Report on Ethnographic Market Research/Analysis of Federal Depository Library Program Workflow

ITHAKA S+R

Project Overview

In August 2015, the Government Publishing Office (GPO) commissioned Ithaka S+R to conduct a participatory work-practice study of the Federal Depository Library Program (FDLP) in order to develop qualitative requirements for the new Library Services System. The new suite of tools and services will enable GPO to improve its organizational workflow and business processes while leveraging new technology features and functionality to enhance services for the public, depository libraries, and GPO staff.

Ithaka S+R conducted observations, structured interviews, work-practice studies (scrutiny of video-recorded work tasks), and a user-centered design workshop, finding a high degree of commitment to the Program among depository personnel. There were also a number of workflow inefficiencies and obstacles, which include but are not limited to:

» A perceived complexity of Program requirements and the difficulty of finding relevant documentation

» Time-consuming processing workflows

» Trouble locating or developing complete and accurate metadata records for individual documents

» Challenges in locating document records during processing, cataloging, and reference work

» Difficulty of developing and maintaining an institution's selection profile

Depository personnel strongly indicated a need for easier access to training, help, and a way to get difficult questions answered, as well as greater overall usability of FDLP tools.

Ithaka S+R recommends that work practices and identified obstacles be considered in designing a new suite of tools and services. A full list of recommended qualitative requirements to address identified issues appears on pages 10-12. These requirements fall into four broad categories:

» Usability issues

» Choosing and managing content

» Discovery of Federal documents

» Finding information about the Federal Depository Library Program

Background

In August 2015, the Government Publishing Office (GPO) commissioned Ithaka S+R to conduct a participatory work-practice study of the Federal Depository Library Program (FDLP). Often described as the Government's first "right-to-know" program, the FDLP was established by Congress to enable an informed citizenry to participate in the democratic process. The FDLP is a nationwide network of different types of libraries that provides free and open access to Government information, making tangible documents available through participating libraries and providing access to electronic documents online, now and for future generations. With the vision of providing Government information when and where it is needed, the FDLP will continue to contribute substantially to GPO achieving its mission of Keeping America Informed. The user-centered study focused on gathering information on the needs of depository libraries in order to develop a suite of tools and services that will enhance support for depository libraries by reducing workload requirements and increasing efficiencies of operations for the Program. The suite of tools and services, known as the Library Services System (LSS), will enable GPO to improve its organizational workflow and business processes while leveraging new technology features and functionality to enhance services for the public, depository libraries, and GPO staff.

Ithaka S+R's role in this project was to conduct ethnographic research in FDLP libraries in order to develop qualitative requirements for the new system. The qualitative requirements for the LSS formulated through this study will complement the technical requirements that will be developed by another team. By using this approach, GPO is aligned with the GPO strategic plan and the National Plan for Access to U.S. Government Information, both of which focus on being customer-centric.

The approach: ethnography, work-practice study, and user-centered design

Over the past fifteen years, academic and public libraries have used qualitative assessment methods, and ethnography in particular, to understand and address the needs of people who use library systems, spaces, and services. Ethnography is the hallmark method of sociocultural anthropology; within the study of human culture and society, ethnography comprises observation and participation within a group of people combined with careful documentation and the production of a written account of the way the people live together. In the library setting, the scope of ethnographic study is limited to work practices associated with finding, using, disseminating, and preserving

information and the participants in the study will include the people who work in libraries as well as those who use them.

Work-practice study is an ethnographic method that focuses on the activities in which people engage when they do their work. In the case of FDLP libraries, work practices are activities that FDLP librarians and technical staff perform to accomplish the work of the FDLP library. Prescribed procedures for FDLP libraries result in shared patterns of activity. However, local conditions and individual abilities and preferences produce considerable variation across libraries. Ethnographic study of on-the-ground practices identifies not only patterns and variations, but also brings to the surface details and nuances that support building a better LSS.

