‘Erasmus’: An Organization- and User-Centered Dublin Core Metadata Tool
Michael Khoo, Craig M. MacDonald, Joon Park
The iSchool at Drexel University
3141 Chestnut Street
Philadelphia PA 19104
+1 215 895 1230
{khood, cmm353, sp347}@drexel.edu

ABSTRACT
Digital library interoperability is supported by good quality metadata. The design of metadata creation and management tools is therefore an important component of overall digital library design. A number of factors affect metadata tool usability, including task complexity, interface usability, and organizational context of use. These issues are being addressed in the user-centered design of a metadata tool for the Internet Public Library.

Categories and Subject Descriptors
H.3.7 Digital Libraries – collection, standards, user issues.

General Terms
Design, Human Factors

Keywords
Dublin Core, metadata, metadata tool, user-centered design

1. INTRODUCTION
The Internet Public Library (ipl2: http://www.ipl.org/) receives 8 million visits and 22 million page views a year. Its catalog indexes approximately 40,000 resources, aimed at K-12 and informal education audiences. ipl2 has crosswalked its metadata to Dublin Core and has added this metadata to a Fedora Commons database, and a new tool for metadata creation and administration, Erasmus, has been developed. Erasmus supports the creation and editing of DC records by ipl2 volunteers, and graduate students in LIS classes, and allows ipl2 administrators to build customized cataloging interfaces. Metadata tool usability is important and can impact the quality of the metadata produced by that tool [1, 2, 3, 4, 6, 8, 9]. Metadata tool users engage in a set of demanding tasks, reviewing the resource to be cataloged, referring to metadata guidelines and collection scope, and using the metadata tool itself [4]. A number of factors affect metadata tool usability, such as task complexity, interface usability, and organizational context of use. To address these issues, the development of Erasmus is following an organization- and user-centered design process.

2. ERASMUS
The initial requirements work was carried out by students in a graduate ‘Introduction to HCI’ class. In teams, 24 students researched digital libraries and metadata tools, practiced using the existing tool, and developed sketches and paper prototypes of a new tool. They then tested their prototypes in class with heuristic evaluation and think alouds [7], and compiled their findings into usability reports. A doctoral student working with ipl2 used the reports to develop and refine an initial HTML prototype, and ipl2 developers then built a high-fidelity prototype, a forerunner of the interface shown in Figure 1. Two doctoral students then performed expert evaluations of this prototype, while at the same time drafting a user manual (these two activities were synergetic). Many of the usability problems found were related to how the tool represented the complex knowledge required for cataloging in an uncluttered and easily accessible form in the interface itself. This led to the design and development of a variety of dropdown ‘tooltip’ boxes, such as those describing the cataloging requirements of particular metadata fields.

Organizational requirements were also gathered in the form of interviews with project members regarding their understanding of metadata work in ipl2. One finding here was that some of the difficulty with working with the original (pre-Dublin Core) metadata arose because the organizational knowledge associated with this metadata (such as why a particular field had been created and defined in a particular way) had not been explicitly recorded and so had been lost over time [c.f. 8]. It was often difficult to understand why particular metadata fields or vocabularies had been created and applied in particular ways. The documentation of these past decisions would have been useful for present-day catalogers, but it simply did not exist. An organizational (rather than technical) requirement for the tool was therefore that it be able to record the decisions underlying choices of metadata schema, elements, and definitions.

The new Erasmus tool is accessible in a Web browser. There are two basic modes, user and administrative. In user mode, the user logs in, and chooses whether they are creating or editing a record. After checking the URL for duplicates, the user is prompted to add the resource to a particular ipl2 collection, before beginning to catalog the resource in the interface shown in Figure 1. The metadata entry tool is shown on the left, and the web resource being cataloged on the right. The tool on the left has fields for metadata entry, and AJAX-scripted dropdowns provide further information about each metadata field and the associated cataloging policy. It should be noted that the elements of the tool seen in the left of the figure – the number and type of fields and their name and order, and the associated information in the dropdowns – are not hard-coded, but rather are stored in and generated from a MySQL database previously populated by an ipl2 administrator in administrative mode. Erasmus can thus be configured to allow any flavors of Dublin Core to be represented in the tool (Figure 2).
The user-centered design of Erasmus supports administrators to build schemas for any ‘flavor’ of Dublin Core, including qualified and administrative metadata, with relatively little effort. By using MySQL to store the schema information and documentation, the components of the tool are modular and extensible, and new schemas can be created easily. Next steps in the work include refining and user testing with students in LIS and cataloging classes, as well as refining the user manual.

3. ACKNOWLEDGMENTS
The authors thank the OCLC and ALISE Library and Information Science Research Grants Program for supporting this work.

4. REFERENCES