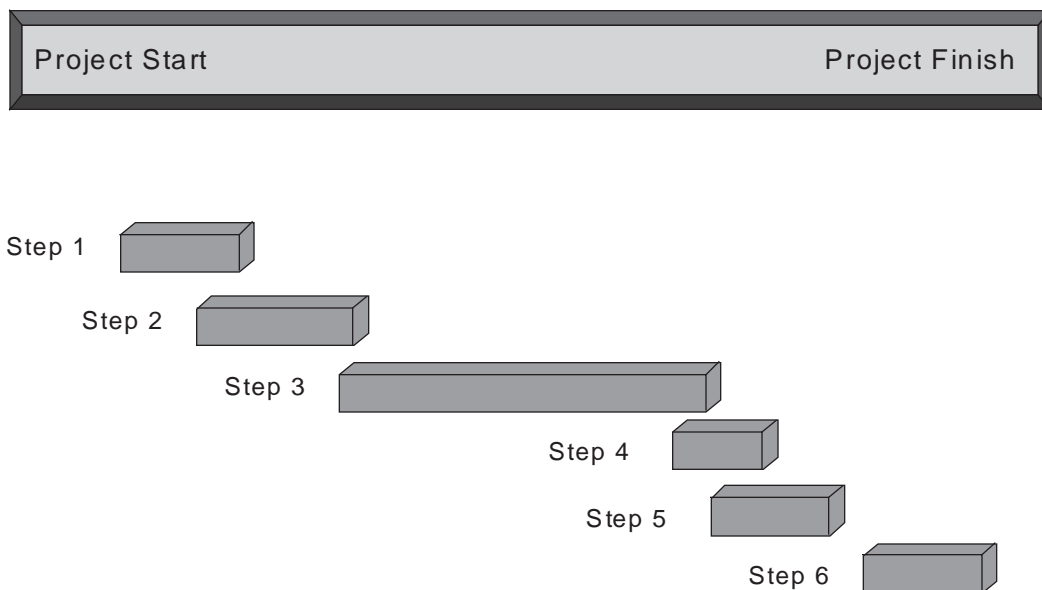
| If you are a system designer you should expect ...  | If you are a system user you should expect....  |
|---|---|
| * to design a system that meets program goals and the operational needs of users  | * the system will be designed to meet your most important programmatic and operational needs  |
| * to make a case to your leaders that sufficient resources need to be invested in the project   | * to make a case to your leaders that sufficient resources need to be invested in the project   |
| * to spend a significant amount of time in the field observing and assessing program operations   | * the project design will take into account how you actually do business  |
| * to design a system that integrates as much as possible with existing systems and business practices                                     | * to change some of your processes and business practices in order to abide by reasonable standards and take advantage of the new system  |
| * to solicit and act on comments and recommendations made by users  | * your experience and knowledge, especially related to direct service delivery will be given full consideration                           |
| * to commit a substantial amount of time, staff and other resources to activities that define, design, test, and implement the new system | * to commit a substantial amount of time, staff and other resources to activities that define, design, test, and implement the new system |
| * to communicate regularly with users and offer ample opportunity for them to influence the design-in-progress                            | * to devote time to the review and improvement of interim products, prototypes, and other partial results                                 |
| * to compromise on your desires for a standard statewide solution   | * to compromise on your desires for a customized solution   |
| * to take into account the need to link this system with other systems  | * to advise designers about the necessary linkages to other related state & local and non-governmental systems                            |
| * to prepare, deliver, and maintain effective training material and other support services  | * to devote sufficient time and resources to staff training, to have ready access to ongoing support services                             |
| * to encounter problems and work cooperatively with users to resolve them   | * to encounter problems and work cooperatively with designers to resolve them   |

# Chapter 3. Best Practices

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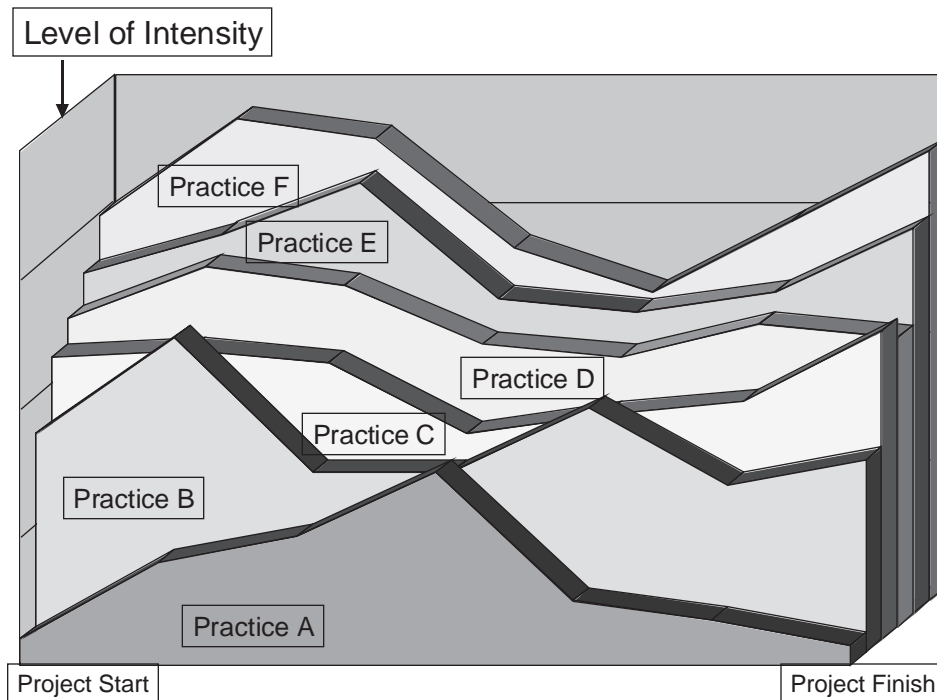
This section presents some exemplary practices used in eleven state-local government information systems projects in NYS. In each section we discuss one kind of practice that contributes to successful state-local information systems, outlining some specific things that project participants can do to help reach their goals. Each best practice narrative is followed by examples of various approaches used in these projects to achieve the desired result. The examples are not prescriptions. They are intended to demonstrate how good managers adapted these concepts to the specific needs of their projects.

Each state-local system project requires a somewhat different mix of these practices to guide it to a successful conclusion. These practices are presented in a logical order of first consideration. However, we stress that these are practices, not steps. A traditional way of thinking about a project is that a number of steps need to be completed in order to reach the project's goals. If that kind of thinking could be captured in a picture, it might look like this chart:





While this kind of thinking is useful and important for managing activities, we urge you to think of these best practices, not as steps, but as ongoing areas of attention that exist throughout the project. The level of intensity that any one practice commands at any point in time will vary. For example, the amount of attention you give to defining the project purpose and scope will be very high early in the project and then take a back seat to other considerations – but it will not disappear. The first definitions of purpose and scope will be revised and refined as you and your partners learn more about the problem you are solving and the resources at your disposal. Even after the purpose and scope seem fine-tuned, there are likely to be new participants or new audiences who need to understand and accept it. This kind of thinking would look more like the chart below.



Keep these differences in mind as you move through this chapter.

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## Define purpose and scope

### **Probation Automation: Focus on core functions**

The criminal justice community recognizes that the county-level Probation function is a critical piece of the public safety puzzle, but one that has typically been left behind in the technological advances that have become standard in the rest of the community. While larger counties with MIS departments have managed to support their Probation offices fairly well, small and medium-sized operations (50 of the 57 in the state) can offer little to help Probation officers do their jobs. In order to identify the best focus for this project, a design team consisting of both state and local officials examined the current functions performed by all 57 County Probation Departments and New York City. The team interviewed Division of Probation and Corrections Alternatives senior staff to identify the functions of the Probation Departments. Based on these interviews the functions were categorized into three levels:

Level I encompassed mission critical probation core functions (such as criminal court investigations and supervision; family court intake, investigation and supervision; and basic administrative functions like restitution collections).

Level II covers alternatives to incarceration such as community service and house detention.

Level III functions involve external treatment providers such as mental health and drug and alcohol treatment services.

An analysis of Probation functions across the entire state revealed that all local departments perform Level I activities, but Level II and III activities are more specialized and not evenly distributed. This categorization was reviewed and affirmed by those interviewed and continues to be reviewed in the project activities. Since the project's purpose is to provide one standard support system, the scope of effort was limited to support Level I functions. All participants agree that this focus will generate the greatest return on investment in the system.

Projects are initiated in a variety of ways. Some result from policy changes, new legal mandates, or changes in elected office holders. Others emerge from grassroots discussions about the need to change, advance, or simplify a process, take advantage of a new technology, or factor in a new information requirement. Regardless of the motivating factor, a well-defined project purpose and scope are instrumental to success. Defining purpose and scope means resisting the lure of the “end all” project and relying instead on realistic incrementalism. We would all like to create the system that addresses all of the information and service delivery needs of state and local agencies. However, to be realistic and successful these needs must be identified, discussed, categorized, and prioritized. The huge range of programmatic issues must be culled for a project purpose and scope that are consistent with those priorities. Further, these needs must be analyzed against the resources that are likely to be available. Ideally, the selected purpose and scope not only attack current problems, but lay a foundation or build capacity to deal with future ones.

State and local participants must work together to identify the information and service delivery needs of a particular program area. Participants from the eleven state-local projects in this study used professional meetings, association conferences, and regular meetings with state agency regional representatives to carry out the needed discussions. State and local participants both saw these meetings as opportunities to discuss program needs and to establish working groups able and willing to participate in a project to address shared goals.

Resources are a key factor in decisions about project scope. The projects we reviewed were typically volunteer efforts at the local level and subject to restricted funding at the state level. Even when both state and local participants are convinced of the overall value of a specific project purpose, they are often unable to bring enough resources to the table to support a broad scope of work. Therefore, collectively prioritizing needs and collaboratively working toward a scope that is appropriate for the available resources serves all participants well. Communication skills, creative funding, and effectively managing existing resources all figure prominently in this stage of the project activities.

**Immunization Information:**  
**Compelling purpose is a strong incentive**

The NYS Immunization Information System (NYSIIS) project operates under state law and a grant from the US Centers for Disease Control (CDC). It comprises four demonstration projects around the state involving the voluntary participation of counties, physicians, and other health care providers. The demonstrations are testing the feasibility of a statewide registry for tracking and monitoring the immunization of children. The demonstration sites have wide discretion in how they set up their systems and forge partnerships with both public and private participants. The State Health Department hired a system integrator to work with each site to design a system that suits the needs and capabilities of that community. The ultimate goal is to increase the rate of fully immunized children in New York State through an electronic recordkeeping process that enables health care providers to track and recall children to ensure that they are age-appropriately immunized, and allows public health officials to assess the immunization status and issues in their communities.

The project is a difficult one for several reasons: it deals with highly confidential information, it needs to be integrated into the existing systems and practices of thousands of physicians and other practitioners, and none of the players is required to participate. The demonstration sites need to sell the project to health care providers and health agencies in an environment where busy practitioners with existing (mostly proprietary) business systems have few dollars to spend on new systems and little interest in systems that deal with a single issue like immunization. The project leaders at both the state and local levels have worked hard to bring all parties to the table and address these issues in each site, but one factor stands out as a reason why participants become and stay engaged in this project: The purpose, (healthier children) and the project focus, (ensuring full immunization against communicable diseases) are clear, compelling, and widely endorsed. Since no other state has tackled this problem in a way that will serve New York's needs, the participants look on themselves as pioneers and have a real stake in its success.

Projects often begin with open-minded brainstorming sessions aimed at garnering as many solutions as possible. It is important in this early phase of idea generation to be relatively unburdened by real-world restraints in order to maximize the number of ideas and potential solutions produced. Once ideas are generated, the team must choose from among the possible solutions and evaluate each using such factors as alignment with project purpose, cost, benefit, skill level required, time requirements, and ability to integrate with other systems.

The following steps very briefly outline a procedure which can help your team establish and stick with realistic expectations:

- Prioritize project goals
- Identify resources - funds, time, people, technologies
- Consider time constraints - legal requirements, timing for maximum impact, budget cycles, elections
- Generate a wide range of potential solutions
- Choose those solutions which can best support project goals while staying within resource and time limits
- Identify measurable performance factors within those solutions
- Map out an implementation plan; assign responsibilities and chart project milestones on a timeline
- Create a budget
- Monitor and manage the project over time
- Discuss progress with the team regularly and adjust the project plan as needed

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## Choose a well-skilled and respected project leader

### Automated Dog Licensing: Leadership communication makes a difference

A project leader can make the difference in the enthusiastic adoption of a new information system, especially one that's entirely voluntary on the part of local participants. In New York's development of a system for the Electronic Transfer of Dog Licenses, the project leader was by all accounts an excellent communicator and salesperson.

She established a monthly division newsletter called "Dog Tales" to keep the Town Clerks informed, and, according to one project participant, the newsletter "helped to generate support, interest, and participation in the project." Everyone potentially affected by the new system received a copy, so there were no communication gaps while development was underway. One local official said that sometimes in dealing with the state, local governments find out about procedural changes after the fact. This project was different, he said, because the leader asked for local advice all along the way, and worked hard to make sure that the project would allow local governments to use familiar technology. Another participant said that the leader was honest and open, assuring everyone that there was no "hidden agenda" – only an attempt to save money while ensuring access to quality data.

In virtually every project interview, we heard about the need for solid, consistent, positive leadership. Leadership was viewed as setting the stage for a project and ensuring timely and meaningful completion. Yet, the personal nature of leadership and our individual desire to be effective leaders often leads us to deal with it in abstract terms. The projects we studied, however, showed how specific leadership traits help produce successful outcomes. A successful project leader:

- **Is able to span the psychological and political distance between state and local governments.** The project leader should possess an understanding of both state and local needs and capabilities – and be able to balance them. This balance is crucial to the success of state-local projects since buy-in and cooperation are two of the fundamental aspects of a successful project.
- **Has a good understanding of local operations.** Since these systems actually run at the local level, a project leader needs to appreciate the reality of local operating conditions. Some successful leaders had experience as both state and local officials, others spent time in their careers working in field or regional offices of state agencies, and still others who did not have these kinds of work experience made it their business to understand local needs and operations from the local point of view.
- **Enjoys the confidence and support of top-level executives.** Getting and keeping top leadership support is the best way to keep a project on the front burner. It is essential to maintaining resources and to competing well against other government goals. Support from state level leaders gives local participants confidence in the project. Support from local level leaders helps ensure full participation and joint problem solving. Successful project leaders delivered on realistic expectations and kept their top executives well-informed and enthusiastic by communicating in terms that executive leaders value: return on investment, partnerships, options, early warnings and so on.

**Annual Financial Reports:  
Leaders bring out the best in each  
participant**

In a project to automate the filing of local annual financial reports, project leaders at the Office of the State Comptroller (OSC) worked hard to bring out the strengths of each participant. Time and again the local participants commented that the work they were asked to do was perfectly suited to their abilities. This meant that local participants were answering questions concerning functionality and were commenting on design characteristics rather than being concerned with the technical system design and software considerations. This demonstrated a leadership attribute that is essential to the successful implementation of an intergovernmental project – understanding the roles and capabilities of each participant, appreciating the limits of their time and energy, and then involving them in the areas where they are most needed. The work accomplished outside of the state-local meetings was focused on coordinating state agency efforts to apply technology to implement all that had been discussed with the local participants. Hence, when OSC and the local representatives reconvened, the technical considerations of previous proposals had been worked out, new products were on the table for discussion, and the meeting could again focus on the reactions and concerns of the local participants.

OSC project leaders also ensured a very professional work-oriented atmosphere. Meetings were held in off-site facilities that were appropriate for the kind of work being conducted. Trained facilitators were used in all meetings. Food and refreshments were provided at each meeting. Local officials felt these were tangible ways of showing that OSC cared enough to take the time to do the project “right” and to treat them as equals. Local participants commented that this level of preparation demonstrated not only concern on the part of OSC but also proved the project had considerable top management support, something which gave them even more confidence that the project would proceed to a successful conclusion.