User-centered design is a process that begins with an understanding of user work practices and obstacles and then designs solutions to support workflows and address identified problems. It is inclusive and participatory, involving many participants in the ethnographic studies and working through a cross-disciplinary project team. The seven-member GPO project team included GPO staff with expertise in all aspects of FDLP operations as well as representation from the technical team that will be planning the design and development of the new LSS.

The context: the Government Publishing Office (GPO) and the Federal Depository Library Program (FDLP)

The GPO was created by the U.S. Congress in 1860 and began operating the following year with 350 employees. Now in its 155th year, the GPO employs 1,700 people to meet its mission as "the Federal Government's primary centralized resource for producing, procuring, cataloging, indexing, authenticating, disseminating, and preserving the official information products of the U.S. Government in digital and tangible forms" (https://www.gpo.gov/about/). The GPO's Federal Digital System (FDsys) provides permanent public access at no charge to Federal Government information (www.fdsys.gov).[1]

The GPO also provides free public access to Federal Government information through the FDLP, a partnership between the GPO and about 1,150 libraries throughout the U.S.[2]

---

[1] At the time of this study and the issuance of this report, FDsys is GPO's online system of record. Following a period of beta testing, it will be replaced by the next generation system, govinfo. This report of the study will be valid with FDsys, govinfo, or any successor online system of record.

[2] Note that participation in the Program varies over time and the numbers of participating libraries given here are approximations as of the time of writing.

The origins of the FDLP as we now know it date to 1813 when Congress authorized legislation that provided for distribution of Congressional documents to selected universities, historical societies, state libraries, and other institutions. Over the years the Program has grown to reach its current size.

Between 1895 and 1897, GPO librarian Adelaide Hasse developed the Superintendent of Documents (SuDoc) classification system for use with Government publications. This unique classification system reflects the structure of the U.S. Government by organizing publications by the originating agency. The SuDoc system is used in many depository collections. After 1922, depository libraries no longer were required to receive all documents distributed by the GPO. Today 46 regional depositories receive all publications distributed through the FDLP for permanent retention. Approximately 1103 selective depositories select specific categories of publications across a range of formats to meet the needs of their Congressional District and local clientele. Each FDLP library has a coordinator who is responsible for meeting the requirements for participation in the Program. Regional depositories may permit the disposal of depository materials from selectives after retention for five years. All depository libraries receive FDLP materials at no cost in exchange for making information available to the public and for providing appropriate assistance to users (http://www.fdlp.gov/file-repository/about-the-fdlp/lscm-year-in-review/2733-lscm-fy2015-year-in-review and https://www.gpo.gov/pdfs/about/FY17_and_15_Performance_Report.pdf).

The Library Services System

GPO has undertaken efforts to design and implement a suite of automated tools and services that will streamline the interaction of the three major user groups of the FDLP: GPO, depository libraries, and the general public. This suite of tools, known collectively as the Library Services System (LSS), will enable GPO to improve its organizational workflow and business processes while leveraging new technology features and functionality to enhance library acquisitions, cataloging, record distribution, federated searching, indexing operations, and other relevant activities for depository libraries.

LSS will support reliable data that is both normalized and authoritative, intuitive workflows that support efficiencies of operations, and Program documentation that is easy to navigate. This single source will aggregate data currently in several information silos, such as:

» The Federal Depository Library Program site (FDLP.gov), which contains information about the Program for its participating libraries

» The Program's integrated library system including the Catalog of U.S. Government Publications

» The Depository Selection Information Management System (DSIMS), which enables libraries to add and delete item numbers from their selection profiles

A website will present a unified gateway to FDLP information and services. In the back end of the system, a data warehouse will provide for storage and preservation of data. The system will support FDLP workflows by depository personnel as well as searching and browsing for information by librarians and members of the public. The new system will provide better support for workflows and improved performance and accuracy for search-based tasks.

Methodology

Depository personnel from 21 sites were included in data-gathering activities. The resulting information was analyzed by a multi-disciplinary team in order to develop a nuanced understanding of frontline work practices and communicate it understandably to designers and developers.

The methods included:

» Review of GPO/FDLP websites and tools as well as documents concerning the processing of Government information; current and envisioned systems; and desired features and functionality of the system used by depository librarians as communicated to GPO trainers and outreach librarians.

