

INTRODUCTION

“Running a Web site is much like running a newspaper, with the content manager as editor in chief. You have to control the focus, the writing, the layout, the design, the marketing, and the performance, and you have to make sure the product delivers something the customer wants and can use.” -- Candis Harrison, HUD Web Manager, Presentation for 2001 E-Gov Conference, 2001

“Fully 77 percent of Internet users – or 97 million Americans – have at some time gone online to search for information from Government agencies or to communicate with them.” -- John B. Horrigan, Pew Internet & American Life Project, 2004

Objectives

The purposes of this study were threefold:

- Identify best practices in Web management (Chapter 1)
- Learn how organizations became leaders in Web management (Chapter 3), and
- Compile a guide to help other organizations achieve Web excellence (Chapter 2).

Web Management Defined

Web management is herein defined as the handling of everything involved in building and operating an organization’s Web presence. This includes managing content and applications, infrastructure, staff, design, compliance with laws and regulations, and the policies and procedures needed to maintain order and meet organizational goals. The basic elements of Web management include:

- Organizational leadership and management (also called “governance”) including: organizational structure and chain of command, mission activities, strategic plans, communication protocols, organizational culture, budgets, and program and project management;
- Content or knowledge management including: life-cycle information management, records management, database and archive management, and management of applications important to Web customers;

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- Hardware and software infrastructure operations and management including: IT operations and maintenance, change management, security management, outsourcing, hosting, etc.;
- Policy, guidelines, and standards related to Web activities;
- Human resources management including: staff development, recruitment, and the use of contracting; and
- Customer relationship management including: gathering and evaluating input from customers).

Web activities exist in many parts of an organization -- although they may not appear in the budget. Web activities can be difficult and sometimes impossible to separate from other mission activities. Basic mission tasks such as data collection and report preparation may be separate from Web activities, but these tasks may be done collaboratively or in real-time using the Web for communications, in which case the Web is helping accomplish the tasks. Using the Internet and/or intranet as a research tool is another example of the Web being used as part of daily activities. Data management, financial management, customer service, internal communications and communications with the news media and the Congress -- many tasks depend upon the Web.

Some might ask, “Why ‘Web management’ and why not ‘Web leadership’?” If management is about operations and coping with complexity and leadership is about looking ahead and handling change, then leadership is certainly needed for effective Web management. For example, people with vision are needed to challenge old ways and set a new direction. Sometimes personal courage and management conviction are needed to keep on task and see tasks through. These and other “leadership qualities” are important to the success of any endeavor. For this study, however, the phrase Web management is used to emphasize the importance of executive involvement and good management controls in making the Web as effective as it can be in accomplishing the organizational mission.

The Importance of Web Management

“Three out of four Americans have access to the Internet, according to Nielsen//NetRatings. Online population surges past 200 Million for the first time.” –Nielsen//NetRatings, March 18, 2004

“89 percent of government Web sites are not easily accessible to the citizenry because the sites read at higher than an eighth grade reading level.” – Brown University Center for Public Policy, 2003

The Web has become an important vehicle through which Federal Government information and services are provided. Twice as many people access government Web sites as those who download music (Madden, 2003). The Web is also an important collaboration tool and information sharing venue inside an organization. The activities

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involved in creating and operating Web sites have become mainstream in most organizations and management of these activities is needed to ensure that a Web presence is a truly successful investment. But different Federal organizations face different challenges and, as a consequence, manage Web activities differently. As a result, some Federal Government Web sites are more effective than others at meeting customer needs.

Born in 1991 with the public launch of easy-to-use browser software, the World Wide Web has grown significantly in size, capability, utility, and stature. It has become a pervasive and essential information tool in both the public and private sector. The Web is a medium through which organizations now provide self-service access to essential services, information, and opportunities to millions of customers every day: wherever they are; whenever they need it. But a Web presence does not just happen. Content must be created, tested, approved, formatted, loaded onto servers, and managed for years throughout the life cycle of the information. Computer hardware and telecommunications networks are needed to provide access. Designers and programmers are needed to create and maintain interactive applications that provide online services. This all takes dollars and people and policies and procedures – all of which are incorporated in the notion of Web management. And someone must oversee that bundled effort called management. Someone must coordinate all the various tasks, handle the daily surprises and dramas, and oversee planning, budgeting, and reporting to senior executives. The larger the organization, the more geographically distributed, and the more internally diverse (in terms of mission), the more complex the challenge of managing Web activities becomes.