- **Is an excellent communicator.** Project Leaders must be able to articulate project goals, explain how they will be achieved, and show how the goals will benefit all the stakeholders. They need to speak the languages of different audiences and provide the right information in the right format to meet those different needs. The leader needs to know when to use formal presentations, newsletter articles, fact sheets, briefing papers, and other methods of communication. Perhaps more important, the project leader needs to be a good listener and adept at encouraging others to communicate their needs and ideas.
- **Is a resourceful manager of people, time, and money.** The project leader is responsible for the effective use of project resources. Often he or she is also the person who identifies and encourages others to commit staff, money, or time to a project. Since it is unlikely that a project will be fully funded from one source, project leaders need to be entrepreneurial, inventive, and resourceful.
- **Is flexible and willing to seize opportunities.** Successful project leaders have a clear vision of where they want to go, but are quite willing to try a variety of ways to get there. In some cases, they started with one kind of approach, but later modified, or even abandoned it, in order to solve problems or take advantage of a different perspective. They also had the ability to know when the time was right to act, even when they had imperfect information or scarce resources. They recognized when key factors in the environment were ripe for change and capitalized on them in order to move their projects forward.



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## Recruit the right project team

### **Social Services Imaging Project: Clarify the nature of participation**

Establishing a project team with the right mix of program skills and technical understanding of the potential uses of imaging technology was a critical step in the Local Social Services District Imaging Project. To encourage local involvement, the State Department of Social Services (DSS) sent a letter to each County Social Services Commissioner inviting the Local Social Services Office to participate in the project. In order to assist the Commissioner in this decision, the letter included detailed information about the desired nature of local involvement. Selected counties were invited to participate in one of two groups: those counties which had been working with the State DSS on imaging related tasks were invited to participate in the pilot activities, while those who had begun to evaluate the role of imaging in their business processes or information access methods were invited to sit on an advisory board.

The invitation letter included the following project details:

1. A statement of the main task for the project
2. A statement of the qualifications of the individual to be designated
3. A statement of the time and travel commitments
4. A draft contract entitled "LDSS/SDSS Imaging Project Collaboration Contract." This document spelled out the project background, purpose, milestones, and expectations for all participants on the team.

This approach resulted in the formation of a project team which was fully aware of the roles and commitment they had taken on, as well as a team with the necessary programmatic and technology skills to carry out the work. It also generated the necessary top management understanding and support for the project.

The success of any intergovernmental information systems project generally depends on three factors working together: technology, management, and policy. If any of these areas are ignored in staffing a project team, the project is likely to have either short or long term problems or both. Without individuals capable of handling project management functions (timelines, workplans, budgets, recruiting) you run the risk of poor coordination, and wasted time and effort. If a project lacks adequately skilled technology personnel, it is likely that deadlines will be missed and applications may fail or contain crucial flaws that render the system inferior to the old way of doing business. Teams that do not include well-informed program and policy staff, especially those engaged in direct service functions, are likely to miss the boat on substantive service goals.

Moreover, the project team needs both state and local membership and the roles assigned to each person should take advantage of that individual's organizational location and professional background and skills. A survey we conducted as part of our study showed clearly that all participants had greater confidence in success when local officials played active roles as lead or co-designers. Local officials have the experience to understand the daily operational needs of any new project. They understand the street-level realities. As such, the early, active, and ongoing involvement of local government partners adds considerable value and ensures more complete success. It is also important to establish at the outset any limitations, such as travel time and costs, on local agency ability to participate.

**Electronic Death Certificate:  
Prepare the way with a business case**

The Electronic Death Certificate Project faced a formidable initial challenge – convincing and securing the participation of all the parties involved in the finalization of a death record. This group of critical players includes physicians, medical examiners, funeral home directors, and local government vital statistics registrars. Beyond this core group, many state and federal agencies, the courts, and insurance companies have a keen interest in the timely and legal verification of deaths. Technology-based improvements in the current paper-bound process needed the support and participation of all parties involved.

Despite the variety of stakeholders and the complexity of their interactions, the project initiators at the State Health Department and the New York City Registrar of Vital Statistics were successful in getting all parties to sit down at the table and begin mapping out their requirements. They accomplished this by first making a compelling business case that the project would benefit each participant. The case was documented in white papers that were widely distributed prior to any formal meetings. For example, the business case for NYC Registrars showed how a networked system would reduce time, cost, and errors. Each borough in NYC used to have a satellite office for vital records where business related to the people living in the borough could be conducted. Due to budget cuts these offices were closed several years ago. Now when funeral directors need an official signature on a burial permit they must travel to the central Registrar in Manhattan to obtain it. Even under ideal conditions, this trip can take several hours. When you consider there are more than 70,000 deaths a year in New York City and that most people live outside Manhattan, this makes for a considerable workload for all the funeral directors in the area. The white paper showed how network technology, including digital signatures, could allow them to obtain the needed authorizations without leaving their businesses.

These papers, with their focus on benefits to stakeholders, generated a great deal of interest in the project and willingness to attend the initial planning meeting. At that session, participants were already well-informed and able to focus on key issues such as protecting confidentiality and adopting electronic signatures that would enable them to achieve these benefits.

As a group the project team will need to set objectives, garner the support of many organizations, plan, design, test, implement, promote, and evaluate the system. Team members should be selected both for the skills they can contribute toward project completion and for the commitment they bring on behalf of their organizations. It is most likely that different team members will need to be involved at different levels of intensity. One approach is to assemble both a core working group and an advisory group. These can then be supplemented when necessary by outside consultants or contractors.

Using stakeholder analyses and similar tools at the inception of a project can greatly enhance your ability to identify and consider all the parties that may need to be represented on the project team and ensure they have a direct or representative voice in its development.

*“A successful project team needs policy, management, and technology experts with both state and local perspectives.”*

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## Sell the project to decision makers

### **Aging Services System: Establish a common vision**

When planning the Aging Network Client Based Service Management System Project (CBS), the NYS Office of the Aging (SOFA) together with the 59 Area Agencies on Aging (AAAs) recognized that for the project to be successful it had to be “sold” to key decision makers at both state and local levels of government. SOFA worked with the 59 AAAs to create a clear vision for the project: *“The goal of the CBS project is to restructure the Aging services network of New York State into an integrated, automated environment that supports the independence of older persons living in the State.”*

The project team members shared a clear and common understanding of the need for the project and its goals. These members in turn were able to communicate this information to the decision makers in their organizations to allow them to understand the benefits and goals of the project and thus gain their support. The project team identified key state and local stakeholders whose support was critical to the success of the project, including program management and technical staff and county level administrators, and developed an approach to communicating with these individuals about the project vision. They explained to the administrators how the CBS system would improve coordination of service delivery to clients by building on available family supports and ensuring that the service delivery system provided only essential services and programs thereby ultimately increasing the efficiency and effectiveness of local Aging offices.

Reasons for developing information systems vary from one project to the next. Some projects are designed to take advantage of new technology, others to improve delivery of services to customers, and still others to improve business processes or reduce costs. Although the reasons differ, the need to “sell” the project to decision makers is universal. This is a particularly important consideration for local governments, which often have to work with very small budgets and much competition for limited resources. Moreover, in an intergovernmental project, the “selling” process needs to be a coordinated effort that involves individuals from both the state and local levels. Very often the project objectives and expected benefits are not uniformly understood by all of the project stakeholders. A good way to establish common understanding, market the project to decision makers, and generate consistent support is to articulate a shared vision at the beginning of the project. This vision (written down and used consistently in important project documents and events) communicates to all stakeholders important information about why the project is being undertaken, what the expected goals are, and how the realization of these goals will benefit the various stakeholders.

There is always some cost involved in automation or new information systems, and some of those costs must be borne at the local level. Local investments need to be tied to local benefits. It is easy to show how a new road or sewer system will benefit a community. It is much more difficult to show how a new information system will do the same. Since local authorities need to make trade-offs among competing demands for resources, they, like all other investors, put their money (or time, or staff, or good will) where there is the greatest potential for real returns.



**Annual Financial Reports:  
Focus on fundamentals**

The Annual Financial Reports project team enjoyed a simplified task of selling their project to top management since the project was designed to simplify a core function at the Office of the State Comptroller (OSC) and a fundamental legal requirement of local participants. Not all projects have this luxury, but the closer a project comes to supporting the "core" functions of both parties in the intergovernmental arena, the more support it is likely to get from top executives.

However, in this project, the team did not stop at the focus on "core" needs. They also encouraged top-level state managers to attend the meetings with local participants so they were informed first hand and stayed aware of the project goals and progress. How did they get top management to attend? By starting early and emphasizing the "core" nature of the project. The project leaders took advantage of the fact that OSC was in the midst of several quality improvement exercises and thus, everyone was more aware of the need "to get involved." This made project progress much easier since it was not a constant battle to get top management attention. The participation by OSC decision makers also sent clear messages to local participants that this project was important and would be supported and completed by the state agency – something local governments have come to doubt from many past projects.

When the choice is between a new road and an information system, it is often tempting for the city council or village authorities to vote for the road and bypass the new system. No matter how improved or elegant the new system may be, it must compete with projects whose benefits are more tangible and whose success is easier to measure. Local officials told us that if they are consulted in the earliest stages of a system design, they can give advice that will make the system more attractive to local decision makers and help make the case for local investment. Securing top management participation in a project up-front can be difficult and usually adds time to the start-up phase of projects, but it goes a long way to ensure successful project completion.

*“Local investment  
needs to be tied to  
local benefits.”*

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## Communicate often and clearly with stakeholders

### **Automated Dog Licensing: Networks connect people as well as computers**

There were plenty of benefits in the Electronic Transfer of Dog Licenses Project that made work easier and faster, and improved the quality of the data. One unexpected benefit, according to the team leader was the extent of “networking with municipal licensing agents and the software vendors.” This networking was not accidental, however, but the result of consistent and careful communication that connected all the stakeholders in the project and provided opportunities for them to become invested from the very earliest stages of system development. The municipal clerks told us that they were members of the team whose opinions clearly mattered.

The team leader knew that the state sent notices occasionally to the municipal license issuers, so she used the mailing as a vehicle for a newsletter that kept all municipal agents informed about changes in the licensing process. She set certain standards for the newsletters. Consistent with the theme of the project, the newsletters aimed at simplicity. They had to:

- contain real information of interest to the municipal officials
- be short – only one page front and back
- be clear and concise, not detailed – other vehicles were used for intricate instructions
- have new information, not old recycled information

Once the system was implemented, a brochure was developed to explain the system and how it works, as well as the benefits for local licensing agents. The brochure was designed to answer one question posed by a municipal clerk: What do I need to know about this new way of reporting dog license information?

Throughout the project the state team also stayed in touch with the Clerks and vendors of municipal software packages by phone. The first calls to vendors about adapting to this new system met with a lukewarm response, but the team, particularly the team leader, was persistent. Development team members attended the statewide municipal clerks meeting where they organized a special session for vendors which eventually led several to adapt their products to support the new system.

Regardless of size and type of application, a project team operating in today’s intergovernmental environment is faced with a multitude of stakeholder relations issues. Project stakeholders have not only a desire but a genuine need to know what is taking place within a project. Good communication practices ensure that all stakeholders (both those actively involved and those who will eventually be affected) are continuously and adequately informed. In addition to communicating with stakeholders during the initial stages of project development, it is important to continue to communicate throughout the entire process to make sure that everyone is aware of and given opportunity to comment on and participate in the project activity. Just as important are good working relationships that encourage stakeholders to participate actively in giving and receiving information. Many techniques may be used to establish and maintain good communications: status meetings, distribution of printed and electronic project materials, formal presentations, and so on. The techniques selected should be based on the particulars of the project and the following factors:

- Who are the project stakeholders?
- What type of information do they require at what level of detail?
- What type and level of information is needed from them?
- How frequently do they want or need information?
- How frequently is information needed from them?
- What is the most useful way for them to receive information?
- What type of feedback mechanisms are necessary to encourage them to respond and react?
- What tools need to be used to continuously monitor the effectiveness of communication?

**Annual Financial Reports:  
Clear, convincing, and continuous  
communication**

The NYS Office of the State Comptroller (OSC) knew that it faced a difficult task when it began planning its automated electronic annual report filing system. Because of the large number of local governments that would be participating in the project and the range of technical knowledge, available resources and existing systems that the local governments operated, there were many factors for OSC to consider. OSC further recognized that it would be necessary to not only enlist the support of all project stakeholders, but also to establish good communication practices for sending and receiving vital information about the project. OSC addressed this problem in two ways: first by letting the stakeholders know that the project was a collaborative effort, and that their input and participation truly mattered, and second by implementing efficient and effective practices for communicating with them. Since this was a voluntary option and not mandated, it was necessary to market the project well to ensure that all local governments who desired to file electronically were aware of the project. Some of OSC's techniques included:

- Establishment of a formal project vision and statement of scope to inform stakeholders about the project purpose and gather support
- Formation of a local government Advisory Committee to act as an oversight body to review project status and discuss goals and strategies
- Consistent and regular use of note takers, facilitators, meeting agendas, "parking lots", and action lists to make effective use of meeting time and ensure that all meetings were run in a professional atmosphere.
- Prompt action on outstanding issues and reports
- Continuous marketing using surveys, newsletter articles, speeches at conferences, training sessions, and direct mailings.

OSC's efforts resulted in a communication environment that encouraged participation and yielded prompt results. Stakeholders knew their input was important because they could readily see how it affected the project development and they were fully informed of what was happening with the project at all times.

By answering these questions, the selection of communication techniques becomes a much easier task that generates more reliable and useful results. For project team members, communications tend to be quite frequent and detailed involving e-mail and phone messages, status reports, flow diagrams, and face-to-face and electronic meetings. For the broader community of stakeholders, they are more likely to involve briefing sheets, newsletter articles, and presentations at conferences. The important thing to remember is to keep information flowing continuously to keep everyone focused on the project goals and aware of the progress being made.

**Probation Automation:  
Frequent, timely interaction among peers**

The Probation Automation Team consists of seven County Probation Directors or their designees as well as both program and technical staff of the NYS Division of Criminal Justice Services (DCJS) and the NYS Division of Probation and Correctional Alternatives (DPCA). This diverse team has been actively involved in every phase of the project. Communication among the members follows a familiar pattern applied across a number of tasks. Whether gathering information or making decisions, the group begins with personal visits. These have included structured "walk-throughs" of local department operations, planning meetings, vendor demonstrations, and so on. After each series of face-to-face sessions, a written document is produced by the state project members, representing their understanding of the business process, project scope, timeline, or other items under review or development. Usually, within a short period of time, the document is given to the local members to obtain their feedback and clarification. Revisions are then made and the documents become part of the written record of project results. These written records, having been developed and approved by all members of the team, form the foundation for a mutually agreed upon set of project principles, goals, and achievements. There is no confusion about what they represent or how each one fits into the larger scheme of the project plan.

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## Finance creatively

### **Probation Automation: A little bit means a lot**

Seven county Probation Directors are members of the design team for the Probation Automation project. Each is strongly committed to the goals of the project and willing to absorb the work it takes to be fully involved in every phase of the project. However, these local officials have great difficulty finding money in local budgets to pay the expenses of traveling to Albany or other local sites to attend planning sessions, or conduct process reviews. The design phase of this project is supported by a limited amount of federal funds. One of the ways these funds are used, is to pay the travel expenses that allow the County Directors to participate in all these activities. It makes sense to use project funds to cover these travel expenses (which are often small) because these expenditures leverage much more valuable and expensive resources represented by the time and expertise of the County Directors themselves.

In addition, a number of state staff in both the Division of Criminal Justice Services and the Division of Probation and Correctional Alternatives are participating in this project. Most of them are also assigned to other activities and divide their time and attention between those responsibilities and the Probation project. DCJS decided, however, that the project director should be devoted to the project 100% and not be diverted by other competing demands. As a result, he is able to focus full time on the needs of this project, organizing the work in such a way that the part-time involvement of all the others generates maximum value for the project as a whole.

