Local Government and the Internet:
Key Issues and Best Practices for Nontechnical Officials

Philip Young

To think comprehensively about the Internet as a way of disseminating information or providing online service requires gaining knowledge across a wide range of topics, from connectivity to security to software and hardware. The Internet has become a de facto part of even the smallest local governments. Ninety-eight of North Carolina's 100 counties and more than 250 of its 700-plus municipalities have websites.[1] At least that many have e-mail.

The author is the School of Government's instructional technology facilitator and director of NCINFO. Contact him at Young@iogmail.iog.unc.edu.

This article discusses key issues and best practices in local government use of the Internet. Local government leaders (elected officials, city or county managers, and department directors) take on a host of responsibilities in this arena. Leaders—and government personnel in general—need to have basic shared knowledge about Internet use and function with regard to communication and the delivery of information and services. In particular, jurisdictions without a dedicated information technology (IT) employee or department should find the ideas presented in this article most helpful. However, the key issues and best practices discussed here apply to all lo-

cal governments, and many of the ideas come from North Carolina jurisdictions with significant IT operations. Elected officials, city and county managers, and all other employees (even part-time ones) have a responsibility to know about the Internet, just as they have a responsibility to know about public utilities, public finances, public records law, and many other aspects of law and rules that affect their work as public employees. Although none of these groups are responsible for detailed, hands-on maintenance of their city or county's Internet work, they should be knowledgeable about key issues and best practices in ways pertinent to their roles in local government.

For example, a best practice for a local government is to have a policy on appropriate and inappropriate use of e-mail and the Web: types of e-mail allowed and types prohibited; types of websites permissible to visit and types proscribed; and so forth.[2] Elected officials should know whether or not their jurisdictions have a policy and what it says. City or county managers and department directors also should have that knowledge but as well should know how to locate the policy or how to write a policy if there is not one currently in use. Lower-echelon employees need to know what the policy is, how it will be enforced if there is an infraction, and what the proper rules of Web and e-mail use are. None of these audiences need to know the policy in the same way or to the same degree.

Each topic discussed in this article is complex enough to require specialized professional skill. Jurisdictions that are fortunate enough to have an IT department, an individual with IT expertise, or a contract with a company or an individual with such expertise can rely on those professionals to know and apply best practices for implementing and

Key Legislation

For local governments running or planning to run a website, the Americans with Disabilities Act (ADA) has kept up with the emerging technology of the Internet. Just as public buildings must have ramps or elevators for the physically disabled, so must websites have designs suitable for visually impaired or blind visitors.

If the government receives federal funding, the Rehabilitation Act of 1973 also applies. The Rehabilitation Act and the ADA generally require that state and local governments provide equal access to their programs, services, or activities to qualified people with disabilities unless doing so would fundamentally alter the nature of those programs, services, or activities or impose an undue burden.

Thus a government website, like a government building, must provide access to people with a disability equal to the access provided for citizens without a disability. Visually impaired citizens can use "screen readers" to "read" a Web page. Screen readers read lines of code that make up the Web page display (to find out how to view this code, see

taining the website knows about ADA compliance and has developed the local government's website to be compliant.

A 2004 Supreme Court decision in *Tennessee v. Lane* allowing people with disabilities to sue governments that do not provide equal access to government buildings may pave the way for a successful suit to demand and expect compliance anywhere that government does business requiring access. Lawsuits pressing for ADA compliance for business websites have been tested since 1996, but none have succeeded in establishing ADA compliance in the same way or to the same degree that the *Tennessee v. Lane* case did for access to public buildings.[5] The best practice for a local government is to meet the ADA design standards when building the site or when next doing a major update or renovation of the site. The U.S. Department of Justice website and the Web Access Board website give detailed instructions for design.[6] Also, a number of programs (such as Bobby, Wave, and LIFT) are available to check whether a current website is ADA compliant and, if not, how far from compliance it is (for the web addresses of these programs, see the balloon).

Besides adhering to federal law regarding ADA

Peek behind a Web Page

The next time you are online, take a peek behind a Web page. Open your Web browser (Internet Explorer, Mozilla, Netscape, or Opera), go to the View option on the top toolbar, and click on it to get the drop-down menu. Scan down until you find Source or Page Source, and select that option. A screen will pop up that shows the code that the browser is reading to display the Web page you are looking at. A screen reader selectively reads through the code to give the visually impaired user meaningful content about the page.

