

User-Centered Designs for Library Government Information Websites

By: Linna R. Agne

U.S. Government Printing Office (GPO) is the central body for the dissemination of U.S. federal government information for the public and government entities. The GPO in conjunction with the Federal Depository Library Program (FDLP) disseminates information across the nation to libraries in the program. Libraries with depository status are required to “provide local, no-fee access to Government information in an impartial environment with professional assistance” (Federal Depository Library Program, n.d.). The shift to improved electronic access to government information has changed how libraries facilitate access.

Heron and Saunders (2009) presents several scenarios for the direction of depository libraries in this age of electronic access. One scenario for the future for depository libraries is to transition from depository libraries. Every library would function as an online gateway to government information. Librarians would facilitate access to online materials opposed to managing collections. In this scenario, a well designed website highlights the information tools and transparent navigation allows users to effectively identify and locate information. Mack & Prescod (2009) report in their study of depository libraries that 164 libraries have relinquished depository status between 1997 and 2007. Some depositories found that providing users access to freely available digital collections via GPO an attractive option. The changes in depository status demonstrate that some libraries believe that they do not need to have depository status to provide and promote access to government information.

Libraries recognize that the use of government information is a lifelong learning skill in continual demand from the public and library users. However, a trend in libraries of merging government documents and reference service desks provides evidence that fewer librarians

are working exclusively with government documents (Mack & Prescod, 2009). Coupled with increased electronic access to government materials this current trend is evidence that a well-designed library government information website is a necessary guide to government resources for both reference librarians and users.

This article will discuss the many factors and elements that should be reflected in the design and upkeep of a library’s government information site. Major design concerns covered include: (1) how to help users move towards electronic access; (2) how electronic access should be reflected; and (3) how to manage and maintain an up-to-date website. Library website design enhancements are further justified because in an environment where both current and historical government information continues to be transitioned into a digital format, studies have shown users prefer locating and accessing government documents through the Internet. Library users must perceive the site as up-to-date and user-friendly to ensure adoption. A well-maintained website also bolsters its credibility and reliability. The sustainability of the site is an essential factor to reduce the time required to update and manage the government resources. Additionally, the integration of Web 2.0 features, such as RSS feeds and blogs, and the use of a content management system, along with creating a custom Google search, can all assist in enhancing the site. The design of Indiana University Purdue University Fort Wayne (IPFW) library’s government information website described to illustrate good design and maintenance practices.

U.S. government commitment to electronic government information

For the past forty years, the federal government has developed means of storing and maintaining electronic information.

Originally, the U.S. Census Bureau stored statistical data on magnetic tapes and used computer programs to manage the data for custom reports. In this context, the federal government was a pioneer in using electronic access to lower the cost of disseminating information to the public. Furthermore, the federal government continued to develop standards for the dissemination of and access to electronic government information and this commitment to standards and developing electronic access to documents has cumulated in the digital access to government information available today (Jorgensen, 2006). A recent example of this is the Government Printing Office migration of collections from the GPO Access platform to Federal Digital System (FDsys) at www.gpo.gov/fdsys/. GPO reports that FDsys will allow Congress and Federal agencies to electronically submit documents. Additionally, users can search across a wide spectrum of collections from one search box. FDsys is also a platform for ensuring authentication and preservation of electric government documents (U.S. Government Printing Office, n.d.). State and local online government services and information have also developed to a point where public online access is a necessity. With this long history of electronic access to government information and today's widely available access to the Internet, the majority of users expect online access and assistance to all types of government information from libraries.

User expectations and preferences

Recent research has shown that the majority of users begin online searching with a general search engine (De Rosa et al., 2005, Research Information Network, 2006). Studies have shown that user behavior is similar when accessing electronic government information. The Pew Internet & American Life Project conducted a national survey to study how people access information with funding from the Institute for Museum and Library Services. The project measured how people recently solved a problem such as a health or financial issue. The survey of 2,796 American adults found that the preferred mode of access to government documents is through the Internet, but many people would like print publications to be available at government agencies and libraries (Estabrook, Witt, &

Rainie, 2007). A recent study by Burroughs (2009) on user preferences for access to government information covered searching in the academic environment. This study also found user preference for digital access. The results determined that users most often discover government information through websites, and they locate sources by using Google or other general search engines. The preferred type of material is digital, but the study found, similar to the Pew Study, that researchers often will print a paper copy of the document (Burroughs, 2009).

