



DLF Website Functional Requirements

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Executive Summary

The Digital Library Federation (DLF) relies on its website to communicate with everyone from staff of member libraries to the public at large. The website mediates the first contact much of the world has with DLF and its mission. It serves as a communication mechanism for DLF members and working group participants. It becomes the archive and record of DLF accomplishments.

The staff of DLF recognize that the current website needs significant retooling to meet the needs of the organization. They field complaints of broken links, poor navigation, slow performance, outdated content, and unappealing design. Working groups of DLF often go to outside sites for basic workgroup services and even to share their output. Working with this consultant, the staff have developed this document to outline the services expected of the DLF website and the functional requirements for a new site.

The use cases and functional requirements in this document envision a website with a much simpler, yet more dynamic structure. It would be a website that can distinguish between classes of users and allow them to cluster together into appropriate groups for access to specialized material. It would be a website that allows staff to manage pages more immediately during the course of fast-paced events like the DLF Forum meetings. It would be a website capable of stitching together opinions from across DLF to help everyone know more about ideas emerging across our membership. Even so, these requirements have been kept simple and straightforward, something DLF can actually accomplish in a short timeframe.

This document expresses the core requirements DLF staff have of a new website. Validation from the broader DLF membership will be an important next step toward making this vision a reality.

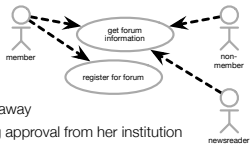
Use Cases

A use case describes how actors interact with the DLF website to achieve certain goals. Each narrative provides a feel for how the interactions play out. The illustrations accompanying some narratives provide a more general overview of the same case.

Note that the actor “group member” covers a lot of territory. This could be a working group member, a board member, a committee member, or a member of the DLF staff sharing internal documentation.

A. Members seek information about the forum

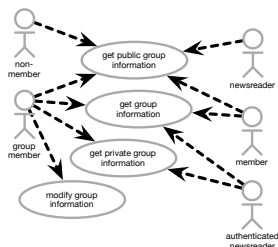
Merrill works at the University of Wisconsin libraries, a member of DLF, and wants to consider attending the upcoming DLF Forum. She visits the DLF site and looks at the papers delivered on the development of social software for libraries at the past two forums. Those look interesting, so she checks out the agenda of the upcoming forum. She finds the topic will be on the agenda and the presenter is someone she's wanted to talk with, definitely worth a go. She checks the forum logistics and makes a reservation with the hotel right away using the conference code from the DLF site. After receiving approval from her institution she returns to the DLF site to register for the forum using the DLF's online form. Merrill notices that she can subscribe to either email or RSS updates of forum agenda and logistics. She opts in to the email updates and plans on printing an agenda to review on the plane the day before she leaves for the forum.



B. Working group member uploads draft for peers

Jason, an employee of a web 2.0 company that is not itself a DLF member, is a member of the social software working group (SSWG) of DLF. The SSWG has been developing guidelines for the use of folksonomies in library systems and Jason was pulling together the latest draft. It is ready for his colleagues in the SSWG to review and edit, so Jason logs onto the DLF website in order to upload the draft for comment. He prefers to use the DLF site for this feedback since he knows all the other members of the working group have access to the document there and can leave paragraph-level feedback for discussion. While in general he likes to keep the draft “clean” and

separate from the commentary, he does want more direct drafting help with an appendix that will list example sites with interesting folksonomies. He puts the draft of this appendix onto a new page on the SSWG wiki so that others can expand the list. Jason is relieved that these draft documents will only be seen by other working group members. He has made some pretty sensational claims which he imagines the group may dial back, but he really wanted to get their juices flowing, and releasing an aggressive draft should do that.



C. Non-member seeks initiative information

Zee has been asked to “add tags” to her public library’s catalog, she is interested in learning more about the direction libraries may go in this regard. She does a Google search for “libraries and social tagging” which produces a link to the Social Software Working Group (SSWG) of DLF in among the top few hits. Even though Zee’s library is not a DLF member, many of the SSWG meeting notes and ideas are available for her review. She notices that one of the working group members is from her state and another works for a company that produces a web service she has used for a few months and decides to contact these two people for advice using the contact information available on the DLF website. She also notices that the group plans to have a draft of their tagging guidelines available within the next month and signs up for email notification of new documents in the working group site so that she will be notified when it actually shows up. Zee is excited about what she’s found, and embeds a link to the SSWG in her own blog that evening.