Test Your Compliance with ADA

Test your website for ADA compliance by using Bobby (bobby.watchfire.com/bobby/html/en/index.jsp), Wave (www.wave.webaim.org/wave/index.jsp), or LIFT (www.usablenet.com/).

running technology related to the Internet.[3] IT specialists also can help with policies regarding Internet use, assuming that they know the most important points of federal and North Carolina state law as it applies to local governments. The most fortunate jurisdictions may even have a public information officer or a chief information officer who helps the jurisdiction connect the "hard" IT aspects of connectivity, security, and hardware or software purchases with the "soft" issues of policy and citizens' needs. But many jurisdictions, especially small ones, may be operating without a resident IT expert or the budget to contract for ongoing IT support and consulting.

the balloon). A Web browser actually translates a particular kind of code (hypertext markup language) to display a website. The screen reader speaks that code to inform a visually impaired user about the page. Poorly coded or intricately designed Web pages can make the task almost impossible for the screen reader.

Local government leaders do not need to know how to code Web pages, how screen-reader technology works, or even what the ADA's recommendations are to make a Web-page design comply with the law.[4] But they should make sure that the IT manager or the person responsible for producing and main-

compliance, all local governments must adhere to state law regarding public records, especially rules regarding retention of records. The website of the North Carolina Office of Archives and History explains record retention for digital information, covering electronic records, website guidelines, and e-mail.[7] The best practice for any local government, besides following the laws and the guidelines on the Office of Archives and

History website, is to make sure that all its employees and elected officials know and understand how the public records law applies to the digital files stored on their computers (home or office, if a record deals with official public business) or exchanged via e-mail. A primary concern for an IT manager, a public information officer, or a chief information officer is proper storage of and ability to retrieve digital records that fall under the public records law.

Jurisdictions that do not have an IT director, an IT department, or even an informal IT individual are still subject to the public records law.

Two common scenarios can help local government leaders think about their ability to comply with the public records law:

- A local newspaper or a reporter from a news organization requests all the e-mail of the mayor and the manager regarding a current issue.

- An employee feels wrongfully dismissed. He decides to take action in court, and his lawyer subpoenas the local government for all digital records regarding the employee.

How would *your* local government go about meeting such a request? Are the e-mails archived and organized in some way that they can be searched? Do any e-mails contain information that might actually be restricted from general public access, such as personnel information?

A tremendous number of work hours can be diverted to dealing with scenarios like these. Each day, employees and elected officials generate significant numbers of e-mails, some casual, some that contain restricted information, and many that must be saved to meet the retention policies of the public records law. Lack of technical expertise does not absolve any local government from complying with the law.

Fortunately, help can be found not only through the Office of Archives and History but also from the listserv of the North Carolina Local Government Information Systems Association (NCLGISA), which local government leaders without IT support can join or visit.[8] (For a definition of "listserv," see the later section of this article titled "Shared Knowledge.") As members or visitors, they can search the message archives for discussions about e-mails and public records.

Connectivity: Access and Service

Most simply, "connectivity" refers to the type of connection that a machine or a network of machines makes to the Internet. Types of connections include telephone lines, cables, fiber optics (digital subscriber lines—DSLs), and wireless (satellites).

Connectivity also has to do with getting easy access and helpful service, which relate to quality of information, presentation of information, and successful interaction in a transaction. Each type of connection has limits based on how well it can transfer information from the computer serving the information up (the server) to the computer receiving it (the client). No matter how complex the network, the aim still is to get one piece of information from one location to another and sometimes back again. Telephone lines are slow compared with high-speed options like cables, fiber optics, and wireless.

