INFORMATION SCIENCE AND SOCIAL MEDIA ISSOME 2011

Proceedings of the International Conference August 24-26, 2011

INFORMATION SCIENCE AND SOCIAL MEDIA

Proceedings of the International Conference Information Science and Social Media ISSOME 2011, August 24-26, Åbo/Turku, Finland

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Foreword

These proceeding contain the papers presented at the Information Science and Social Media (ISSOME) – international conference which was held in Åbo, Finland 24-26 August 2011.

The aim of this conference was to address new modes of information behaviour in different contexts focusing the effects of social media and technologies in the interactive web. The conference received a good number of submissions of which 20 proposals were selected to be presented. These papers covered a broad range of perspectives on the effects of social media in different contexts including libraries, businesses, and schools. Different actors in social media were discussed as well as how different tools and techniques in social media are used. The conference and these proceeding contribute to the line of research in information science that is concerned with information behaviour, information sharing, knowledge organization, knowledge management, and information politics in the context of the social web. While the events on the Web more and more are integrated into everyday life and work, it is obvious that there is a growing need for social technology competencies. It is important to gather expertise in this area from different fields such as Internet research, social media, information science, and business administration.

Special thanks go to our three keynotes who contributed to the critical discussion needed for shaping our understanding of the information society. Professor Hazel Hall from School of Computing, Edinburgh Napier University, talked about the relationship between information service and user perspective “Beyond broad-

cast and consume: modification of provider-user information behaviours in social media space". Professor Alf Rehn from Åbo Akademi University, School of Business and Economics, raised the question "Can Business Turn Social? Post-Control Society and Its Implications for Business and Management". Professor Carol Tenopir from University of Tennessee, discussed the changing information behaviour of researchers "Researchers and Scholarly Resources—usage patterns now and into the future".

This conference is the first international conference that has combined the focus of information science and social media. The conference is relevant for the international research community. It is a venue for gathering best practices and to deepen the understanding of the intersections of social media and information research. Information society is an international phenomenon with its unique challenges in different countries and it is important to bring together these insights. The delegates and presenters of the conference represented eight countries. Having started this new series of ISSOME conferences we are happy to conclude that the next conference will be held 2013 at the School of Library and Information Science at Borås University.

We would also like to thank our financial supporters, the Federation of Finnish Learned Societies, Research Institute of the Åbo Akademi Foundation and the Academy of Finland.

Åbo in October 2011

Gunilla Widén

I

CONFERENCE PAPERS AND EXTENDED ABSTRACTS

TOWARDS TRAINING LIBRARIAN 2.0

A Community-based Participatory Teaching Approach

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Introduction

Library 2.0 model has attracted a lot of research and practice attention in Library and Information Science (LIS) discipline. Library 2.0 emphasizes the importance of user participation in creating and evaluating services that libraries provide both physically and virtually (Casey and Savastinuk, 2006). Moving towards Library 2.0 model, LIS professionals are challenged to start becoming "Librarian 2.0" – a term first proposed by Stephen Abram, vice president of Innovation at SirsiDynix (Abram, 2006). Since then, there have been numerous discussions about what the skills and knowledge that LIS professionals should have in order to provide Library 2.0 service. In spite of the various lists of librarian 2.0 skills and knowledge, all agree that Library 2.0 is about a user-centered approach to provide and improve library services, and a librarian 2.0 needs to be able to take that approach in his/her daily practice. For example, Stephens listed six key traits that he believed were necessary for Librarian 2.0 with the first key trait as librarians 2.0 plans for their users (Stephens, 2006). Cohen published her much cited work The Librarian's 2.0 Manifesto (2006) where nine out of the seventeen principles were about users, the need of using users' needs, and involving users in library practice.

There have been practices about using community-based projects in teaching LIS courses. In these practices, the emphasis has been

on providing students authentic learning experiences and encouraging or requiring students to participate in the community-based projects and/or activities during the course study. In other words, community groups are mainly viewed as just stakeholders of the projects providing real world context for the students.

This paper reports a community-based teaching practice that focuses on training LIS students about the user-centered approach towards Librarian 2.0. In this practice, a user-centered approach is considered not only about using technologies to reach the users such as the use of Twitters to collect users' feedbacks, but also about how to encourage and foster active user participation and integrate users' needs into the processes of planning and design in library space. Different from the existing community-based teaching practices, the proposed teaching approach puts an emphasis on encouraging the community partners to participate in the project-related activities. That is, community groups are active players in the students' projects. This emphasis is expected to support students to practice the process of engaging and facilitating user participation in their projects, which is a key soft skill of Librarian 2.0.

This paper reports a case study of how this community-based participatory approach was practiced in a database management system (DBMS) class. The rest of the paper is organized as follows: the class context is first presented including the class' community partners, the database projects, and the evaluation mechanisms. Then the data collection and analysis methods are described for probing the effectiveness of the community-based participatory approach. Next the findings and lessons learnt are discussed for future teaching practices that adopt this community- based participatory approach.