The traditional ways to finance government information systems initiatives, prevalent in the 1970s and 80s, consisted of two main types: (1) direct appropriations from state legislatures that were used to cover both state and local costs or (2) federal funding that usually matched state funds by a formula. Some critical systems projects financed partly by the federal government benefited from “enhanced” federal funding – sometimes as much as 90 percent – as long as states abided by certain schedules and other rules. While these methods are still in use today, it is much more likely that a state-local information system effort will be financed by a “package” of resources that comprises some combination of cash appropriations, some grant funds (either federal or foundation), some “in-kind” resources (public and private), and a lot of redeployed human effort.

Since these resources go well beyond the usual budget categories that finance and budget office staff are familiar with, the project manager or the senior members of the project management team are often responsible for putting this package together. Creative financing entails not only the usual budget management skills, but the ability to convince others to contribute resources, the ability to identify grant opportunities and write successful grant applications, and the ability to recognize and balance the constraints and rules that multiple funding sources can impose on a project plan. Since the full project budget may not come from a dedicated new fund, it is more important than ever that the source and amount of available resources be well understood and carefully managed. Creative financing also means carefully thought out investment of the resources available. Think about ways to cover actual expenses that also “leverage” other resources.

**Aging Services System:  
A financial fabric of many threads**

The Aging Services community deals primarily in discretionary relationships. There is no mandate that aging services be provided. They operate through resources that are annually appropriated to support aging network activities. To use their words, "we live by faith." This is possibly one reason why the community has developed a keen appreciation for the value and necessity of building effective partnerships and identifying and securing multiple sources of funding.

Garnering financial support and building partnerships with a broad range of public and private sector participants has allowed the State Office for the Aging (SOFA) to move forward in its efforts to integrate and enhance service delivery to elderly New Yorkers. Several streams of funding support this highly interdependent effort. A grant from the U.S. Department of Commerce is supporting the implementation of Internet connectivity for New York's 59 Area Agencies on Aging (AAA). Together with matching funds and private sector contributions, this grant provides for remote connectivity to local client databases. A partnership with New York City and a number of private vendors in the development of a pilot system has allowed SOFA and the AAAs to move forward despite limited staff and funding.

In an effort to attract partners from the private sector to participate in the project SOFA advertised the project on its World Wide Web page. As a result, both NYNEX and Cabletron provided services and materials. SOFA sees building partnerships with public and private sector organizations as an ongoing effort. Maintaining current partnerships and building new ones helps this project team stretch the value of the "hard" dollar investments being made by the state, local, and non-profit agencies.

**Electronic Voter Registration:  
Financing from the ground up**

Electronic Voter Registration in New York State has been a grass roots project with local officials taking the lead to implement a new process to expand voter registration, provide more accurate and timely data, give faster service, and expand the time period during which Election Boards register voters. This is not a mandated program. Neither is it an optional state-sponsored program that the state tried to sell to localities. It is a voluntary effort among the participants, led by local government sponsors.

The Monroe County Board of Elections was the sponsor of a grant proposal for staffing and consultant services that was funded through the New York State Local Government Records Management Improvement Fund administered by the State Archives and Records Administration (SARA). Total state funding for the project was \$180,000. The staff position was located at the New York State Forum for Information Resources Management, an agency-supported organization associated with the State University devoted to effective use of information technology in state and local government. The Forum also contributed additional professional and administrative time to the project and managed a consultant contract. All local staff worked on a volunteer arrangement, as did state staff from the Departments of Health and Motor Vehicles. Together, the paid staff and volunteers managed an effort under the aegis of the American National Standards Institute (ANSI) to define the electronic data interchange transaction set for voter registration that is now the standard for the nation and is currently being adopted throughout New York State.

*“Projects are usually financed through an informal package of resources including appropriations, grants, and in-kind contributions.”*



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## Adopt tools and techniques that can manage complexity

### Real Property System: User groups for various platform options

The New York State Office of Real Property Services (ORPS) needed a good way to effectively manage and communicate with a large and diverse user community when it began planning for its Real Property System (RPS) Version 4 project. The local government user community for the system was dispersed all across New York State and comprised individuals with different levels of technical knowledge and available resources. In addition, no two local governments seemed to be using the same hardware and software configuration. The RPS team understood that to meet the needs of all stakeholders, it would be necessary to work with several different groups that represented the various interests in this diverse user community. The solution was to create user groups for each of the major technical platforms then in use.

The RPS team held formal meetings with representatives from each of the user groups to discuss the project and how it would affect agencies using their platform type. The representatives participated on a purely voluntary basis, according to their interest and availability. After each meeting, the representatives relayed the meeting minutes to all members of the user group using e-mail or memos. This process ensured that everyone in the user groups was kept informed of all discussions held and decisions reached during the meetings. This method of management proved to be very successful. The staff at ORPS credit the success of this effort as part of the Agency's new focus on the customer, and said that this practice will be continued in future system development efforts.

The manager of a state-local system project needs tools to manage people, time, relationships, partnerships, ideas, conflicts, resources, information, and processes. He or she needs a range of techniques to manage multiple streams of formal and informal communication and activity. Most of the successful techniques we observed were based on a keen understanding of the project's goals and common sense adaptation of both traditional and newly popular management techniques. The state-local project manager must have a considerable number of management techniques in his or her tool kit. Among these, the most important is the ability to select the right tool for the job at hand.

A number of tools are useful for establishing common understanding, and getting support and buy-in for proposed project activities. Starting a project with a set of formal assumptions about what is expected of each participant, the pace at which the project will progress, the limitations of existing resources or systems, helps avoid misunderstandings and dispels unrealistic expectations. Visual tools such as conceptual and project workflow diagrams and timelines become living guides to the project that evolve over time. Starting each meeting with a review of the workflow diagrams and timeline helps participants see progress and focus their energies on the work ahead.

Tools that are more oriented to task management are necessary at the functional level of project activities. Preparing for a group facilitation exercise, preparing a site for a pilot installation, or preparing for a public showing of progress or results all require detail-oriented task management techniques.

The following are a few of the more popular techniques in use in the projects we studied:

- **Team meetings.** Team meetings provide a forum for the project team to meet as a group to plan, and discuss issues, problems, or activities that affect the project as a whole. Thanks to teleconferencing and videoconferencing, meetings can be held face-to-face and electronically.
- **Facilitated group meetings.** For some activities it is very useful to have a professional facilitator take over the responsibilities of

**Probation Automation:  
A picture is worth a  
thousand words**

The goal of the Probation Automation Project is to develop a computerized system to support the informational needs and business practices of approximately fifty small to mid-size County Probation Departments. In order to succeed, the project team needed to first identify and then stay focused on those functional areas which were common to all of these different departments. The various tasks being performed at the local offices were identified and then categorized as Levels I, II, and III with Level I representing common core functions. The team represented their findings in a diagram using concentric circles - the center circle specified Level I Probation Core Functions, the middle circle specified Level II functions needed for Alternative to Incarceration Programs, and the outermost circle specified Level III functions performed by external treatment providers. The diagram was used by the project team to confirm their mutually developed understanding of the functional areas to be addressed by the new system. It was also used to convey their focus and reasoning to the wider community of stakeholders. The diagram became the focal point for many subsequent discussions, allowing the team to emphasize both the precise areas the project was meant to address and the larger context within which these core functions lie.

managing group dynamics so every member of the project team can make a substantive contribution to the discussion or decision at hand. This is particularly helpful when many voices need to be heard in the process of reaching consensus on an important decision or action.

- **Committees and specialized work groups.** Not every agency or individual is necessary in every step of the process. Instead, select representative members of user groups, agency types, or other stakeholders and organize them into working groups. A committee or work group is typically formed to perform a specialized task or activity, and then report its results to the larger project team. This allows work to go on in parallel on several fronts. It also helps focus the limited time of individuals on the areas where they have the most expertise.
- **Status reports.** Status reports provide information about current project activity and can be distributed in electronic or paper form. Most project participants we interviewed wanted regular status reports, even when there were no major changes or milestones to report. It was more important to have a steady flow of useful information than to have a sporadic one limited to big news.
- **E-mail.** E-mail is a very versatile communications mechanism. It can be used for one-to-one as well as group communications. E-mail distribution and discussion lists can be used to inform team members about important project activities or events, or to facilitate discussion of problems and accomplishments.
- **Visual project management tools.** Graphical project planning, scheduling, and reporting tools (e.g., GANT, CPM, PERT) provide useful techniques for visually communicating project information. These pictures are often the best way to show how different streams of activity interact with or depend on one another. There are software packages that create these pictures, but the most complicated is not necessarily the best, and sometimes a simple hand drawn sketch says all that is needed.
- **Quality management techniques.** Many of the tools and methods of the quality movement are very effective in state-local systems efforts. They are especially useful in setting goals and solving problems. Don't worry about finding a complete set of brand-name quality management tools. The generic versions work just as well.
- **Checklists.** The humble checklist gets a great deal of use in planning specific activities, products and events. It puts all the pieces of work in one place along with due dates and work assignments for all to see, discuss, and understand.

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## Look for existing models

Any project can benefit from a systematic review of similar efforts in other places. Since private and public sector organizations in this country and others often conduct similar programs, there are nearly always models from which to learn. Academic researchers and non-profit organizations may also have solved a problem, or at least developed part of the solution. There is a lot to learn from success stories and even more to be learned from cases where things didn't always go as planned. Although most organizations and individuals are more likely to report their successful models rather than their failures.

Best practices research is an organized attempt to learn from the experience of others. It aims at identifying the best possible set of solutions for a given problem. The advantage of best practices research is that it minimizes the possibility of repeating known mistakes and helps planning teams identify all components of a problem.

Models can be found on the World Wide Web, in library online catalogs and CD-ROM databases, from commercial information vendors and at conference sessions and vendor displays. Interviewing experts can yield good results as can posting questions on Internet-based discussion groups. Site visits and technology demonstrations can provide firsthand experience with a system already in use.

*“Best practices research is  
an organized attempt to  
learn from the successes and  
failures of others.”*



**Immunization Information:  
Piece together a model from partial solutions**

The NYS Immunization Information System project is designed to construct and manage a number of very large regional databases that catalog immunization records from thousands of providers, including public, private, and non-profit health care professionals and agencies. To collect this invaluable public health data means involving no less than every provider of immunizations in the state. No existing models emerged from a review by the State Health Department of existing state or federal government efforts. However, the US Centers for Disease Control (CDC) had developed a working paper around the issue including a key factor: the specific data elements that would be needed for an effective immunization registry. A contract systems integrator was able to identify technology components that might serve the needs of this unique project as well as offer IT methodologies to help ensure that the project sites were considering all the various management, technology, and policy implications associated with such an ambitious project. While the systems integrators were not directly responsible for system design they were able to aid the teams in identifying and evaluating existing technologies which helped ensure technology awareness and system integration needs. The project team began to construct its plans based on these two partial foundations: from the CDC paper they were able to compare their thinking with other public health experts, and from the experiences and expertise that the systems integrator offered, they could see some of the likely technical options and operational considerations.

Although there were no working immunization registries from which to model their project, the team learned that there was great value in these pockets of expert judgment. They pulled these partial models together and were able to recognize key data and technology factors that gave them a significant head start on this important and ambitious new initiative.

**Aging Services System:  
Good models are sometimes close to home**

The Aging Client Based Management System (CBS) project team undertook a comprehensive search for models to guide the development of an information system to integrate and enhance service delivery to older New Yorkers. To avoid "reinventing the wheel," the project team established both technical- and content-focused interdivisional teams and undertook an exhaustive search for applicable models in other state and local units on aging. Professional associations, personal contacts, and formal channels were used to support this search. The effort successfully identified a model, secured a primary partner on the project – and ended closer to home than anyone expected. A project was already underway in New York City to develop a system to support integrated needs assessment and service authorization for the elderly and it served many of the needs of this new statewide effort.

The new partnership between SOFA and the New York City Department for the Aging is resulting in the development of a pilot system which will be tested in eleven Area Agencies on Aging (AAA) as well as in NYC. SOFA, working together with the AAAs and the NYC Department for the Aging, identified a set of common core business processes that could be the focus of the pilot system. SOFA and NYC are working with a subcontractor on the development of the system. Representatives from the eleven AAAs as well as staff from the NYC Department of the Aging have been participating in needs analysis efforts and are being trained on the use of the pilot so that they may effectively evaluate its use and the level of customization that may be required to support their local conditions.

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## Understand and improve processes before you apply technology

### **Probation Automation: On-site “walk-throughs”**

The Probation Automation Team conducted extensive “walk-throughs” of the seven local probation departments represented on the design team. They used a standard protocol to document the business practices of each department to determine whether their practices were similar enough to warrant a standardized process that could be supported by one new system. The Directors from all seven local agencies plus state staff (both technical and program) from the Division of Criminal Justice Services and the Division of Probation and Correctional Alternatives took part in each site visit. Each local department received a written summary of the documentation for review, comments, and revision. The next step was a “cross-walk” among the seven write-ups to identify both similarities and differences among these local operations. The result was a flow chart and process element narratives that will be used to design the new system. These documents not only established the feasibility of standard business processes, they also turned out to be quite useful in other settings, such as orientation for new staff and input to other business process improvement activities like document imaging.

A system that successfully supports both the service delivery role of local governments and the information requirements of the state usually results from a clear understanding of the dependencies and requirements that govern the business processes that link them together.

In many cases when an organization takes on a project to improve a complex business process, those involved in the process are brought together for the first time. Most work processes have evolved over long periods of time and reflect the idiosyncrasies or preferences of individuals or of program and policy changes. Often, no one knows the whole story or the basis behind particular tasks or sub-tasks.

Project teams often find that a significant amount of the improvement they expect from a new system, actually comes from understanding and improving these processes. Subsequently, automation can often add further improvement. Several approaches were used by the eleven project teams to ensure that the participants understood and improved the complete business process involved in their systems efforts.

Bringing state-local project participants together in an effort to map or outline the business process under consideration for improvement is critical to the success of an intergovernmental project. The information flows and process dependencies within

**SALESNET:  
Every player at the table**

In preparation for developing an automated system to record and report property sales, the NYS Office of Real Property Services (ORPS) organized a highly representative statewide Steering Committee which acted as both an advisory group and a communication conduit. In organizing the committee, the ORPS team invited representatives of the Bar Association, the municipal assessors, county clerks, title companies, county directors of real property services, and county IT directors. Through the contacts on the Steering Committee, stakeholders in the counties who deal with property sales and transfers were surveyed about their readiness for adopting an automated system. The survey results helped the developers choose the pilot site and it helped provide a realistic user perspective.

The team also operated in parallel with an overall core process improvement project underway at the Office of Real Property Services. The core process improvement effort produces maps that explain what users are doing in transactions that affect real property. One group of representative clerks, assessors, and lawyers were brought together in Orange County to determine every step of the sales process, including what happens in the prelude to a sale. A data flow diagram that resulted showed the process from beginning to end. This helped the development team focus on users needs in designing a friendly, functional system – and one that would make sense in the context of the overall core processes that support real property transactions all around the state.

and among organizations are complicated and seldom under the complete control of any one organization. Participants in these efforts certainly begin to understand the related processes in place in the other agencies, but in many cases they also come to better understand their own processes. Once participants are fully aware of the business process under consideration, the basis or rationale behind particular steps, and the effect of those steps on the overall process, they are then able to begin reviewing the process for improvement opportunities. If a particular step in the process results from a statutory requirement, then the step cannot be removed and the freedom to modify that step is limited. However, if a particular task is based on agency practice which has evolved over time and the rationale is no longer relevant, then the task may be considered for removal or refinement. Redundant and inefficient steps can be identified and removed. After this process improvement effort, a system design can go forward with greater likelihood of success.