In a study completed in December 2002, in twenty-five North Carolina counties, a majority of households with Internet access did not have high-speed access.[9] The type of connection that a citizen has affects the citizen's ability to get easy a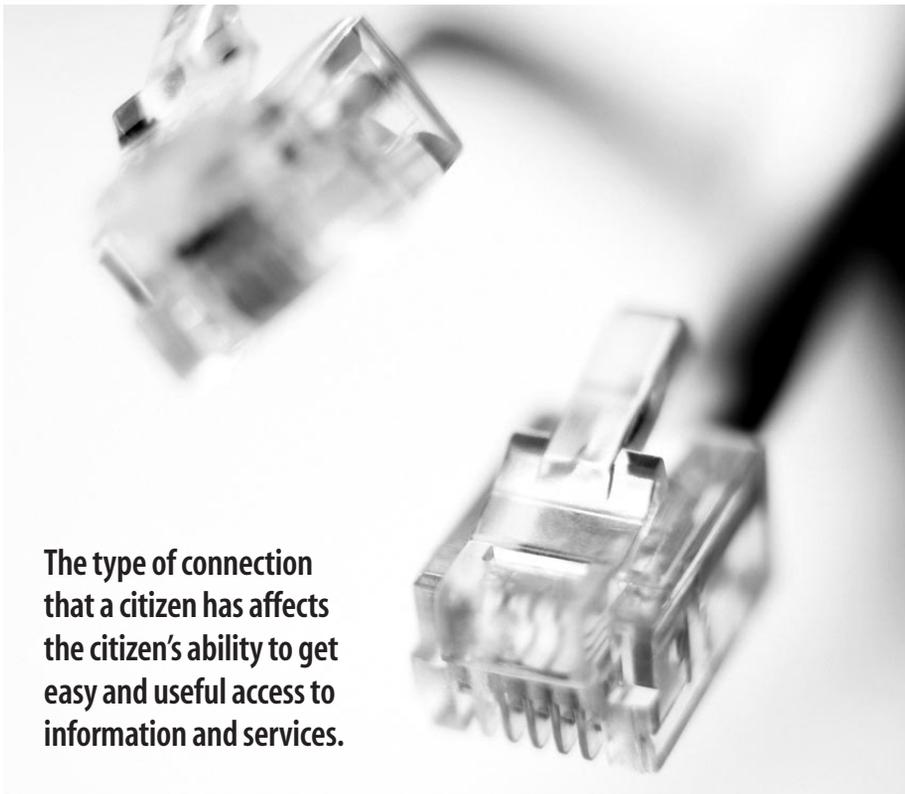nd useful access to information and services. Like roadways across the state, the Internet is constrained by laws of physics: digital records take up space on a hard drive, data transferred from one computer to another can clog a telephone or cable line if too much is sent at one time, and applications performing tasks on a computer can slow performance if the demands of the process are too large. A complex website loaded with multimedia, Geographic Information Systems (GIS) data, and dynamic services can prove unwieldy and downright impossible to use for a citizen who connects to the Internet via a telephone line. A telephone line, like a small rural road, cannot handle a lot of traffic, and a website trying to transmit large amounts of data through a telephone line to produce the proper display for a user can slow to a crawl. The issue is not whether a user (a citizen or a business) has access but what degree of access the user needs to make the visit to the website useful and worthwhile.

To think wisely and comprehensively about connectivity, local government leaders might seek answers to the following questions:

- How many citizens in our jurisdiction connect or could connect to the Internet by using a telephone line, and how many connect or could connect using cable, fiber optics, or wireless?

- How many citizens in our jurisdiction cannot connect because they do not have a computer, and how many have a computer but choose not to connect?

Unless a local government intends to discontinue taking payments at the town hall or stop mailing bill notices to mailboxes when it establishes a website, the Internet is an additional way to offer service. It may not be the choice that most or many citizens want to make. Instead of building or expanding a website, a jurisdiction might better spend $20,000 to hire a part-time person to answer telephones and a part-time person to meet and greet the public coming to the town hall or the city hall. It may even have a large group of citizens who do not know that this extension of service exists, if the service has not been

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The type of connection that a citizen has affects the citizen's ability to get easy and useful access to information and services.

E-government could be extremely efficient for all parties for certain kinds of information and services.

But efficient performance requires the successful integration of several factors. First, a citizen must have access to the Web with the minimum type of connection—that is, dial-up through a telephone line.

Second, the citizen must know about the local government website.