Leadership is comfortable with – and even expects to see -- Web activities in strategic plans and organizational budgets. With this visibility comes an expectation and an increased need for effective management. Executives are being urged to run their information technology (IT) activities like a business (Overby, 2004). The Web is now an essential corporate resource that enables employees to do their jobs. The Web serves so many customers (and so many kinds of customers) that organizations now see the Web to be not only beneficial, but essential in presenting their current and constantly evolving set of information and services to their customers. Thus, this resource needs to be effectively managed. Research has found that governance is critical in ensuring that IT-related decisions align with organizational objectives. “Companies with better than average IT governance earn at least 20 percent higher return on assets than organizations with weaker governance” (Ross and Weill, 2004).

Customer expectations, too, have expanded as more people use the Web as part of their daily business or personal activities. As customer expectations increase, managers are challenged to keep up and use the Web every way they can to serve these customers and thereby better accomplish their mission.

The Bush Administration has made Web management a priority for Federal agencies. Introduced in 2001, the President’s Management Agenda (PMA) has the ambitious objective to make government results-oriented, market-based, and citizen-centered (PMA, 2001). One of the five PMA initiatives, Expanded E-Government, seeks to improve government performance through “the use of the Internet to empower citizens” (PMA, p. 23). The belief behind this initiative is that Federal Government can secure

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greater services at lower cost through E-Gov and can meet high public demand for E-Gov services. The idea is to make it simpler for citizens to receive high-quality services from the Federal Government, while reducing the cost of delivering those services. One report says the United States is behind Canada in E-Government maturity for the fourth year in a row (accenture, 2004; Frank, 2004). The Bush Administration has set a goal “to champion citizen-centered E-Gov that will result in a major improvement in the Federal Government’s value to the citizen” (PMA, p. 23). In addition to the E-Gov efforts that transcend organizational boundaries, the PMA calls for agencies to be equally “results-oriented, market-based, and citizen-centered” in accomplishing their individual missions. While the PMA presents a good approach, it’s less about a specific Administration’s priority, and more about good practices and good services to the taxpayer, the ultimate customer of the Federal Government. Web management that follows the recommendations in this study can be a major contributor toward these goals.

Methodology

Initial Research

This project began with library and online research, but little information on Web management was found. Content management, project management, and operations management have each received their share of attention as individual areas of study. Information management and government IT periodicals have provided news and information concerning Chief Information Officers in the Federal Government. Awards for Web sites have been reported online and in journals.

Selection of organizations

No overall information was found to describe how organizations manage their Web activities. (It was not until late in the study that overall works like Brigman’s “Web site management excellence” and Siegel’s “Secrets of successful Web sites” were discovered.) To learn the most about Web management in the limited time available, it was decided to ask those who have been judged to be the best. The following four criteria were used to rank Federal organizations and identify the “Best-in-Web” organizations to be invited to participate in the study:

- Scores in the September 2003 Web study by Brown University Center for Public Policy (West, 2003).
 - Final score for an agency is the average score over all the Web sites tested for that agency. Scores for each Web site are on a 100 point scale, as follows:
 - 80 points possible for features (four points per feature): publications, databases, audio clips, video clips, foreign language access, not having ads, not having user fees, not having restricted areas, W3C disability access, having privacy policies, having security policies, allowing digital signatures on transactions, an option to pay via credit cards, email contact information, areas to post comments, option for email updates, allowing for personalization of the Web site, PDA (personal digital assistant) or handheld device accessibility, and readability level below grade 10.
 - 20 points possible for online services (1 point per service).

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- American Customer Satisfaction Index scores (<http://www.theacsi.org/overview.htm>, accessed August 19, 2004)
 - Scores are based on data compiled from online surveys completed by customers while they are using a Web site.
- Receipt of major Web awards since 2002.
- Our evaluation of Web content on government Web sites vis-à-vis the Web content standards recommended in June 2004 by the Interagency Committee on Government Information (“Recommended Policies and Guidelines for Federal Public Web sites,” 2004).
 - Recommended standards for content address:
 - Enabling citizens to identify Federal Government Web sites and trust that they provide current and accurate government information.
 - Writing and organizing content from the customer’s point of view.
 - Designing and writing to ensure Web sites are easy to access and use.
 - Unifying information across government organizations.
 - Observing priorities and a schedule for posting content.
 - Complying with existing federal laws, regulations, and policies.

Using these four criteria, organizations were ranked and those with the highest scores were deemed to be the “Best-in-Web”. From this ranking were selected those invited to participate. The selection process also sought organizations that were large, geographically distributed, and internally diverse. These aspects were felt to make Web management all the more challenging, and yet these organizations have succeeded better than many others in managing Web technology and presenting award-winning and effective Web presences. (Other highly ranked Web-award-winning organizations were considered, but not included in the study, including the Securities and Exchange Commission, the Patent and Trademark Office, the Department of Education, the Department of Energy, the Internal Revenue Service, the Department of State, the Department of the Navy, and the Food and Drug Administration.)