*“Often, much of the improvement we expect from a new system actually comes from understanding and improving business processes.”*

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## Match the technology to the job

### **Hunting and Fishing Licenses: Making hard choices**

When looking at the information requirements of its automated hunting and fishing licensing system, the New York State Department of Environmental Conservation (DEC) recognized that the technology options that could be used to build the system were somewhat limited, due to the rather unique way that the Department sells and processes licenses as "accountables." One of the solutions proposed to DEC involved the use of specialized point-of-sale hardware that was impressive, but also proprietary, expensive, and difficult to integrate with local systems. The appeal of investing in this solution was tempting – DEC would be able to use dedicated, state-of-the-art technology to automate the licensing process and build a system with high integrity. The downside of the solution however outweighed this appeal. Local issuing agents did not want another piece of hardware or a stand-alone system for licenses. They believed they would be much better served by a solution that integrated with technology already in use in their offices. DEC decided that those considerations were more important and began to investigate other tools to get the job done. DEC's ability to weigh long-term goals against the immediate appeal of the specialized hardware will eventually result in a system that will better support the needs of the local governments by satisfying their requirements for simplicity and integration with existing business activities.

Understanding that the solution to one problem is not always the solution to another even highly-related problem, helps a project team avoid mismatching technology solutions to problems. Further, understanding that not all problems have or require a technology solution helps ensure that an appropriate match between technology and the task at hand is made. Over-doing as well as underutilizing technology are both risks to state-local system initiatives.

Project teams often look to the technology lessons from their last project and try to apply them in the current project. Or they become interested in a new technology that seems to be barreling through the marketplace with powerful new features. They sometimes fail to give full consideration to the work processes and overall business context in which the system must operate. Consideration must also be given to user capabilities and the organizational and staffing limitations of the agencies that will be implementing, using, and maintaining the system to deliver services. Technical awareness activities that introduce a variety of technical tools to the project team are often helpful. These can consist of literature reviews, searches on the World Wide Web, vendor

**Social Services Imaging Project:  
Tools of the trade**

The tools that are used by tradesmen to perform carpentry, plumbing, electrical work, and masonry are all different because the tasks they perform are different. In the world of system development, the same principle holds true, if you want to do the job right you need to use the right tools.

The New York State Department of Social Services (DSS) understood and subscribed to this philosophy when it was considering design options for its local district imaging system. On the surface, the system appeared to be a simple imaging application that would be used to collect and archive forms and information relevant to social services cases. However, the team knew that the system would need to do much more than that. It would also need to be a decision support tool that would be used by local DSS caseworkers to make client decisions based on historical information. As a result, the team knew it would need to consider technologies that would accommodate the integration of images, workflow, and case information stored as "objects."

By understanding how case workers work and selecting the right tools, the team achieved successful results. The imaging technologies they selected met the initial requirements of the system design by supporting the collection and sharing of case-relevant information among local DSS staff. Information that previously had to be sent to different offices through the mail, could now be shared electronically over computer networks to support rapid and effective case decision making.

presentations, or attendance at technology exhibitions and conferences. Prototyping is an excellent, relatively low-cost way to test the "fit" between a technology and the environment it which it must work.

In most cases, incremental system building using appropriate standards, prototyping, piloting, and evaluation techniques, is a good idea. This approach allows for additions to system functionality as well as for the integration of new technologies over time.

*“Before choosing  
technology, consider  
work processes,  
user capabilities,  
organizational factors,  
and existing systems.”*

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## Use industry standard technology

### Social Services Imaging Project: Images of success

When considering technical options for the development of its Local DSS Imaging project, the New York State Department of Social Services was faced with a dilemma: try to build a system that would run on as few platforms as possible to reduce support and maintenance problems or try to accommodate the diverse hardware and software base of its large user community. The team understood the inherent difficulties of trying to develop and maintain different versions of a system that would run on multiple platforms at the local level – the numerous idiosyncrasies of different software, operating systems, and hardware would make it extremely difficult to design and support the system. However, the team also understood that local agencies need to integrate new systems into their existing computing environments and would have a tough time convincing their management to accept a system that was not compatible with existing hardware and software. The problem was how to build a system that would take advantage of the best technology while at the same time avoid the possibility that it would become an orphan in the local government's larger systems environment.

As a solution to the problem, the team decided to develop a system that would be compliant with as many mainstream hardware and software standards as possible. This would ensure that the system components would integrate with one another, and greatly increase the potential longevity of the system by providing an upgrade path that would allow for the integration of evolving technologies that used the same industry standards. Local users were happy with this solution because they knew that they would not be receiving a system built with outdated or proprietary components. For those not yet following the mainstream, this was also an incentive to begin to move toward standard technologies that would enable them to adopt new tools and enhancements more readily in the future.

In our world of rapidly evolving technologies, there are many different options. Before making selections, it is a good idea to investigate current technical standards and to develop an awareness of what products support the standards. If you purchase technology that does not support current or developing standards, chances are good it will not be able to integrate with other products.

Industry standards exist for almost every type of hardware, software, and communications technology, including such things as data organization and access (e.g. database structure, query languages), data interchange (e.g. Electronic Data Interchange, encryption), networking services (e.g. data communications, network management, e-mail), and document imaging (e.g. scanning, imaging, workflow). In some cases, these standards are developed through the efforts of a formal national or international committee. In other cases, because of market share, a certain vendor's approach becomes the *de facto* standard.

**Electronic Voter Registration:  
The right standard at the right price**

The Electronic Voter Registration project team was faced with a challenging task: the seamless communication of information among disparate computer systems employed by the State Board of Election, the local Boards of Election, and the State Departments of Health and Motor Vehicles. While employing Electronic Data Interchange to handle the application-related interface issues, the project team originally expected to use Value Added Networks (VANS) to actually transport the transaction records from one computer to another. Under this traditional method, companies lease lines into a central site supported by a for-profit VAN. The VAN transfers records from a client which is sending EDI transactions to the intended recipient. Both the client and recipient must be members of the VAN and the service charges are considerable. During the project, the team wondered whether the standard TCP/IP protocol of the Internet might be employed as a replacement for VANS. The team was able to demonstrate that such a system could be developed using electronic mail and the MIME protocol along with standard encryption methods. The result was a workable solution which used emerging world-wide technical standards to accomplish their goals at reduced costs.

Standards enable interoperability and electronic messaging among system components. They also offer vendor independence and scalability – when you use a common standard, you will be able to choose among different products that adhere to the standard and will be able to scale up to larger systems when the need arises. You can become familiar with the appropriate standards for any given application through discussions with experienced colleagues, talking to vendors, reading trade journals and other literature, and by searching the Internet. New York State has established preferred standards for many technologies through the efforts of working groups sponsored by the Governor’s Task Force on Information Resource Management.

*“Technical standards offer interoperability, scalability, and vendor independence.”*



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## Adopt and abide by data standards

### Automated Dog Licensing: Keep it simple

Standard data definitions were a guiding principle of the Electronic Transfer of Dog Licenses Project from its inception. The NYS Agriculture and Markets staff knew that in order to make the licenses electronic, the process would have to work with many vendors' systems. The development team looked at the information and asked "What do we really need?" Despite the fact that several interest groups wanted additional information collected at the point of issuing a license, the Ag & Markets team stood firm against data redundancy and "nice to know" information. They had one aspiration – to keep it simple.

After consulting with users and vendors, the development team defined the basic data needs with which all vendor systems would have to comply. They eliminated all fields that were not used regularly. Vendors realized that in order to compete with other software companies, they needed to meet state data requirements. Any automated licensing system that complied presented benefits to municipalities.

Today, each approved vendor system converts the information collected to a file that can either be e-mailed via the Internet or sent to Ag & Markets on a floppy disk. Each municipality has an authorization code that provides validity for the data communication when records are sent electronically. The basic information that now must be collected boils down to just a few important, standard elements describing the license, the owner and the dogs.

Each municipality that has adopted the system transmits information in the same order, using the same codes, and using fields that have common data definitions. Keeping it simple has eliminated paperwork, mailing, and postage costs, and has ensured more accurate data that helps protect communities against the spread of rabies.

Data standards help different participants speak the same language. They usually include at least two features: an agreed upon definition of the meaning of a term and an agreed upon format for how the term will be represented in the system. For example, the term "application date" might be defined to mean the date on which an applicant for services submitted a signed application form. The agreed upon format for "application date" might be defined as an eight-digit number consisting of 2 digits for day, 2 digits for month, and four digits for year, in that order. Data standards can be more complex and include information related to business rules for how the data is used and even data models that show the relationships among data elements.

Standard data definitions and formats organized in a common data dictionary are an essential prerequisite for effective information sharing among government organizations and between the government and private firms. While the development of these standards is often a time-consuming and difficult process, it is an effort well worth making since common data definitions form the core of any integrated system. A standard data definition offers these necessary components for successful intergovernmental implementations:

- **Provide a common language for information sharing.** Since a primary goal of any intergovernmental application is to facilitate the exchange of information among interdependent organizations, it is important that all groups "speak the same language."
- **Help ensure that the data sets will be described accurately.** Data dictionaries can serve as a guideline for describing data completely and accurately. Well-understood definitions are an important tool for an organization's internal documentation as well as for data exchange.



**Electronic Voter  
Registration:  
Local needs become  
national norms**

Not every state-local project requires the creation of a new national data standard, but New York State's Electronic Voter Registration project did produce standards for the transmission of voter registration information that will be used all across the country. This project was started by local officials in the Monroe County Board of Elections who applied for and received a grant from the State Archives to hire a technical expert housed at the NYS Forum for Information Resource Management. The expert, using New York State needs as a guide, chaired a national ANSI working group to select EDI protocols, encryption protocols, software, platform, and Internet capabilities that will allow for the standardized electronic transfer of voter registration records.

- **Facilitate automation.** Once the data is standardized, more sophisticated software can be developed for creating, collecting, processing, and searching the data.
- **Allow for both central and distributed storage of data.** In some cases, it may be desirable to store and integrate the information collected at multiple origins into a single database. Sometimes, original information collection is accomplished with a variety of local software packages. Integration of information which originates from different sources can only be accomplished when data elements are commonly defined. Conversely, data defined in the standard way can be stored at distributed locations with confidence that the meaning and integrity of the information is consistent from place to place.
- **Support information exchange.** To enable the exchange of information among disparate computer systems, the data being transferred must conform to strict messaging formats. Often, this exchange is facilitated through Electronic Data Interchange (EDI). EDI uses a set of national and international standards to define message formats and the data elements within these messages. EDI standards have been developed and approved by the American National Standards Institute (ANSI) and the United Nations/Electronic Document Interchange for Administration, Commerce and Transportation (UN/EDIFACT).

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## Integrate with related processes and practices

### **Aging Services System: Identify and build on the common ground**

The State Office for the Aging (SOFA) works with 59 Area Agencies on Aging (AAA) located throughout the state. The federal government has implemented new reporting requirements for these agencies. SOFA recognized that the range of available technical infrastructures within the AAAs located throughout the state precluded their ability to implement an information system to support these new requirements. SOFA needed to identify a way to ensure that each agency was capable of responding to the new reporting requirements. Recognizing the variability of the local environments, yet the generally similar approach used in the process of analyzing eligibility and authorizing services, SOFA engaged in a process of identifying a set of standard data elements to support both the federal reporting requirements and the local needs assessment processes. SOFA engaged in a collaborative process with over 200 representatives from the AAAs, to identify the necessary elements and to develop an approach for the implementation of these elements into the assessment process. The follow-on project being conducted by the project team is to pilot an information system that will support integrated case management in the AAAs so that as these agencies may transition to the information system as they develop capability to support the necessary technical infrastructure.

The State of New York has 57 counties, 62 cities, 932 towns, 554 villages, 707 school districts and 646 independent special purpose units working with each other, with citizens and businesses, and with about 100 state agencies and authorities. A project being conducted in this environment must deal with huge variations in financial, technical, and managerial resources, and seek to minimize the uncertainty of this environment on the project. A system that supports information exchange, transaction processing, or decision support between just two organizations is a challenge. A system which is integrated into the work processes of 50 or 100 or 1000 organizations is orders of magnitude more difficult.

Understanding the range of conditions under which both state and local organizations operate is key to ensuring that the system is designed to integrate with their business environments. The particular business process being addressed must be analyzed and understood by all participants. In most cases, state-local information systems projects are focused on standard business processes such as issuing a license, determining eligibility for a benefit, or recording a property transaction or vital record. However, these standard business processes are conducted throughout the state in very non-standard environments. Projects therefore need to focus on both the business process and the ability of individual organizations to adopt an information system to support that process. Tools such as data dictionaries, and process and workflow analysis help identify ways that different organizations can and should participate. Organizations unable to implement a sophisticated automated system in the short term can begin to transition their work environment by focusing simply on the new or improved business process. An organization that needs to retain its reliance on paper processing can still improve its performance and consistency by adopting the set of standard data definitions that are built into the computerized system. In this way, each organization can begin to integrate the useful elements of the new system into its own environment, within its own operational and resource constraints.

There are excellent resources available to help develop profiles of the various local entities. There are numerous state associations affiliated with counties, cities, towns, villages and virtually any other designation applicable to local governments. Often these associations have conducted extensive surveys of their members and at the very least have a working

**Automated Dog  
Licensing:  
Build on the existing  
base**

The nightmare of proliferating hardware and dozens of incompatible software packages is what municipalities fear when state agencies dictate the adoption of new systems. With each new information system, local officials fear the cost of new hardware and the time necessary for training before the new system is fully functional. The NYS Department of Agriculture and Markets calmed the fears of Town Clerks when it developed an automated dog licensing system that was designed with compatibility in mind. The system can be used with existing hardware and commercial software packages that Town Clerks already have installed for other uses. The developers ensured this compatibility by working closely with the users and the vendors who would be supplying software. The new system was cost effective and required minimal training because of the smooth way it adapted to local conditions. Now Town Clerks have fewer weekly paper reports to submit, data errors are minimized, Dog Control Officers have more current information, and without adopting entirely new technology tools.

knowledge of the conditions their members face. The Office of the State Comptroller, Division of Municipal Affairs also has extensive information available on the state of local government in NYS.

In developing a working profile of the local participants, a project team should be able to better define the scope and possible solutions much earlier in the project cycle. For instance, if the majority of potential local users lack a fairly new, modem-equipped computer, then an Internet/ Intranet solution may simply have to wait, or a more incremental approach adopted. On the other hand if the majority of potential system users have already established Internet access, then it may make sense to pursue a system that takes advantage of this established resource. Our interviews revealed that many agencies are moving toward providing an Internet type option for their service but will continue to maintain paper and computer disk systems as well to meet the needs of all local governments. This may seem less than ideal but it is a realistic way to deal with so much local diversity.

**Immunization Information:  
Tailor made systems with a common purpose**

The NYS Immunization Information System project consists of four regional demonstrations to define, collect, monitor, and report information about immunizations for children age two and under. Each demonstration adheres to a set of common program and functional goals, but each is free to design a system that suits the needs and capabilities of the users and agencies in its region.

- The Upper Hudson demonstration will use a Frame Relay System with a regional server connected to health care providers throughout the region.
- The Central New York demonstration chose to build its system on the foundation of the existing Central New York Regional Perinatal Data System.
- In the Finger Lakes demonstration, newborn data will come from the NYS Birth Certificate database and data on older children will be gathered from billing claims and outreach workers.
- In western New York, the Chautauqua demonstration will expand the existing immunization tracking system now in use by western New York county health department clinics.

Each demonstration site has its own design team advisory committee and is working with a system integrator hired by the NYS Health Department to assist them in matching the system to both statewide goals and local conditions.

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## Use prototypes to ensure understanding and agreement about design

Prototyping your system as you develop it offers an excellent way for the project team and customers to see the design-in-progress and help refine and improve the system as it evolves.

The development environment for state-local information system projects is typically complex, due to the large number of project stakeholders, the need to consider numerous system requirements of each, and the demand from all stakeholders for rapid development and deployment. Creating systems in this kind of environment demands a system development method (SDM) that lends itself to rapid design and development. Often, the SDM best suited to this environment is prototyping.