Third, the local government website must be designed to work efficiently with the citizen's type of connection. An all-too-common problem that occurs when a government is using the Web to target the general population is that it creates Web pages and a website that require a high-speed connection to function efficiently. This frustrates users with dial-up connections, who still represent the largest type of connectivity group. A sad product of the "browser wars" between Internet Explorer and all the others has been the addition of specialized code for

promoted and marketed. Local government leaders should be sure that they think about how the Internet fits into their larger system for reaching and responding to citizens, including telephone calls, faxes, U.S. Postal Service mail, and visits to government offices.

Performance Measurement

Since the use of the Internet represents an extension of service and a new way of doing government business, local government leaders should think about measuring their government's performance on the Internet. The best practice for measurement involves a comprehensive look at all services in an attempt to see where and how the Internet helps improve efficiency.[10] "Efficiency" is the ability to increase output by reducing input. If a citizen wants to know the office hours of local government departments, he or she might call a local government number, get someone on the phone, and ask that person a question. If fifty citizens decide to make the same call in a day and a human being has to answer each call, that process is very inefficient. But if a citizen can call an automated recording or go to a website, then the process is more efficient.

Join a Listserv

The School of Government runs more than twenty listservs, in areas ranging from business licensing to property tax. A list follows. To request to join any of these listservs, go to www.sog.unc.edu/listservs.htm, and select the |subscribe| option in the listserv table on that Web page.

Group Served	Listserv Name
Business licensing	buslic
City and county managers	ccmanagers
City and county clerks	clerks
Department of social services attorneys	dssattorneylist
Human resources and personnel	humanresources
Facilitation and organizational development group	fodg
Recent N.C. criminal court decisions	iogcriminal
News of IOG recent publication releases	instofgovpubs
Local government lawyers	lglaw
HIPAA medical privacy training	medicalprivacy
Registers of deeds	ncard
Community development	nccomdev
Economic development	ncecondev
Finance officers and directors	ncfinance
Geographic Information Systems	ncgis
Local government information systems association	nclgisa
Local government budget association	nclgba
Planners and planning departments	ncplan
Property mappers association	ncpma
Risk management	ncprima
Public works and environmental services	ncpublicworks
Purchasing agents	ncpurchasing
Nonprofits and local governments	nonprofitliasons
Soil conservation and management	soilconservation
Property tax assessors and administrators	ptax

"cool effects" that alternative browsers cannot interpret properly. Any person designing a site for a local government should test the site in all browsers on the basis of a reasonable standard (such as certain versions of the browsers). Currently a good test standard would be Netscape 4.7 or better, Internet Explorer 5.0 or better, Mozilla 1.5, Firefox, Opera, and Safari (Macintosh's default browser).

Fourth, content or services that work ideally with Web delivery are important for efficient performance. One of North Carolina's breakout service successes has been the Department of Motor Vehicles' online vehicle registration service.[11] Handling registration and payment through a Web transaction is highly efficient. The only way that it could be more efficient would be for users to be able to print their new registration, complete with sticker, directly after their payment is processed. This online service has not closed the physical locations of the department, but it has relieved personnel of some duties and reduced processing hours.

The Web cannot make all services more efficient. Any online payment that can be automatically debited directly from a bank account, like a water bill, cannot be paid as efficiently via a Web transaction as with the automatic-debit processes used by banks and credit card companies.

Also, an online payment system that does not devote a portion of its Web page to explain to users why paying online is safe will not seem as reliable to people who would rather pay in person or by U.S. mail.

Local governments cannot do everything via the Web, but they should consider doing everything that could be done more efficiently that way. Talking to personnel in other jurisdictions that have ventured farther down the Internet road can help local government leaders determine where best to put their Internet energies. In the "forest" of the organization, the Internet represents only some of the "trees." The larger the forest, the more trees IT will represent, but IT is not a

forest unto itself. In gauging the performance of the entire organization, the two wisest questions to consider are these:

- Does the Internet perform efficiently for local government employees?

- Where and how much does the Internet help the local government improve efficiency for citizens?