A Database Management System (DBMS) Class

The DBMS class was offered to the students of MLIS program at a major Canadian university. This program in general entails three terms of coursework in which DBMS course is considered an important technology course.

In fall of 2010, the database class consisted of ten students. Three non-profit community organizations worked with the class for their database development projects. The class created three databases for these organizations including: a volunteer database to help one organization better manage its volunteers and schedule volunteers for activities, a visitor database to help one organization manage visitors' information for quarterly report, and a collection database to help one self-organized group to archive and share useful information about the collection. Three student groups were formed by the instructor according to the students' technical background, group work and leadership history, schedule for group meeting, and preferences on the database projects.

The student groups were required to engage the community partners in the project and foster active participation of the community partners. This was manifested by requiring the students to collect and document the community partners' feedback on the students' activities at different stages. The students were also required to write reflective journals about their learning experiences which included not only their reflections on the database concepts and the database design and implementation issues, but also their feedbacks on the non-technical challenges they ran into in the group project.

Data Collection and Analysis

All the three representatives of the community groups chose to participate in the study. They were interviewed about their experiences of working with the student groups. Eight students chose to participate in the study. Four of them chose to be interviewed about their experiences of working with a real user in the project and their experiences of working with the other students in the group. Three interviewees were from the same group. The interviews were semi- structured. All interviews were conducted close to the end of the group project. They were conducted in a face-to-face setting and lasted between 25 and 45 minutes. The interviews were recorded and transcribed.

The participating students' coursework was also collected as part of the research data. This includes their background survey used for forming the groups and their reflective journals.

Findings

The interview data suggest that the students not only learned about database concepts and database technology but also appreciated the opportunity of working with real users and gained experiences of how to take their perspectives into account and integrate them into the database design. One group was assigned to create the collection database. The collection included published articles, books, etc. At the beginning of the project, the students thought they would develop a library catalogue for the collection with bibliographic data like authors, publication year, publisher, etc. An interview with the representative totally changed the group's view. One member reflected on this and said, "Working with a client is really interesting, and the project that we got, the cataloguing of resources...we have to be a little bit creative in how we approach the project because...he wants it to be place where people can come and quickly find resources without having to type in search words."

The community partners also appreciated the active participation process. They were pleased that the students took the organization's perspective seriously in the design process. One representative said: "They do not come in with preconceived ideas of what should be done, what needs to be done. They listen to what I have to say... And I think that's the right way to do it, it's not being reactive...I've seen some professional consultants that aren't as well prepared and as thorough as this group is, so they've been very good". He further commented that, "... They do care about an organization they've had no connection to. That's...something that don't always get with the consultant that looks at it you know, this is a business project one off then I'll move on to something else..."

One representative was happily surprised when he found he was empowered to offer feedback during the design process. Reflecting upon his "learning experience", he said, "I hadn't realized...that you don't just turn something over to people and say do it. They're

gonna come back with questions, and they're gonna force me to think about...And so it's not a matter of, 'Oh here's a bunch of stuff. Go away and have fun with it.' It meant that I had to think about what this...database was for, and it meant what people would want it for, and I had to clarify my own thoughts about it. And...that was a very interesting experience..."

The case study presented two challenges of practicing the approach in classroom teaching: solidifying project vision with the community groups and alleviating the students' pressure about real impact of the project. Several suggestions are made to address these challenges. First, the instructor develops an agreement with the community groups on project expectation: the community groups are not obligated or anticipated to adopt the project outcome but understand that the project outcome has the potential benefit to the groups. Second, the instructor requires the student groups to develop a user need document together with the community groups as a way for both parties to identify the shared project goals and specify the community groups' needs. Third, the students are educated about the culture of non-profit community groups to help the students better position their roles in the community groups' practice.

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TO INFORM OR TO INTERACT, THAT IS THE QUESTION

The role of Freedom of Information in Social Media Policies

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Introduction

The concept of Freedom of Information (Balkin 2004, Lamble 2002, Solove 2002) has been raised to a fundamental good that permeates all aspects of modern democratic societies. The goal of this paper is to explore the role of this principle in relation to local authorities attempts to increase citizen participation via increased levels of social media usage. We argue that social media policy work raises a conflict vis-à-vis the established norms of Freedom of Information and the ideological underpinnings of the technology in use. Our analysis builds on a Swedish case study and illustrates the conflict between citizen-government interaction via social media technologies and the established norms of Freedom of Information.

Freedom of Information

When Chydenius (Lamble 2002) in the 18th century proposed his radical vision of Freedom of Information (offentlighetsprincipen or FoI) he was arguing for an unheard of level of openness and transparency in government. He argued that FoI would produce stability and predictability in government as the acts of politicians and public servants could be observed and traced. Increased accountability leads to increased control. His arguments can be seen to be Fou-

cauldian (Bentham 1995, Foucault 1979) in nature as they focus on the individuals' interest in internalizing their own supervision.