Library website design for government information

The implications for design are to incorporate user expectations and behavior into the design by including search engines within the library website. Syndicated government search engines pull multiple government resources together into one search. The main government search engine is USASearch.gov. This simple and straightforward search engine enables the user to search online local, state and federal government resources. Another excellent resource for both users and librarians is Google U.S. Government search engine, www.google.com/unclesam.

In addition to general government search engines, there are many subject-specific search engines that can be incorporated into a library's government information top page or subject-specific pages. Useful information on a subject is available from many different federal agencies. Subject-specific government search engines are especially important tools. For instance, the Science.gov search allows the user to search databases and websites pertaining authoritative U.S. government science information.

Custom search engines allow the tailoring of searches to selected websites of interest. A library may create and add a custom subject-specific Google search engine to their website. Many universities utilize custom search engines to provide the user with subject-specific search tools. Indiana University Bloomington maintains an intergovernmental organizations (IGO) custom Google search, www.libraries.iub.edu/index.php?pageId=4173. The search includes 355 select IGO websites. Additionally, Indiana

University Kokomo maintained the Indiana Statistics custom Google search, www.iuk.edu/index/services/library/. Custom search engines highlight the abilities of librarians to select and package resources from the vast amount of information resources available to users.

Library website design and navigation

Understanding the structure of government, from large U.S. agencies such as the Library of Congress to small local city and county governments, help users understand how government information is disseminated and organized. Government information is subject to the current federal, state and local government laws and administration. Any change in office can result in the forming and dissolution of government agencies, which may disrupt the dissemination and location of public information. Governments also balance the need for an informed public to promote democracy with the need to identify, manage and secure sensitive information (Jorgensen, 2006).

One difficult issue with government information is how to promote access to multiple media formats including print, microfiche, data sets and electronic formats. Online public access catalogs (OPACs) are one platform to integrate electronic and tangible government resources into one searchable access point. Otherwise the fragmented access to government documents can make access challenging to a user and maintenance of that access challenging for librarians. Libraries must make staffing decisions on how to manage staff time in cataloging government documents. Another solution to better integrate government resources is to provide a federated search engine or portal that will place all government publications and resources in one interface (Kawula & Weible, 2006). This approach has its own problems. Federal depository libraries are required to provide public access to government electronic information products and services. A cross-database federated search does not allow public users to have full access to resources because they will have limited to no privileges to library services such as interlibrary loan or remote access. Burroughs (2009) also demonstrated that a general search such as Google is the preferred method over using the government

portal USA.gov or U.S. Government Search. The advantage to the library's government information page is that the site can serve as the first stop for public users and place subscription-based resources in the appropriate context for library affiliated users.

The various formats, the need to understand the structure of government and the changing nature of government are all inherent barriers to accessing and using government information. Users reported that they did not use government information due to a lack of awareness and the difficulty of locating information (Burroughs, 2009). The addition of teaching elements in the form of guides and tutorials, in conjunction with increasing the profile of government information via the library website, facilitate the use of government information in libraries. Guides and tutorials functioning as teaching elements in combination with custom search engines or portals could potentially increase the use of government information in libraries. There are multiple approaches to create tutorials for users. Screen casting software is one way to create tutorials. It allows for capture and recording of computer screens with additional audio. This software is readily available at most institutions. There is also free screen casting software available.

Tutorials can be created to walk users through frequently asked questions about government information. Also, tutorials can be developed to guide users in searching and accessing complex private databases such as and LexisNexis Congressional and popular public government resources like the U.S. Census on the Web. Library-authored guides and tutorials can be included in specific courses and incorporated into course-specific guides across many disciplines. Incorporating learning tools into the page design accommodates the user's need for background knowledge and guidance to the appropriate government resources.

