Conducting Practical Library Assessments that Promote Program Change and Improvements

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Abstract
This paper reviews a number of recent studies conducted by the Information Use Management and Policy Institute at the College of Communication and Information, Florida State University. The studies reviewed in the paper demonstrate how, over the Institute’s 11-year history, the staff accomplished effective, sustainable, and practical assessments that affected change and improved the delivery of library services and programs. Moreover, the paper suggests that such studies do not have to be expensive nor does the methodology need to be complicated. The paper reviews three recent studies: (1) a website assessment, (2) a broadband mapping assessment, and (3) a training assessment. In addition, the paper makes comparisons among these three in terms of methods, data collection, reporting, impacts, and benefits.

Introduction
The Information Use Management and Policy Institute (Information Institute; www.ii.fsu.edu) at Florida State University’s College of Communication and Information assesses numerous library services and programs each year. These assessments cover a wide range of services and programs. In recent years, the Information Institute has also done considerable work evaluating electronic library services, such as web portals, digital libraries, and the underlying broadband infrastructure necessary to provide electronic library services. This paper details three Information Institute assessments of electronic library services that include:

- Two-year development and evaluation of a the Hurricane Preparedness and Response for Florida Public Libraries Web Portal (hurricanes.ii.fsu.edu);
- Three-month statewide public library broadband needs assessment; and
- Nine-month multi-tier assessment of marketing and training plans for a statewide digital library, the Florida Electronic Library (FEL; www.flelibrary.org).

These three projects were chosen for their wide variation, not only in the underlying service being assessed, but also in the methodologies employed and timeframe for completion of the assessments.
The purpose of this paper is to use these three projects as examples of how public libraries can assess electronic library services, regardless of time constraints and utilizing a variety of methodologies. The authors hope this paper provides research strategies that are easy to understand and simple to employ in public libraries.

**Overview of the Three Example Studies**

The three example projects described in this paper represent over two years of assessment work by the Information Institute. The hurricane project covers the largest timeframe, running from August 2008 – August 2010, but the web portal evaluation occurred during one portion of the overall project, from November 2009 – January 2010. The broadband needs assessment covers the shortest timeframe, occurring during the summer of 2009 (June-July). The Information Institute conducted the FEL training and marketing assessment during a nine month period (October 2009 – June 2010), although this project is part of a longer term evaluation program for the Florida Electronic Library, which the Information Institute has conducted since 2003 and continues through 2011.

**Hurricane Web Portal Evaluation: Overview**

The Florida Catastrophic Storm Risk Management Center at FSU’s College of Business awarded a grant to the Information Institute to assist public libraries and local communities better plan for, and respond to, hurricanes. A central part of the project was the development of the Hurricane/Disaster Preparedness and Response web portal to aid Florida public librarians and emergency response personnel during hurricanes and/or disasters (see: hurricanes.ii.fsu.edu). The study team developed plans for use and usefulness data collection activities based on the following two scenarios:

- **Scenario 1 – Hurricane/Disaster Event Occurs:** If a hurricane/disaster event occurred during the project, the study team would conduct interviews, focus groups, and surveys to collect information related to the use and usefulness of the web portal prior to, during, and after the event; and
- **Scenario 2 – Hurricane/Disaster Event Does Not Occur:** If no hurricane/disaster event occurred during the project, the study team would conduct interviews, focus groups, and surveys to collect information related to the use and usefulness of the web portal.

Since no significant hurricane/disaster event occurred during the 2009 season, the project team implemented the evaluation plan under Scenario 2. For more information on the overall hurricane project, see the final report,¹ and for more detail on the evaluation of the project web portal, see the evaluation report.²

**Broadband Needs Assessment: Overview**

The Information Institute received a grant from the State Library and Archives of Florida (State Library) to conduct a needs assessment of Florida’s public library E-government and emergency/disaster management broadband-enabled services. This project provided preliminary findings to assist the State Library in determining (1) broadband needs of public libraries in Florida, and (2) E-government and emergency/disaster management services that might be deployed throughout the state with increased broadband connectivity. This project was a first
step to enhance delivery of broadband-based E-government and emergency/disaster management services and resources, improve Florida residents’ access to and use of these services and resources, and assist public libraries to better support these activities at local and state levels. Additionally, the findings provided background information and justification for a proposal to the National Telecommunications and Information Administration Broadband Technology Opportunities Program to support improving Florida public libraries’ broadband capacity.

