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DataONE Prototype Catalog Site Test Report

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Executive Summary

The Usability and Assessment Working Group conducted an onsite usability test at the Joint DataONE CI/CE Meeting in New Mexico on May 25th and May 27th, 2010. The purpose of the test was to assess the usability of the web search and search results interface design.

Four attendees participated in the test. Each individual session lasted approximately 15 minutes.

In general all participants found the metadata search web site straightforward and easy to use. The test identified some problems in interface including:
- Font size for search and result page is too small
- Confusion over some advanced search options
- Lack of an information flow on advanced search page

This document contains the participant feedback and subjective ratings. A copy of the scenarios and questionnaires are included in the Attachments' section.

Methodology

Session Overview

The session was conducted in the hotel lobby. Each individual session lasted approximately 15 minutes. During the session, participants read the test scenarios and were required to accomplish a search task while vocalizing their thoughts during the process. Upon finishing the test, the test administrator asked participants' opinions for the website via an online survey and a brief interview. The usability software MORAE Recorder was used to record participants' interactions with the website. Their vocalized thoughts and interviews were recorded by a digital recorder.

Test

The test consisted of two stages (see Attachment A for complete test scenarios):
- Initial impression about the simple and advanced search interface
- Finish one of two search tasks

Post-Test Feedbacks

After the test was completed, the test administrator asked the participant to rate the website overall by using a 5-point Likert scale (Strongly Disagree to Strongly Agree) for six subjective measures including:
- Perceived complexity of the system
- Ease of use
- Search options use

- Learn ability - how fast it would be for most users to learn to use the website
- Learn ability - how easy it would be for most users to learn to use the website
- Confidence in using the system

In addition, the test administrator asked the participants questions about the overall website

- What the participant liked most.
- What the participant liked least.
- Recommendations for improvement.

See Attachment B for the subjective and overall questionnaires.

Results

This section will first report survey results, then report participants' feedbacks in three parts: simple search interface, advanced search interface, and search results page.

1. Subjective Ratings

After task session completion, participants rated the site for six overall measures (See Attachment B). These measures include:

- Perceived complexity of the system
- Ease of use
- Search options use
- Learn ability - how fast it would be for most users to learn to use the website
- Learn ability - how easy it would be for most users to learn to use the website
- Confidence in using the system

Overall, all participants (100%) agreed that they did not need to learn a lot of things to use the system. Most of the participants (75%) agreed that the system was not complex and half of them (50%) agreed that the system was easy to use. The majority of participants (75%) agreed that most people would learn to use the system quickly. Half of them (50%) found the search options were well integrated. However, only 25% felt confident using the system.

See table below.

Post-Test Overall Questionnaire [scale: strongly disagree (1) to strongly agree (5)]

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean Rating	Percent Agree*
I found the system unnecessarily complex		3			1	2.75	25%
I thought the system was easy to use			2	1	1	3.75	50%
I found the various search options in this system were well integrated	1	1		2		2.75	50%
I would imagine that most people would learn to use this system very quickly			1	2	1	4	75%
I felt very confident using the system			3		1	3.5	25%
I needed to learn a lot of things before I could get going with this system	2	1	1			1.75	0%

Percent Agree (%) = Agree & Strongly Agree Responses combined

2. Comments on Website

2.1 "Simple Search" Interface

Overall impression:
- The interface is pretty straight-forward
- There is a lot of space on the right part of the page
- The font size of the name of the site "DataOne Metadata Clearinghouse" is small, so participants were not aware they were in DataOne metadata search site.
- The hint in "simple search" page is too small to read

Suggestions:
- Three participants mentioned that they had no idea what the site was about: what the records were, what they could get out of the search. It is suggested to add one or two sentences or a tagline in this page to introduce the purpose of the site.
- One participant mentioned that Google simple search interface is designed to let people search anything, but this system is designed to search in some specific collections of data. The participant raised the question that if we really need the simple search interface.

2.2 "Advanced Search" Interface

Overall impression
- The sentence on the top introducing this website is good in that it delivers what the site is about
- Font size in this page is small, which makes the page hard to read

Fielded Search
- Currently, "fielded search" allows users to search in one field only. It should allow users to add more rows to combine different fields to search

Format
- To be consistent with names of other search types, "format" may be changed to "format search." One participant mentioned that using "format" only was confusing in that they search data by a specific format or if the results are displayed in a specific format.