Prototyping differs from the classic system development methods in that it allows for the building of the system to begin much earlier in the development process, and allows customers to see and influence the system as it is being built. The philosophy behind prototyping is that system development is more effective when customers are partners in the design process. The prototype makes tangible all the ideas that both designers and customers usually try to communicate to one another in words. The prototype makes it possible for both to see and understand the needs, functionality, and limitations of the design and to alter it as needed. Most of the projects we reviewed used prototyping to develop their systems and reported satisfaction with the results.

**Aging Services System:  
Prototype your way to a final  
design**

When considering what type of system development method to use for its Aging Network Client Based Service Management System, the NYS Office for the Aging (SOFA) identified two criteria that the method would need to accommodate: (1) it would need to support a rapid development cycle, and (2) it would need to facilitate convenient modification of the system as it was being developed. These criteria were not selected by whim. Because of the large number of project stakeholders, which consisted of local administrators in all of the State's 57 counties plus New York City, and some complex system requirements that included the integration of several different kinds of technologies, the project team realized that it would need to use a development method that would allow for a working version of the system to be developed very early so it could be shown to the various project stakeholders and modified according to their needs. Based on these factors, the team selected prototyping as the system development method that would be used.

The prototyping method produced positive results. The early system demonstrations showed the county level administrators the potential of the system and how it could support locally administered, cost effective, flexible services, while simultaneously supporting clients' most important needs. These early demonstrations of the system created an enthusiastic response among local governments and generated positive interest in the system among the user community.

*“With prototyping,  
customers become  
partners in the design  
process.”*

**Social Services Imaging Project:  
Generate bigger and better ideas**

The NYS Department of Social Services (DSS) found that prototyping method provided more than just a way to rapidly and effectively develop a computer system. When working on its local DSS imaging project, the team used prototyping to build a system that was more comprehensive than the original design.

The developers used the prototyping method to demonstrate the system as it was being built. As each iteration of the system was developed and presented to the full team, suggestions were made for modifications and enhancements. As the system grew and began to make more sense to the team members, suggestions were made to accommodate an increasingly larger number of processes and system features. In short, the increased exposure to and use of imaging technology acted as a stimulant for expanding the scope of the entire project. For example, the initial goal of the system was to construct an imaging system that would capture information vital to a DSS client case. The use of prototyping also encouraged the evaluation and expansion of related business processes. As the prototype version of the system progressed through various iterations, the focus of the project team moved to other scenarios such as “electronic case foldering” (i.e., how to electronically share all case information among geographically dispersed DSS employees) that offered expanded benefits to both clients and caseworkers.

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## Choose a capable pilot site

### SALESNET:

#### This is a make-or-break relationship

The technology staff at the NYS Office of Real Property Services knew that pilot testing their SALESNET system would be critical to its successful implementation. Through surveys and discussions with county officials and information technology directors throughout the state, the SALESNET team chose a county that seemed ready and willing to test the Internet-based sales reporting system.

Before long though, it became clear that not all the primary stakeholders in the county had a strong commitment to the project, and some of the secondary stakeholders were reluctant. Local officials expressed concern over control issues and political concerns about having a central database on the state level. The SALESNET developers were wise enough to determine that this county was not ideal as a test site, and they started over to explore testing in another county. They knew that full cooperation in the original site was unlikely. Despite the added trouble, energy, and staff investment, a new county was chosen as the pilot site. Through the SALESNET project we learned that a pilot site must be chosen carefully, using the following criteria:

- primary stakeholders must be committed to, not just interested in, testing
- peripheral stakeholders must have an interest in the test
- there must be an abiding interest in the project that will last the duration of the pilot period
- the political climate must be open enough to permit some realignment of information and responsibility

Many system implementations are initiated with pilot tests that bring the system into the field to evaluate and refine design, performance, and integration with other systems and activities. The pilot site (there may be more than one) is a critical organization – one that is willing to undergo on-the-spot evaluation and identify and work on the inevitable problems that pilots are created to uncover and resolve. The pilot site provides the system developers with a way to evaluate the initial release of the system in a controlled environment and, if necessary, make any changes before releasing the system to all users. Many of the projects we reviewed involve one or more local pilot sites to test and refine their systems. In some cases, the pilot site was an integral part of the development team, building local needs and practical limitations into the initial design and then serving as the initial implementation site.

Sometimes pilots are promoted as a way to get special attention and early implementation for a new system. While this is true, it is only half the story. In return for these benefits, the pilot organization has to commit staff, space, and other resources to a process whose goal is to find and fix problems. Although it has clear benefits, piloting can be frustrating, time-consuming, and disruptive.

A number of considerations go into the selection of a pilot site. Here are few of the more important ones:

- **Representativeness.** Will the site(s) you are considering give realistic results for guiding broader implementation? If there is a great deal of local variation, you may need several pilot sites that represent broad categories of local conditions.



**Social Services Imaging Project:  
What to look for in a pilot site**

The Department of Social Services SSIS staff (Social Services Information Systems) believed strongly in the importance of selecting a good pilot site for their Local DSS Imaging Project. Selecting a good site would add value to their project by providing useful feedback about the fledgling system and by letting other sites see and hear about the benefits of the project. The problem was, which site should be selected?

The team did its homework to ensure that the pilot site would contribute to the success of the project. After considering the criteria for the selection of a site, and the various pros and cons associated with each site, the LDSS team made its decision. The selection of their pilot site was based on three important factors:

- What site had the best technology environment to act as a pilot?
- What site had strong leadership and good relations with employees?
- And finally, what site would provide the most positive impact for the project once the piloting work was complete?

The implementation of the system at the pilot site yielded solid information for the project team about the system and about the implementation process itself. The illumination of both technical shortcomings associated with the system and process issues related to implementation provided the team with vital information that could not have been discovered otherwise. Due to the success achieved at this pilot site and other early participating sites, additional counties have expressed a desire to participate in the project.

- **Organizational capacity to carry out the pilot.** Does the pilot site have the staff, space, equipment and other resources needed to carry out the pilot without adversely affecting its ongoing operations? Do the pilot site staff have realistic expectations about their roles and the amount and kind of assistance they can expect from developers or consultants?
- **Leadership commitment to the project and to the special demands of pilot status.** Do senior managers in the pilot site believe in the goals of the project? Are they ready and willing to deal with unexpected problems? Will they give their staff the support they need to carry out both pilot activities and regular operations? Will they act as liaisons to local officials in other departments who may be affected by the pilot or eventual operation?
- **Geographic accessibility.** Is the pilot located in a relatively convenient place so travel costs and time can be minimized for the project staff who need to be on-site and for the pilot staff who need to travel for training or other project activities? Try to avoid a pilot site whose location discourages on-site technical assistance, monitoring, and evaluation. For example, does it always require an overnight stay or several hours of driving, or more than one mode of transportation to get there?

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## Make the best use of vendors

### **Immunization Information: Experts put the technology pieces together**

The immunization registry project is organized into four regional demonstrations areas, covering large numbers of individuals and needs. In considering the resources necessary to effectively design and develop a system, participants agreed that neither the state nor the localities had enough technical staff to do the system development work in addition to other project activities and existing assignments. As a result, an approach was selected that freed the project team from the burden of technical development and allowed them to focus on identifying and meeting disparate local needs within a set of statewide goals.

The project team chose to focus on the local and state program needs and on acquiring a general understanding of available technologies to address these needs. They became familiar with a number of potential technology solutions and began to understand what kind of system would best meet their needs. They then turned to the private sector for technical experts to implement the technology pieces. A private firm was brought in as the systems integrator and was charged with subcontracting the necessary technical development to appropriately skilled vendors. The knowledge gained in the process of self-education about needs and possible technical approaches gave the project team greater confidence when working with the integrator and helped them educate the vendor as well as themselves.

We've all heard the phrase, "Don't reinvent the wheel." If the technology you need has already been developed and is available for you to use, then you shouldn't waste time and resources recreating it. Another increasingly common phrase is, "Outsource it." Depending on the nature of your project and the availability of resources, it can make good sense to pay an expert to build the system for you, so you can concentrate on the work that needs *your* specialized expertise.

Managing organizational interdependencies and new partnerships, setting data standards, and facilitating group decision making are just a few of the challenges to state-local government project teams. These processes require the programmatic and contextual knowledge that government officials possess. Technical expertise to support the implementation of a new network, a new database engine, or a more intuitive graphical user interface is not the exclusive knowledge of government officials. A number of the projects in the eleven reviewed in this effort had no technical expertise on the project team. Either the resources were not available in the participating agencies at all or they were not available to these projects. In some cases, technical expertise was available on the teams but in limited quantity.

To overcome the resource limitations and to maintain focus on the programmatic challenges, a number of the teams operated as systems integrators rather than as system developers. Project teams identified portions of the plan that could be outsourced to technical specialists and then managed those relationships. This hybrid approach allowed for substantial time savings. In many cases the project participants recognized the value of various technical approaches to implementation of the system, however, the necessary technical expertise was not available on the team. Rather than investing in developing those skills first, and then



**Automated Dog Licensing:  
Selling to the vendors**

When planning for the NYS Department of Agriculture and Markets Dog Licensing system, the project team was acutely aware of the time and staff constraints that all participants faced. To meet the project schedule, they decided to look to the vendor community for technical solutions while they concentrated on the data and operational issues. Knowing that many municipalities use commercial packages designed to support the usual functions of Town, City, and Village Clerks, the team created high-level system specifications and issued an RFP looking for companies interested in adding dog licensing to their packages. This approach would allow several vendors to build and market versions of the system as long as each provided a mechanism for the data to be sent from their system to the Ag & Markets centralized database. Several vendors responded to the RFP and the competitive aspect of multiple vendors vying for a limited market ensured that all would have to build quality products.

The NYS Department of Agriculture and Markets talked extensively with vendors to ensure that the requirements for automated dog licensing could work with local systems already in place. This helped many localities, especially small ones, save money and time while allowing them to make useful connections to a new statewide system. Some local officials told us that being able to use existing systems to meet the requirements of automated licensing made all the difference in their enthusiasm and willing compliance with the new program. This approach also generated unexpected side benefits when vendors offered suggestions for making both the centralized system and the field system design more efficient.

designing and developing the system, the team focused on business process issues and basic design and handed off the detailed design and hands-on development work to vendors. In a number of cases, vendors were able, due to their comprehensive knowledge of the technology and the use of an iterative prototyping approach, to contribute to the design efforts as well. It is important to remember, however, that agency staff will need to develop the skills to maintain the system unless an ongoing maintenance relationship with vendors is part of the overall plan.

**Real Property System:  
Buy some and build some**

Version 4 of the software to support Real Property Services in NYS is being developed with relational database technologies. The team reviewed the technology and application marketplace, as well as the systems and software located in the local agencies before deciding on the appropriate platform and approach to use in developing the new release of this software.

The challenge faced by the Office of Real Property Services (ORPS) in implementing this development approach was the fact that few, if any, of their MIS staff had experience in these technologies. The question facing the project team was this: Do we develop in the technologies we know or do we work with the technologies that better meet the needs of the users? Clearly, the right choice was to match the technology to user needs, but how could they do that with no in house technical expertise? To address this challenge ORPS technical staff worked with vendors to build components of the system while in parallel building capability in the agency to handle these technologies themselves. As ORPS staff became more knowledgeable about the relational technologies, they were increasingly able to participate in the design and development activities. The ongoing maintenance and enhancement of the system is expected to be the responsibility of the newly trained ORPS MIS staff.

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## Train thoroughly

### **Automated Dog Licensing: Get help from your friends**

The NYS Department of Agriculture and Markets, initiated peer tutoring for the Electronic Transfer of Dog Licenses. Town Clerks who have adopted the automated dog license process volunteer to train their colleagues from other towns in issuing licenses electronically. They are even willing to travel to other municipalities to do on-site one-on-one training. The experienced users also use the Municipal Clerks Association to spread the word about the automated process of issuing dog licenses. In our discussions with the local representatives for this project, they cited this volunteer training program as a real plus that encourages new users to adopt a system that is strictly voluntary. Good training is to the point, meets personal users needs, and comes from credible sources such as experienced users. Excellent training is customized to meet users immediate and long-term needs. The individualized training given by Town Clerks involved in the Automated Dog Licensing information system meets all of these criteria.

Mastering a new computer system can be a tricky business for even the most proficient users. Of course, the ideal system design is so elegant and simple to use that little training is necessary. This simplicity is seldom possible, however. Complex, interconnecting systems may not permit the ease of use that a single purpose system does. For example, a system that connects health care providers with local governments and insurers demands different training strategies than one that involves only the account clerks in a single finance office. Both need excellent training, but the integrity of the system and its information is far more vulnerable to error in the first than in the second. In both cases, the users are not technical experts, but are professionals in other fields who must use the system to accomplish some part of their responsibilities. Training needs to demonstrate not only how the system works, but how it fits in this larger picture. “User-friendly” training is crucial, but “friendly” is often in the eye of the beholder; that is, what is friendly to the development team may not seem so easy to the user. The user’s needs and reactions should be the litmus test for the ease or difficulty of the system, and training should be developed around their needs.

When any user adopts a new information system, there is always some anxiety. The process of adopting a new system can be made much less painful by offering well-designed, user-oriented training sessions and reference materials. A thorough training program can help users be more confident in the system and allow them to

*“Training needs to demonstrate not only how the system works, but how it fits into the larger picture.”*

**Aging Services System:  
Develop skills as you develop the  
system**

Through the Aging Network Client Based Services Project, the State Office for the Aging (SOFA) is building a large and complex system to manage services to support the independence of elderly people. The project has started training sessions for the system even though the beta testing phase is not yet complete. Through the cooperation of the City of New York Department of Aging, a primary partner on the project, twenty-two people from twelve New York counties came together to learn about the system in preparation for the second round of beta testing. This group will explore the system capabilities and give feedback to the developers.

In preparation for the adoption of the new information system, SOFA sponsored a statewide interactive teleconference with 59 Area Agencies on Aging; 600 people participated. This training session was offered to alert practitioners to the information content that will be available on the system. The comprehensive information collection will allow case workers to develop complete care plans for aging individuals. This content training is just as important as the technology "how to" training. The case workers need to know what information and tools the system will contain in order to use it effectively to support integrated case management.

When the new information system is implemented SOFA will conduct regional training sessions and additional teleconferencing training in order to introduce the system to users around the state.

approach the work more enthusiastically. It is often a good idea to offer training at various points in the system development process. Train those who will evaluate prototypes early in the process, give general orientation sessions to all participants in advance of implementation, and train thoroughly at the point of roll-out in each organization.

Training can take many forms from formal classes to written help materials, and it's important to recognize that different staff members have different preferences and varying strengths in acquiring new knowledge. It's helpful to present the same content several different ways to appeal to the different learning styles represented among employees. One person may be an excellent listener and can learn most easily through a lecture or by hearing a trainer talk about how to navigate through a new system. The person in the next seat could be a visual learner and would much prefer seeing the functions of a new system mapped out in geometric shapes with colors differentiating various options available. Others learn by doing and benefit most from hands-on exercises. Whatever the format, thoughtful user training conveys information and relieves anxiety – both critical to successful implementation.

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## Support users

### **Annual Financial Reports: Willing help from familiar faces**

The Electronic Annual Financial Reporting project is designed to meet the needs of a very exacting community – accountants and auditors – and many of the project requirements had to meet national standards. As one local participant put it, “When was the last time the IRS allowed *you* creativity in your filings?” The reports that were being automated reflect directly on the municipalities and have considerable legal bearing on local governments and the state as well. Thus, it was crucial that the system work well and maintain accuracy from the start. Meeting the needs of the local officials as the primary customers, was essential for this project to succeed.

OSC maintained a consistent project team throughout the process. This commitment to keeping “familiar faces” in the room was cited by local participants as a key to the success of the project. The local participants observed that by seeing these same faces at each meeting and having contact with these same individuals throughout the project they felt confident that expert, consistent help would be available.