The FoI takes different forms in society. In general the principle refers, first and foremost to, public access to official documents. However, it also includes other forms such as whistleblowing by officials, court publicity, the publicity of decision-making meetings, etc. This principle has been successful and been implemented in many democratic states. However, the earliest and most radical forms have been established in Sweden and Finland (Lamble 2002). Additionally, Sweden and Finland have been early adopters of information technologies. Therefore, it is valuable to look at Swedish and Finnish implementations and adaptations of technology and administrative practices.

The concepts presented by Chydenius were put into practice in Sweden (and Finland). Since then these rules have become general principles of Swedish constitutional law. The right to inspect public documents was first introduced in Sweden through the Freedom of the Press Act of 1766. One way of looking at the success of the concept of FoI is the way in which the principle has been adopted (often in modified form) in many countries around the world, up until the point where today it is generally seen as a fundamental cornerstone of democracy.

The fundamental information infrastructure (Hanseth 1996, Pironti 2006) in the 18th, 19th and much of the 20th century has been analogue paper based information systems. Therefore the principle of FoI was proposed, implemented, matured and developed within a sophisticated, analogue, paper based system. This led to a command and control structure where the authority is involved in a monologue with its citizens.

From the point of view of efficiency the paper-based information infrastructure was eminently suited for conversion to a digitally based network structure. Therefore computers were easily adapted to fit into the administrative sphere. This implementation provided the first fundamental ideological challenge to the FoI principle as basic concepts such as document, file, signature, document creation and revision needed to be re-interpreted.

In recognition of these technological developments FoI has been re-interpreted in different international contexts. In Sweden two important changes have been made to the FoI. In 1974, freedom of access to public documents was deemed to apply to computer systems and in 1976 the principle was deemed to apply even when the data was not stored as documents. From the point of view of FoI the focus shifted from the information bearer (the document) to the content.

Technology and State

Government depends fundamentally upon the approval of the population it is set to govern (Dahl 1989, Harrison 1993, Pateman 1970, Sartori 1987). Therefore a democracy is a form of government where policies are directly or indirectly decided upon by the will of the majority of the population. This will is expressed by the participation of citizens in the democratic process. As a form of government, this system builds upon two assumptions (i) that people are capable of understanding, expressing and finding solutions for their problems, and (ii) effective solutions require the participation of the people who will be affected by them, without necessarily being dependent on authorities and experts (Oppenheimer 1971).

However, participation has major logistical challenges (Dahl 1989, Pateman 1970) as the communications infrastructures required for large-scale participation have not always been in available. Democratic participation should be understood as a compromise between theoretical possibilities within technological realities. Therefore, it is of great interest when societies begin to overcome the technological limitations and the theoretical ideologies fall into the realm of the possible. The technology itself is not inherently democratic but may be implemented to support participatory processes.

E-government or E-democracy

Government and democracy are at times interchangeable terms but they should not be confused. For the purpose of this work electronic government (e-government) refers to the states goal to make its processes more efficient. In contrast, electronic democracy

(e-democracy) is not about streamlining or economizing the state by alternative forms of communication. It is about empowering the user in her ability to directly participate in the general democratic process (Kahn & Kellner 2004).

Thus far the main thrust of technological implementation has focused on the processes of e-government while the processes of electronic democracy (e-democracy) have not been equally implemented. This mindset has also been possible to discern in many social media policies. This is an aspect that we will return to in our discussion of our empirical material.

From information to interaction

In the last decades advances and dissemination of communications technology have both enabled, and created a demand for, public access to public information via the Internet. Within the public sector the conflicting needs of the authorities to provide service and protect certain forms of information (for example personal data) have spurred a need for reinterpreting established norms. Even though digital documentation is the norm, there is, in the case of Sweden, no corresponding requirement for government bodies to provide access in digital format (SOU 2010).

The communications infrastructure of social media does not fit well into a hierarchical communication model and as such does not reinforce the role of the position of the authority. Social media is based upon high levels of social interaction between those involved and may be likened to a dialogue rather than a monolog. In addition, social media has less built-in systematic controls but, rather, allows all the participating parties to choose both topic and forms of dialog (Honeycutt & Herring 2009, Huberman et al 2009).

An important feature of this novel communication structure is the layers of legal and technological control (Winner 1985), which lies largely outside the control of the governmental authorities and the citizens. The legal and technological basis for the use of social media is in the hands of the platform owners. Physical control of the platforms depend on servers located outside Swedish borders and access to their information and use are regulated by licensing

agreements controlled by the platform owners and regulated under the laws of the countries of their corporate domicile. These conditions present particular problems for formalistic regulation and control by the municipalities and citizens as users of the information infrastructure. One could ask if the FoI actually could facilitate the information gathering activities of multi-national corporations?

