The Roles of Digital Libraries as Boundary Objects Within and Across Social and Information Worlds

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Brief Abstract

Digital libraries must support existing and emergent communities and collaborations. This study of LibraryThing and Goodreads found they play important roles in establishing community structure, values, and ties. Digital library designs and services should support these, with implications for research and theory in social informatics, information behavior, and online communities.

Keywords: *digital libraries, social informatics, online communities, boundary objects, communities, collaboration, social worlds, information worlds*

Problem Statement and Purpose

The purpose of this dissertation research is to improve understanding of the social contexts of digital libraries and their roles in users' information behavior. Adapting Borgman (1999) and others, a *social digital library* includes (a) collection(s) of digital content collected on behalf of a user community; and (b) services, relating to the content, offered to the user community. It is, or is part of, one or more formal or informal organizations that manage these content and services, focusing on facilitating information and knowledge creation and sharing (after Lankes, 2009, 2011) and excluding different primary motivations (e.g. selling products).

Digital libraries must support and construct the different "knowledge communities" they serve (Bearman, 2007, p. 245; Gazan, 2008; Levy & Marshall, 1995; Lynch, 2005; Van House, 2003), akin to physical library environments serving as inherently social spaces (Pomerantz & Marchionini, 2007). Many have contributed to this problem (e.g. Fox, 1999; Krowne, 2003; Marchionini, 1999; Tuominen, Talja, & Savolainen, 2003), but further theoretical and practical research is necessary to assess digital libraries' roles in and support for existing and emergent communities and collaborations.

Theoretical Framework

Review shows a theoretical framework incorporating Star's (1989; Star & Griesemer, 1989) *boundary object theory*, Strauss's (1978) *social worlds framework*, and Burnett and Jaeger's (2008; Jaeger & Burnett, 2010) *theory of information worlds* is appropriate and well grounded. Social digital libraries, as successful boundary objects, should (a) cohere and translate meanings and understandings between existing communities; (b) converge emergent communities around themselves; (c) support existing and emergent social norms, social types, information values, and information behaviors shared by different information worlds; and (d) act as common sites and technologies for users' information-based activities (Worrall, 2012, 2013b).

Method

A case study approach (Yin, 2003) is used to study LibraryThing (librarything.com) and Goodreads (goodreads.com) as social digital libraries. The research questions examine the roles they play in (a) translation and coherence between existing social and information worlds, and (b) possible convergence of emergent worlds around them. The mixed methods research design (Creswell & Plano Clark, 2011) incorporates three sequential methods:

- qualitative content analysis of 519 messages from the discussion boards of five LibraryThing and four Goodreads groups;
- an online survey of 163 users from the nine groups; and
- semi-structured qualitative interviews with at least 15 users.

Findings

Content analysis based on the theoretical framework has found three roles played by LibraryThing and Goodreads in cohering and converging communities. First, a strong role exists in establishing structure and social norms, as key members or group moderators establish common sites for information behavior and activities, with explicit social norms guiding their use; this role is strongest in Goodreads groups. Second, a moderate role is played in reinforcing common information values; values cohere and converge, but occasional divergences take place and are accepted. Third, a weaker role exists in supporting social ties; social typing becomes common and off-topic discussions are frequent in these communities, more common in LibraryThing. This role sees the community less tied to the digital library as their venue for information behavior and activities, but it still serves as a key boundary object that connects them with each other (Worrall, 2013a).

The survey results indicate LibraryThing and Goodreads play strong roles, as boundary objects, in translation activities, coherence, and the sharing of common social norms and information behavior and activities; they also serve as common and shared sites, information and communication technologies, and organizations (all $p < 0.001$). The role is less clear in the sharing of common information value judgments and social typing, with ratings not statistically different from "neutral" for the broader sample ($p > 0.05$), although Goodreads appears to play a stronger role than LibraryThing ($p = 0.002$ and $p = 0.037$, respectively). Other variables including frequency of Internet, digital library, and group use; use of social networking sites; and age have significant interactions with many of the phenomena of interest. There were also demographic differences between the two cases, with the average Goodreads user being 5.55 years younger ($p = 0.012$), using the Internet a little over 7 hours more per week ($p = 0.035$), and using the digital library 3 hours and 20 minutes more per week ($p = 0.025$).

Implications

Digital library designs and services that support establishing structure, sharing common values, and forming social ties will strengthen their roles in and support for users' social information behavior across existing and emergent communities. Strengthening these should also help increase coherence and convergence of information value judgments and social typing. Consideration should be given to other contextual factors such as age, Internet use, and use of other sites and services; the digital library does not exist in a vacuum, and must consider the context of users' social information behavior and the coherence and convergence of communities. Further analysis of the survey and data from ongoing interviews will help confirm and further extend these implications for digital library design and services; the information behavior of their users; and theory and research in digital libraries, social informatics, and online communities.

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