One of the best practices for evaluating a website's performance is to use software like Webtrends or Urchin (for the web addresses of these programs, see the balloon). These programs provide all kinds of information about activity on a website, including the number of hits by unique visitors and the means by which visitors access the site (for example, whether they are using a search engine, typing the address directly, or linking from a School of Government website). These applications also will tell a local government how many visitors its website has by the day or the month or the year, what browsers the visitors are using, which pages are most frequently visited, and which files (applications forms, city council minutes, etc.) are most frequently downloaded. They can even tell a government how long a visitor spent on a page, and track the path that the visitor took through the website before exiting. Without some kind of analysis tool, the success of a website might be measured only by praiseworthy comments and anecdotal stories among a few citizens.

A government may discover that its website is not doing much more than acting as a billboard. The Web provides far too much power for a local government website to function only as a billboard.

Policies

Far too many jurisdictions have Internet access without policies in place. Policies for use of both the World Wide Web and e-mail are imperative. So are policies for security and disaster recovery (see the balloon).[12]

Fortunately, no city or county needs to invent policies from thin air. Excellent use and security policies can be found online at either the NCLGISA website or many of the best North Carolina local government websites.[13] IT directors are happy to share policies because sharing makes Internet use by all local government employees better, especially where security is concerned.

The great power of the Internet also is its great weakness: massive and immediate interconnection. Because local government employees now often communicate by e-mail with their counterparts in other jurisdictions, they can spread an e-mail virus to their entire peer group if lax security standards exist in their local government. The strongest chain is only as strong as its weakest link. Networks without firewalls or computers without virus protection are a danger to everyone. Equally problematic are employees operating on the Web or using e-mail without guidance about what is appropriate use and what is not. Common sense cannot substitute for a use-and-security policy.

Use policies cannot be uniform. They must reflect the culture of a local government. Thus local government leaders should look at several policies before determining the right one for their juris-

> ### *Analyze Your Website's Performance*
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> Analyze your website's performance with Webtrends, available at www.netiq.com/webtrends/default.asp, or Urchin, available at www.urchin.com/.

> ### *Establish a Disaster Recovery Process*
>
> Imagine that the hard drive on your computer at work crashed and all the data and applications on it were destroyed. How long would it take you to reinstall them on a new computer? More immediately, how long would it take you to get a new computer? Would any information be irretrievably lost? If so, the first thing on your to-do list when you finish reading this article should be to establish a process and procedures to protect, store, and recover your data.

diction. Local governments that are too small to have a human resources department or an IT manager can visit the School of Government listserv site (see the sidebar on page 23) and join or visit the human resources and NCLGISA lists to get help. Some use policies are extremely strict, limiting Web use and e-mail to work only. Other policies are more open and flexible, allowing for Web surfing and personal e-mailing during lunch and breaks. A good policy and reasonable enforcement might just spare a government an embarrassing report in the local newspaper.

Strategic Planning

Strategic planning, like performance measurement and policies, should cover the overall relationship of a local government with the Internet and IT. A government should have processes in place to back up data regularly, to manage recovery of data in the event of a disaster, to locate software licensing, to provide employee training, and to manage IT budgeting. Even a small jurisdiction with only one computer should have a plan to back up data regularly to a CD or an alternative hard drive (on another computer away from the main computer in use). The jurisdiction should be able to recover those data and reinstall all software on the same or another computer if employees come in one day and find the computer burnt to a crisp in a fire or its hard drive erased by user error or malice.

Local governments are responsible for many records and all software licenses. Buying a single user copy of software and installing it on more than one machine is illegal. Owning a copy of software and being unable to produce the license for it is also illegal. Many local governments found this out in 2000 when Microsoft began demanding proof of licenses for software in use at local governments. Reporter Christopher Mcconnell described what happened to Virginia Beach, Virginia, when Microsoft came calling:

> *Last August [2000], Virginia Beach received a letter from Microsoft requesting a routine inventory of licenses and installed software at city offices. Virginia Beach's city government employs 5,900 people and uses 3,900 Windows computers. The 60 days [Microsoft] gave the city presented both an organizational and technical challenge for the city's IT unit.*