OSC has a technical support group for this project. They answer the usual questions about specific system problems. However, local officials say the real benefit that this technical support group has provided is their willingness to answer related technology questions that local users may have. While OSC is not in the business of all-purpose technical consulting, this willingness to take extra time to listen to and help resolve other technical concerns has built a solid trusting relationship and helped local organizations become more technically adept overall.

Ideally all new systems work just as they were designed. Realistically, you can usually count on the implementation of a new system to result in unanticipated problems. Computer users become comfortable in their familiar software surroundings, and taking on a new system is the intellectual equivalent of physically moving to a new home or new office. Users need help adapting to a new system and making it feel as easy and comfortable to use as their old way of doing business.

The time period surrounding implementation is a critical one for user support. Offering immediate, appropriate support at this point in time will relieve anxiety and will encourage willing and effective users. But don’t stop there. There are always new users and most systems continue to add or change features throughout their life cycle. User support needs to be continually updated and continuously available.

**Social Services Imaging Project:  
More than a help desk**

Evaluating a pilot system is a significant undertaking for any agency and the DSS Local District Imaging project was no exception. The local Social Services offices which participated in the pilot phase of the project depended on support from the project team for many purposes. Of particular value was the support that the pilot counties received in preparing to participate in the pilot efforts. Thanks to group discussions about techniques to use to overcome local technology and management problems, the pilot site staff were well prepared for the integration of the new technology as well as for changes in workflow to support the improved business process. The local participants found that they turned regularly to the project team for support for many things including their efforts to secure and maintain local support, to establish effective working relationships with local MIS staff, and to overcome resistance to changes to the workflow of the agency.

The projects we studied made good use of a number of user support formats and strategies including:

- awareness meetings to introduce the system goals and features
- system “maps” presented graphically and in color
- easy to follow one-page “cheat sheets” for common activities
- full-scale documentation manuals
- online help features
- a staffed help desk
- individual tutoring or peer tutoring
- small group training, review, and support sessions
- designated learning time for initial training
- videotaped step-by-step instruction
- frequently-asked questions and answers brochures
- a “help” newsletter

*“User support doesn’t  
stop with  
implementation -  
there are always new  
users and new features  
to adopt.”*

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## Review and evaluate performance

### **Immunization Information: Measuring up to a set of ideals**

The NYS Immunization Information System (NYSIIS) project has a number of measurable goals that lend themselves to formal evaluation. One set focuses on the functional requirements of an ideal immunization information system. Each of the four regional demonstrations now underway has great latitude to choose methods and features for its systems, but all are trying to measure up to these functional ideals:

- Each child's immunization record must contain a unique identifier that could be reconstructed by the parent from information they have readily at hand.
- The system will use the National Immunization data standards to assure compatibility and usability of data across different regions
- A registry must be able to identify all immunizations due for every child in the registry and generate reports of immunizations due
- The system will capture only necessary data elements and automatically generate reports and reminders based on that data set
- Local systems and users, with appropriate safeguards, will be able to update and query regional systems
- Immunization coverage level reports will be available for children at various ages from birth to 24 months of age.

The second set of measurable goals is focused on the public health outcomes associated with immunization:

- By 1997, have at least 120,000 immunization records of children under age 5 (i.e., 15% of such children outside New York City) captured in the NYSIIS
- By 2000, have at least 400,000 immunization records of children under age 5 (i.e., 50% of such children outside New York City) captured in the NYSIIS

To monitor progress over time, these questions are being asked about each regional effort starting in 1997:

How many immunizers are electronically exchanging immunization records with a regional IIS server?

How many individuals have their immunization records in a regional IIS server?

Of the immunization records captured, what percent are accurate and complete?

These and other evaluation activities are reported and discussed by all the participants in annual working group meetings where each site shares its progress and problems with other public health officials from around the state.

Performance-based accountability is a real issue for managers and agency directors, and systematic evaluation and review activities can help administrators and IT staff determine if their systems are achieving their intended goals. Every system should begin with clear purpose and goals. After it has been up and running for a period of time (say six months to a year), it makes sense to revisit them in a formal way to see if the system is performing as intended.

The system evaluation assesses how well the information system is working to support the purpose and goals of the project. Moreover, a solid evaluation of your work establishes credibility that goes a long way in establishing the support you need for the next project. A comprehensive evaluation plan is attractive to funders, policy makers, and taxpayers alike. A project without an evaluation plan is like a stage performance without any audience reaction. Program managers need to know if the system is making a difference. Designers need to know how well the system is working in order to modify and adjust it. Often a new information system is also the impetus for improvements in business processes and an evaluation helps measure these as well.



**Annual Financial Reports:  
Looking back for future success**

The NYS Office of the State Comptroller (OSC) wanted to design its automated annual reporting system to be useful to localities for as long as possible. OSC recognized that the longevity of the system would depend not only on how well it was initially designed, but on how well it could continue to meet local needs. This meant that communication channels with the customers would need to be maintained, and that periodic reviews of the system would have to take place so that changing environmental factors and functional requirements could be accommodated. OSC let its local customers know that it is committed to the longevity of the system by identifying and correcting problems as soon as they become visible. Customers were encouraged to keep in contact with OSC staff, and to report any problems right away. In turn, OSC keeps in constant communication with system users by informing them of system changes and by demonstrating by their responses to requests that they are listening. The result? A system that is not only accepted but appreciated by its users, with the potential for being around for a long time.

An evaluation can sometimes be as simple as a self-administered customer survey, phone interview, or focus group with users. It can also be a more formal and elaborate program review, cost-benefit study, or other analysis conducted by evaluation experts. The method needs to be matched to the goals the project was designed to achieve. Each method has its advantages and disadvantages with resources and time crunches being major considerations. Whatever format is used should address the following kinds of questions:

- Service outcomes: how well does the system meet pre-defined customer needs?
- Programmatic outcomes: how well does this system contribute to integrated service delivery or other service system goals?
- Operational outcomes: how well does the system meet time-savings, streamlining, and other operational improvement goals?
- Financial outcomes: how well does the system meet cost-savings or revenue goals?
- Return on investment results: Considering what it cost to create and operate, how cost-effective is this investment?

The answers to these questions lead to decisions about changes, improvements, refinements, and lessons for future initiatives.



# Appendices

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- A. Project Summaries**
- B. Project Comparisons**
- C. Project Participants**
- D. Bibliography**
- E. World Wide Web Sites of Interest**
- F. Relevant Policies of the Governor's  
Task Force on Information Resource  
Management**

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## Appendix A. Project Summaries

| <b>Aging Network Client Based Service Management System Project (CBS)</b> |   |
|---|---|
| Contact   | Steve Walter<br>New York State Office for the Aging<br>Phone: 518-473-4275<br>E-mail: steve.walter@aging.mailnet.state.ny.us  |
| Purpose and users   | The primary purpose of the system is to improve coordination of service delivery to clients, building on available family supports and ensuring that the formal service delivery system provides essential services and programs. The primary users of the system will be case managers and the aging services workers in public and non-profit service agencies.                               |
| Expected Impact   | The program will increase the efficiency and effectiveness of local offices for the aging and non-profits and enable older persons and their families to obtain the information they need to make informed decisions.   |
| Participating Agencies  | The State Office for the Aging (SOFA); the New York City Department for the Aging; Area Agencies on Aging; NYS Departments of Taxation and Finance, Health, and Social Services; the U.S. Social Security Administration; Cabletron; NYNEX; and Niagara Mohawk Power Corporation.   |
| Project Management Process  | Several advisory committees have been established along with an ongoing dialogue with case managers and others at the community level. Beta testing was conducted in various service delivery environments and pilot activities continue at the local level. An aggressive policy of recruiting private, public, and non-profit partners has been conducted with considerable success.          |
| System Functionality  | The Aging Services Network (ASNet) will provide connectivity between locations in two ways: by providing Internet access to SOFA and AAA staff, and by providing features in "PDS" which allow the transfer of client data between AAA offices and field workers via either cellular modems or conventional modems and phone lines into the main system. Internet access will also be provided. |
| Resources   | \$1.249 million grant from the U.S. Department of Commerce, plus contributed effort by all parties.   |
| Status as of 5/97   | Beta testing and pilot site use of the "PDS" software   |
| Timeframe   | 2 years for the grant monies. Minimum data set in use at all AAAS by April 1, 1999.   |

| <b>Electronic Filing of Local Government Annual Financial Reports</b> |   |
|---|---|
| Contact   | Jeff Swain<br>Office of State Comptroller<br>Phone: 518-474-4005<br>E-mail: jswain@osc.state.ny.us  |
| Purpose and users   | The purpose of the project was to design an electronic system including report software that would assist local governments in preparing and filing annual financial reports required by state law. The primary users of this system are local government financial officers and accounting firms.  |
| Expected Impact   | Streamline and improve the timeliness and accuracy of annual local government financial reports which informs the legislature about local financial conditions which is used in the distribution of state aid. OSC uses the report to identify municipalities in fiscal stress and allows them to intervene at an earlier date.   |
| Participating Agencies  | Office of the State Comptroller and various local governments   |
| Project Management Process  | OSC established multi-division and multi-bureau level teams to handle this project. Other state systems were surveyed for existing software solutions and software vendors were contacted and test versions of their software were provided. OSC consulted the State Archives on electronic information retrieval and disposition options. The process was mapped and flowcharted, and staff were trained in re-engineering exercises. A local government advisory committee helped define the project. Local users were surveyed for their needs and preferences and asked for continuous feedback. A Rapid Application Development (RAD) methodology was used to design, develop, and test the system and pilot sites helped test and critique the software. Throughout, OSC marketed the system to local governments through publications, training systems, presentations, and direct mailings. |
| System Functionality  | Local governments are provided with software for modem, filing, and database applications. Their previous year filing is provided through the State Comptroller's Assistance Network (SCAN). The local government retrieves this by a download or through e-mail and then sets up their system. Local staff then either complete the report using the filing software, or arrange their data in a standard format and use a data merge feature to upload the information. Local users need a 386 system or better with 8 megs. of RAM, a 9600 modem, and Windows 3.1. Local governments certify the electronic reports to OCS via pin numbers generated by OSC.   |
| Resources   | \$530,000 from OSC funding, 6 OSC staff were assigned at 80% for two years to develop the system.   |
| Status as of 5/97   | In production. Evaluation and refinement efforts underway.  |
| Timeframe   | 1 year development, 1 year production; exceeded 2 year objective in first year with 293 electronic files out of a possible 1,500.   |

| <b>Electronic Death Certificate</b> |   |
|-------------------------------------|---|
| Contact                             | Pam Akison<br>New York State Department of Health<br>Phone: 518-474-5245<br>E-mail: pja01@health.state.ny.us  |
| Purpose and users                   | The purpose of the project is to allow for the electronic filing of a death certificate which must be completed within 72 hours of death and is presently issued on paper. The primary users of the system will be funeral directors who are the agents charged with the completion of death certificates. Other users will include the local registrars who file the information with the state, physicians, coroners, medical examiners, hospitals, nursing homes, and county public health agencies. |
| Expected Impact                     | The system is expected to reduce overhead costs for funeral directors who will now have less travel time and filing time associated with their duties. Data accuracy should also be enhanced through the new process. This, in turn, will enable state resources to be used in other ways.  |
| Participating Agencies              | New York State Department of Health, various local governments, and private and non-profit organizations.   |
| Project Management Process          | Considerable best practices research was conducted concerning digital signatures as this will be a key to the success or failure of the project. Microsoft Project was used to plan the work schedule. The work group developed flow charts and pseudocode for business rule documentation. A two-day task force meeting was conducted with local registrars and other partners to demonstrate prototype screens and obtain feedback and enhancement opportunities for the project.                     |
| System Functionality                | The system is a Web application built using HTML and CGI scripts. All users are registered with the system but can perform various roles. The system allows for creating new cases (each case has a unique number), transferring cases, updating cases, and referring cases. The system will ultimately allow funeral directors to order certified records from local registrars.   |
| Resources                           | Federal contracts (2) provide \$50,000, and the state has committed \$100,000.  |
| Status as of 5/97                   | The system is preparing for a beta test in 1997.  |
| Timeframe                           | 1 year  |

| <b>Electronic Transfer of Dog License Data</b> |  |
|--|--|
| Contact  | Jo Amy Guild<br>NYS Department of Agriculture and Markets<br>Phone: 518-457-3502<br>E-mail: nysagmk@emi.com  |
| Purpose and users                              | The purpose of the project is to streamline the issuing and reporting process associated with dog licenses in NYS. The users are the municipal licensing agents (city, town, and village clerks) and municipal shelters.   |
| Expected Impact                                | The system is designed to lower mailing and handling costs between the state and municipalities. Dog control officers are also able to access more accurate and timely data since the system greatly reduces the time needed to update the state system. The Department of Agriculture and Markets also benefits from a reduced workload with the new system.  |
| Participating Agencies                         | The Department of Agriculture and Markets and municipal governments.   |
| Project Management Process                     | Since no other state maintains a dog licensing system similar to NYS, no best practice existed. Surveys were used to better understand the technological capabilities of the potential municipal users. Focus group discussions were held with local users to better understand what was needed and how best to meet their needs. Agriculture and Markets then prepared the system specifications and persuaded the private software providers to integrate the new system into their existing local government software packages. |
| System Functionality                           | The system functions on stand alone PC's within each municipality and can deliver data to the state via disk transfers and modem connections. The system is integrated into seven municipal software packages available from private vendors and is capable of producing the individual license and creating the various reports requested by Agriculture and Markets.   |
| Resources                                      | State and local employee time in designing functionality for the system.   |
| Status as of 5/97                              | Project is complete. The Department of Agriculture and Markets continues to promote the use of the software and encourages municipalities to begin using the system.   |
| Timeframe                                      | An effort was begun in 1995 to restructure the dog licensing program in NYS. In early 1996 new software specifications were written and distributed to vendors. In May 1996 those programs were tested and continue to be implemented.   |

| <b>Hunting and Fishing License Project</b> |  |
|--|--|
| Contact                                    | Peg Sauer<br>New York State Department of Environmental Conservation<br>Phone: 518-457-3400<br>E-mail: peg.sauer@dec.mailnet.state.ny.us   |
| Purpose and users                          | Provide "one-stop shopping" for the sportsperson by making all types of licenses available, at all agents, at all times. The system will be used by town clerks, private businesses who sell licenses (650 statewide), and DEC campsites. There are about 1,750 users statewide including municipal clerks and selected commercial issuing outlets.  |
| Expected Impact                            | Increase the assurance that the sportsperson is purchasing a valid license by selling hunting or fishing privileges only in the combinations which are described in law. Provide the issuing agent with the ability to query the system with regard to the status of an individual seeking a license. Provide more complete data to the state regarding hunting and fishing trends statewide.  |
| Participating Agencies                     | The Department of Environmental Conservation (DEC), town clerks and private sales agents (Wal-Mart, K-Mart, etc.).   |
| Project Management Process                 | A considerable amount of time was spent conducting best practices reviews of five other state systems. A task force was convened in 1991 to consider the computerization of the licensing process. In 1996, DEC also used its annual training seminars to discuss computerization options with local users. Various sporting advocacy groups have been shown the proposal and have given their support to the project. DEC has also contacted and held meetings with the various private software vendors that currently supply municipal software packages and looked into their role in the new system design. |
| System Functionality                       | A NYT based system with a centralized repository that directs the license sale system and stores customer and transaction information. A centralized program will handle all accounting needs. A customer will receive a valid license printed on site as they wait. The need for stamps will be eliminated and DEC officers will be able to verify licenses in real time.   |
| Resources                                  | Cost absorbed in regular state and local operations  |
| Status as of 5/97                          | Planning and design  |
| Timeframe                                  | An RFP may be ready in early 1999 for a mid 2000 implementation  |