**FEL Training and Marketing Assessment: Overview**

Since 2002, the Information Institute has engaged in multiple evaluations of the FEL. During this time frame, the Information Institute has assisted in the clarification of the status and goals of the FEL, developed criteria and measures to assess the FEL, and developed evaluation plans and strategies for the FEL. In addition, the Information Institute has conducted usability, functionality, and accessibility testing of various components of the FEL for the State Library and Archives of Florida. The Information Institute also has completed marketing studies and developed an evaluation database of key statistical indicators to describe FEL activities. The current evaluation efforts of the FEL build upon prior FEL studies and include:

- Summary evaluation of selected aspects of the FEL for Library Services and Technology Act (LSTA) reporting;
- Assessment of Ask-a-Librarian (AAL) chat reference questions;
- Updated FEL five-year plan and assessment of public library and school needs to better provide consumer health information via the FEL;
- Continuation of assessment of the AAL component of the FEL; and
- Provision of support to the State Library regarding the maintenance, use, and analysis of FEL statistics.

The project described in this paper includes evaluation of marketing efforts conducted by the primary database vendor for the FEL (Gale-Cengage; [www.gale.cengage.com](http://www.gale.cengage.com)), the usage of FEL-Gale resources, and the effect of training on library staff’s ability to be self-sufficient users of FEL-Gale resources and to train others on the use of FEL products.

These assessments build on prior FEL studies conducted by the Information Institute for the State Library and focus on three tasks: (1) measuring usage of FEL-Gale resources, (2) assessing the effect of FEL-Gale training program on usability, and (3) identifying awareness of FEL-Gale resources. For more information on the current FEL project, see the final report, which provides an overview of findings from each task, summary findings for the project overall, and suggested future evaluation activities.

**Methodologies Employed in the Three Studies**

Typically, the Information Institute relies on multi-method assessment strategies and combines various strategies that best fit the needs and goals of the project at hand. For each project described in this paper, the methodology design took into consideration the specific goals of the assessment, the resources available, and situational factors associated with the assessment, which are discussed below.
Hurricane Web Portal Evaluation: Methodology

The hurricane web portal evaluation included three primary methods: (1) interviews/focus groups and surveys, (2) usability, functionality, and accessibility testing, and (3) web analytics. The interviews and surveys were designed to assess the use and usefulness of the project’s web portal by soliciting feedback and opinions from hurricane-experienced librarians from a convenience sample of Florida public libraries. The usability, functionality, and accessibility assessments of the overall usability of the project web portal included user and expert usability testing, and expert functionality and accessibility testing to assess the degree to which the hurricane web portal meets general usability, functionality, and accessibility standards. Web analytics were obtained by utilizing Google Analytics to evaluate web portal usage from October 1 through December 31, 2009. Based on the analyses of these data, the study team edited, refined, and improved the project web portal to better meet Florida librarians’ and local/state emergency responders’ needs.

Interviews, Focus Groups, and Surveys
Using an interview/focus group script and Hurricane Web Site Use Survey, participants across the state were questioned regarding the effectiveness of the web portal, its usability, its organization and its comprehensiveness. The interview script and survey were pretested on librarians at a Southeast Florida public library. Their answers were recorded to preserve the input, and the study teams’ questions were refined to acquire the most valuable recommendations. After making the necessary changes to the script and survey, 15 librarians were interviewed and their responses were recorded and analyzed so their feedback could be used to make changes to the web portal.

Usability, Functionality, and Accessibility Testing
To perform usability, functionality and accessibility testing, the team developed standard usability protocols for the evaluation of the hurricane web portal. Areas included within the protocols were based on general information seeking behaviors of users that include the use and usefulness of the web portal’s content and design. In addition, the usability protocol included questions related to the most and least useful aspects of the web portal and recommendations to improve the web portal. The usability evaluation included assessments by selected public librarians and expert testing by members of the study team. The study team emailed a usability protocol to 3-5 selected Florida public librarians. The usability protocol developed for this project was specific to the hurricane/disaster preparedness and response web portal and was based on the study team’s prior usability testing experience. The selected participants reviewed the protocol and project web portal, and completed and returned the usability protocol form to the project team along with recommendations on how to improve the web portal. The study team also conducted expert usability assessments of the project web portal where members of the study team reviewed the project web portal and completed the usability protocol.

Functionality is the degree to which all aspects of a website are functional and operate properly. Functionality testing helps assure that a system performs as expected, or that it works. This testing insures that the web portal is delivering the intended services and capabilities needed by
the targeted population of users. For the project web portal, functionality testing included a systematic assessment of every page of the portal.