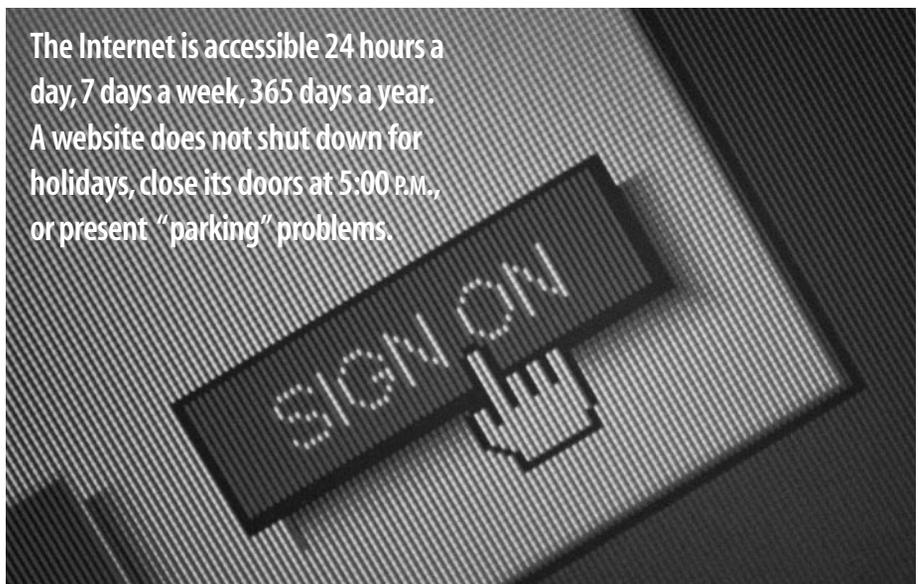Microsoft's random audit "resulted in the municipality sending [Microsoft] a $129,000 check."[14]

Virginia Beach's experience has become the de facto cautionary tale for all local governments. The best practice is to keep all software licenses and Repair/Restore disks in a central location that is well guarded against disaster. A government may need only the licenses if the Restore software can be downloaded from the company website, should the disks fail or be lost.

Finally, employee training and IT budgeting should be part and parcel of a strategic plan for IT. Again, even a one-computer, one-stoplight, one-police-car

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town should have an IT plan. Any public employee accessing the Internet should have proper training in basic computer knowledge, especially as it relates to connecting to the rest of the world (through e-mail and the Web). The School of Government offers a basic IT course online.[15] Local community colleges and universities offer other options.

All employees should be knowledgeable about IT policies, use of antivirus software, management of e-mail, and resources for help with computer problems. The IT budget should anticipate monthly expenses and yearly upgrades in software and hardware.

If a local government's IT needs are being met by a conglomerate of employees with specialties in areas other than IT, that jurisdiction should consider budgeting for a permanent IT position whenever possible. A single professional person devoted to IT management can help immensely, especially when issues of federal and state law arise and when technical expertise is required for data management, security, and disaster recovery.

Creation, Implementation, and Management of Websites

Just as every jurisdiction has a town hall or a county government office, so does every jurisdiction have a website or plan to have one in the future. In some jurisdictions the website has probably supplanted the hotline as some citizens' first avenue for information.

Most cities and counties, however, probably underuse the Internet. Further, quite a few websites may not comply with ADA recommendations.

Creating and posting a Web page is simple. For $9.95 a month, a person can purchase a domain name and post Web pages, images, and documents to a server directory that can be viewed by anyone with an Internet connection. But for a website to be something that a citizen, a business, or a visitor will use, local government leaders must see that creation, implementation, and management of it are handled professionally and thoughtfully.

Designing a website to be compliant with the ADA and consistent when viewed by different browsers is difficult. A designer who wants to use all the rich enhancements of Web browsers may find that many of them either fail to comply with ADA recommendations or make it extremely difficult to do so. Local governments cannot make their websites "cutting edge" or "cool" if doing so will deny access to a citizen who does not have the latest computer equipment and the most advanced browser. Governments must accommodate users viewing the website with various browsers, which have different versions (3.0, 4.0, 5.0, 6.0, and 7.0, and many upgrades in between).

In contrast, businesses can easily decide that viewers of their sites must use the latest version of a browser or even a particular browser only. They are not held to standards of equality and fairness.

Another concern that will be of importance to some North Carolina local governments is the vast Hispanic population that may be looking for information and services online. Many Hispanics cannot read English. Some local governments may need to create a viable Spanish version of their website.