| <b>Immunization Reporting and Tracking System</b> |   |
|---|---|
| Contact   | Gary Rinaldi<br>New York State Department of Health<br>Phone: 518-473-4437<br>E-mail: gmr06@health.state.ny.us  |
| Purpose and users                                 | The purpose of the project is to test the feasibility of building an immunization information system that will register and track childhood immunization statewide. The primary users are health care providers which offer immunization services and public health agencies which use the data for monitoring and planning purposes.   |
| Expected Impact                                   | A fully functioning system would allow health care providers to ensure that children are properly immunized and that a larger proportion of the population gets immunized. The system would also allow for reducing re-immunization cases through greater coordination among the various health care providers in the state, and help school districts better manage their immunization requirements. The system would also make the tracking of vaccine recalls much simpler.  |
| Participating Agencies                            | New York State Department of Health, county health agencies and various non-profit organizations, with IBM as system integrator.  |
| Project Management Process                        | Literature searches were used to investigate and identify similar projects. The Centers for Disease Control and the Robert Wood Johnson Foundation were also contacted for possible models. A needs analysis was conducted with each of the four regional demonstration projects, followed by re-engineering studies. A statewide work group was also established which represents a cross section of people who will use or be impacted by the system. Various subgroups have been broken off from this work group to focus on specific policy and technical aspects of the project. |
| System Functionality                              | Each demonstration project has been allowed to develop its own technical architecture and specifications depending on its needs. A security standard has been established for the Health Information Network that all participants must meet. By allowing each site to develop its own system, the project is exploring many options for achieving a common set of programmatic goals.  |
| Resources   | Grant from U.S. Centers for Disease Control: \$3,870,699  |
| Status as of 5/97                                 | In the pilot stage  |
| Timeframe   | 2 years   |



| <b>Probation Automation Project</b> |  |
|-------------------------------------|--|
| Contact                             | Edward DeFranco<br>New York State Division of Criminal Justice Services<br>Phone: 518-457-3776<br>E-mail: edward.defranco@dcjs.mailnet.state.us  |
| Purpose and users                   | The system will provide timely probation-related information to County Probation Officers to assist them in the performance of core probation functions. The users will be small and mid-sized probation departments numbering about 45 statewide.   |
| Expected Impact                     | The system will improve information management and decision making at all levels of a probation department and thereby improve quality of service both to the individual client (the probationer) and the general public through increased public safety.  |
| Participating Agencies              | The Division of Probation and Correctional Alternatives (DPCA), Division of Criminal Justice Services (DCJS), and County Probation Departments   |
| Project Management Process          | A best practices review was conducted using professional organizations as well as the Internet. A BPI process was used to map out the existing process and from that the functions were broken into three levels and to date level 1 (core functions) has been addressed. In order to complete level 1, on-site walk-throughs were conducted by team members. This was followed by a series of seven site reports and these were then integrated into a standard process. This information will be used to prepare an RFP. |
| System Functionality                | The system planned will be a PC/Windows based LAN. The RFP will determine whether standard software packages or custom built programs will be used. The system is intended to be linked with various criminal justice agencies to allow for information exchanges.   |
| Resources                           | To date the costs have been absorbed into regularly funded State and Local positions.  |
| Status as of 5/97                   | Process analysis and design completed. Technology selection process under way.   |
| Timeframe                           | Began August 1996, RFP planned for July 1997   |

| <b>Real Property System Version 4</b> |  |
|---------------------------------------|--|
| Contact                               | Bonnie Scott<br>NYS Office of Real Property Services<br>Phone: 518-473-8742<br>E-mail: <a href="mailto:bonnie.scott@orps.state.ny.us">bonnie.scott@orps.state.ny.us</a>  |
| Purpose and users                     | The purpose of the system is to improve access to the RPS data by other applications, both commercial and user-developed packages, through the use of a relational database. The primary users of the system will be municipal Assessors and staff in the county Real Property Tax Services offices.   |
| Expected Impact                       | The project is expected to improve and enhance processing capabilities for maintaining assessment data needed for assessment rolls, tax rolls, and bills at both state and local levels. The data should also be more accessible to secondary users such as zoning boards, 911 systems, and planning agencies.   |
| Participating Agencies                | The NYS Office of Real Property Services (ORPS) and municipal and county assessors   |
| Project Management Process            | ORPS conducted internal staff interviews to determine software needs for the project. They then used a customer-oriented technique to produce a process map of the system and have used CS10000 to map and track the project. An external advisory group comprised of municipal and county officials was established to help define the system and advise the state developers. It meets every two months. |
| System Functionality                  | The system is designed to run on microcomputers and on mainframes to accommodate the needs of all the users. The system will be based on GUI screens for the micros. No database engine has been selected yet. The new system will likely require a 486 machine or greater to run and, as such, will necessitate upgrades by some local users.   |
| Resources                             | Absorbed into normal costs of doing business at ORPS. A licensing fee charged to each municipal user will offset some of these internal costs.   |
| Status as of 5/97                     | ORPS is currently in the development phase of the project. Testing should begin in June 1997 with an initial release date of January 1998.   |
| Timeframe                             | 1996-1998  |

| <b>SALESNET</b>            |  |
|----------------------------|--|
| Contact                    | Paul Szwedo<br>NYS Office of Real Property Services<br>Phone: 518-473-7222<br>E-mail: paul.szwedo@orps.state.ny.us   |
| Purpose and users          | The main purpose of the project is to allow for the electronic preparation of the official records of real property transfers, known as the RP-5217 form. The system is designed to reduce errors and eliminate duplication of effort at the state and local levels in the filing, processing, and distribution of the data. The primary users will be private attorneys or their staff and title companies. Secondary users will include county and municipal assessment officials as well as ORPS staff.   |
| Expected Impact            | Duplication of data entry at the state and local levels will be eliminated. Information about real property transfers will be more accurate, complete, and legible therefore overcoming the three most cited problems by local officials. Median timeframes will be reduced from 123 days to 60 days for transactions added to state files.  |
| Participating Agencies     | Participants in the project include the NYS Office of Real Property Services (ORPS), Onondaga County (pilot site), and an advisory group comprising both public and private users.   |
| Project Management Process | A steering committee that included representatives of all stakeholders was formed at the project's inception. Other critical membership included the Governor's Task Force on IRM, NYS Archives and Record Administration (SARA) and the Telecommunications Initiative Project (TIP). The committee members serve as communication links with stakeholders and were instrumental in surveying their membership regarding existing practices. The agency was undergoing a Core Process Improvement (CPI) exercise concurrent with this project and both efforts benefited from each other. Work with local officials in the pilot helped refine system features. ORPS purchased and continues to use CS10000 software to outline and maintain tasks for client server projects. |
| System Functionality       | End users will access the application through the Internet. Sales data will be stored in Albany on a Sybase SQL Server XI relational database. Requests for data will be processed through a Netscape Enterprise server. Thus, a PC running Netscape Navigator will be needed to use this application.   |
| Resources                  | Costs absorbed by internal ORPS processes and personnel  |
| Status as of 5/97          | The project is currently working on functional specifications and prototype development.   |
| Timeframe                  | June 1996 - Early 1998   |

| <b>Local Social Services District Imaging Project</b> |   |
|---|---|
| Contact   | George Warner<br>Department of Social Services<br>Phone: 518-486-9459<br>E-mail: <a href="mailto:george.warner@dss.mailnet.state.ny.us">george.warner@dss.mailnet.state.ny.us</a>   |
| Purpose and users                                     | The purpose of the system is to test imaging as a tool to improve Local District Social Services (LDSS) case workers' ability to coordinate activities related to individual cases by improving access to case folders and case related documents. The primary users of the system will be LDSS case workers.   |
| Expected Impact                                       | The system will allow case workers to access files in seconds rather than hours or days. This should allow for greater coordination of case worker activities. A driving factor for some of the project participants was the new recordkeeping requirements of Elisa's Law which requires long-term access to child abuse records. The project will also offer better support to remote office locations and replace outdated technology. |
| Participating Agencies                                | Department of Social Services and Local Districts of Delaware, Oswego, Rockland, and Ulster Counties.   |
| Project Management Process                            | Industry case studies were thoroughly reviewed. A standard project planning methodology was followed. Pilot sites were selected and a specific business need and process was then identified in each site. Applications to meet these needs were developed and tested.  |
| System Functionality                                  | The system runs on a client/server platform in each LDSS and includes three primary components: scanner, image software, and an image server. Users gain access through existing PC's on a LAN.   |
| Resources   | Between \$30,000-35,000 per LDSS excluding personnel time.  |
| Status as of 5/97                                     | In the pilot stage  |
| Timeframe   | 1 year  |

| <b>Electronic Voter Registration</b> |   |
|--------------------------------------|---|
| Contact                              | Terry Maxwell<br>New York State Forum for Information Resource Management<br>Phone: 518-443-5001<br>E-mail: tamaxwell@aol.com   |
| Purpose and users                    | Assist state and local agencies to manage the increased information flows generated by the "Motor Voter" legislation.   |
| Expected Impact                      | Faster service, less errors, and fewer resources required for data entry, records management, and records storage.  |
| Participating Agencies               | Local Boards of Elections, State Board of Elections, State Department of Motor Vehicles, State Department of Health, and the New York State Forum for Information Resource Management.  |
| Project Management Process           | Extensive use of best practices review was conducted with regards to Electronic Data Interchange (EDI) standards. A Business Process Review (BPR) analysis was conducted, the existing process was mapped, and a reengineered process was suggested. Three planning sessions were held which all participants attended. Following these meetings, consistent contact was maintained with all participants while the system was developed. |
| System Functionality                 | The system will be Internet based. Components include:<br>1) The X12 280 transaction set, which is the standard transaction set to which databases map; 2) EDI software; 3) Encryption software; 4) Mail software; 5) A mail server and Microsoft Exchange compatible system software; 6) An Internet service provider to transport the transaction set using TCP/IP protocol.  |
| Resources                            | \$180,000 grant from the NYS Archives and Records Administration and continuing volunteer efforts   |
| Status as of 5/97                    | In the software installation and mapping phase  |
| Timeframe                            | The project was funded for the period 11/94-6/96. It now continues on a voluntary basis.  |

## Appendix B. Project Comparisons

| Project Participant Roles  |   |                  |                                  |                           |                           |  |                    |
|----------------------------|---|------------------|----------------------------------|---------------------------|---------------------------|--|--------------------|
| PROJECT                    | Goal Setting                            | Process Analysis | System Design                    | System Development        | Testing                   | Review & Advice                          | Project Management |
| Aging Services System      | State, Local                            | State, Local     | State, Local                     | Private                   | State, Local              | State, Local                             | State              |
| Annual Financial Reports   | State, Local                            | State, Local     | State, Local                     | State                     | State, Local              | Local                                    | State              |
| Death Certificates         | State, Local                            | State, Local     | State                            | State                     | Local, Private            | Nonprofit, Private                       | State              |
| Dog Licensing              | State, Local                            | State, Local     | State, Private                   | State, Local              | Local                     | Local, Professional Association          | State              |
| Hunting & Fishing Licenses | State, Local, Professional Associations |                  | State                            |                           |                           | State, Local, Professional Associations  | State              |
| Immunization Information   | State, Private, Local                   | Local            | State, Local, Private, Nonprofit | Local, Private, Nonprofit | Local, Private, Nonprofit | Local, Private, Nonprofit, Federal       | State              |
| Probation Automation       | State, Local                            | State, Local     | State, Local                     | State                     | Local                     | Local                                    | State              |
| RPS Version 4              | State, Local, Professional Associations |                  | State, Local                     | Private, State            |                           | State, Local                             | State              |
| SALESNET                   | State, Local, Private                   | State, Local     | State, Local                     | State, Local              | Local, Private            | Local, Private, Professional Association | State              |
| Social Services Imaging    | State, Local                            | State            | State                            | State                     | State, Local              | State, Local                             | State              |
| Voter Registration         | State, Local                            | Local            | State, Local                     | State, Local              | State, Local              | Local, Federal                           | Non-Profit         |

| Primary Purpose of Information System for Various Stakeholders |  |  |  |   |   |   |   |
|--|--|--|--|---|---|---|---|
| Projects   | State  | County   | Municipalities   | Federal                                 | Private   | Non-Profit  | Citizens  |
| <b>Aging Services System</b>                                   | Reporting, Program Planning, Program Evaluation                | Decision Support                                   |  | Reporting                               |   | Decision Support                                      |   |
| <b>Annual Financial Reports</b>                                | Reporting, Decision Support, Planning                          | Reporting  | Reporting  |   | Inquiry   |   | Inquiry   |
| <b>Dog Licensing</b>   | Administrative, Decision Support, Inquiry                      |  | Administrative, Transactional, Reporting                       |   |   |   | Notification  |
| <b>Electronic Death Certificates</b>                           | Administrative, Decision Support                               |  | Transactional, Administrative, Inquiry, Reporting Requirements |   | Transactional, Administrative, Reporting Requirements | Transactional, Administrative, Reporting Requirements | Transactional, Administrative, Reporting Requirements |
| <b>Hunting &amp; Fishing Licenses</b>                          | Reporting, Program Evaluation                                  | Transactional, Reporting                           | Transactional, Reporting                                       |   | Transactional   |   | Transactional   |
| <b>Immunization Information</b>                                | Reporting, Planning, Program Evaluation                        | Reporting, Planning, Program Evaluation            |  | Reporting, Program Evaluation, Planning | Inquiry, Reporting, Notification                      | Inquiry, Reporting, Notification                      | Inquiry   |
| <b>Probation Automation</b>                                    | Reporting  | Administrative, Decision Support                   |  |   |   |   |   |
| <b>RPS Version 4</b>   |  | Transactional, Program Planning, Evaluation        |  |   |   |   |   |
| <b>SALESNET</b>  | Administrative, Reporting, Planning, Decision Support          | Reporting  | Reporting  |   | Transactional   |   | Transactional   |
| <b>Social Services Imaging</b>                                 | Decision Support, Administrative, Planning, Program Evaluation | Decision Support, Program Planning, Evaluation     |  |   |   |   |   |
| <b>Voter Registration</b>                                      | Administrative   | Administration, Information Integration, Reporting | Administrative   |   |   | Planning, Inquiry                                     |   |



| <b>Motivating Factors</b>             |                                      |                           |                                    |                                 |                               |   |                                       |  |
|---------------------------------------|--------------------------------------|---------------------------|------------------------------------|---------------------------------|-------------------------------|---|---------------------------------------|--|
|                                       | <b>Reason For Initiating Project</b> |                           |                                    |                                 |                               |   |                                       |  |
| <b>Projects</b>                       | <b>Offer New/Expanded Service</b>    | <b>Improve Efficiency</b> | <b>Improve Service to Citizens</b> | <b>New Federal Requirements</b> | <b>New State Requirements</b> | <b>Current Technology Unsupportable</b> | <b>New Technology Offers Benefits</b> | <b>Integration/Comply With Standards</b> |
| <b>Aging Services System</b>          | X                                    | X                         | X                                  | X                               | X                             |   | X                                     | X  |
| <b>Annual Financial Reports</b>       | X                                    | X                         |                                    |                                 |                               |   | X                                     | X  |
| <b>Death Certificates</b>             | X                                    | X                         | X                                  |                                 |                               |   | X                                     |  |
| <b>Dog Licensing</b>                  | X                                    | X                         | X                                  |                                 |                               |   | X                                     | X  |
| <b>Hunting &amp; Fishing Licenses</b> | X                                    | X                         | X                                  |                                 |                               |   |                                       |  |
| <b>Immunization Information</b>       | X                                    | X                         | X                                  |                                 |                               |   | X                                     |  |
| <b>Probation Automation</b>           |                                      | X                         |                                    |                                 |                               |   |                                       |  |
| <b>RPS Version 4</b>                  |                                      |                           |                                    |                                 |                               | X                                       | X                                     |  |
| <b>SALESNET</b>                       | X                                    | X                         | X                                  |                                 |                               | X                                       | X                                     |  |
| <b>Social Services Imaging</b>        | X                                    | X                         |                                    |                                 |                               |   |                                       |  |
| <b>Voter Registration</b>             |                                      | X                         | X                                  | X                               |                               | X                                       | X                                     |  |

| <b>Status as of May 1997</b>          |  |                         |                      |   |                             |                  |              |                   |                   |
|---------------------------------------|--|-------------------------|----------------------|---|-----------------------------|------------------|--------------|-------------------|-------------------|
| <b>Projects</b>                       | <b>Activities Complete or In Progress as of May 1997</b> |                         |                      |   |                             |                  |              |                   |                   |
|                                       | <b>Goal Setting</b>                                      | <b>Process Analysis</b> | <b>System Design</b> | <b>Standards Development<br/>or Awareness</b> | <b>Technology Selection</b> | <b>Prototype</b> | <b>Pilot</b> | <b>Production</b> | <b>Evaluation</b> |
| <b>Ageing Services System</b>         | X  | X                       | X                    | X   | X                           | X                | X            |                   |                   |
| <b>Annual Financial Reports</b>       | X  | X                       | X                    | X   | X                           | X                | X            | X                 | X                 |
| <b>Death Certificates</b>             | X  | X                       |                      | X   | X                           | X                |              |                   |                   |
| <b>Dog Licensing</b>                  | X  | X                       | X                    | X   | X                           | X                | X            | X                 | X                 |
| <b>Hunting &amp; Fishing Licenses</b> | X  | X                       |                      |   |                             |                  |              |                   |                   |
| <b>Immunization Information</b>       | X  | X                       |                      | X   | X                           | X                | X            |                   |                   |
| <b>Probation Automation</b>           | X  | X                       | X                    | X   |                             |                  |              |                   |                   |
| <b>RPS Version 4</b>                  | X  | X                       | X                    | X   | X                           | X                |              |                   |                   |
| <b>SALESNET</b>                       | X  | X                       | X                    | X   | X                           | X                |              |                   |                   |
| <b>Social Services Imaging</b>        | X  | X                       |                      | X   | X                           | X                | X            |                   |                   |
| <b>Voter Registration</b>             | X  | X                       | X                    | X   | X                           |                  |              |                   |                   |

