CHAPTER 1: WEB MANAGEMENT BEST PRACTICES IN THE FEDERAL GOVERNMENT

Best-in-Web organizations come in all shapes and sizes. This study sought award-winning large, distributed, and diverse organizations. Their information provides the following recommendations on Web management best practices. For further detail, see Appendices 5 and 6.

Centralization Models for Organizing Web Activities

How Web activities are managed touches the heart of an organization's culture. The organizing of Web activities emerges as a common theme from most of the recommendations in this report. Best-in-Web organizations have developed various approaches to organizing their Web activities, all of which involve some degree of <u>centralization</u>. (Centralization, as used in this discussion, refers to the bringing together of staff, infrastructure, responsibilities, or other selected Web-related elements into a very few places, organizational units, people, etc.) Elements such as infrastructure and staff for management of content and operations lend themselves better to centralization than content creation, as illustrated by the models below.

HOW to centralize, how MUCH to centralize, and WHAT to centralize varies across organizations. Centralization of selected elements appears to provide benefits such as cost savings or efficiencies in accomplishing goals; but balance is needed in some organizations to gain the benefits of distributed elements such as those involved in content creation. Best-in-Web organizations in this study typically centralize Web infrastructure; likewise, Web managers and production staff (graphic arts, editors, technical writers for derived products, marketers, etc.) are typically centrally organized, if not physically located all in one place.

Just as organizations centralize some elements and not others, centralization of elements for <u>Internet</u> activities does not necessarily mean an organization will also centralize <u>intranet</u> or <u>extranet</u> activities. Many factors affect how intranets and extranets are managed and by whom. In many cases, intranets and extranets are more recent activities under different (or even local) leadership. Also, tighter budgets and the increasing emphasis on customer service and partnering have drawn attention, resources, and priorities away from intranet needs. These conditions have led to development of multiple, independent, locally operated intranets in a single organization. Extranets may need to be like this because they serve specific partner arrangements, but it can be argued that intranets need to serve the entire organization equally, and should therefore be centralized.

Some organizations manage Internet, intranet, and extranet activities more comparably and with greater overall coordination. Different issues may drive different tasks in each area, but Internet, intranet, and extranet activities are seen by these organizations as equally important – each for its own reasons. In these organizations, centralization includes all three areas of Web activities, thereby providing better coordination, efficiencies, reusability, and cost savings across more Web activities.

Three centralization models are apparent from this study. A <u>unified</u> model (see definitions below) seems to work well for internally homogeneous organizations. A <u>federated</u> model better addresses the needs of organizations that have distributed and diverse organizational units with related and /or coordinated aspects to their missions – a balance of interdependence and independence. A <u>distributed</u> model works well for organizations that have very strong and independent subunits that have little or no need for internal coordination. Some organizations are in transition between models, the result of a management decision to reorganize/restructure their Web activities.

<u>Unified</u> – complete centralization, in which all Web activities are accomplished by one Web Team at the top level of an organization; infrastructure is centralized in one location with appropriate redundancy for load balancing and contingencies. Examples of this model are HUD, SSA, and USPS, but each diverges from total unification in some respect. HUD has one Web team for content (Internet and intranet) across the organization; infrastructure, however, is managed by a separate team. SSA and USPS each centralize their Internet infrastructure and Web operations staff but manage intranet in a separate part of the organization.

<u>Federated</u> – a partial centralization at the higher level, in which subunits of an organization coordinate overall Web management, allowing independence or "flexibility" to subunits for some aspects (for example content creation), while centralizing other aspects at the top level. A good example of this model is NASA, which has 11 locations that do different work, but ultimately work together to accomplish goals. Like Treasury, NASA provides a top-level point of entry, and the subunits work together to organize and consolidate Web content at nasa.gov where it makes sense to do so, while leaving some content tasks and infrastructure at the subunit level where appropriate. NASA Web staff has developed a style guide and templates to present NASA content consistently (although look and feel varies considerably when navigating into specific areas); the style guide allows content owners in the subunits the flexibility they need to manage their content. FirstGov (and other E-Gov websites) may be examples of the Federated approach. FirstGov has a centralized Web team, Web hardware and software infrastructure, and Web policies and procedures for management of the site. However, all content on FirstGov is owned by partner organizations. FirstGov formally partners with many organizations to create the Web presence. FirstGov provides the point of entry that has links to content owners' sites.