Library website maintenance

The challenge of government information websites is to maintain current sites with limited library staff. Government agency websites change and fluctuate with changes in government administration and policies. In libraries, government documents departments

have been restructured across the nation. Mack & Prescod (2009) note a decline in job ads for government document librarians over a 10-year period. Their analysis demonstrates that government document positions have been combined with other positions such as digital collections and data librarian (Mack & Prescod, 2009). Libraries must prioritize where to focus staff time and resources. Web 2.0 technologies that focus on providing dynamic content can help maximize library resources. These technologies provide a means for adding regular news updates and provide many value-added features to the site. The updates allow users and librarians to note the changes in government sources. Useful Web 2.0 technologies, including RSS feeds, widgets and blogs, all provide users with current information with little to no technical maintenance. RSS news feeds can be embedded into pages to bring news about newly published reports and publication as well as agency news. One example is the Indiana government site, IN.gov, www.in.gov/, which offers a variety of RSS feeds for current state news and publications. Each Indiana agency and department has an RSS news feed. Libraries can customize subject-specific state information pages with news from the related agency or department. For current news on the national level, USA.gov, www.usa.gov/, offers a wide array of RSS feeds by topic and agency. Gadgets or widgets are another way to display a search box on the page, current statistics and news with no technical maintenance. USA.gov has a Gadget Gallery that groups the gadgets by topic, conveniently gathering sources across all the major agencies. These gadgets may be easily embedded into a webpage or blog and most provide the code for embedding.

Blogs are also useful in alerting users to new resources and changes in government information. The blog can be written in-house and targeted to the interests of the library's primary users or in collaboration with area librarians depending on the needs and focus of the library. Another option is to select and provide links to popular blogs that discuss the resources and issues regarding government information. A major issue with government information websites is managing a regular review of links. In general, web pages have a short lifespan complicated further with changes in government

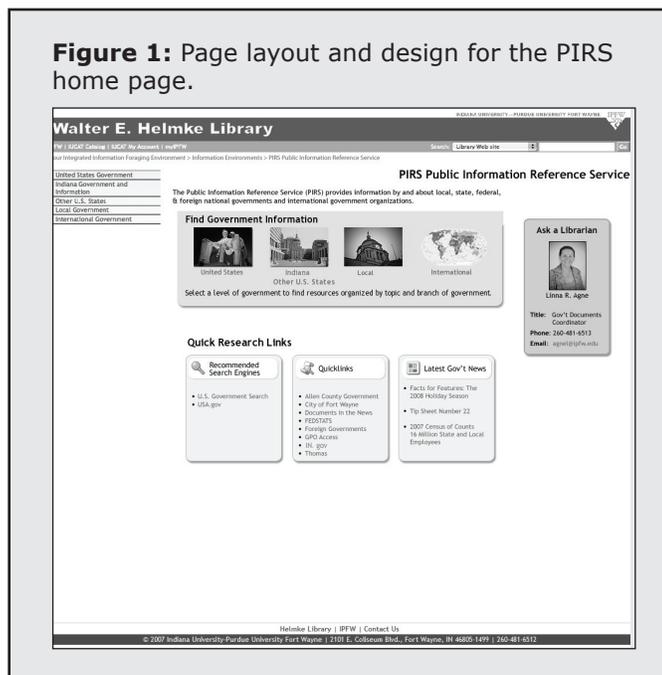
priorities and, more importantly, funding. Many libraries use a web content management system (CMS) to manage the library's website. Government resources can be incorporated into a CMS. Resource links managed within a database allows for changes made in the database record to be reflected throughout the library's website. The management of resources in a CMS works much like the GPO PURLs, which are permanent identifiers and identifiers for government resources. The incorporation of government resources into the library's content management system produces stable URLs for government resources that, behind the scenes, can then be updated across the entire library website. Content management systems can greatly reduce the amount of time required for updates and the number of dead links on the website. Furthermore, the majority of content management systems have built-in link checkers that generate reports, reducing the amount of time spent checking links. Libraries can design a sustainable government information website by making use of the technology that is readily available in the form of Web 2.0 technologies and current content management systems.

The design of IPFW's library government information website

There are many ways to design and manage a library's government information website. This section will describe Indiana University Purdue University Fort Wayne (IPFW) library's approach to updating their government information website, www.lib.ipfw.edu/581.0.html. IPFW's Public Information Reference Service (PIRS) was developed and launched by government document librarians in the mid 90s. Since PIRS' launch, there is an ever increasing availability of government information on the Internet and changes to how users access information. The Government Information Task Force was formed to coordinate the update and redesign of PIRS to fit current trends in information-seeking behavior and the shift towards electronic dissemination of government information. The government documents coordinator at IPFW pulled together a team of diverse library representatives: government documents department, references services and technical services, including information technology

and cataloging. They established a vision for PIRS as the library's main online access point and guide to government resources and as a teaching tool on doing research with government sources and using library reference services. The team determined on content and major elements to be included in the design and consulted a web designer for the main page. Between the group and the designer the page designs were created (see Figure 1).