Local governments should establish minimum design standards that meet reasonable expectations. A reasonable standard would allow a website to be delivered through a telephone line, with the user having a version of Internet Explorer or Netscape greater than 4.0. Most other browsers were created after these higher versions of Internet Explorer and Netscape were released and will work with a Web design that displays properly in Internet Explorer 5.0 or Netscape 4.8 or better. An unreasonable standard would require the latest version of Internet Explorer and a cable or DSL connection.

Shared Knowledge

The Web and applications like listservs create a virtually level playing field for exchange of and access to information. In other words, in the virtual reality of cyberspace, information becomes equally accessible to all. If, at a minimum, a local government has e-mail, which is inexpensive to acquire and not difficult to set up,

it can join any number of listservs that the School of Government runs (for a current list, see the sidebar on page 23).

A "listserv" is a collection of the e-mail addresses of a professional group—for example, finance officers or city and county managers. This collection creates a group "mind" that all members can access by sending and receiving e-mail messages through the listserv. At any given moment, a member is connected to hundreds of other members. Making telephone inquiries or attending conferences over an entire year cannot yield the kind of information sharing that a single e-mail can produce when a person is using a listserv. For example, the clerks listserv currently has 377 members. If those members average five years of service, they have a total of 1,885 years of experience.

As an information resource, the Web has the same potential as a listserv to provide users with needed information, if users know how to search and if the desired information has been posted on

the Web (for a tip on conducting searches, see the balloon). Local government employees who know how to use the Web effectively to locate information can help citizens and their local government immensely.

Actively working to get useful information online also helps. The Internet is accessible 24 hours a day, 7 days a week, 365 days a year. A website does not shut down for holidays, close its doors at 5:00 P.M., or present "parking" problems (except on rare occasions when too many users might try to access a particular page on the local government website).

As much as the Web can help local governments, local governments should keep in mind how much they can help the Web become an even better resource

for their employees and citizens. Basic websites with a clean design and a consistent look and feel are the first step toward dynamic, interactive sites that perform services for citizens and businesses (for examples of good basic and advanced sites, see the balloon). Better and better Web design, current and valuable information, and services that users can perform independently online —all help improve efficiency for local governments and their citizens.

> ## Visit Exemplary Sites
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> Examples of good basic sites are Banner Elk (www.townofbannerelk.org/), Fair Bluff (www.fairbluff.com/), and Montreat (www.townofmontreat.org/). Examples of more advanced sites are Blowing Rock (www.townofblowing rock.com/), Cary (www.townofcary.org/), and Wake County (www.wakegov. com/default.htm).

> ## Specify Search Parameters
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> You can direct searches by specifying search parameters to be sought only in certain types of sites. To do so, go to www.google.com, and type in
>
> "public records law" site:.edu
>
> Be sure to use the quotes as they are used in this phrase, and to place a colon and a period after "site." You will get all the ".edu" sites that have the exact combination "public records law." You can change the site search by changing ".edu" to ".gov":
>
> "public records law" site:.gov

Conclusion: Think Globally, Act Locally

Through the Internet, local governments are now accessible to the entire world in a way that defies local boundaries. Although local governments will continue to serve their communities, the Internet bridges the isolation that a river, a forest, a mountain, or a dirt road might create. Even wires no longer determine connection, thanks to widespread distribution of satellite dishes.

Much of what is global about globalization may never touch some local governments, perhaps even most. However, the mindset of globalization is highly instructive when one is thinking

about the relationship between local governments and the Internet.

A naming scheme for e-mail addresses illustrates this point well. Using some version of a person's name to create an e-mail account for a position in the local government is quite common—for example, john.smith@serviceprovider.domain. In this example John Smith is the finance director. His e-mail address easily moves outside the confines of the local government when he joins a listserv, exchanges e-mails with others around the state or the country, and posts his e-mail address on the local government website. But what happens when Smith leaves the employment of the local government? Every place his e-mail address appears must be updated to reflect the new finance director, Jane Doe.