Geographical Search
- Two participants mentioned that the map in "geographical search" is too small
- In "geographical search", although north, south, west, and east text boxes are pretty intuitive, it's better to give some hints to require users to input longitude and latitude numbers.
- After typing in numbers in north, south, west, and east text boxes, the rectangular area in map did not change. Participants raised the question how these four boxes connect to other parts in "geographical search" area?
- Two participants were confused about the meaning and use of "overlap" and "enclose"
- Overall, the geographical search area is too complex

Data Providers
- In "data providers", novice users may not know they can select more than one data providers or they may not know how to make more than one selections. A better way is to use check boxes.
- In addition, the box for the data providers is too small, so users cannot read the full names of some data providers
- One participant suggested providing some information about each data provider to help novice users make decision about choosing the data provider, such as briefly describing a data provider's dataset: ocean-related data or bird-related data

Query Built
- "Query built" feature is good
- We may provide a function to allow advanced users to build/revise the query themselves (typing in query text)
- In "Query being built" area, it states that it is not editable, but placing "CLEAR QUERY" in the same area to clear the query in the not-editable area makes it inconsistent

Information Flow Problem
- One participant mentioned that there is no information flow in this page. Putting each search option in a cube and grouping these cubes together

made it confusing to participants. Another participant mentioned the search options were not laid out in a hierarchical way. Putting all of them together made it hard to distinguish each other.
- Suggestion: using a linear way to represent search options. For example, the fielded search could be placed at the top, because it is a required search option. Using radio box for each search type (e.g., date search, geographical search). Users can click the radio box to select one search type, and specify how they want to search within each type, then scroll down or move to next page for another search type

Search Button
- Three participants mentioned that the actual "search" button is not easy to find. If putting search options in a linear way as suggested above, we can put a "search" button in each search type area.

2.3 Comments on Search Results Page

If no results are found
- The button "Return to Search" on the result page doesn't work
- The system could
  a. Provide suggestions on how to modify some search options so users can find some results (for example, if dropping one search option, you may get 220 records)
  b. Provide the search query so users can modify the query

If results are returned
- It is good to open a separate window to "get data" so users will not lose their search results
- It is better to provide the format of each result entry, because in "advanced search", it allows users to search in different formats
- Provide a function to allow users to save some of their search results in a temporary folder if too many results are returned, so users can first filter out some irrelevant results, save relevant ones, and come back to read details of saved results to make decisions

Conclusion

Most of the participants found DataOne metadata catalog site easy to use, the interface intuitive enough to get going with the system. Some recommendations are given to improve user experience. Continuing to work with users (i.e., real lay persons) will ensure a user-centered website.

Recommendations
- make the font size bigger for search and result pages
- consider re-organizing search options in "advanced search" page
- consider improving "geographical search" area in "advanced search" to make it simple and easy to understand and use
- one similar websites was recommended by a participant to compare with:

NASA Warehouse Inventory Search Tool (WIST):
https://wist.echo.nasa.gov/~wist/api/imswelcome/

Appendix A – Test Scenarios

Stage 1

This is the homepage of prototype catalog of DataOne Metadata Clearinghouse. Please give me your initial reactions to this page. You can switch between "Simple Search" tab and "Advanced Search" tab with your mouse, but please don't click on or type in anything else just yet.

Next

We will give you one task to accomplish. We will ask you to vocalize what path you take to search for needed information, what questions you have, and what surprises or confuses you as you go through the task.

Task 1

You need to search publications which contain "water" in title and were published between 1998 and 2010. When you finish searching, please go back to search page.

Task 2

You need to find the data set about "forest leaf" in Zambia. Please use "Geographical Search" area to narrow down your search to particular area. When you finish searching, please go back to search page.

Appendix B – Questionnaire

System Usability Scale (SUS)

	Strongly disagree				Strongly agree
I found the system unnecessarily complex	1	2	3	4	5
I thought the system was easy to use	1	2	3	4	5
I found the various search options in this system were well integrated	1	2	3	4	5
I would imagine that most people would learn to use this system very quickly	1	2	3	4	5
I felt very confident using the system	1	2	3	4	5

I needed to learn a lot of things before I   1   2   3   4   5
could get going with this system

Post-test Interview

1. What are your overall impressions of the Web site?
2. What did you like best about the site?
3. What did you like least about the site?
4. Is there anything that you feel is missing on this site? *(Probe: content or site features/functions)*
6. Would you recommend this Web site to a colleague? To a friend?
7. Do you have any other final comments?]