Empirical Study

Sweden is divided into 290 municipalities with populations ranging between 2,460–847,073.[1] Each municipality is responsible for social services, care of elderly and handicapped, childcare and schools, planning and zoning, environment and health protection, public cleaning and garbage management, fire brigade, water and waste, order and security. In addition to these areas the municipality may also play an active part in recreational activities, culture, housing, energy, business and reception of refugees.

To better understand the municipalities attempts to use social media as a platform for increased openness and citizen interaction this paper analyzes social media policies published by Swedish municipalities prior to December 2010.

The choice of limiting the study to policies prior to December 2010 was not arbitrary but coincided with the publication of the report from E-delegationen (The eGovernment Delegation) who were given an additional mandate on public information and social media to develop draft guidelines for government agencies' use of social media. The publication of these guidelines (E-Delegationen 2010) created an informal precedent that has been followed by many Swedish municipalities. Prior to their publication the main source of semi-official support was a PM published by Sveriges Kommuner och Landsting (Swedish Association of Local Authorities and Regions) in April 2010 (SKL 2010) and a document on organizational responsibility for data in social media by Datainspektionen

[1]Statistics Sweden, "Population statistics" at http://www.scb.se/, accessed 15 March 2011.

(Data Inspection Board) published in August 2010 (Datainspektionen 2010).

The empirical data collection resulted in 26 policy documents. These texts varied greatly in length and ambition, from a few paragraphs to 20 pages (Klang & Nolin 2011).

Results

The empirical material reviewed for this article turned out to be exceptionally rich. It has not been possible to fully explore the many different dimensions that our analysis has brought forward. We hope to explore several themes in greater detail in separate works. We have already pursued a few other perspectives in a separate article (Klang & Nolin 2011). It is also a rich field for other researchers. In the following, we will therefore, roughly outline a number of themes and problems that seem urgent for both policy makers and researchers.

The 26 policies included in this study vary widely in their length; organization, focus and content but there are some clear areas of common ground that are interesting to point out.

Legality: 19 policies included statements reminding that criminal acts would not be tolerated. This is an interesting point as there is nowhere an assumption that social media use is free from regulation by criminal law. Therefore the high numbers of policies that reinforce the statement that criminal acts are not allowed in social media are a signal of the concerns of the municipality. Additionally 18 policies referred to administrative law. This reflects a concern in relation to the value of acts carried out in social media (for example: What is the difference in administrative law between a message, sent or received, via letter, email or social media?).

Analogue bias: All policies demonstrated an analogue bias. This is not unexpected as the organizations have well-established routines, forged through law, tradition and culture. However, the analogue bias is often seen acting against the logic of social media. In part this is shown through the ways in which legal requirements of administrative law, such as duty of service and archiving, are interpreted by the policies.

In a concrete example of the analogue bias: Many policies require that social media be recorded and archived this is a duty created by administrative law, however the wording of 11 policies shows a clear lack of understanding of social media. In order to fulfill their archival duties these 11 policies require screen shots of the social media sites to be taken every six months. Considering the fast changing pace of social media interaction, such a form of archiving would be redundant.

Goals & purpose: While 17 policies included statements on the purpose of using social media by the municipality only five policies addressed measurable goals or success or failure factors. The most common reason for using social media, stated in the policies, was to increase the level of communication. These statements on increased communication were mainly about how the municipality could increase its communication to its citizens. All communication from citizens was treated as either administratively or legally problematic.

The view of citizen communication as disruptive is particularly interesting when one remembers that the policies arise from democratic institutions attempts to incorporate social media in their daily work. The fundamental role of Swedish Municipalities is, according to the Local Government Act, to provide services to its citizens in a democratic, non-discriminatory manner. It could be argued that by viewing social media as disruptive, municipalities are not adopting the full potential of the technology.

One conclusion that can be drawn from this is that the purpose of the policies is to regulate the actions of the employees of the municipality rather than to encourage their forays into social media. The high focus on law and prevention of error would support arguments that the policies are there to reduce the potential legal and social liabilities faced by the municipalities. This is in large part due to the recognition that used incorrectly social media can cause a wide range of problems: everything from damaging the organizations reputation to involving the organization in criminal proceedings. Therefore, from this perspective, it is only natural that the document reminds, or warns, employees of the potentially serious consequences of their online actions.

Analysis

Is Social Media a public or private space?

The policies tend not to define social media. A number of policies list examples of social media platforms, however this listing approach to the problem of definition does not address how to treat non-listed platforms. Furthermore, this approach results in an unsatisfactory "non-definition definition". Attempting to define social media as a phenomenon by listing organizations that provide social media services does little to further our understanding of the phenomenon. An organization, and a service, such as, for example, Facebook means different things to various people. Facebook can be seen as a network, a privacy threat, a site for self-publication, a photo-sharing site, a chat site etc. Additionally, definition by listing corporations demands that these corporations have attained a relatively agreed upon and static meaning. However, Facebook is not the same thing today as when it was launched, with much more applications, settings and complexity.