Accessibility is the level at which a technology can be used by individuals with disabilities.\textsuperscript{17} Accessibility testing is particularly important in Florida as many seniors have disabilities including visual, hearing, and mobility impairments that impact the ability to use Web-based materials. Categories of evaluation include checking for accessibility friendly features as menu driven selections, testing policy, accessibility statement, and compatibility with assistive devices used by individuals with disabilities. Members of the study team (i.e., experts) conducted the accessibility testing.

Web Analytics
The study team utilized Google Web Analytics (\url{www.google.com/analytics/}) to examine web portal usage and selected metrics determined to be the most useful for assessment of web portal usage. The project team used a convenience sample of the first quarter (i.e., October 1 – December 31, 2009) after the portal was launched and the marketing campaign has been in full effect. Overall, the analytics indicated that the portal is experiencing increased usage, even toward the end of a quiet hurricane season.

Broadband Needs Assessment: Methodology
The needs assessment employed a multi-method data collection approach, which included seven distinct methods: (1) literature review, (2) interviews, (3) case studies, (4) site visits, (5) GIS analysis, (6) survey data analysis, and (7) costing models. The authors limited the discussion in this paper to only three of these methods: case studies, GIS analysis, and costing models. Additional information related to the project methods and data collection techniques used in this study is available in the final report.\textsuperscript{18}

The study team employed a combination of purposeful and cluster sampling for the study’s iterative multi-method data collection efforts. The study was exploratory and purposeful, thus limiting the generalization of the data. The seven methodologies, however, provided detailed and overlapping findings regarding broadband capacity issues associated with providing E-Government and emergency/disaster management services and resources in public libraries. By using an iterative and multi-method approach, the study team identified and triangulated perspectives on broadband needs for the delivery of E-Government and emergency/disaster management services and resources in public libraries from both the public library and user populations, thus ensuring reliable and valid data.

Public Library Case Studies
The study team enlisted selected public libraries to conduct case studies describing their current broadband configuration/infrastructure, collecting data on workstation connectivity speeds and network configurations, and collecting anecdotal data related to use of the workstations at the current connectivity speeds. The study team enlisted six public libraries to conduct broadband connectivity case studies in their libraries.

Data collection efforts for the case studies were based on library-provided answers to the following requests:
• Provide us with a written network configuration for your library network beginning with the bandwidth coming in to the system (library), how all the branches and outlets are connected, with what, and at what speed;
• Tell us your telecommunications/broadband costs for the current network and name of the ISP;
• Do some speed tests at the workstation level using www.speakeasy.com (or whatever you prefer) over a one week time period at a selection of the branches, preferably around (9:00 AM and 4:00 PM in the afternoon) on weekdays – MWF would be great;
• Supply us with anecdotes or stories regarding connectivity and bandwidth at the branch level as to problems or issues;
• Describe the internal size of the library technical staff and the amount/type of assistance you get from the ISP;
• Draw the DREAM configuration that you wish you had for your broadband connection (based on number one above) and indicate what the costs would be with your current provider; and
• Send all this material to the Information Institute; we will then schedule a quick conference call to discuss.

Typically, a member of the study team contacted either the library director or lead technical support person at the case study site and asked if they would be willing to provide answers to the above seven questions. An attempt was made to obtain data from two large library settings, two moderate sized libraries and two smaller and rural libraries. The libraries provided answers to the above seven questions as best they could. In a number of instances, a member of the study team (either through email or via phone conversations) assisted participating library staff members to locate/obtain the information.

Geographic Information System (GIS) Analysis of Public Library Telecommunications
Study team members accessed the Bill & Melinda Gates Foundation 2009 Florida public library technology dataset, made available by the State Library and Archives of Florida, and the 2009 Florida K-12 public school dataset, made available by the Florida Department of Education. The study team used geographic information systems (GIS) software to manage, analyze, and display geographically Florida public library broadband information. The study team utilized GIS to analyze connectivity speeds and costs for public library outlets, schools, and school districts. Results of analysis of speed and cost connectivity were displayed statewide, by county averages, and by LATA and RACEC.

The Information Institute used these designations to produce four series of maps. First, the Information Institute looked at public library Internet connectivity speed and cost statewide by mapping individual library outlets’ connectivity speeds in comparison to each other, average annual connection costs for public library outlets in each county, and average connectivity speeds for public library outlets in each county. Then, the study team compared public library Internet connectivity speed and cost by LATA in a series of 21 maps that included one map showing the location of all 10 LATAs in Florida and two maps for each LATA, one showing individual library outlets’ connectivity speeds in comparison to each other and the other showing individual library outlets’ annual connection costs in comparison to each other.
Next, the team investigated K-12 public school district office Internet connectivity speed and cost statewide by creating two maps showing the connectivity speeds and annual costs for public school district offices in comparison to each other. Finally, the Information Institute looked at Public library, public school, and school district office Internet connectivity speed and cost by RACEC.