» Structured interviews by telephone with personnel at 21 FDLP libraries to familiarize the research team with the overall landscape of FDLP libraries and with specific characteristics of the libraries in the sample and to obtain baseline information for selecting 12 FDLP libraries for site visits.

» Site visits to 12 FDLP libraries that were selected by the GPO project team for representativeness by size (small, medium, and large), type (academic, public, law, and Federal agency), and selection rate (less than one percent to 100 percent). Sites included libraries throughout the U.S. mainland, a U.S. Territory, and an Indian reservation. On site visits, data were collected through observations, structured interviews, and work-practice studies with one to six individuals, depending upon the size and organization of the site. Work-practice studies entailed video-recording of selected work tasks followed by audio-recorded discussions of the tasks as viewed together by the interviewer and interviewee. All site-visit interviews were recorded and transcribed.

The following table displays the amount of data collected for this project. As in other studies of this nature, raw data has been kept confidential to protect the privacy of participants.

	Number of transcript pages	Video footage in hours
Telephone interviews	69	
Observation notes and photos at site visits	150	
Workplace interviews	394	
Work-practice studies	260	14.5
Website walkthroughs	79	
Totals	**952**	**14.5**

Telephone interview notes were analyzed and tabulated thematically and then shared with the project team for feedback. Site visit data were analyzed through an iterative process starting with the development of categories for thematic coding of transcripts. Coded transcript data were then grouped by category and site to gauge the prevalence of key themes, with the creation of subcategories as needed. This analysis in turn provided the basis for concept development.

Concept development was initiated by the consultants working with the full set of data and completed in project team meetings facilitated by the primary consultant using excerpts drawn from the interview transcripts. This led to the development of an artifact comprising two full-page images of an imagined FDLP site, which was designed by GPO personnel.

The artifact was used in a design workshop attended by personnel from 18 depository libraries. In the design workshop, participants were asked to mark portions of the images that they liked, disliked, and deemed important. They were also asked to write in any elements they thought belonged on the page but were missing. They were then debriefed on their marked-up artifacts. Participants were then asked to respond to a brief written questionnaire, which asked them to select their work tasks from a comprehensive list. They were also asked to review a list of FDLP-related tools and mark the ones they liked best and the ones they found most difficult to use. In the last question, they were asked to imagine two things they would do to change the FDLP site and tools if they could magically make any improvements they desired.

After workshop participants had completed their tasks, Ithaka S+R facilitated the project team in analyzing workshop outputs.

Major Findings

In this section, we review the major findings of the project. These findings are derived from telephone interview, site visit, and design workshop data. Data were analyzed in work sessions of the project team facilitated by Ithaka S+R. In addition, Ithaka S+R conducted extensive analyses on the data within its own team of ethnographers and library specialists.

Depository personnel need to find FDLP rules and regulations: FDLP coordinators demonstrate commitment to the Program and, in particular, to ensuring that the Program is appropriately and effectively administered. They are concerned about complying with FDLP rules and regulations with regard to their own decisions and work processes and those of the people they supervise. They are particularly concerned about minimal requirements for collections and proper processes for withdrawing and disposing of documents. They are also concerned about making good use of resources (especially "taxpayer dollars") and ensuring that federally published documents are available for members of the public to find and use.

Depository personnel have trouble with shipping lists: When processing material, whether tangible or online, depository personnel capably process it following steps that are generally consistent from one site to another. They have difficulty with certain aspects of the work, especially with regard to shipping lists (inaccuracy, difficulty of finding correct list, seeing documents that they have not selected on their own lists) and document identification (questionable metadata, delay between shipment and availability of record).

SuDoc numbers, document titles, and other information may be changeable or difficult to differentiate: There are numerous challenges in systems and processes for identifying items and documents due to the necessity, over time, to make changes to SuDoc numbers. Additionally, enormous overlap in names of documents, combined with inconsistencies in the handling of punctuation and other elements, complicates the identification and location of desired documents. Beyond even these problems, there is some confusion over the term "item," which is sometimes used in reference to a single document rather than to a cluster of publications in the SuDoc scheme.