The policies also only rarely discuss the difference between social media used privately by identified municipality employees from social media used by employees in authorized municipality business. This lack of clarity raises issues of acceptable online behavior.

In this latter question the policies demonstrate a conflict between encouraging employees to be enthusiastic about their work and using social media. This conflict is especially visible in private settings, where employees may discuss issues of interest to them but may need to draw a line between enthusiasm and presenting a correct view of municipality work and attitudes. Policies regularly reiterate that employees fundamental free speech rights apply to social media, coupled with reminders that even in their private lives employees may be identifiable with the municipality and owe loyalty to their employer.

In addition to the free speech problem above the policies also attempt to regulate forms of address. Nine policies specifically bring up the question of formal or informal address and these maintain that address in social media should be informal. Those using the municipalities' authorized social media should or must respond us-

ing informal manners of address. Linguistically this manifests itself most commonly in using the more informal "*du*" rather than the more formal "*ni*" when referring to others in second person singular pronoun.

Unaddressed issues: the cloud problems

It is surprising to note that none of the policy documents touch upon the important question of the legal and ethical consequences of government – citizen interaction via cloud services. All services discussed in the policy documents are technically built up in such a way as all information is transferred to servers controlled by the service providers. Most of these servers are based outside Swedish jurisdiction. By using social media in citizen communication the municipalities have difficulties with:

(1) Promoting chosen corporations: since the interoperability is low in social media, choosing a specific service provider limits the use of alternative service providers.

(2) Personal data transfers: while the policies were clear that specific questions between client and municipality should not be conducted over social media. The use of the latter as a communications platform will facilitate the sending of personal data to systems outside the municipalities' control.

(3) Loss of control: Information added to social media falls outside the control of the information provider. Removing information on social media does not remove the information from the service providers but only makes it inaccessible to other social media users.

It is surprising to note that questions such as these are not dealt with either in the policy documents or in any other government or municipal documentation surrounding the use of social media.

Property, Privacy and Voice

A common factor for all the social media policies is that they attempt to control social media use. It is noteworthy that many policies did not make any differentiation between forms of use. Among those that did the concept of use is badly defined at best. Within the policies three separate forms of use are defined: (1) Official municipality use, (2) Private use of social media during work, and (3) Private use of social media outside work. These three forms are not equally addressed in the policies. In those policies that attempt to define forms of social media use they commonly focus on one or two.

Despite this, there is a specific control question that is not brought up in all policies – the question of which individuals have access to the social media account and, which individuals have the authority to publish information. For the purpose of this paper we have used the terms property and ownership to distinguish this problem from other more general issues of control.

It is interesting to note that the relative uncertain positions taken by many municipalities are made more complex by the lack of definitions for social media and the wide range of types and licensing agreements social media usage requires. Not all social media allow corporate or shared accounts and would therefore make municipalities use of such social media a violation of the service. Some policies refer to this and require user names and passwords to be individual – but still stored with a supervisor to ensure continuity should the individual leave the municipalities employ.

A second set of property problems concern the material that is published. Here the focus is on questions of copyright and attempts to clarify which material from the municipalities may be used. It deals with questions such as: Who is the copyright-holder of the material once it has been published? What rights, if any, does the municipality have to the material? How can material published via social media be re-used in other media? This second set of questions has not been dealt with adequately in any of the policies included in this study. Most policies have not touched upon these issues at all.

A third set of problems deals with the removal of information. Here many of the policies are concerned with the effects of allowing the public to participate in social media dialogues in spaces that are under the municipalities' control. Much of the concern is focused on what would happen if illegal speech acts are undertaken in these spaces. This latter problem is dealt with very clearly in most (19) of the policies, which are clear that illegal speech will not be tolerated and will be removed. However, there is no discussion of the grey zones of illegal speech – will uncomfortable, but not necessary, illegal speech be removed? And to what degree should, and can, harsh criticism be tolerated?

It is clear from this third set of problems that the municipalities are happy to regulate where the law is clear but unwilling to address areas that are more complex. This lack of policy clarity reduces the effectiveness and usefulness of the documents for those who are regulated by them.

Conclusion

From the wording and intentions of the policies included in this study it is clear that the municipalities are suffering from a lack of clear definition of social media. The lack of definition is not a problem particular to municipalities but it becomes more acute when highly-rule based organizations, such as municipalities, attempt to regulate its use. Without a clear definition of social media the idea of creating a policy in which the use of such a technology can be regulated becomes increasingly complex. The difficulties in regulation through become more complex when taking into account the wide range of services, forms of communication and interaction the Swedish municipality is charged with.

The policies included in this study have focused on different uses of the technology and varying levels of threats social media misuse may cause the organization.

One suggestion as to why the policies remain vague in relation to many of these areas discussed above may be found in the social context within which the municipalities operate. Legal and social understanding of employee rights, freedom of expression, and public

information shape the workplace and the social agreements therein. This must also be coupled with the nature of social media and the ways in which such media can support and promote communication – but also by its technical or regulatory nature (the terms of use of the social media platforms) limit what can and is done online.