D. Non-member seeks standards documentation

Richard works for a state historical society that is about to create an online digital archive from the resources in three of their major collections. Richard has worked with his local university on other digital initiatives in the past and has heard of a standard called MODS that might provide some guidance on how to structure the metadata of this new resource so that it is as interoperable as possible with that from other institutions. He does a Google search for MODS metadata and finds that the latest version of the DLF guidelines for implementing MODS for use in describing digital cultural heritage and humanities-based scholarly resources would, indeed, be helpful. As the weeks go by he realizes that one choice made by the DLF group with regard to dates overlooks a common case in historical data. He thinks it might be an easy fix to accommodate this date type, and returns to the DLF site to leave a comment describing his finding on the page that announced the MODS guidelines he is using. He does not have time to participate in the working group, but he is pleased that there was a way to share his insight without having to commit to further involvement.

E. DLF staff post forum information

Everyone is getting a bit strung out around the DLF office as the date of the Forum nears. Jaime and Barrie are both getting updates for the forum schedule on an hourly basis, but Barrie is on site so it is hard to coordinate the changes. Jaime just got word that one of the presenters for a social software session at the meeting won't be able to make it, but the team has provided the name of another member who will take her place. Jaime goes to the DLF site and logs on. When she pulls up the meeting schedule she sees that it has been changed since this morning, but nobody is currently editing it. Good, that means Barrie must be busy with something else. She jumps in and makes the substitution of presenters. She does not worry about alerting Barrie to the change, because she knows that he, like she, has subscribed to the RSS feed of all changes being made to the forum information.



F. Non-member seeks forum paper

Marc attended a presentation at ALA Midwinter where one of the speakers made reference to a talk that had been given a couple months ago at something called "DLF". Curious, but without much to go on, Marc searched Google for "images DLF presentation". That turned out to be a muddle, so he decided to just see if he could find "DLF presentations" and navigate his way there. This search brought him to a list of meetings of the "DLF Forum" from which he could easily see that the 2007 Fall Forum had been just a few months ago. Clicking on that forum's link he found the schedule of the meeting with links to each presentation. A quick scan of the schedule revealed a session about "wavelet processing of digital images" that sounded like what the ALA presenter had described. Marc went ahead and downloaded the handout and slideshow from that presentation.

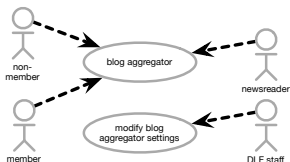
G. Non-member seeks contact information

Alice, a reporter for National Public Radio, is putting together a guest list for a national call-in talk show about book scanning in libraries. Some hunting has revealed that the Digital Library Federation has been engaging this topic for a while. She decides that the Director of the DLF might be a good guest or at least a good source of guest names. She comes to the DLF site looking for a list of staff and contact information. She does not have much time to fumble around, given her deadline. Luckily, she finds the contact information she needs in the staff directory on the "About Us" page.

H. Member seeks blog of DLF member

Edward, a director at a DLF member library, knows that he recently saw an email fly by mentioning a radio appearance by the DLF director discussing book scanning projects. Since his library has been working with Google on such a project, during his limited downtime he decides to listen to the story. Of course, the email has come and gone, not to be found. No matter. Edward knows

that Peter blogs about everything he sends to the DLF list, so he goes to the Opinions section of the DLF website where all DLF member blogs are spun together into an ongoing conversation. He narrows this field to just Peter with a click in the sidebar, and sees immediately the reference to the NPR story on Peter's blog. Listing to the story leaves Edward a little miffed, no mention was made of their university, which had been fairly innovative in their approach. At the DLF blog aggregation, Edward clicks on Peter's entry, revealing the entry in Peter's native blogging platform. Not that this matters to Edward, he's just happy that this version of the entry has a comments link, since he definitely wants to leave Peter a comment about this one!