The invited Best-in-Web organizations who participated were:

- U.S. Department of Housing and Urban Development (HUD)
- U.S. Department of the Treasury (Treasury)
- Environmental Protection Agency (EPA)
- Federal Aviation Administration (FAA)
- General Services Administration (GSA)
- National Aeronautics and Space Administration (NASA)
- National Weather Service (NWS)
- Social Security Administration (SSA)
- U.S. Postal Service (USPS)

(The following organizations were also rated Best-in-Web and were invited, but were unable to participate in the study due to pressing Web projects: Department of Agriculture, Department of Health and Human Services, the National Science Foundation, and the Office of Personnel Management.)

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As it turned out, these participating organizations did not include as much diversity as was sought. EPA, NASA, and the Department of the Treasury were the most internally diverse organizations, so their answers should be of special interest to Web managers working in internally diverse organizations (such as the Department of the Interior).

In addition to the Best-in-Web invitees, FirstGov requested to participate. Even though FirstGov is different in many ways from the target participants, in that it is a point of entry to government-wide information rather than an individual organization's Web site, its participation was welcomed as a point of comparison and further information, as discussed in Chapter 3.

Information Gathering

At the core of the study was a two-part data-gathering process: a detailed, structured questionnaire and follow-up interviews for gathering information the questionnaire could not.

Part 1. The Questionnaire

A questionnaire was developed from questions originally posed and investigated through the literature search into Web management activities. In developing the questionnaire, specific areas of Web management were identified and the questions were initially organized into leadership, content, infrastructure, staffing, and customer feedback. For the final questionnaire, however, the segmentation by areas was eliminated, and the 29 questions were organized into what was considered to be a logical flow. The questionnaire was designed to take 30 minutes or less to complete, and it was tested to validate that assumption and was refined before it was sent out.

Questions were of four types. The first type asked "to what extent" respondents used specific practices and they selected answers from prescribed choices: "completely," "mostly," "somewhat," "little," or "not at all." A second type asked which approaches were used for accomplishing certain tasks; respondents could select as many choices as applied from a list that included "other," for which they provided a comment to explain what this was. A third type asked "how well" Web activities were funded and staffed; respondents selected from "very well," "adequately," "unevenly," or "poorly." The last type consisted of two open-ended text questions.

In addition to the four types of main questions about various practices, three columns on the right side of the page sought additional information about each practice. These columns were labeled Effectiveness, Importance, and Difficulty (E, I, and D, respectively). For each practice these columns represented the following three questions:

- How effective is this specific practice in your Web management?
- How important is this specific practice to the overall success of your Web management?
- How difficult has it been for you to implement this specific practice?

Answer choices were on a five-point scale where 5 = "completely," 4 = "very," 3 = "somewhat," 2 = "not very," and 1 = "not at all."

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Questionnaires were personalized for each organization. Because names of ideal respondents were not known at the selected organizations, questionnaires were emailed to a few likely respondents in the offices of the Chief Information Officer (CIO) in each organization. Through follow-up phone calls, the best individual respondent in each organization was identified. Most respondents were in a Public Affairs or Communications Office, not in the Office of the CIO.

To encourage and reward participation, the Performance Institute offered a 25 percent discount for registration at a planned E-Gov Usability Summit, which was to be held a few months later. (However, this event was later cancelled because of inadequate registration.) It was gratifying that most organizations participated willingly and without expectation of reward, stating that they felt this to be a worthwhile study; many stated they felt honored to be asked to participate.

Eight organizations replied to the first sending of ten questionnaires. FirstGov also requested a questionnaire and provided their responses. To get more participants, three questionnaires were sent to additional organizations, and one response was received. This brought the number of participating organizations to ten. Respondents generally completed the entire questionnaire, although a few left one or two questions blank or even provided more than one answer. Although follow-up interviews were planned anyway, incomplete answers further justified the need for the interviews.

Part 2. Follow-up Interviews

The first phase of the study brought in considerable information from organizations with important stories to tell. For example, informal phone conversations with HUD participants revealed that as early as the mid-1990's, HUD saw the Web as an integral part of everything they did as an organization; they managed their Web activities very effectively from the beginning. The questionnaire was unable to capture this potentially useful information, so the follow-up interview (originally designed to check and validate questionnaire data) was expanded to ask additional general questions.

Follow-up interviews were conducted with all ten participants. In addition to validating the E, I, and D data and checking selected answers in the questionnaires, the interviews enabled respondents to provide general overall information as well as examples and details on important points. The open-ended interview questions were about the same across all regular respondents, but different for FirstGov. The interview data is presented as succinctly as possible while still retaining the significant details concerning the issues they faced, the actions they took, and the outcomes they achieved. Some common themes can be noted, and the individual culture of each organization presents various issues, affecting how they see and manage their Web activities. The notes from the interviews were reviewed and approved by each interviewee for inclusion in this report.