<u>Distributed</u> – centralization at the subunit level, in which the top-level organization does not or can not standardize, coordinate, or control all Web management for all the subunits. An excellent example of this model is the Department of the Treasury, whose Web presence is an overview for and point of entry into its subunits. Treasury allows the subunits to retain separate designs for look and feel and to manage their Web activities independently, with little overall coordination. The Internal Revenue Service (IRS) Web site, winner of many recent Web awards, is by far the largest component of the Treasury's Web presence. Other subunits of Treasury such as the U.S. Mint, the Bureau of Engraving and Printing, the Financial Crimes Enforcement

Network, and the Bureau of Public Debt (to name a few), have very different functions and most have long histories. They also have much smaller Web presences than IRS, which interacts with virtually every American adult. These are good reasons for Treasury to use a Distributed approach. Each Treasury subunit is a good point of centralization for their Web activities, enabling them to centralize as best suits their organizations.

Some organizations in this study might best be characterized as "in transition" from distributed to unified: EPA, FAA, and GSA. Each has internal diversity, but they have decided to work through the challenges of unification, and are in the process of standardizing Web policies, processes and procedures, content design, and navigation. They are reorganizing their Web sites, Web infrastructure, Web staff, etc., to provide their customers with more effective access to their resources over the Web.
They see unification as a better way to organize their Web infrastructure, staff, and content, and thereby better serve their customers.

Overall Strategies

Best-in-Web organizations follow these overall strategies:

They operate with top-level executive support that –
- Views the Web as integral to organizational activities
- Funds Web activities adequately
- Aligns Web tasks with mission goals
- Involves all stakeholders in the organization around the Web as a key tool in accomplishing the goals
- Entrusts Web work to a full time "Web Team" under the leadership of a professional Web Manager
- Positions the Web manager and team in the Communications or Public Affairs Office, where contact with executives can be frequent and effective
- Employs the Web as the official voice of the organization to outside constituencies
- Involves Web managers in strategic planning and decision making

They have one Web site for the organization in order to –
- Use consistent page design standards and/or templates for the entire Web site
- Bring all information and services together into one place where customers can easily find it and where maintenance of the content is most easily managed
- Present the organization's "brand" or corporate image to best advantage and assure authenticity and accountability for the content
- Coordinate all Web activities across the organization
- Employ an enterprise architecture designed around the major categories of their information and services
- Centralize their Web infrastructure
- Standardize on software and hardware for the Web

They are passionate about serving their customers by –
- Knowing their customers and what they want

- Seeking new customers
- Gathering customer feedback and turning it into improvements
- Continuously keeping content fresh, not just by adding new content, but by improving navigation and moving old content to an archive
- Making investments in outreach and marketing to help customers find and use their Web content and services

They measure their performance to drive improvement by –
- Using project management techniques to plan and monitor and report on Web work
- Gathering and using customer feedback and Web statistics
- Monitoring progress toward goals
- Using accomplishments, metrics, customer and senior executive satisfaction, and external recognition to demonstrate how the Web contributes to accomplishing mission goals

In short, Best-in-Web organizations take a top-leadership-led approach to accomplishing specific goals, organize their efforts to maximize their Web investment, seek to please their customers, and track their progress.

Web Management Best Practices in More Detail

Looking into specific areas of Web management reveals more useful detail in these practices.

Best Practices for Management of Content

The customer's need for content should drive an organization's Web activities. Content is why customers come to an organization. Content includes text and images, as well as applications that provide interactive services over the Web. Different kinds of content need different kinds of management, and all management of content needs to allow for differences in the life cycle of different kinds of information.
- Translate Web analytics and customer feedback into improvements to the Web site. This issue ties for the most important practice with funding Web activities adequately and having leadership that considers the Web to be integral to the organization's activities.
- Use content standards. Ensure that Web content standards are understood in the organization. Consistent page design is better for the customer and for site maintenance than pages with different navigation and layout elements and a different "look and feel." Templates are an easy and effective way to enable content providers to meet the standards without having to know the detailed and complex details. Templates and a common design approach enable an organization to reinforce its brand and image.
- Ensure that new content meets prescribed standards. Review new content before it is approved for posting. Approval may be by a supervisor, an executive, a Web Council, or a Public Affairs officer. It is important that there be a clearly articulated, broadly understood, and well enforced process of approval. Approval of text and images can be a separate process from approval for new Web applications that are developed.

- Review posted content regularly. <u>This housekeeping is even more important than initial content approval.</u> Content owners and Web staff need to work together to remove old content annually or more often. This can be either by a manual process or one that is aided by content management software. ("Retired" content needs to be retained in an archive so it is not lost. National Archives and Records Administration is developing standards for Web records for use across the Federal Government.)
- Find and fix underused content. Evaluate Web logs to find content that may be underused. Make wording, format, and linking changes to try to improve access to underused information.
- Involve all stakeholders in the development of new Web functionality. The organization's leaders, customers and partners, content owners, and the Web team need to work together to get results. Roles and responsibilities need to be clear, and the process needs to be well managed.
- Write for the Web. Be brief, use bullets, keep each page simple, and use terms customers understand. The accepted standard is to write for the 8th grade reading level.
- Minimize graphics. Use them only for content enrichment. Be sensitive to the limitations of users with older browsers and computer capabilities. Do not use animations or flashing text, because these involve considerable amounts of data that slow the loading of the page.
- Simplify the management of content you co-own with partners. Use a clear memorandum of understanding with well-specified exit strategies and statements regarding ownership.   Ensure that content meets the host organization's content standards, or make an appropriate disclaimer, or consider a different hosting arrangement. This is a very difficult area.