It is important to understand that the policies created by the municipalities do not exist in a vacuum but are part of a complex reality of control. The policies themselves span from areas that are highly regulated to unregulated and often refer and allure to laws, other regulatory documents and social norms. The technology itself also controls the behavior of the users, and in this ways acts as a regulatory instrument. It is in these contexts that the policies must be understood and appreciated.

Notwithstanding the approach taken to social media policy by the 26 municipalities it is clear that these organizations have attempted to take a positive approach to social media use within their municipalities. While the efficiency of these technological platforms for municipalities need to be studied longitudinally it may be deduced that by their adoption an expectation of service is created. This is reflected in the policy documents that attempt to clarify response times to incoming social media messages, re-action times to negative or illegal information, and creating redundancy when individuals responsible for social media end their employ. The policies reflect a fear of creating ignored or unmonitored information infrastructures.

An interesting question that is not brought up in the policies is the issue of municipality privacy. The Swedish FoI act regulates both state openness and, to an extent, the right of the state to operate privately, i.e. at which stage the state actor need not provide information.

It is understood that even within a democracy there must be levels of privacy (Shils 1956, 1997; Westin 1967). The recent focus on FoI and the adoption of social media by state actors (such as municipalities) runs the risk of creating an expectation of service that cannot be delivered without productivity costs. Murray (2005 p 197) argues that a level of state privacy is necessary: "…a condition in which there is enough privacy to nourish individual creativity and group expression; enough publicity of government

affairs to let the public know the facts necessary to form judgments in political matters; and a small area of secrecy for government to preserve the integrity of certain secret information and the privacy of internal policy-making processes." By introducing social media as an information infrastructure in interactions between municipalities and citizens this private space will be challenged. It will be interesting to see how this point develops over time.

In closing it is worth pointing once again to the high level of analogue bias that permeates the policies. The municipalities view, and often refer to, social media an addition communications channel. This view clearly shows a level of unpreparedness for any real interaction that is the real potential offered by social media use. The municipalities are very much mired in a mind-set of e-government and have yet to move onwards to e-democracy where collaboration, participation and dialogue are key ingredients.

With this lack of interaction and participation the potential of social media has yet to reach any real potential and cannot now be seen as the fulfillment of Chydenius dream. The policies show a clear focus on adapting social media as channels of communication to further the interests of e-government while avoiding social media's potential as a tool for increasing participatory democracy and furthering the goals of e-democracy. We find this state of affairs problematic and in need of both further research and dialogue between researchers and policy makers.

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AUTHOR DISAMBIGUATION FOR ENHANCED SCIENCE-2.0 SERVICES

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Abstract The disambiguation of authors with homonymous names has been a growing concern in bibliometrics for several years. The identification of authors is a necessary precondition for accurate bibliometric calculations. The basic technique of matching authors' names based on ratios of shared letters is susceptible to error in the case of very common names or in broad research fields. A more advanced approach to the problem relies on the contextual metadata relating to an author. Using the co-author and the co-citation relationships that pertain to a given author, a map of the intellectual landscape of that author can be constructed. Such patterns of collaboration and citation are typically unique to each individual and serve as fingerprints for the identification of those who happen to share the same name. The automated analysis of contextual metadata for each author-name-instance can be used to enhance the management of knowledge within science-focused social media. This paper presents a minimalistic solution to the author disambiguation problem that leverages bibliographic metadata to generate clusters of articles belonging to distinct individuals who all share the same name. Implications for enhanced Science 2.0 services are discussed.

Introduction

The disambiguation of authors with identical (homonymous) names has been a growing concern in bibliometrics for several years. The identification of authors is a necessary precondition for accurate bibliometric calculations. A review of the current literature on au-

thor disambiguation reveals three broad approaches to tackling the problem. The simplest technique involves matching the authors' names based on ratios of shared characters. [Bolacker et al. (1998); Lawrence et al. (1999); Galvez & Moya-Anegon (2007)] Some of the algorithms used include Jaro-Winkler proximity, the Dice coefficient, and Levenstein distance. While these techniques can go a long way in standardizing variations in author names, they are of little use in disambiguating correctly spelled but common names or in broad categories of science in which many researchers are active. A more advanced approach to the problem relies on the contextual data relating to an author. [Tang & Walsh (2010); Kang et al. (2009); Wooding et al. (2006)] By exploiting the co- author and/or the co-citation relationships that pertain to a given author, articles can be grouped together so as to distinguish one author from another. Such patterns of collaboration and citation are typically unique to each individual and serve as distinguishing characteristics for the identification of those who happen to share the same name. Indeed, in such contextual approaches, the name of the author is not even taken into consideration by the disambiguation algorithm. This approach is therefore more robust to instances of spelling errors. Beyond these lies the realm of statistical approaches to author disambiguation. [Zhang et al. (2007); Tang et al. (2008)] These offer the promise of a more accurate solution to the problem. In addition, one would expect that a statistical approach would offer some measure of probability as to the accuracy of a particular author-disambiguation solution, although the literature does not address this issue. While this third category offers the most potential for highly accurate name disambiguation, the research at this level does not seem to be generalizable outside of small amounts of curated test data. These techniques often rely on a priori assumptions about the frequency of certain parameters or require a "training set" of correctly-identified authors before they can begin. For example, Smallheiser and Torvik (2009) estimate the statistical properties of the names being disambiguated as a precursor to the calculation of author-name groups by statistical methods. Soler (2007) presents a statistical model for disambiguation in which many assumptions and approximations are made