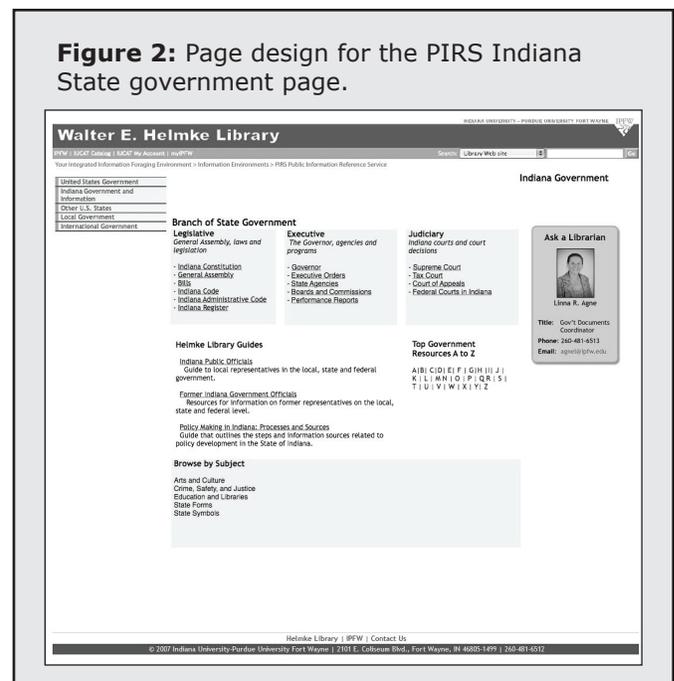
The innovative design of PIRS resulted in the redesign of the navigation and layout of three pages. The group redesigned the main page, the U.S. government page and the Indiana government page to reach users with various skill levels, illustrate the structure of the U.S. government, and highlight library-created tools.



The resulting main page emphasizes different levels of government from federal to local to better direct the user to the appropriate information based on the structure of the United States government. The other section contains links to starting places for new users of government information that want to start research with a search engine. Also, the layout highlights current government news with the use of RSS feeds. News feeds from the White House and general government news from USA.gov were selected to display in one section of the main page. Most importantly, the government information librarian's profile and

contact information is prominently displayed on the main page and U.S. and Indiana pages of the site to promote access to library information and reference services.

The U.S. and Indiana government Web pages have similar templates that mirror the structure of federal and state information by dividing the information into three branches of government. Each page provides access to resources by subject. The newly designed pages feature comprehensive research guides that further teach and guide users to specialized resources on a variety of topics. PIRS' design allows users to access appropriate information from the U.S. and Indiana pages with fewer layers of navigation. Essentially, the page design places emphasis on learning resources and guides users to select resources by branch of government and subject (see Figure 2). Beyond the design of the pages, the maintenance of site was a major factor in ensuring a credible, up-to-date library government information site. The site contains over 800 links to resources many embedded both on subject pages and in the A to Z resource list. IPFW library uses a content management system to manage the library's website. The content management



system includes a database called the master database (MDB) feature which permits the creation of customized displays of resources by subject and by discipline including both free and subscription-based electronic resources.

The addition of government resources into the MDB allows each resource to be managed within a database record. The changes made in the MDB are globally reflected across the library's website, allowing ease in updating resource links. When a resource is added to the MDB, the outcome is a stable link that can be used throughout the site. The resulting link redirects the user to the correct page functioning much like PURL links. The integration of government resources into MDB reduces link checking time across the website. Further, the content management system can generate reports that pinpoint dead links on specific pages for more targeted updating of the website.

Users of government information report that government information is difficult to locate (Burroughs, 2009). In addition, users need to understand the structure of government in order to locate information. The design of the library government information site can reduce the barriers for accessing government information. Web page design based on the framework of government simplifies the navigation to government resources and library guides. Further, the layout directs users to more research assistance through the prominent display of the librarian contact. One major question for the Government Information Task Force was how to keep the site current. The solution for maintaining a sustainable site is the use of the content management system to assist in managing the link updates combined with incorporating RSS feeds for news updates.