Best Practices for Improving Navigation

Best-in-Web organizations continually review and tweak navigation, yet do not change familiar navigation tools and overall structure too often.
- Avoid major Web site redesign more often than once every 18 to 24 months ("How to Manage Your Web site").
- Fix broken links as content changes. New tools make this an easy task. FirstGov does this daily.
- Look for ways to improve the customer's Web experience by reducing clicks.
- Learn from other Web sites. Copy good practices.
- Manage data so that Web content can be found by the major search engines. Have a search strategy and enforce standards of titling and metatags.

Best Practices for Identifying Customers and Obtaining and Using Customer Input

Meeting the customer need is the central goal, and Best-in-Web organizations work at this from many directions. They get to know their customers and they measure customer satisfaction using whatever means they can.
- Identify customers using customer surveys and feedback.
- Gather customer satisfaction data using customer surveys and emails sent to a "Contact us" address.

- Use focus groups, usability testing, and other in-person interactions (Michael, 2003).
- Use Neilsen//NetRatings, Web statistics, and other ways to get to know customers and what they want.
- Learn to think like customers; know what they want, and how they come looking for it.

Best Practices for Managing the Infrastructure

Most Best-in-Web organizations centralize their Web infrastructure.
- Locate Web servers and data storage in very few locations, and have redundant systems for load balancing (to handle variations in traffic volume) and for offsite backups in case of an emergency. IT responsibilities like these are typically in the domain of the CIO, providing this service to the Web manager's part of the organization.
- Consider a hosted infrastructure (owned and operated by contractors). This can be difficult to establish, but can provide good service and flexibility as needs change. Much depends on the details of the contract, especially the service level agreements. Be sure to retain ownership of data and software code; this enables the organization to change contractors more easily if and when it is needed in the future.

Best Practices for Managing Staff

Web activities are performed by many kinds of employees.
- Ensure that management and leadership of Web activities are done by government staff.
- Place Web operations tasks (posting of text, reviewing links, correcting errors, handling customer feedback, etc.) in the hands of one content-oriented team of employees directed by the Web manager. This team needs to be very oriented to satisfying external customers.
- Staff these activities with well-trained Web experts. Resist allowing other professionals to take on Web tasks when it takes away from their other duties. Inadequate or uneven staffing of Web efforts is a problem even for some Best-in-Web organizations.
- Consider performing many of the hands-on tasks of content posting, new coding, and IT operations and maintenance with contractors.
- Engage staff from the organization's programs to create new content and help review posted content.
- Consider outsourcing for IT operations and maintenance tasks. This staff typically handles more IT tasks than just Web activities, so they are oriented to the needs of internal system users. If Web managers do not control these activities, senior executives need to ensure coordination of priorities and accomplishments between the Web and the IT groups.
- Recognize and celebrate Web accomplishments appropriately.
- Review titles, position descriptions, and grade levels for Web staff for consistency and level of responsibility. Today's deficiencies in this area apparently do not reduce the effectiveness of the work done, but this is nonetheless an area that needs work. The CIO Council established by the E-Government Act of 2002 that reports to the

Office of Management and Budget is addressing IT staffing issues across government; this may address some Web staff positions (CIO Council Strategic Plan, 2004).

Practices for Budget Planning

Web activities hide in many parts of an organization's budget, because they are an inherent part of business processes that span many parts of the organization. IT procurements, contract costs for staff, government staff salaries, maintenance and license costs, training and travel, and content creation are often seen as different kinds of money and are handled in different parts of the budget.

- Fund Web activities adequately. Inadequate or uneven funding of Web efforts is a problem even for some Best-in-Web organizations. This issue ties for the most important practice with translating Web analytics and customer feedback into Web site improvements and having leadership that considers the Web to be integral to the organization's activities.
- Budget for new Web developments (which may include content and IT tasks) as projects and include all the expected costs.
- Budget for Web operations as predictable operating costs.
- Expect to make IT procurements every year, but don't require specific details until the year of purchase. Consider these to be long-term investments and establish a general or working capital fund for these purchases.
- Budget for the task of reviewing Web content in every program that has content on the Web.

Practices for Intranet and Extranet

Intranet and extranet work is generally handled very differently, although this may not be a best practice.