as to the frequency of words and names. Such exercises achieve remarkable results with and may point the way to better disambiguation principles, but it is hard to see how these can be made to work without considerable fine-tuning or in-depth knowledge about the characteristics of the field in which the name to be disambiguated is found. If one must determine how many "J. Smiths" are working in the field of materials science in order to be able to disambiguate instances of "S. Johnson", one has simply exacerbated the problem.

A good example of a more robust solution is given by the recent work of Gurney, Horlings, and Van Den Besselaar [Gurney et al. (2011)]. Their approach incorporates up to eight different metadata elements and performs regression analysis to determine the strength of the similarity between each pair of metadata. A network of relationships is then constructed with the regression coefficients as the weight of the edges between items. A clustering algorithm then groups the network into author instances. Gurney et al. make the important point that many other author-disambiguation algorithms are evaluated against datasets that have been pre-filtered. The algorithms naturally perform very well because any records that do not contain all the requisite metadata are removed beforehand. In contrast, their approach makes do with whatever metadata is available. This is an important issue, as the solutions proposed for author-disambiguation are purely academic if they do not handle the imperfections of real-world data.

The algorithm presented here falls into the second category of author-disambiguation techniques in that it relies on metadata relating to an author's publications. This approach is decidedly simpler than many of the other techniques in the literature. It was developed with an eye towards providing a data-cleaning procedure that facilitates the work of the Institut für Forschungsinformation und Qualitätssicherung (iFQ). As part of a German research consortium the iFQ performs bibliometric studies in support of Germany's national science policy. To accomplish this, the iFQ has access to a database of the raw data that is behind the Web of Science. To ensure that the analyses are as accurate as possible, the iFQ requires a tool that helps to clean the data by disambiguating authors such

that the correct articles can be attributed to the people and institutions being studied. However, all of the metadata for authors is not always available (depending on the publisher from which the data was collected). While some records contain complete information including the author's first name and institutional affiliation other records do not. Thus for the application described herein to work with all records, it must rely only on the lowest common denominator available: co-authors and references.

Thus the specific challenge addressed here is to group author-name instances in a reliable and automated manner – given a limited amount of metadata – such that it becomes practical to undertake large-scale studies involving many authors from any field of research. In this real-world scenario, utility is as important as accuracy.

Method

Homonymous name instances (retrieved from the iFQ's databases) that share co-authors and/or references are grouped together as one individual according to the following algorithm. This is implemented in Java and uses local caching of names and ID numbers to reduce the need to re-query the database for the same information.

1. Query based on a given last name and first initial ("SMITH J").

2. Create an array of the authorID numbers ("A"). Create a copy of this array ("B").

3. For each element in A (that has not been compared previously), create an "author- group" array, and then loop through all subsequent elements in B:

    3.1. For each combination of A and B, retrieve the article each author ("a1" and "b2") is associated with. Query for the co-authors of both articles, as well as for the references contained in each article a1 and b2.

	Condition (reality) TRUE	Condition (reality) FALSE	
Test (prediction) TRUE	**True positive**	False positive	***Precision*** TP ÷ (TP + FP)
Test (prediction) FALSE	False negative	**True negative**	
	Recall TP ÷ (TP + FN)		

Table 1. A confusion table for evaluating the accuracy of matches.

3.2. Create two arrays, one for each set of co-authors (a1_c and b2_c), as well as another two arrays, one for each set of references (a1_r and b2_r).

3.2.1. Loop through the co-author arrays, comparing the names. Loop through the references, comparing the referenceIDs.

4. If, after comparing all co-authors and all referenced articles, a match has been found (at least two matches in the case of references), then add the authorID number of the author from B to the "author-group" belonging to author A.

Results

Table 2 shows the names tested, the year from which those names were considered. For "B Borasoy" the algorithm created two groups. The first group held 17 of the articles known to have been written by this particular "B Borasoy", and the second group contained ten more articles known to have been written by this very same person. Ideally all 27 articles would have been in the first group, resulting in a Precision of only 63%.

