THE INTERNET: INFORMATION FOR GOVERNMENT LIBRARIES *

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Abstract: Government agencies are utilizing the Internet as a means to promote tourism and economic development, provide diplomatic documents and foreign policies, describe legislative and bureaucratic activities, and make statistical, technical, and scientific results available. The Internet presents both citizens and their governments with a paradox: can a computing environment which transcends state boundaries actually improve day to day operations, reduce costs, and minimize red tape? Successful implementations of the Internet prove the value of Internet based services and information, in reaching larger audiences and making a bureaucracy more responsive with less expenditures.

What is Government?

Information is crucial to the operation of any government. Without the rapid flow of information between government agencies and citizens, government would cease to function. Indeed, the control, manipulation, and distribution of information defines government and its relationship to its public. If we accept the principle that "the legitimate object of government is to do for a community of people whatever they need to have done, but cannot do at all, or cannot, so well do, for themselves in their separate and individual capacities," then the Internet gives government agencies the opportunity to do more for its communities at less cost and with greater speed then ever before.  

Why is information so important? Without information, communities served by their governments are ill-informed and unable to influence decision makers. Without information, government servants, elected officials, and bureaucrats risk making costly and even dangerous decisions. Without information, government becomes increasingly isolated and remote, distant from its communities. Information allows communities to work in concert with public officials and


elected representatives. As Thomas Jefferson wrote, "Enlighten the people and
tyanny and oppressions of body and mind will vanish like evil spirits at the dawn
of day." How does the Internet make government work more efficiently? Let's
examine the Internet in general, and look at specific ways in which the Internet is
helping local, regional, state, and national governments, as well as international
organizations, carry out their missions.

What is the Internet?
The Internet is a vast global network of computers connected together by virtue of
the cooperation of a number of national and international agencies, the acceptance
of several communications and computing standards, and the efforts of millions of
daily users. As of May, 1995, at least 93 countries were connected to the Internet,
linking 50,766 separate networks together. A majority, or 56%, of the networks
connected to the Internet are found in the United States. If you examine
networking in the most thirty developed national states, you will find another
19,362 networks as part of the Internet. These thirty counties and the United
States account for 94% of all of the networks included in the Internet. Nevertheless, the most rapid growth of the Internet has occurred outside of
Europe, North America, and the Pacific Rim, in developing countries. As
telecommunications improves, computing equipment and software becomes more
affordable, Internet access expands into developing countries rapidly.

The 50,000 networks around the world that make up the Internet link, in turn,
nearly 5,000,000 computers. If we accept one rule of measure that every computer
on the Internet represents ten users, then some 50,000,000 individuals are
members of the Internet community.

How does the Internet alter our definition of government?
The Internet barely recognizes national boundaries. To those looking for
information on Internet servers, it doesn't matter if a document is on a computer

2 Letter to P. S. Dupont de Nemours, dated April 24 1816, In: Thomas Jefferson. Writings. New York,
3 From gopher://nic.merit.edu:7043/00/nsfnet/statistics/nets.by.country
4 These thirty countries and states include Australia, Austria, Belgium, Canada, Denmark, Finland,
France, Germany, Greece, Hong Kong, Iceland, Ireland, Israel, Italy, Japan, South Korea,
Liechtenstein, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Puerto Rico, Spain,
Sweden, Switzerland, Taiwan, Thailand, the United Kingdom, and the Virgin Islands.
5 According to Tony Rutkowski, Executive Director of the Internet Society and quoted in
gopher://nic.merit.edu:7043/00/nsfnet/statistics/history.hosts
next door, in a neighboring city, or half way around the globe. The Internet dissolves traditional boundaries between entities known as countries, states, and cities. This network has been viewed with increasing alarm on two fronts piracy and privacy.

The nature of the Internet has been viewed by some as a threat to the economic well being of certain countries. The ease in which information can be transferred across national borders means, to some, a loss of intellectual property. Intellectual property in turn has become increasingly valuable in this digital age, on the order of the hundreds of billions of dollars per year in royalties and other fees. It is not surprising that there is a major investment by many organizations in software and hardware solutions to protect electronic properties.

Privacy has also become a concern as more and more confidential information is transmitted digitally. Banking records, credit statements, electronic mail, and other online transactions have made the Internet the preferred pipeline for much personal information. Layers of secured communications lines, protected by firewalls composed of hardware and software, assure the security of these messages to all but the most dedicated and sophisticated programmers.