Analysis and Presentation

To analyze the responses, the data from all participants were compiled in a spreadsheet for easy viewing (see Appendix 6). No statistical analysis was considered possible due to

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the small and selected population. Numeric scores were tabulated and averaged, but all responses were analyzed and evaluated as qualitatively as possible. Answer data was handled separate from E, I, and D data, and all FirstGov data was handled separate from the other respondents. The overall answer scores represent the extent to which these organizations employ the practices in question; the overall E, I, and D scores point to those practices considered to be the most (and least) effective, important, and difficult. The average score for each question was used as the line between “higher” and “lower” scores for that question. An overall average was also computed to identify answers that were higher or lower than average.

The answers to the four types of questions were evaluated in different ways. The first answers were easiest to evaluate. Responses for the first type of question (“to what extent...”) were given numerical values (completely = 5, mostly = 4, somewhat = 3, little = 2, and not at all = 1). High or low values were compared to the overall averages to formulate conclusions about each question. Patterns observed in the data were interpreted in light of other information about the individual participants, and hypotheses were suggested to explain these patterns.

Analyzing the data for the second type of question (“approaches used”) was more complicated. Because multiple answers were generally selected for each question, a tally was made across all respondents to provide a count for each answer choice, including “Other.” Because some respondents did not provide individual E, I, and D scores for each answer chosen, whatever value was provided was copied to all answers to that question, possibly masking individual variation between these answers. A weighted average was then calculated to reveal greater and lesser E, I, and D values. The number of organizations using each practice indicates how common the approaches are in this population.

The answers to the “how well” questions were translated into numeric values and averaged across all responses (except FirstGov). Because this four-point range (“very well” = 5, “adequately” = 3, “unevenly” = 2, and “poorly” = 1) differed from the five-point scoring of the other answers, these values were not totaled into the overall answer scores at the bottom of the spreadsheet. E, I, and D scores for the “how well” questions, on the other hand, were no different from other E, I, and D scores, so they were averaged across all responses and were totaled into the overall scores.

Lastly, open-ended answers were evaluated qualitatively and are presented in their original words. Common themes are evident in these answers, but the varying information also reveals different ways to understand and approach Web management tasks.

The analysis in this report used the overall average for answers and for the E, I, and D data. The charts in Appendix 4, which summarize each question, show the overall averages at the top of each column. Weighted averages were calculated for questions with multiple answers; these are shown at the bottom of the each column.

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The E, I, and D information helped in identifying the “Most Effective,” “Most Important,” and “Least Difficult” practices. These are the areas that probably deserve the most attention from Web managers and executives.

The notes for each follow-up interview were compiled into a master table for easier review and were reviewed and approved by each participant prior to publication. The answers to question #28 were compiled with interview notes other data collected to present an overall description and Web history of each participating organization (see Chapter 3).

To comply with participants’ requests that most of their individual information remain confidential, the identity of the respondents has been removed, and text answers have been edited to remove identification.

How to Read the Data in the Appendixes

Scores for Answers are presented as numbers. “Completely” was valued as a 5; “Mostly” a 4; “Somewhat” a 3; “Little” a 2; and “Not at All” a 1. Answer scores are the average of the nine responses (excluding FirstGov). The numeric scores were used as a guide in a gross sense, that is to compare answers—to rank the highs, averages, and lows. Weighted averages were calculated separately for each answer choice in the multiple choice questions. Because the population is so small for this study, differences of a few tenths between scores are probably not significant.

Scores for effectiveness, importance, and difficulty are the averages of the nine responses (excluding FirstGov). A few respondents did not provide E, I, and D scores for some answers, in which case the average was over the smaller number of answers. As with the answer scores, these values were used to compare data within each column. Multiple-choice questions have a different overall average from the other questions for the several reasons described above in “analyzing the data.”

Data for FirstGov is presented by itself for comparison in Appendixes 5 and 6. It should be noted that the overall scores for FirstGov are higher in effectiveness and importance, and lower in difficulty than for the other respondents. A good description of FirstGov history and operations is included after the other descriptions in Chapter 3.

Limitations of this Study

Interpretation of this data is limited by the design of this study. For example, since a larger, more random population was not included in the study, it cannot be assumed that other organizations do not use these practices or that they use them less effectively. Also, since the questionnaire and interview asked only about selected practices, these organizations may have other effective and important practices that did not come to light in this study. The findings of this study focus solely on the practices addressed in the questionnaire and follow-up interview, as supplemented by additional materials provided by the participants.