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A simple, globally minded best practice for the creation of e-mail addresses for employees with clear titles that persist when they leave their positions is the use of the title instead of the name: financedirector@serviceprovider.domain. An even better address also would include the local government identification in the e-mail address: financedirector@ci.cityname.nc.us or financedirector@countynamenc.gov. When the person in the job changes, the e-mail address stays the same. No changes are required on the website, a listserv, or anywhere else that the previous user sent the e-mail address for public, professional use.

No matter how small the jurisdiction, an Internet connection is like a super-highway running through the middle of town. Failing to think globally and comprehensively only limits the richness that the Internet can deliver to the "mind" of a local government. A well-connected, properly managed, fruitful relationship between a local government of any size and the Internet opens up a world of possibilities, providing the most remote citizen with the opportunity to be connected and involved, both locally and globally, with his or her government (local, state, and federal).

Local government leaders must manage vast amounts of information in key ways. Ten years ago the knowledge base about the Internet and its relationship with local government did not exist, except in the most advanced or largest jurisdictions. Today counties as small as Hyde (estimated population 5,826 in 2000) and municipalities as small as Banner Elk (estimated population 828 in 2000) maintain websites and use e-mail.[16] Visitors and viruses from all around the world can visit and infiltrate their cyber locations. Local government leaders now must be diligent about knowledge in yet another area of government, IT.

Notes

1. For a list of the counties with websites, go to www.iog.unc.edu/library/counties.html. For a list of the municipalities, go to www.iog.unc.edu/library/cities.html.

2. Sample policies can be found at the North Carolina Local Government Information Systems Association (NCLGISA) website, www.sog.unc.edu/organizations/nclgisa/policies.html, or by searching the Web.

3. If your jurisdiction does not have these resources, it may want to work toward hiring an IT professional; providing training for an employee to gain some degree of specialization in IT and related issues; forming partnerships with Internet service providers or academic institutions (like community colleges); or hiring individual contractors who offer support and training.

4. The recommendations can be found at the U.S. Department of Justice website, www.usdoj.gov/crt/ada/websites2.htm, or the Web Access Board website, www.access-board.gov/sec508/guide/1194.22.htm.

5. Tennessee v. Lane, 315 F.3d 680 (6th Cir.), aff'd, No. 02-1667 (U.S. May 17, 2004). For an article on a case involving the ADA's applicability to websites, see www.law.com/jsp/printerfriendly.jsp?c=LawArticle&t=PrinterFriendlyArticle&cid=1032128683422.

6. For the addresses of the Department of Justice and Web Access Board websites, see note 4.

7. The website of the Office of Archives and History is at www.ah.dcr.state.nc.us/sections/archives/rec/default.htm.

8. To join the listserv, go to www.sog.unc.edu/listservs.htm. For the website of NCLGISA, see note 2.

9. The information is from North Carolina's e–NC Authority, *Households with Access to High Speed Service* (Dec. 31, 2002), available at www.e-nc.org/HiSpeedIntAccess.asp. Click on NC Households with Access to High Speed Internet Service. The resulting map provides a snapshot of connectivity in North Carolina in 2002.

10. For local governments, use of the Internet would involve a website, e-mail, and possibly an Intranet (Web-enabled or network applications accessible only to local government employees).

11. To view the online vehicle registration service, go to www.ncdot.org/dmv, and click on Click@DMV.

12. *See* Thomas Foss, *Ensuring Services Availability: Seven Steps to Continuity of Government Operations*, Digital Government Innovation, no. 2004/01 (Feb. 2004), available at http://ncinfo.iog.unc.edu/pubs/electronicversions/pdfs/dgib0401.pdf.

13. For the website of NCLGISA, see note 2.

14. Christopher Mcconnell, *Microsoft Licensing: A Cautionary Tale—Company Business and Marketing*, ENT, Jan. 29, 2001, available at http://articles.findarticles.com/p/articles/mi_m0FOX/is_1_6/ai_75645069.

15. The online IT course is available at http://ncinfo.iog.unc.edu/onlinecourses/courseITissues.htm.

16. The data on Hyde County are from www.census.gov/popest/counties/CO-EST2003-01.html; the data on Banner Elk, from www.census.gov/popest/cities/SUB-EST2003-04.html. Click on North Carolina in your preferred format.

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