Item selection is difficult: Different aspects of collection development and management may be taken on by the coordinator or other depository personnel. In general, we saw that coordinators were most likely to lead the overall process and to use web tools to make additions and changes to the selection profile for their institutions. Support personnel were more likely to play a significant role in claiming or withdrawing

material and they experienced problems with both processes. For those who register selection changes, the DSIMS system proves extremely challenging for the following reasons: it is slow and cumbersome; it does not include all the information FDLP librarians need, sending most of them to Documents Data Miner 2 as a supplement.[1] They use DSIMS infrequently and tend to forget login information as well as how to use the various features.

The catalog is hard to use: The Catalog of U.S. Government Publications (CGP) is widely used by depository personnel across positions and job responsibilities, and it presents several problems. Along with DSIMS, the CGP is one of the least liked FDLP tools. Respondents showed and described the CGP as a hard-to-use tool that returns inadequate results.

Depository personnel find some cataloging tasks to be time consuming and difficult: Copy cataloging is done at most but not all sites. Depository personnel ingest or copy records to the extent possible, mainly using MARCIVE, GPO's Cataloging Record Distribution Program, OCLC WorldShare Management Services, or the CGP Z39.50 gateway. They do this generally with success, encountering problems finding the correct SuDoc number or ingesting duplicated MARCIVE records. When catalog records are incomplete or unavailable, depository personnel create new records by making small changes to copied records for similar documents. In some cases, copy cataloging can require a great deal of work. On several occasions, researchers saw catalogers generate Dewey or LC call numbers for items that lacked or had incomplete call numbers in their system of choice. We also saw librarians taking pains to complete records for very old documents that had been donated to a library and for which no adequate record could be found.

Electronic documents pose certain difficulties: The selection and processing of electronic documents appeared in the research sample to be far more streamlined in general than similar tasks performed in connection with tangibles. Some depository personnel stumbled in the process of choosing which electronic documents to select although in one case we were told that the choice was easier for electronic documents because electronic documents are easier to inspect. We saw that personnel at several sites had trouble reviewing e-book titles in the CGP. We also heard that over-selection of electronic documents could flood a small library's online catalog with records, overshadowing other holdings in the library's collection.[2]

----

[1] Document Data Miner 2 (DDM2) is a collection management tool for depository libraries that brings together information from the List of Classes, Item Selection Profile, and Superseded List. DDM2 was developed and is hosted at Wichita State University.

[2] Note that finding known electronic documents and searching for relevant documents are both problematic, as discussed elsewhere in this report.

Reference librarians sometimes struggle to connect patrons to the most relevant and useful government documents: Responding to reference questions in the FDLP sites we visited is mainly integrated into the work of reference librarians but there are some differentiated services. One such service is the outreach, training, and specialist support that the coordinator or the designated FDLP reference librarian provides to other reference librarians at a site. Another is the development of finding aids, LibGuides, and webpages specifically for government documents. FDLP reference service is integrated into reference service in general insofar as it is provided by all reference librarians when it is related to the patron's needs. In other words, when reference librarians assist patrons, they seek sources of any type that may answer the question, generally using the library's OPAC but sometimes using specialized databases and finding aids, including the CGP. Librarians encounter difficulties connecting patrons to content when the CGP, the OPAC, or finding aids do not return adequate results. Depository personnel encounter problems that lie outside the control of the GPO but that complicate their work with government documents. For example, links to government documents may change or the patron may need documents in electronic format that are not available in free (non-proprietary) repositories. Frequently reported cases include historical census information, older statistical information, and Congressional or Presidential documents in certain date ranges.

Depository libraries use a variety of tools, some provided by GPO and some provided independently: The FDLP.gov and FDsys websites are liked by depository personnel. Within FDLP.gov, they particularly like the List of Classes and the Item Lister.[1] In addition, depository personnel like tools that help them complete FDLP tasks but that are not provided by GPO, such as GOVDOC-L and Documents Data Miner 2 (DDM2). At the same time, there are GPO-provided tools that are considered hard to use by a significant number of respondents. These are Needs and Offers, Catalog of U.S. Government Publications (CGP), and Depository Selection Information Management System (DSIMS). Interestingly, FDsys is both well-liked and said to be hard to use.