In spite of these concerns over privacy and piracy, does the Internet make the operation of government easier? If the true role of the government is both information acquisition and dissemination, then the Internet provides ample opportunities for government agencies to acquire information, edit and (re-) publish it, and finally distribute it to a global community.

**Internet kinds of government information**

The presence of government agencies on the Internet falls into several general categories. Government organizations use the Internet to promote a particular perspective with documents and files to attract investment and tourism while encouraging good will. In other cases, agencies view the Internet as another way to supply propaganda supporting a particular philosophy or world view. The Internet in turn gives agencies the most rapid means to respond diplomatically to a given event, by making available documents and supporting files for other states and their diplomatic corps that answer specific questions, reply to new situations, or fill a need. Histories are created by documents and other files made available

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via different kinds of government bodies; access to historical records over the Internet allows for new interpretations and new histories to be created by researchers, without the necessity of examining records in situ.

Many departments and branches see the Internet as a vehicle to provide statutes and regulations. Politicians and their staffs have recognized the advantage of providing legislative information on the Internet, a means to keep their citizens informed and also a way of promoting themselves for future elections. For libraries, thanks to the wide acceptance of standards for data, a great deal of bibliographic information is available over the Internet from national and other governmental libraries. Given that the Internet was initially conceived as a way to exchange technical data, many agencies make technical data available on the Internet, targeting specific researchers economically with digital results. These results include much scientific information that under normal conditions would not appear in print, or appear in altered form long after experimentation has concluded. Let's examine a few sites as examples of each of these government applications of the Internet.

**Promotional uses of the Internet**

Thanks to the global reach of the Internet, government agencies can encourage tourism and promote economic development on scale unprecedented with more traditional media. For example, the city of Copenhagen is advertising, on the Internet, its selection as the twelfth cultural capital of Europe in 1996. A home page on the World Wide Web (http://info.denet.dk/cph96/) provides information on the city, a detailed program of events, and organizational notes. With some 100 million ECU for activities and 250 million ECU for development and rebuilding, a flurry of activities and projects will keep Copenhagen occupied. The Internet provides one way for the Danes, fellow Europeans, and the world to watch Copenhagen prepare for its role as the cultural capital. Projects are described on the Internet in music, the visual arts, theater, literature, film, and other areas.

For the state of Washington in the United States, the Public Information Clearinghouse provides a central Internet location for information from a large number of public agencies (http://olympus.dis.wa.gov/www/wainfo.html). Twenty two separate agencies, from the Governor, the chief executive of the state, to the State Library provide electronic resources for citizens of Washington and Internet users. Eight colleges and universities also provide data via the Clearinghouse. Nearly fifteen different local government groups give details about Seattle, Spokane, and other cities and counties on this server. The Seattle Chamber of
Commerce, for example, describes the Urban Enterprise Center and makes a directory available on local businesses. Another server will graphically describe traffic patterns on Seattle's expressways over the Internet, thanks to special sensors embedded in the highway. The same home page provides pointers to information on weather across the state, recent earthquakes, volcanoes, and other environmental data. Bicycling, sailing, and other forms of recreation and entertainment are also treated.

Thingvellir, Gullfoss, and Skaftafell are all features of Iceland's home page devoted to tourism (http://www.primenet.com/~peetah/iceland/Tour-Main.html). These natural features make Iceland a popular country for those interested in geysers, waterfalls, and unusual national parks [Figure 1]. Another portion of the home page discusses weather while another part provides a list of common and helpful phrases. Tourism brought over 175,000 visitors to Iceland in 1994, ready to watch puffins, hike over glaciers or former lava flows, fish for salmon or trout, travel on a raft down rivers, or take part in many other activities, described in this home page. Thanks to this form of advertising, Iceland expects its amount of tourism to grow by over 14% in 1995, with nearly a hundred visitors a day to its home page at several sites (on a server in the United States or on another server in Iceland (http://rvik.ismennt.is/~gummihe/Islandia.html)).

News

Another function for the Internet is as a outlet for press releases, packets of statistical reports and other data, and news. Hundreds of online newspapers provide information from cities and countries around the world via the Internet. Government agencies recognize the value of using the Internet as distribution point to journalists, citizens, and the merely curious.

Daily News from the Baltic Online gives four "editions" every weekday at 12:00, 15:00, 18:00, and 21:00 (http://www.viabalt.ee/News/BNSday/index.html). News is provided on anyone of the Baltic states, Lithuania, Latvia, or Estonia, and its neighbors. A typical issue may feature stories on the foreign ministry of one of the states, economic relations with European states, trade and exports, construction, or the budget. For many former citizens living abroad, relatives, and other interested parties, this electronic newspaper provides insight into the activities of the Baltic governments, a level of detail not found in any of press.