This final series of six maps included two maps for each of the three RACECs in Florida, one map showing the connectivity speeds of individual public library outlets, public schools, and school district offices in comparison to each other and the other showing the connection costs of individual public library outlets, public schools, and school district offices in comparison to each other.

Connectivity Costing Models
Study team members investigated several possible models by which to cost out library equipment and bandwidth upgrades. Study team members provided public library location, current connectivity speeds, and current annual cost to AT&T and requested broadband upgrade costs and connection speeds for all 547 Florida public library outlets. Data collected from site visits, case studies, GIS maps, public library national survey data, and AT&T upgrade costs allowed study team members to develop a number of initial connectivity cost logic models.

This method would have resulted in the cost logic model, a total cost for upgrades in all Florida public libraries, and a total cost for upgrading only the libraries in the 28 RACEC counties. However, based on the NTIA Notice of Funding Availability (NOFA) and with input from the State Library, the study team abandoned the plan for cost models to upgrade library bandwidth. Ultimately, the study team, working in concert with the State Library, developed a menu of equipment options from which libraries selected what they needed, and tabulated a total cost of all necessary upgrade equipment for libraries participating in the State Library’s BTOP grant program.

FEL Training and Marketing Assessment: Methodology
The Gale-Cengage training assessment included three main tasks, each of which required a unique approach to data collection. Measuring changes in usage before and after the beginning of the marketing effort relied heavily on analysis of usage statistics. Assessing the effect of the training program on library staffs’ ability to use the FEL in a self-sufficient manner employed e-mail questionnaires and evaluation of quiz results from online self-paced modules. Due to limitations of the quiz results, however, only the e-mail questionnaires are discussed here. For details on this method, see the final report. Evaluating the impact of the marketing program on levels of library staff awareness of the FEL occurred via two rounds of telephone interviews.

Analysis of Usage Statistics
To analyze usage statistics, the Information Institute first gained access to the Gale-Cengage statistical portal and participated in a webinar/teleconference to learn how best to use the portal. Then, the study team reviewed the available reports in the portal and downloaded benchmark data (November 2009) from the portal. Finally, the Information Institute downloaded monthly usage data for December 2009 and January-May 2010 to compare to the benchmark to determine
the degree to which usage has increased (or otherwise changed). Downloaded benchmark and monthly usage data included the canned reports entitled: Usage Summary; Usage by Database; Session Time; Session Location, Date and Time; Journal Retrievals; and eBook Retrievals. Data from each report were analyzed in Microsoft Excel to determine any change, and results were reported using a variety of line and bar charts.

**E-Mail Questionnaires**
First, the Information Institute recruited library staff who had completed Gale-Cengage trainings (face-to-face or via the on demand web modules) to respond to email questionnaires to assess the degree to which the Gale-Cengage training program improved their abilities to use the FEL, both for themselves and to train others in using the FEL. Gale-Cengage provided the Information Institute with a population of 179 unique library staff who had completed Gale-Cengage trainings by the end of April 2010. For the interviews, the Information Institute selected a random sample of 77 from the population of training participants (43% of the population). Information Institute staff then contacted these library staff members via email and asked them to participate in an online questionnaire by the end of May. As instructed by the email, Information Institute staff contacted those library staff members who did not complete the interview script within the time allotted and conducted their interviews over the phone. This took between 5-10 minutes per interviewee. Overall, the Institute received responses from 31 library staff members, or 40% of the total sample of 77.

**Telephone Interviews**
The Information Institute needed to conduct targeted interviews with public librarians for a pre-marketing program score of awareness and a subsequent round of interviews to measure any change in awareness. The sample for the pre-marketing interviews was comprised of a random sample of 54 libraries (10%) that were pulled from the population of 547 Florida public libraries. The sample for the post-marketing awareness totaled 49 public libraries: seven main libraries, 33 branch libraries, two academic-affiliated libraries, and seven non-responses (i.e., librarians who did answer phone calls or declined to participate in the interviews). Both rounds of interviews were conducted using a predetermined list of questions, and only after library staff signed informed consent forms. Each interview lasted between 10-15 minutes, with responses manually recorded for subsequent analysis.