Depository personnel use available help and would like easier pathways to help for specific questions: The length of service/knowledge of FDLP nexus is a singularly important factor in an FDLP librarian's expectations and interactions with FDLP tools. The most experienced and knowledgeable depository personnel may have many suggestions for improvement but they use the tools well and help others learn the ropes. At any level of expertise, FDLP librarians will sometimes need help, whether that means help to complete a task or help in fixing a problem. In this regard, it seems that

---

[1] "List of Classes" refers to a publication entitled, *List of Classes of United States Government Publications Available for Selection by Depository Libraries* (https://www.fdlp.gov/file-repository/collection-management/list-of-classes/2682-list-of-classes-print-version-revised-11-2015).

the way they want to request and use help is related to whether they need to reduce uncertainty or ambiguity. If they need to reduce uncertainty, for example, to find and complete the right form, they would prefer to do a simple search for what they need, possibly augmented with a demonstration video. If they need to reduce ambiguity, for example, to understand and apply a policy, they prefer to browse through explanatory documents. In any case, depository personnel want to be able to identify and send a question to the right person or department if they cannot resolve the matter alone. Additionally, all personnel want easy access to training materials. New personnel need training that will help them "hit the ground running."

Search and browse functions should be improved: Depository personnel encounter obstacles when they try to find information and documents, that is, they find it hard to search and browse FDLP-provided sites and tools, particularly the FDLP.gov site and the Catalog of U.S. Government Publications (CGP). They are particularly impeded by "unforgiving" search, inadequate faceting or filtering, and lack of a consistent organizational scheme and nomenclature across FDLP-related sites and tools.

Overall usability of sites and tools is an issue: While we paid more attention in these studies to systems and processes, we also discovered that depository personnel have some specific concerns about usability, including sign-in, look and feel, labels and terminology, search and browse (discussed separately), and ease of finding explanatory information.

Qualitative Requirements for the Library Services System

In this section, we summarize key observations and recommend corresponding qualitative requirements for the new system.

Based on the telephone interviews, on-site studies, analytical activities, and the design workshop, Ithaka S+R recommends that common obstacles and work-practice needs be considered in designing the new Library Services System. To this end, the qualitative requirements for the LSS based on ethnographic studies will be incorporated into the technical design process along with information about the Program collected within FDLP.

FDLP coordinators are committed to complying with Program requirements.

1. Ensure that precise, up-to-date information about all aspects of the FDLP is easy for coordinators and other depository personnel to find and use

2. Streamline systems and processes for withdrawing and disposing of documents

Depository personnel seek streamlined workflows.

3. Provide easy navigation to current and past shipping lists that are fully usable in digital format and make it possible for depository personnel to easily recognize the items on a complete shipping list that are actually included in their institution's selection profile (e.g., by bolding their selections)

4. Reduce redundant operations wherever possible (e.g., make it possible to perform the same operation on items from different pages in DSIMS at the same time)

5. Simplify and streamline the claims process so that, for example, depository personnel can claim multiple documents using the same form.

6. Post offered material and find needed material in a unified tool that remembers past information and requires only a few steps

7. Provide better reporting and notification for changes to document records, call numbers, superseded documents, and so on.

Depository personnel experience slow system performance during some tasks, especially in the DSIMS system; they also find it difficult to gather all metadata about item numbers and documents, which sometimes leads them to turn from GPO tools to such alternatives as DDM2.

8. Enable quick aggregation of all metadata related to an item or document, such as title and SuDoc stem.

9. Improve system performance while making more data available through the selection system

Compared to other, non-GPO systems such as Google or HeinOnline, depository personnel find the Catalog of U.S. Government Publications hard to use, particularly with regard to locating the exact records they seek but also in connection with conducting a search for useful documents in a reference situation.