The goal for the implementation of PIRS was to develop an intuitive navigation and Web redesign that emphasizes a service orientated information environment. The redesign of the main and subpages simplified the navigation of the site, requiring fewer clicks in accessing subject-specific pages. Service features were also added to the design including the librarian profile, current awareness services in the form of RSS feeds, and a more tiered approach to resources to reach a variety of users from advanced to beginner. Teaching elements were also included in the form of short explanations and subject-specific guides on the U.S. and Indiana government Web pages.

Conclusion

The trend of electronic access to government information and user information-seeking behavior results in the need to revise the goals and management of library government information websites. Additionally, the federal government's transition to the electronic management and dissemination of government information is an established part of current policy. Electronic access to government materials in combination with the user expectations and preferences influences how libraries design government information websites. A factor in designing websites is how to maintain links to resources and updates to the site. Libraries can make the most of resources by using the available syndication technologies and library systems. IPFW's redesign of PIRS is one illustration on how to update a web design to incorporate many of these strategies. Ideally, the website should provide excellent access to online resources and help for users. The library can ensure user and library adoption by employing technologies to assist in the management and maintenance of the library government information website.

Resource List

Government Search Engines

General

- The **Google U.S. Government Search**, www.google.com/unclesam, and **USAsearch.gov** are both excellent starting points for the beginners and advanced users of government information.

Subject specific

- **Business.gov** is the official business link of the U.S. Government to help small businesses comply with federal, state and local business laws and government regulations.
- **GovBenefits.gov** and **GovLoans.gov** includes tools that outline and guide citizens to over a thousand Federal and State benefit programs.
- **Indiana MarketMaker**, <http://in.marketmaker.uiuc.edu/>, includes agricultural market demographics as well as local producers and businesses.

- **Kids.gov** locates government sites for parents, educators and kids. It includes a guide to resources by grade then subject level.
- **Nutrition.gov** searches consumer food and human nutrition information from the federal government.
- **Recreation.gov** gathers recreation information from the National Parks Service, Bureau of Land Management and other related agencies.
- **Science.gov** is the gateway to searching over 40 databases and 1,950 authoritative U.S. government science information websites, including research and development.

Custom Search Engines

- **Google Custom Search Engine**, www.google.com/coop/cse/
- **Intergovernmental Organizations (IGO) search** from IU Bloomington, www.libraries.iub.edu/index.php?pageId=4173

Resources for RSS feeds

- **U.S. Government RSS Library**, www.usa.gov/Topics/Reference_Shelf/Libraries/RSS_Library.shtml, from USA.gov. Official information and services from the U.S. government feeds are available by topic and agency.
- **Indiana State Government News feeds**, <http://in.gov/core/rss.htm>, from IN.gov provides a full listing of feeds available from agencies and departments.

Gadgets and blogs

- **Docuticker**, www.docuticker.com/, is a blog with daily updates of new reports from government agencies, NGO's, think tanks, and other groups, including links to full text and related materials of interest.
- **Free Government Information (FGI)**, <http://freegovinfo.info/>, has regular updates the developments in regards to the dissemination of government information. The recommended government information blog list includes the most popular and informative.
- **Government Gadget Gallery**, www.usa.gov/Topics/Reference_Shelf/Libraries/Gadget_Gallery.shtml, provides a guide to gadgets by subject. Many of the gadgets/widgets include the option to embed the item

into a blog or personal website.

- The **MSU Gov Doc Dept Wiki post Gov Docs 2.0 Web 2.0 Tools & Resources**, <http://msugovdocsDepartmentpbworks.com/Gov-Docs-Two-Point-O-Resources#Widgets>, includes both government and non-government widgets. The post has many additional resources on how to incorporate Web 2.0 technologies.

Screencasting software

- **Jing**, www.jingproject.com, developed by TechSmith captures a screenshot and records and narrates onscreen actions. This program allows a user to easily create and quickly share content.
- Adobe **Captivate**, www.adobe.com/products/captivate/, and TechSmith **Camtasia Studio**, www.techsmith.com/camtasia.asp, are popular software programs that records, edits and then shares onscreen voice and video in a wide range of file formats. Some added features include picture-in-picture for presentations and closed captioning capabilities.

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