

Government is all about information and service delivery. The World Wide Web, offering virtually unlimited access and almost instant feedback, seems perfectly suited for government work. By transcending time, place, and distance, the Web removes barriers that often hamper effective service. For these reasons, most government organizations are eager to use the Web to deliver services to citizens and to conduct internal business. However, the Web abounds with examples of premature, ineffective attempts to take advantage of its power to visualize and communicate information. Developing a service delivery strategy that incorporates the World Wide Web is neither simple, nor straightforward, nor inexpensive.

In late 1995, dozens of New York state and local government agencies identified a long list of learning objectives that became the agenda for the Internet Services Testbed Project at the Center for Technology in Government. Over the first six months of 1996, the Center worked with seven state and local agencies to assess the feasibility, costs, and benefits of Web-based services. The agencies included:

- Empire State Development, Office of Motion Picture & TV Development
- Governor's Traffic Safety Committee
- Hamilton County & the NYS Performance Measurement, Reporting, & Improvement System Project
- NYS Division of Housing and Community Renewal
- NYS Division of Military and Naval Affairs
- NYS Office of Alcoholism & Substance Abuse Services
- NYS Office of Real Property Services

The project activities were focused in two areas. First, to develop, test, and evaluate prototype Web sites for each agency and to identify the technology, management, and policy barriers they encountered and the lessons they learned. Second, to develop practical tools, based on the project experience, that would assist other organizations in their efforts to provide Web-based services. The project resulted in four such tools, all available on the CTG Web site (<http://www.ctg.albany.edu/projects/inettb/isgmn.html>).

- Developing & Delivering Government Services on the World Wide Web: Recommended Practices for New York State
- World Wide Web Starter Kit
- Cost/Performance Model for Assessing WWW Service Investments
- Online Seminar on Internet Security Topics

Six of the seven agencies successfully completed prototype Web sites during the project. Five sites were released on the Web by August of 1996, with the sixth following in January of 1997. The development and evaluation process uncovered a number of obstacles that the agencies worked to overcome. Those barriers and the key lessons learned are the main focus of this project report.

Barriers to developing Web-based public services

Management barriers. Overall, the management barriers encountered were more severe than the technology and policy barriers. Participants believed that these barriers resulted from a lack of understanding on the part of management, that the Web is a powerful but extremely complex new approach to providing services to customers. The lack of clear programmatic goals and organizational roles and responsibilities were significant barriers to success as was the sheer number of organizational units and individuals that needed to be involved in these efforts.

Technology barriers. The agencies faced a range of barriers as they worked toward establishing a technical environment to support the delivery of Web-based services. They dealt with technical infrastructures that were inadequate to support development of Web-based services. They also faced a new and rapidly changing product market. In addition, they found they had little relevant in-house expertise and insufficient time to develop it.

Policy barriers. Overall, policy issues represented the weakest barriers to project activities. The lack of internal policies, in fact, allowed a wide range of freedom in selecting objectives for Web-based services and in selecting and presenting content. However, the participants expected policy issues to become significantly more important in the future. First, as more sites come on line, the linkages among them are likely to raise policy questions related to data sharing between programs and agencies. Second, as individual sites mature, they will move beyond information dissemination into more transaction-oriented areas where policy questions about documentation, ownership, authenticity, privacy and other concerns will become critical.

Lessons from the field

The project produced key lessons about defining, developing, and managing Web-based public services.

This is a new kind of service, not just a new technology. The ability to integrate services and information from many organizational units and programs means that WWW services need to be guided by enterprise-level strategies and managed by teams with a broad range of expertise.

A Web site is a dynamic public representation of an agency and its programs. It needs to be developed and managed as a major organization-wide initiative. Clearly defining the business needs that the Web service will support and its relationship to the overall agency mission is key to this effort.

It is easy to underestimate the managerial and technical complexity of Web-based services. Complexity stems from several sources: a high degree of public visibility, rapidly changing technologies, the need for incremental and iterative development processes, and the tightly interwoven threads of policy, management, and technology concerns.

Web-based services can be expensive. Because it is easy to use, people often tend to underestimate the cost of developing an effective WWW service. Even the smallest projects demand substantial human, technical, and financial resources. Personnel and technical infrastructure costs tend to comprise the bulk of expenses.

Managing information content is the most fundamental and often the most difficult aspect of developing and managing a WWW site. This activity entails selecting content that satisfies a clear service objective and making it accessible to a well-defined intended audience. Often existing information needs to be reformatted or “reengineered” to take advantage of the linkages, search features, and navigation aids that the Web provides. It is also usually necessary to maintain the same information in two or more formats for different audiences.

Effective Web-based services demand appropriate computing and communications infrastructure. The condition of an agency’s existing infrastructure, especially on the desktop, can present a significant threshold barrier.

The use of the Web presents new policy issues and casts existing information policies (especially those related to access and intellectual property) in a new light. A clearly stated Internet service policy can help focus agency-wide efforts to create and manage this service. Both statewide and agency-level information policies need to be evaluated and refined in order to fully employ the data sharing and business transaction capabilities of the Web.

Security considerations are important, but manageable. The most common WWW applications (information and referral, downloading documents, e-mail forms, internal searches of a site) have few security risks. Other applications (such as providing public access to internal databases) entail major security concerns. However, rather than shy away from these applications, agencies should educate themselves about both the risks and tools for managing them.

Much basic information and many technical tools needed to create and manage a Web site are available at low or no cost on the Internet itself. Practically anything an agency needs to know about using the WWW or developing Web services is readily available on the Web itself including other sites, white papers, tutorials, style guides, discussion groups, software, indexes, and search tools.