10. Provide a simplified way for depository personnel to find and download the records they need

11. Design LSS in anticipation that over time the CGP will become more comprehensive and have improved search and browse

Depository personnel, who without exception performed FDLP tasks as part of their much larger non-FDLP library responsibilities, expend time and effort learning how to use FDLP tools and re-learning how to use infrequently used tools. When tasks are performed rarely or intermittently, the need for help increases.

12. Provide help in different ways through pervasive redundancy of search features

» For information that addresses uncertainty, highlight the use of searching and provide explanatory text and, in some cases, demonstration video

» For information that addresses ambiguity, highlight the use of browsing, using explanatory text to help personnel navigate to what they need

» To the extent possible, integrate helpful information and sources of training related to the tools that are included within LSS and the tasks that will commonly be performed with those tools

» Make it easy for depository personnel to identify and get in touch with the office or individual who is best able to respond to a question they cannot answer alone

Depository personnel find that FDLP tools do not always compare favorably to other library and general online tools (e.g., newer OPACs, Google, ProQuest Congressional), which they find to be more intuitive and easier to use.

13. Improve the overall usability of the system, including:

» Provide single sign-in with indication of signed-in status

» Integrate all aspects of the system and provide a seamless, intuitive interface, one look and feel, and clear information throughout

» Conduct usability testing on terminology for the site

» Add change notification based on the SuDocs in a given library's selection profile

» Provide a mechanism within FDLP systems for delivering search results to patrons

» Improve search and browse across all FDLP sites and tools but especially FDLP.gov and the CGP

Proceeding with Design and Development of the LSS

The findings and requirements developed from the ethnographic study of the work practices of depository personnel form one significant part of the informational basis for design and development of the new LSS.

The findings have been incorporated into section 3.1.2 Motivation for New System of the Concept of Operations (ConOps) document and the requirements have been incorporated into section 3.2 Description of Desired Changes.

As the development team begins work, they will be briefed on the ethnographic study and provided with a copy of the report in order to give them a comprehensive

understanding of the problems from the user point of view. Once the development team understands user work practices and problems, they can design solutions.

We anticipate that improving system performance and addressing usability issues will go a long way toward alleviating the problems that depository personnel encounter when they use FDLP tools provided by GPO. Issues related to current sub-systems should be addressed at the highest possible level. That is, where possible, problems with the current system should be addressed through the architecture of the technology and the structure of information in the system instead of by fixing each and every current tool separately.

The study described in this document and its outcomes are intended ultimately to enhance the ability of the public to find and use Government information. By providing high-performing tools to depository personnel, it is believed that this objective can be better accomplished.

Acknowledgement

This study would not have been possible without active participation from the FDLP community. GPO would like to thank the following libraries for their part in phone interviews and/or site visits.

Bangor Public Library
Bangor, Maine

California State Library
Sacramento, California

Cornell Library
Vermont Law School
South Royalton, Vermont

Eli M. Oboler Library
Idaho State University
Pocatello, Idaho

Encarnacion Valdes Library
Pontifical Catholic Univ. of Puerto Rico
Ponce, Puerto Rico

Fairchild-Martindale Library
Lehigh University
Bethlehem, Pennsylvania

Fenwick Library
George Mason University
Fairfax, Virginia

Harford Community College Library
Bel Air, Maryland

Homer Babbidge Library
University of Connecticut
Storrs, Connecticut

Interior Library
U.S. Department of the Interior
Washington, DC

Leech Lake Tribal College Library
Cass Lake, Minnesota

McWherter Library
University of Memphis
Memphis, Tennessee

Sitting Bull College Library
Fort Yates, North Dakota

Stratton Taylor Library
Rogers State University
Claremore, Oklahoma

Troy H. Middleton Library
Louisiana State University, Baton Rouge
Baton Rouge, Louisiana

Walter E. Helmke Library
Indiana University – Purdue University
Fort Wayne (IPFW)
Fort Wayne, Indiana

Washington State Law Library
Olympia, Washington

Wiener-Rogers Law Library
University of Nevada, Las Vegas
Las Vegas, Nevada

Plus 3 others