Ukens statistikk is a weekly statistical report from Statistics Norway. Press releases, new publications, and other reports are available via the home page (http://www.ssb.no/www-open/nyheter/top_en.html). Statistics Norway also organizes its data by subject into thirteen categories, including public finances,
health, education, and labor [Figure 2]. Need to track the price of a barrel of Norwegian North Sea crude, check the number of guests staying overnight in Norway, or the simple unemployment rate? You can find all of these numbers in this home page or in a weekly news report.

**Diplomatic uses of the Internet**

Foreign policy finds its most congenial setting on the Internet, where the very nature of this international network of networks lends itself to a common interest in position papers, speeches, and reports. Much of the every day studies and analyses are appropriate to the Internet audience, traveling from one server to another around the globe without a passport, visa, or other travel document.

The Virtual Embassy of the Finnish Foreign Ministry gives readers press releases, speeches, election details, and news in both English and Finnish (http://www.mofile.fi/fennia/um/). News bulletins are arranged chronologically, and a given issue may discuss agriculture, economics, the value of paper, or national security. Speeches by Prime Minister Paavo Lipponen or the Under Secretary of State Jaakko Blomberg may appear on relations to the European Union. The results of the Finnish Parliamentary elections with profiles of all of the political leaders are also included in this server.

One of the most popular servers is operated by the United States Department of State (http://dosfan.lib.uic.edu). Containing hundreds of documents and files, The State Department server is visited by thousands over the Internet each month [Figure 3]. To facilitate access to information, the State Department server uses AppleSearch, a program that allows users to actually search the text of each document for specific words or phrases. These searches can examine speeches, treaties, economic and trade documents, or any other materials on the server. Visitors also can take a tour of the Department of State or examine an organization chart.

**A Legislative Internet**

In democracies, elected officials represent their public, discussing issues, debating legislation, and eventually enacting new laws. The Internet gives citizens the opportunity to watch their politicians in action from any connected computer. It also provides a new stage for elected representatives to demonstrate their talents and sensitivities.
Several houses of elected officials exist in their virtual form on the Internet, but none are as realistic as Stortinget, the Norwegian Parliament (http://mice.uio.no/Stortinget/English.html). Thanks to the cooperation of UNINETT and the University of Oslo, Internet connected Norwegians can hear speeches from Stortinget as they are presented [Figure 4]. Three or four sessions of the Norwegian Parliament occur each week, with individual sessions lasting a few hours to most of the day. Agendas for Parliament are available on the Stortinget server along with a local timer, so listeners can "tune in" over the Internet at the appropriate time. Speeches are not stored, given the amount of space that they use. The server has only two saved vocal recordings; a 13-minute session requires over 6,000,000 bytes of storage.

In New Zealand, members of the House of Representatives, the single unit of Parliament, are accessible via a searchable database (http://www.govt.nz/hor.html). In keeping with British tradition, any New Zealander may petition the House to seek change in laws or policies, to demand some sort of legislative action. Another portion of the New Zealand government home page describes the petitioning process. Election results from the most recent campaign are included, along with a glossary of terms and a description of the law making process.

**Technical and Scientific resources**

Given the origins of the Internet as a means to connect scientific and technical communities around the world, it is not surprising that there is an abundance of government sponsored research on the Internet. This information may represent the most arcane results on quarks from high-energy physics laboratories to surveys of bird and fish populations in coastal waterways and rivers. Much of this data may be exclusively the province of researchers and their students, while other files may be specially designed for naturalists and the ecologically minded public. Many scientific and technical government agencies also see the Internet as a way to publicize their work on the behalf of the tax paying public, to earn their support during budget cycles and cost cutting meetings.

In the United Kingdom, the Office of Science and Technology provides online documents and guides to research (http://www.open.gov.uk/ost/osthome.htm). The entire 1995-96 science budget, all 959,621 bytes, is available for examination and downloading. Strategies for this Cabinet Office are also available in a series of documents. Parallel organizations in the United States such as the National Academy of Sciences and National Research Council operate their own home page (http://www.nas.edu/), visited by tens of thousands of Internet users. Publications of the Academy can be ordered directly from the home page.
Descriptions of United States-funded research efforts can be found on a home page, containing analyses of programs by National Institutes of Health, the National Science Foundation, the Department of Agriculture, and other agencies (http://medoc.gdb.org/best/fed-fund.html). I can search a database of National Science Foundation grants, looking for awards to a given institution or researcher, in a specific discipline, or of a certain monetary value. In the National Institutes of Health home page, I can track grants for specific clinical trials, gene targeting, or cancer research. For a scientist or physician preparing documentation for a grant, these databases provide a way to look at other efforts in several disciplines, reducing duplication and overlap.