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## Appendix C. Project Participants

*Governor's Task Force on IRM,  
Special Work Group on Intergovernmental Information Systems*

Co-Chairs Stanley France, Director,  
Schoharie County Central Data Processing  
Thomas Griffen, Executive Director,  
Office of Real Property Services

Pamela Akison, Department of Health  
Joseph Cain, Department of Health  
Edward DeFranco, Division of Criminal Justice Services  
JoAmy Guild, Department of Agriculture and Markets  
Richard Harris, Office of Real Property Services  
Terry Maxwell, NYS Forum for Information Resource Management  
Anne Marie Rainville, Governor's Task Force on IRM  
Mary Redmond, New York State Library  
Gary Rinaldi, Department of Health  
Peg Sauer, Department of Environmental Conservation  
Bonita Scott, Office of Real Property Services  
Jeffrey Swain, Office of the State Comptroller  
Paul Szwedo, Office of Real Property Services  
Steve Walter, State Office for the Aging  
George Warner, Department of Social Services  
Bill Wray, Department of Social Services

*State Agencies*

Department of Agriculture and Markets  
Department of Civil Service  
Department of Environmental Conservation  
Department of Health  
Department of Motor Vehicles  
Department of Social Services  
Department of State  
Division of Criminal Justice Services  
Division of Probation and Correctional Alternatives  
Empire State Development  
Governor's Task Force on IRM  
NYS Library  
Office of Probation, Community Correction  
Office of Real Property Services  
Office of the State Comptroller  
State Archives and Records Administration  
State Board of Elections  
State Office for the Aging

***Local Government***

***Associations***

Association of Town Clerks  
Local Government Information Technology Directors Association  
NYS Association of Towns  
NYS Government Finance Officers Association

***Counties***

|            |             |
|------------|-------------|
| Albany     | Oswego      |
| Chautauqua | Orange      |
| Chemung    | Otsego      |
| Columbia   | Rockland    |
| Cortland   | Saratoga    |
| Dutchess   | Schoharie   |
| Delaware   | Suffolk     |
| Monroe     | Ulster      |
| Nassau     | Westchester |
| Onondaga   |             |

***Cities***

|               |         |
|---------------|---------|
| New York City | Rome    |
| Oswego        | Rye     |
| Rochester     | Yonkers |

***Towns***

|               |                 |
|---------------|-----------------|
| Bergen        | Malta           |
| Binghamton    | Marcellus       |
| Byron         | Mendon          |
| Canton        | New Lebanon     |
| Champion      | North Hempstead |
| Clifton Park  | North Collins   |
| Cobleskill    | Perth           |
| Cortlandville | Pittsford       |
| East Fishkill | Putnam Valley   |
| Edinburg      | Schodack        |
| Ellery        | Somerset        |
| Hamburg       | Unadilla        |
| Huntington    | Union           |
| Lancaster     | Williamson      |
| Lebanon       |                 |

***Villages***

|             |              |
|-------------|--------------|
| Garden City | Port Chester |
|-------------|--------------|

***Other Participants***

National Center for Health Statistics  
Upper Hudson Primary Consortium  
NYS Forum for Information Resource Management

***CTG Staff***

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Jung-Sub Lee, Intern, National Computerization Agency,  
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## Appendix D. Selected Bibliography

Bruner, C., Kunesh, L.G. & Knuth, R.A. (1992). "What Does Research Say about Interagency Collaboration?" <[http://www.ncrel.org/sdrs/areas/stw\\_esys/8agcycol.html](http://www.ncrel.org/sdrs/areas/stw_esys/8agcycol.html)> Oak Brook: NCRL.

Interagency collaboration is the solution to the fragmented state and local initiatives that currently provide services to families and children. Comprehensive and integrated services are a better way to meet the human needs of families, but comprehensive and integrated services usually do not exist in most states. The nature and magnitude of the problem are presented and a vision for interagency collaboration is outlined. The authors provide a list of guidelines for effective collaborative planning, and they spell out strategies for engaging families and communities. The article includes an excellent list of resources.

Cigler, B.A. (1994 January/February). "The County-State Connection: A National Study of Associations of Counties." *Public Administration Review* 54(1): 3-11.

The author looks at current issues of greatest concern to counties as their service delivery roles expand. The lobbying efforts of state associations of counties were examined, and executive directors of statewide county organizations across the United States were interviewed in the study. The findings focus on four main areas: structural change, intergovernmental arrangements, substantive policy issues, and internal operations.

Dawes, S. S. et al. (1996). *Making Smart IT Choices: A Handbook*. Albany, NY: Center for Technology in Government.

*Making Smart IT Choices* summarizes the methods and models that CTG uses to help organizations apply technology to mission-critical problems. In true handbook style, it provides background information, worksheets, exercises, and practical ways to approach an information technology project. The case descriptions include nine evaluation products that culminate in final problem analysis and a choice of an optimal IT solution to an information problem or need. The book includes tools that can assist any planning team with step-by-step guidance.

Florio, J. J. & Reich, R. B. (1996). *Working Together for Public Service*. Washington, DC: U.S. Department of Labor.

This work is a report of the U.S. Secretary of Labor's Task Force on Excellence in State and Local Government through Labor-Management Cooperation. The results of site visits across the country are detailed to show how management and labor groups cooperated to produce better service for citizens. Typical findings are outlined and case studies are presented. A list of contact people for exemplary projects is included.

Jennings, E.T. (1994). "Building Bridges in the Intergovernmental Arena: Coordinating Employment and Training Programs in the American States." *Public Administration Review* 54(1): 52-60.

This article examines coordination issues in the context of employment and training programs at the state and local level and associated federal legislation, grants, and administrative activities. The particular focus is the effort of states to produce coordinated employment and training programs. Statutory provisions of those programs indicate that national policy makers have been attentive to the need for coordination but not much more willing to consolidate program authority than they were in the past. Instead, they have instituted procedural and structural coordination requirements, granted governors authority to foster coordination, and provided funding incentives to support coordination activities (adapted from author's abstract).

Kumar, K. & van Dissel, H.G. (1996 September). "Sustainable Collaboration: Managing Conflict and Cooperation in Interorganizational Systems." *MIS Quarterly*: 279-287.

The article identifies the possible risks of conflict in interorganizational systems, and it points out some strategies for minimizing such conflicts. A typology is identified that classifies interorganizational systems into three types: pooled information resources, value/supply chains, and networks. Economic, technical and socio-political arguments for potential conflict in these systems are also identified.

Lambright, W.H. (1997 January/February). "The Rise and Fall of Inter-agency Cooperation: The U.S. Global Change Research Program." *Public Administration Review* 57 (1): 36-44.

The Committee on Environment and Natural Resources was an inter-agency Federal committee that coordinated the multibillion dollar Global Change Research Program. Created by Ronald Reagan, honored by George Bush, and used as an exemplary model by Bill Clinton, the committee is considered an ideal model for integrated institutional innovation.



The Global Change Research Program was charged with studying environmental issues such as global warming, deforestation, and ozone depletion. The program has involved as many as 18 different federal departments and agencies since the science involved in studying these environmental issues overlap the missions of many organizations. In order to be successful the Committee on Environmental and Natural Resources determined that the critical success factors included awareness and vision of the problems, a 'triggering' event such as the 1987 Montreal Protocol, the birth of an institution, and successful implementation. The key to implementation involved neutralizing dissent, securing external dissent, and defining the limits of power.

Marzke, C., Both, D. & Focht, J. (1994). *Information Systems to Support Comprehensive Service Delivery: Emerging Approaches, Issues, and Opportunities*. Des Moines, IA: National Center for Service Integration.

The Ford Foundation and the U.S. Departments of Agriculture and Health and Human Services funded a project that investigated the current status of information technology in the context of comprehensive services initiatives. The project focused on information systems developed to support efforts to reform the service delivery system rather than those relating to the automation of existing single service programs. Examples of using information systems effectively to plan and deliver integrated services are explained, and documentation and tools from various projects are included.

McCaffrey, D.P., Faerman, S.R. & Hart, D.W. (1995). "The Appeal and Difficulties of Participative Systems." *Organization Science* 6 (6): 603-627.

Relying on the literature of cooperation and collaboration, the authors analyze experiences with participative systems in management and regulatory policy. Their thesis is that although there are many compelling reasons for private and public organizations to embrace participative systems, there are significant barriers to doing so embedded in deeply valued social, economic, and political principles. Barriers to adopting and sustaining participative systems are described; among them are dispositions against cooperating with prior adversaries, the costs of collaboration in complex social and political systems, the difficulties of engaging deep conflicts, and leadership incentives favoring control. These conditions, the authors maintain, undermine fragile participative systems.

Newcombe, T. (1996 May). "Tying the Knot: Intergovernmental IT Projects Unfold." *Government Technology* <<http://www.govtech.net/1996/gt/may/html>>

There is an ingrained culture of separatism among government agencies at different levels. The article explores cases where federal, state, and local governments are working together to develop new ways to use technology on an intergovernmental basis.

New York State Association of County Health Officials. (1997 March). *NYSACHO Automation Committee Policy Paper*.

The New York State Association of County Health Officials formed an Automation Committee in order to discuss their objectives and experiences and to air their concerns about information systems that link the New York State Department of Health and local health agencies. The discussions are summarized in this policy paper. The paper outlines key problems the committee identified and it calls for a plan of action to address them.

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## Appendix E. World Wide Web Sites of Interest

Intergovernmental issues are covered in considerable detail on the WWW. The sites we suggest here range from generic intergovernmental relations material to the very information technology (IT) specific.

Access America: Government Information Technology Services (GITS)

<http://www.gits.fed.gov/hlm/appndxb.htm>

An Appendix associated with the National Performance Review regarding goals of the Access America project.

Government Technology, May 1996

<http://www.govtech.net/1996/gt/may/cover1/cover1.shtm>

An article exploring intergovernmental information technology initiatives and some of the things to keep in mind when engaging in such a process.

Government Technology, September 1995

<http://www.govtech.net/1995/gt/sep/cooperat.shtm>

An article describing some of the initiatives of the NPR and its goals of getting government to work together.

Information Infrastructure Task Force (IITF)

<http://www.iitf.nist.gov/index.html>

A site with several links to various documents associated with federal, state, and local information technology areas.

Intergovernmental Information Systems Advisory Council (IISAC)

<http://www.admin.state.mn.us/iisac>

An advisory group dedicated to covering IT issues in an intergovernmental arena.

International City/County Management Association (ICMA)

<http://www.icma.org/>

The ICMA homepage which links to several valuable sites and documents associated with local government concerns.

National Association of State Information Resource Executives (NASIRE)

<http://www.nasire.org>

NASIRE maintains an excellent intergovernmental relations committee that recommends policies and technologies state governments might want to consider.

National Conference of State Legislatures (NCSL), Intergovernmental Health Policy Project

<http://www.ncsl.org/ihpp/>

A project designed to explore the future role of intergovernmental collaboration in health care issues and the role IT can play in that future.

National Performance Review Reports

<http://www.npr.gov/library/reports/it05.html>

A report from the National Performance Review (NPR) dealing with electronic tax filing in an intergovernmental atmosphere.

*New York State Governor's Task Force on Information Resource Management* <http://www.irm.state.ny.us/>

Policies related to management of information resources in NYS are available on the Task Force Web site. State and local information system planning teams can refer to the policies online while developing and designing new systems as well as during the implementation phase when systems are being piloted, tested, and rolled out.

NT Town

<http://www.sas.ab.ca/nttown/inter.html>

A document describing seven themes of networked government and some of the things that must be considered when establishing such links.

Office of Information Technology, Office of Governmentwide Policy, US General Service Administration

<http://www.itpolicy.gsa.gov/>

This site offers many information technology links and the sponsor is beginning to develop several intergovernmental initiatives.

Public Technology, Inc.

<http://pti.nw.dc.us/index.html>

Public Technology, Inc. (PTI), is the non-profit technology R&D organization of the National League of Cities (NLC), the National Association of Counties (NACo), and the International City/County Management Association (ICMA).

The Office of Intergovernmental Solutions (OIS)

<http://policyworks.gov/org/main/mg/intergov/>

OIS is an office of the General Services Administration (GSA). The site contains several links to information technology sites. There are also newsletters, a guide to state IT offices, and several international IT links.

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## Appendix F. NYS Policies Related to State and Local Government Information Systems

The following New York State policies, developed and promulgated by the NYS Governor's Task Force on Information Resource Management, are relevant to information systems for state and local collaboration. The full text of these policies is available on the Task Force Web site at [http://www.irm.state.ny.us/policy/pol\\_tbl.htm](http://www.irm.state.ny.us/policy/pol_tbl.htm)

| Number | Policy  | Date Issued        |
|--------|---|--------------------|
| 96-7   | Electronic Data Interchange                                   | April 12, 1996     |
| 96-8   | Use of the Internet   | May 3, 1996        |
| 96-10  | Legal Acceptance of Electronically Stored Documents           | July 23, 1996      |
| 96-11  | Network Services Agenda                                       | August 7, 1996     |
| 96-11A | Agency Preparation for the "NYT"                              | November 15, 1996  |
| 96-14  | New York State Use of Electronic Mail                         | June 11, 1996      |
| 96-16  | Technology Standards  | July 19, 1996      |
| 96-16A | Technology Standards - Electronic Document Management Systems | January 3, 1997    |
| 96-17  | New York State Strategy for Information Resource Management   | August 7, 1996     |
| 96-18  | Geographic Information Systems                                | September 20, 1996 |
| 96-19  | Data Sharing Among Agencies                                   | December 5, 1996   |
| 97-1   | Information Security Policy                                   | January 9, 1997    |
| 97-2   | Local Government/State Government Technology Initiatives      | February 4, 1997   |
| 97-3   | Statewide Data Dictionary                                     | February 13, 1997  |

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