I. DLF Board member reviews prospective membership packet

Wonka University has been invited to join DLF and has submitted a packet of material for the DLF Board Membership Committee to review. DLF staff scanned and uploaded the documents into the DLF Board Membership Committee area of the DLF website. Suzy, a library director on the committee, logs in to her account to review the material and leave comments. It is so much easier to evaluate potential new members now that the review can be done online rather than having to schedule phone meetings or wait for the face to face board meeting.

J. DLF staff archive content from completed initiative

The DLF Social Software Working Group completed the tasks outlined in the scope of work defined by the DLF Board and the initiative was handed off to OCLC for further development. Resources that supported the initiative are distributed around the DLF website, including the group's work area, DLF forum presentations, and a couple press releases. Jaime gathers all the site pages which have been tagged SSWG into a DLF Social Software Working Group archive which is stored offline. She then adds appropriate links to the ongoing work at OCLC and "freezes" the group's work area. The frozen pages will still be accessible at their old URLs, but they will no longer be editable and all commentary will cease.

K. Non-member seeks general information about DLF

DLF has applied for a grant from the Glass Elevator Foundation (GSF). In the grant application we include the URL of our public relations area on the website where the GSF will be able to find a good executive summary of DLF and links to various press releases and other material that present DLF in the best possible light.

L. Temporary staff member uploads files

It's March and Barrie and Jaime are very busy managing the DLF Forum. Barrie has hired some on-site help and hands Veruka a flash drive with two PowerPoint files to load up to the server from his WiFi-connected laptop. Veruka logs into her own account and adds the PowerPoint presentations to the appropriate sessions in the DLF Forum area of the website.

Functional Requirements

Functional requirements are requirements of the system in question, in this case the DLF website. Their scope is technical, not comprehensive. Some requirements, such as financial constraints for the purchase of a system, are non-functional and won't be discussed in this document. These functional requirements were derived from a set of use cases (referenced by letters in parentheses) developed with the staff of DLF.

1. Content

- 1.1. Content of the site shall be well separated from design to facilitate editing of the content without concern for the design. (E)
- 1.1.1. The site shall make use of industry standards such as CSS and shall be viewable with full features on all modern browsers including Firefox 2, Safari 3, and IE7.
- 1.1.2. DLF staff shall have access to the "skin" of the site and authority to edit that skin as needed.
- 1.2. Content on the site shall have URLs that are persistent enough for embedding into other settings like del.icio.us, digg, and user blogs. (C)
- 1.3. Content shall be open to web spiders such as Google. (D,F,G)
- 1.4. Content of the site shall be editable from any web browser. (E)
 - 1.4.1. When editing, the site shall display date, time and user who last edited each page. (E)
 - 1.4.2. The site will respond gracefully to multiple, simultaneous attempts to edit one item. (E)
- 1.5. The site shall accept file uploads. (B,E,L)
- 1.6. The site shall be able to aggregate content made available via RSS. (H)

- 1.7. The site shall be able to accept comments on selected pages and documents. (B,I)
- 1.7.1. It shall be possible to attach comments at the paragraph level to designated pages of the site. (B)
- 1.8. It shall be possible for multiple users to jointly edit designated pages of the site as wiki pages. (B)
- 1.8.1. Wiki pages shall keep a history of changes made and be able to roll back to prior versions.
- 1.9. Users shall be able to tag each page of the site with multiple terms. (J)
- 1.10. The site shall be able to “freeze” certain content into an archival form that no longer accepts comments or editorial changes. (J)
- 1.11. Newsreaders shall be able to subscribe to updates of changes to the content within designated areas of the site. (A,C,E,H)

2. Structure

- 2.1. The site shall have a clearly designated area for DLF Forum information. (A,E,F)
- 2.2. The site shall allow for the creation of designated group areas. (B,C,D,I,J)
- 2.3. The site shall include a contacts area with information about DLF. (G)
- 2.4. Each group area shall include a contacts page with information about members of that group. (C)
- 2.5. The site shall include a public relations area with general information about the organization. (K)
- 2.6. The site shall include an opinions area to aggregate blog content from around DLF. (H)
- 2.6.1. Aggregated blog entries shall include links back to native platforms. (H)
- 2.7. The site shall present a sidebar for navigation. (H)
- 2.8. The site shall clearly designate archival or non-active content. (J)