The Internet paradox for government

Different levels of government can use the Internet to reach different audiences, locally, nationally, and internationally. The Internet makes a governmental agency more open, more visible, and hopefully more responsive. The Internet reduces bureaucracy by making it more visible; it makes paperwork and red tape less complicated by making paperwork and red tape digitally accessible and understandable. Because the Internet transcends boundaries, government is both less important and more important to its citizens. With the Internet, the functions of one agency in one part of the world are readily comparable to other similar agencies. It is no wonder that citizens and their elected officials see the Internet both as a blessing and as a curse.

The Internet makes different levels of agencies accessible to their citizens. In France or Peru, I can learn more about specific states or departments by accessing clickable maps of the country. The digital map of France, for example, gives me the means to use my computer to travel to any of the major regions of the country and their cities (http://web.urec.fr/france/france.html). By clicking on the map, I can examine all of the World Wide Web servers in the Loire valley, and directly visit a server in Angers or Nantes. Bordeaux is quite Web server rich in comparison to its Aquitane neighbors. In Peru, a server set up by a non profit organization makes it possible for Internet users to learn more about any Departamento or Province (http://www.rcp.net.pe//peru/peru_ingles.html). A visit to Loreto, the easternmost section of Peru, via computer gives me a calendar of events in the Departamento for the year, leading attractions for tourists, and a brief history. A return to the Peruvian server from Loreto gives me an opportunity to listen to a few songs over the Internet, study a more detailed map, or examine a number of graphic images of people and places [Figure 5].
On a larger regional and international scale, the Internet can bring together different electronic resources together, under a common and simple interface. For the countries of Europe, the European Commission provides an overview of the continent from the broad political and economic perspective (http://www.cec.lu/Welcome.html). For the Baltic states of Estonia, Latvia, and Lithuania, a joint server gives news, economic and business leads, and tourist information (http://www.viabalt.ee/). With the Nordic Pages, Denmark, Finland, Sweden, Norway, and Iceland have a common locality to describe their cities, universities, and governments (http://www.algonet.se/~nikos/nordic.html). Information is in English, as well as native languages.

Conclusion

The Internet acts as a way to bring countries together, to erase boundaries and minimize language differences. It encourages citizens to participate in this electronic recreation of government and makes it possible to more easily communicate with elected officials and bureaucrats.

In the global community of the Internet, government agencies have a role in making information accessible and in providing a new digital means for communication. In return, agencies win a public more understanding of their role in society, supportive of their survival in these times of budgetary crises and red ink. The Internet makes government work once again for its public, not for itself. Even the harshest critics of computing would find this an admirable objective for all levels of government.

Captions

Figure 1: An Icelandic server (http://rvik.ismennt.is/~gummihe/Islandia.html OR http://www.primenet.com/~peetah/iceland/Tour-Main.html) encourages tourism with a glimpse at geysers, waterfalls, and unusual national parks.

Figure 2: Statistics Norway provides press releases, publications, and other reports on its home page (http://www.ssb.no/www open/nyheter/top_en.html).

Figure 3: The United States Department of State server is one of the most popular sources of information on foreign policy, visited by thousands over the Internet each month (http://dosfan.lib.uic.edu)

Figure 4: Speeches from Stortinget, the Parliament of Norway, are available over the Internet to Norwegians (http://mice.uio.no/Stortinget/English.html). Three or four sessions occur each week.
Figure 5: It's possible to visit any Departamento or Province in Peru over the Internet, listen to songs, learn a little history, and examine images of people and places (http://www.rcp.net.pe//peru/peru_ingles.html).

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Main tourist attractions

Thingvellir, Gullfoss and Geysir

East of Reykjavík, Thingvellir nearest at about 40km. While at the Geysir area you will see Geysir's smaller brother, Strokkur, blow water high into the sky (20 meters high maybe). Geysir himself is however mostly retired from the show business :)

Thingvellir

Gullfoss (Golden Falls)
News from Statistics Norway

You find here the new statistics from Statistics Norway. Older statistics are sorted by subjects and you can find it at Statistics by subject.

Ukens statistikk

Issued every Thursday. Last edition.

- Press Releases
- Economical key figures
- Upcoming Statistics
- New publications

Explanation of symbols used in tables.

Remember to name Statistics Norway as source.

Back to homepage
Figure 4