- Reconsider the idea that the Internet's public nature makes it more a priority than intranet. Reevaluate the potential of intranet and extranets as tools for accomplishing the mission (Michael, 2003).
- Review the role of the Public Affairs and Communications offices (with their focus on external communications), and decide if they should manage only the Internet or public side of the organization's Web presence, while IT and Operations staff manages the intranet or internal side. Can one Web Team bridge these areas and handle it all, including extranets? Some Web managers already handle all Internet, intranet, and extranet activities. They present comparable content across these platforms, but the look differs from Internet to intranet. Coordination, economy of scale, reusability, lowest long-term cost of ownership, and other considerations may lead more organizations to consolidate these Web activities.

FirstGov Web Management Practices

FirstGov Web site operations are directed by one Web manager. They also attribute their success to a high-performance Web team, which is well trained, flexible, and looks at things from the customer's perspective. They work with content managers across

government to identify best practices and lessons learned, to share resources, and avoid duplication.

- FirstGov strives to continually improve by listening to their customers. They do market research to know who their customers are and what they need. They look at phone and email inquiries and Web traffic to determine most requested content and ensure that those topics are easily accessible. They listen to their customers in as many ways as possible -- including usability testing and an online customer satisfaction tool -- and then use that feedback to improve the site.
- They benchmark with other top sites to learn best practice or common practice or an innovative way to present content. They also look at what the government has to offer across all agencies; this is important since the public doesn't always know what the government provides or which governmental entity provides the information.

FirstGov employs the following general principles in determining FirstGov content and sources of information:

- Segment customers and determine what those customers want.
    - o Sources of customer segmentation: Bureau of the Census, Small Business Administration, Office of Personnel Management, and other data sources; FirstGov.gov statistics; Internet statistics
    - o Sources of what customers want:
        - Current FirstGov visitors—FirstGov site and search statistics, "contact us" e-mail, frequently asked questions (FAQs), suggest-a-link, customer satisfaction survey, Nielsen net ratings
        - Potential FirstGov visitors—call centers (FAQs); other government and partner Web managers; Internet and market research statistics (Hart-Teeter, Pew, usability, etc); usability testing, focus groups, benchmarking
- Determine what government has to offer.
    - o Sources: E-Gov initiatives, government agencies and cross agency portals, partners, FirstGov search, benchmarking, FirstGov's daily broken links report, in-depth research and analysis, review of hot news, new sites, and awards criteria
- Offer multiple paths to services information.
    - o People look for services and information in different ways.
    - o Develop content once. Repurpose it to serve different needs of different customers.

FirstGov posts an official linking policy on the Web site that outlines the criteria used to select links for the FirstGov Web site. The FirstGov staff evaluates all suggested links using the following criteria:

- Is the Web site:
    - o An official government-owned or supported Web site?
    - o Accessible and applicable to a wide variety of customers?
    - o Accurate and current?
    - o Consistent with the government's privacy and security policies regarding personal information?
    - o "User-friendly?"

- Does the Web site:
    - Provide official government information or services?
    - Complement existing information, products, and services on FirstGov.gov?
    - Provide relevant, useful, and authoritative content for citizens, businesses, and/or government officials?
    - Meet one or more of the following "highly desirable" criteria?
        - Cross agency or governmental boundaries (e.g., students.gov, fedforms.gov and nutrition.gov)?
        - Enable citizens, businesses, and/or government officials to conduct transactions online (e.g., buying stamps or coins, replacing Medicare cards, and filing taxes)?
        - Provide citizens, businesses, and/or government officials with the information they need to interact directly with government organizations (e.g., clearly available telephone numbers, street addresses, e-mail addresses, and instructions)?
        - Provide citizens with information about service performance (e.g., Nursing Home Compare, AirNow and Ontime Airline Statistics)?
        - Provide community-level information and services (e.g., MapStats, post office locators, Social Security Office locators, National Park Service Guides, and veterans' facilities)?

FirstGov employs the following Web content best practices:
- Define the purpose of the Web site.
- Define the customer(s) and continue to refine the definition.
- Focus on customer, not on organization or program names.
- Provide customer interaction and listen to the customer.
- Respond to customers.
- Define information architecture.
- Offer information/services in different ways/paths.
- Avoid duplication and confusion – develop once; use many times.
- Get forms and services online.
- 3-click rule for common services/information.
- Structure content to make it visually scan-able.
- Use table of contents (with anchors) for longer pages.
- Create consistent navigation.
- Create consistent look and feel.
- Partner with organizations, agencies, states, and localities to better serve customers.
- Write for the Web: Use plain language customers understand.
- Determine style guide and use consistent style.
- Keep content up-to-date.
- Check often for broken links.
- Create linking, security, and privacy policies and post them on the site.
- Make site accessible and usable for persons with disabilities.
- Test the site in browsers and levels of machines.
- Check back often with customers and use this input.