3. Users

- 3.1. It shall be possible to register users of the DLF site. (A,B,E,I)
- 3.1.1. It shall be possible for users to register themselves on the DLF site.
- 3.2. It shall be possible to distinguish staff from non-staff users of the site. (E,J,I)
- 3.3. It shall be possible to distinguish between member and non-member users of the site. (A,B)
- 3.4. It shall be possible to assign each user to any number of groups on the site. (B,I)
- 3.5. Designated administrators of group areas shall have the authority to assign users to their own groups.
- 3.6. It shall be possible to designate "super-users" with full access to all areas of the site. (J)
- 3.7. Each user shall have a profile on the site to be referenced from various contacts pages. (C,G)

4. Security

- 4.1. Areas of the site with access limited to a certain set of users shall require user registration. (B,I)
- 4.2. Group areas of the site shall include at least three levels of access for their content: (B,C,D,I)
 - 4.2.1. It shall be possible to make content public, for all to see; (C,D)
 - 4.2.2. It shall be possible to make content members-only, so that only registered users who are members or who are assigned to the group can see it;
 - 4.2.3. It shall be possible to make content private, so that only registered users who are assigned to that group can see it. (B,I)
- 4.3. Wiki areas of the site shall include at least two levels of access: (B)
 - 4.3.1. It shall be possible to make wiki pages public, so that any registered user can edit the pages.
 - 4.3.2. It shall be possible to make wiki pages members-only, so that only registered users who are members or who are assigned to that group can edit the pages;
 - 4.3.3. It shall be possible to make wiki pages private, so that only registered users who are assigned to that group can edit the pages. (B,I)

- 4.4. The ability to leave comments on the site shall include at least three access levels: (B,D,I)
 - 4.4.1. It shall be possible to make commentary public, for all to create and see; (D)
 - 4.4.2. It shall be possible to make commentary members-only, so that only registered users who are members or who are assigned to that group can create and see it;
 - 4.4.3. It shall be possible to make commentary private, so that only registered users who are assigned to that group can create and see it. (B,I)
- 4.5. There shall be at least two classes of tags: (J)
 - 4.5.1. There shall be tags that can be entered by any user;
 - 4.5.2. There shall be tags that can only be entered by DLF staff.
 - 4.5.3. DLF staff shall be able to remove any tag.

5. Other requirements

- 5.1. The site shall have the ability to present forms which generate email to the appropriate DLF staff person.
- 5.2. The site shall be able to identify orphan pages (pages without any inbound links).
- 5.3. The site shall be able to identify stale links (links that point to nowhere).
- 5.4. The site shall be responsive, most pages should load in less than two seconds and no page should require more than five seconds to load under reasonable network conditions.

For further consideration

In addition to these functional requirements there may be non-functional requirements that are important to DLF. Some requirements that lie on the border between functional and non-functional are still quite important.

For example, does DLF care what kind of URLs it ships out to the world. To date the web site has used URLs that have some meaning embedded, they include words. Some systems produce URLs that are simply coded identifiers with no intrinsic meaning at all. Does DLF want to require a URL like "http://diglib.org/forum" or is "http://diglib.org/28931" acceptable?

User registration is not yet fully explored in the functional requirements. In particular, DLF might consider a requirement to accommodate OpenID or GoogleID or Shibboleth in order to avoid local user management details. These may still be more trouble than they are worth, but some consideration should be given before a platform is selected.

Tagging may well be an "outlier" feature, one that can be sacrificed to practicalities. The tagging features specified in 1.9 and 4.5 derive from use case (J) in which staff gather together the elements of the web site that pertain to a particular project or working group and "archive" this information. One way to accomplish this would be for the staff to browse through the whole site looking for pertinent pages and documents and grabbing copies for the archive. Another idea, the one reflected in (J), would be for creators and users of pages and documents to assign them tags (such as project names) throughout the life of the page or document. If the system can accommodate this, then the task of "gathering" the archive is simply pulling together all the site elements that share a given tag (or set of tags). The tags are not critical to the scenario, just a more efficient and flexible way of meeting that end.

When DLF starts looking for a platform that can meet its needs, it may have to give up some of the functionality described in this document. Still, these functions are specified in hopes that DLF will be able to uncover suitable solutions as it explores potential platforms.