

Prototypes are used to represent, test, and revise design concepts. Their purpose is to test certain aspects or characteristics of a desired system without incurring the cost or time of actually building a full system. Prototypes include just enough functionality, data, and presentation features to build mutual understanding between designers and users and to test key elements of the design. They are not developed into a final product, but inform its later development through iterative testing, discussion, and evaluation. Prototypes can range from paper and pencil sketches to partial systems, depending on the complexity of the design to be tested.

The New York State-Local Internet Gateway Prototype was a partial system built to identify, demonstrate, and evaluate key factors associated with the design, development, and deployment of a single point of contact for G2G work among state and local governments. In design terms, the Prototype channels multiple G2G business functions through a secure, single sign-on, role-based system accessible through the Internet. It was used to assess management, policy, technology, and cost implications likely to be associated with the development of a full-scale G2G system. The overarching goal was to understand what would be necessary for state, county, and municipal governments to realize greater efficiency, high quality authentic data, and more consistent and coordinated services.

Figure 3. New York State-Local Internet Gateway Prototype design

Figure 3 represents the high-level conceptual design of the Gateway Prototype. It included applications from three state agencies, plus general information features. It used data about 15 (of 62) counties and their associated municipalities. This data was provided by the participating state agencies. The Prototype did not include any financial transactions associated with the applications. It operated from a secure Web site hosted on the public Internet and was available to authorized government officials. The Prototype focused entirely on G2G relationships: it did not offer public services.

Even in this limited form, however, the Prototype was designed to represent key features of governmental structure and dynamics in New York State. Toward that end, key working assumptions were adopted that guided participation, design, and testing. First, state and local agencies were all defined as both customers and suppliers of information and services to the Gateway Prototype; neither level was exclusively the customer of the other.

Second, in order for the Prototype to generate enough useful results, it had to demonstrate how multiple organizations at different levels of government work together. We therefore selected three state agencies from three different policy domains and thirteen local governments (including counties, towns, and cities, but not villages) from every region of the state to take part in the design. We refer to cities and towns collectively as "municipalities." Local governments were selected to represent a wide variety of size, wealth, and technical sophistication. Together with the Center for Technology in Government (CTG) staff and corporate partners, these state and local representatives constituted the Prototype Team.

Third, part of the Gateway Prototype's purpose was to identify the value proposition for all participants. Consequently, both benefits and major cost categories were documented for all types of participants. This data lays a foundation for establishing cost structures for any future effort.

The Prototype design

The Gateway Prototype was designed to offer some features and applications to all users and to limit other applications to specific users based on their functional roles. In the Prototype three functions were made available to all state and local users.

- Links to Resources on information about laws and regulations, professional associations, data resources, and other helpful information selected to be of value to state and local officials.
- A searchable, unified Contact Directory of state and local government professionals. This electronic repository of contact information allowed users to identify state and local government officials and use the information for mailings and other purposes.
- User support functions including FAQs and Help features.

Under the role-based scheme, each user had access to additional functions that pertained to his or her job. Roles were assigned based on official job title with some additional adjustments made to fit special local conditions. Three role-restricted applications were selected to represent common categories of state-local business functions, so that the learning generated by the Prototype could be generalized beyond these specific cases.

- **Contact Repository Application.** This electronic repository contained contact information about state and local government officials such as title, organization, address, phone number, and job function. All contact information was updated electronically through a decentralized process that made each locality or state agency its own data owner. Users who had access to this application were designated data owners who managed their own contact information and contact information for other officials in their agency or jurisdiction. This business process was chosen to represent an authentic shared data resource and was modeled after a similar effort at the New York State Office of the State Comptroller.
- **Dog Licensing Application.** This application supported transactions that take place between the NYS Department of Agriculture and Markets and city, town, and village clerks. The application included searching for registered dogs in multiple municipalities in NYS, registering a new dog, renewing a dog license, and transferring a license to a new owner. In addition, the application made it possible to create and print reports on new and delinquent or expired licenses. This application was chosen to represent a high volume G2G transaction process.
- **Parcel Transfer Verification Check Application.** This application performed an automated data quality check to flag possible errors that require further investigation to either adjust or validate the record. The application involved the New York State Office of Real Property Services (ORPS), county real property officials, and town and city assessors. The county forwarded property transfer records to the Gateway Prototype for checking. The application applied nine business rules to each record and flagged records that may have had errors, thus alerting assessors to review them. This application represented rule-based exception reporting.

The role-based access feature was built into the sign-on function and limited access to each application based on individually assigned roles. For example, town clerks generally processed dog licenses and contact information, but not property transfer records. Therefore, when a town clerk signed on to the Gateway Prototype she had immediate access to both the Contact Repository Application and the Dog Licensing Applications, but not to the Parcel Transfer Verification Check Application.

New York State-Local Internet Gateway Prototype Scope Statements

The Prototype consisted of several components, including the Gateway Prototype, a Dog Licensing Application, Parcel Transfer Verification Check Application, and Contact Repository Application.

Gateway

The purpose of the Gateway Prototype was to pull several different G2G business functions from different state and local agencies through one common place on the Internet. The Gateway Prototype included

- single sign-on,
- centralized identification and authorization of users,
- access to the look up feature of the Contact Directory with ability to do predefined sorts and queries,
- access to role-appropriate business functions (dog licensing, parcel transfer data verification check, contact repository),
- access to general information resources, and
- access to Help and FAQs.

Dog Licensing Application

This intergovernmental application represented a high volume transaction process. It involves the NYS Department of Agriculture and Markets and cities, towns, and villages throughout the state. The Dog Licensing Application provided:

- data as required in the existing DL1Form,
- input into a repository of new dog and owner information producing generic recording of licenses for non-purebred dogs,
- renewal of licenses (excluding mailing renewal notices to owners),
- transfer of ownership, and
- local reporting functions.

Parcel Transfer Verification Check Application

This application supported an exception reporting process that involves ORPS, county real property officials, and town and city assessors. It was a data quality check on the status of parcel transfers in localities throughout New York State. The application applied nine business rules that identified potential data problems. The application provided:

- validation of data input from the required RP 5217 form,
- alerts to assessors, county real property tax service officers, and ORPS staff about potential data conflicts or abnormalities,
- simplified verification and correction steps for data quality, and
- more accurate recording of parcel transfer data in the initial stages of reporting.

Contact Repository Application

This application, modeled after the Office of the State Comptroller's MACROS system, provided access to a repository of contact information for state and local government officials. This application included:

- a decentralized data management process in which each state agency or local government was the owner of its respective contact information,
 - role-based assignment of data owners and data entry operators,
 - ability for the data owner to change, delete or add data,
 - ability for all users to search, view, and export contact information, and
 - ability for all users to propose a change to any record for the approval of the record's data owner.
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