**Practical Lessons for Conducting Program Evaluation**
While the Information Institute regularly conducts assessment studies that are budgeted in the hundreds of thousands of dollars, the assessments described above were budgeted in the $50,000 range. Each assessment relied on very practical and effective methods and data collection techniques that resulted in high quality data.

The Hurricane Preparedness and Response website assessment resulted in much improved access to hurricane preparedness and response content. The broadband needs assessment findings assisted the state library and archives of Florida to identify areas in the state where improved library broadband is essential. The FEL training and marketing assessment will result in the Gale-Cengage’s ability to better fine tune the training content to specific audiences and to determine the degree to which the training affected overall FEL usage.
The three studies presented here provide a number of practical lessons for library program evaluations:

- **Write proposals that are feasible given time and financial constraints.** The first stage of any project is the proposal writing stage. At this point, the study team needs to sit down and discuss what can and cannot be accomplished within the constraints of the request for proposals, such as budget limitations, imposed timelines, etc. Be careful to write proposals that include only those tasks and activities that reasonably can be accomplished within those financial and time constraints.

- **Be organized at the start of a project to minimize problems later on.** For all evaluations and other research, the Information Institute begins each project by compiling a detailed tasking document that lays out key tasks for the project, as well as step-by-step activities for each task, with a timeline to completion. The tasking document is not set in stone; rather, the Information Institute modifies the tasking when necessary. However, the tasking document does serve to guide the overall project, help staff keep track of deliverables, and deadlines, and minimize issues regarding how tasks are meant to be accomplished.

- **Apply lessons learned in previous projects to new or existing projects.** The three projects described here used methodologies that the Information Institute had found reliable previously and are adaptable to various research questions and evaluation projects, such as the telephone interviews employed in the FEL Training and Marketing Assessment. By leveraging existing data collection instruments, staff knowledge, and methods and procedures, the project teams did not have to re-invent the wheel. Instead, Information Institute staff had the opportunity to use their time and expertise in innovative ways.

- **Maintain ongoing communication with funding agencies.** By communicating regularly with the funding agencies supporting the three example projects discussed here, the Information Institute was not hit with multiple surprises along the way. Also, regular communication allowed the project team to solicit feedback from the funding agencies to include their good ideas in project development and implementation, as well as assuring that the projects addressed the funders’ concerns.

- **Minimize project expenses by matching project activities with specific skills and knowledge of the project staff.** If projects include concepts or methods that are foreign to project staff, considerable time, energy, and cost has to be expended educating the staff. A way to mitigate costs is to match project activities with staff who expertise in certain areas. For example, the Information Institute employs experts in usability, functionality, and accessibility, so assigning those staff to the Hurricane Web Portal Evaluation was more cost effective than assigning staff with little or no knowledge in these areas.

- **Identify and understand a project’s situational factors as best as possible before beginning work.** Any project comes with multiple situational factors, such as the degree of access to various measures of usage for the FEL Training and Marketing Assessment. The Information Institute wanted to analyze data from the Gale-Cengage statistics portal in conjunction with Google Analytics on the individual Gale-Cengage databases; however, Google Analytics data were not available for just Florida users of the databases. By understanding the limitations cause by this situational factor, the Information Institute
was able to adapt the methodology early into the project with minimal effect on workload or outputs.

- **Understand and strategically manage, to the degree possible, the politics associated with a project.** Evaluation projects often come with political complications, such as a funding agency’s need to justify services to the agency overseeing their efforts. Project staff need to understand these political issues as best they can in order to complete the project in a manner that is both methodologically rigorous and meets the needs of the funding agency.

In each of the three studies presented in this paper, specific strategies were in place to insure that the findings could result in improved library services, that high quality data could be collected relatively inexpensively, that small numbers of participants could provide information for significant program/services improvement, and that data analysis and reporting techniques were straight-forward and not convoluted. Further, in each of these instances the assessment findings contributed to a longer-term improvement in and impact from library services.

**Conclusion**

This paper reviewed three recent evaluation projects conducted by the Information Institute. The projects were conducted for different funding agencies, in varying timeframes, and utilizing multiple methodologies. All three projects included a multi-method approach, which the Information Institute prefers because of the benefits of collecting multiple types of data and the ability to compare finding from the multiple data types for a more complete picture of a problem than could be obtained from a single method. Also, each of the three evaluations cost less than $50,000, indicating that a large budget is not necessary to conduct a thorough and effective evaluation of a library service. These three projects are detailed here as examples of how libraries can evaluate their own services, in a cost- and time-efficient manner.

**Endnotes**

17. Bertot et al., 24.