The average Precision for these analyses was 79%. However, the variability is quite high. One fairly common error seen in the results occurs when the same individual publishes articles with dif-

Name tested	Starting Year	Records retrieved	Groups identified	True Positive	False Negative	Precision
B Borasoy	1996	72	2	17	10	63.0%
R Huber	2002	798	64	45	2	95.7%
A Blaukat	1996	54	7	39	29	57.4%
G Behre	1995	180	5	30	13	69.8%
M Albrecht	1999	914	71	52	1	98.1%
L Ackermann	1999	111	13	32	10	76.2%
R Everaers	1994	69	4	16	5	76.2%
P Neumann	1997	454	76	50	0	100.0%
K Niebuhr	1996	18	7	4	4	50.0%
C Ochsenfeld	1996	65	4	20	7	74.1%
JW Pan	2000	257	11	47	9	83.9%
T Pietschmann	2002	99	2	28	2	93.3%
B Regenberg	2002	25	1	20	0	100.0%
K Wiegand	1999	46	12	10	5	66.7%

Table 2. Accuracy of disambiguation over 14 names corresponding to a known individual of that name.

ferent sets of co-authors on topics that are disparate enough to not share any references. In such cases of "split personality" [Ley, 2009] the algorithm described above will leave two instances of the same person unmatched. This is a false negative in that the name-instance is assigned to another group when it is clearly the same person as a previously- created group to which it should have been added. One may decide to join these instances based on some other type of metadata, but without further supporting evidence, two homonymous names remain different individuals.

A more informative analysis of the results is possible when the exact number of individuals is known. For example, Estel Cardellach and Esteve Cardellach are both active researchers living in Barcelona. Estel works mostly in remote sensing while Esteve concentrates on Geology. The application identified 41 articles published by "Cardellach E" since 2002 (inclusive) and disambiguated them into four groups. If we take the largest group matching Esteve to be the positive prediction (group #1) and the largest group matching Estel is the negative prediction (group #2), then a con-

	Reality		
Prediction	Esteve	Estel	
Esteve	25	1	Precision = 96%
Estel	3	12	
	Recall = 89%		

Table 3. Confusion table of disambiguation of "Cardellach E"

fusion table can be constructed and the Precision and Recall of the disambiguation can be calculated[1].

An evaluation of these results is given by the Matthews correlation coefficient of 0.79 [Matthews (1975)]. Interestingly, the single error in prediction (a false positive) occurred when Estel published an article on Geology, presumably citing or co-authoring with one of Esteve's usual collaborators. The three false negatives were contained in a third group of exclusively Esteve's articles. While these should have been collected into the first group with the other 25 articles by Esteve, the fact that they share no co-authors or references reveals a distinct research topic. Although not the goal of author disambiguation, these false negatives can be of interest in characterising the different aspects of a researcher's career. Perhaps the individual is active in two distinct fields, or the separate groupings might indicate different phases of their career.

In comparison, a search of Thomson Reuter's Web of Science online database retrieves 37 articles written since 2002 (inclusive) by "Cardellach, E". Then using the Web of Science's "Distinct Author Sets" feature, these 37 articles were grouped into 32 sets. This represents a simplification of only 13%. In addition, as we know that there are only two people with this name, the Recall is

[1]This type of table is often used in clinical studies to evaluate the effectiveness of some new drug (for example). The normal terminology is then "Condition" for the columns and "Treatment" for the rows.

only 47% (Estel and Esteve each get one group, meaning that the 30 other groups are unnecessary).

Overall, the advantages of the approach presented here are two-fold: First, the application achieves fairly good results, especially considering that it only has two types of metadata to work with. Secondly, the application runs in a "hands off" manner, requiring only two pieces of information (a name and the year from which to begin collecting records) and a few minutes to organize the records into groups. This means that the application can be used by those who have no background in bibliometrics or programming. On the other hand, the limitations of this approach include the great deal of variability in the precision of the results and the inflexibility of the algorithm to account for publication patterns that do not fit the model.

As new versions of the database become available, additional types of metadata can be included into the algorithm to increase its accuracy. By extending the metadata used for comparison to include institutional affiliation it is likely that the reduction in superfluous names can be further improved. Because the spelling of the name to be disambiguated is not taken into consideration by the algorithm, the results are – theoretically – as good for very common names as for rarer ones.

Discussion

The minimalistic approach to author disambiguation presented here demonstrates how fairly accurate results can be obtained using only a limited amount of metadata. The technique for doing this should be of interest for the "Science 2.0" type of social media services such as CiteULike or Mendeley that are forums for sharing references and for building connections within the research community. These do not have all of the bibliographic data that a database of publications has (such as the Web of Science), yet they still seek to provide a space where published research is organized.

Currently, CiteULike makes no attempt to disambiguate author names. One can browse CiteULike by author name, following the link from the author of one article to see a list of all articles by

authors with that name. But each name is treated as a distinct entity, even if they refer to the same person. Using the system described here would allow a 2.0 service (such as CiteULike) to automatically create groups of author identities.

Indeed, linking information to create something greater than the sum of its parts is the whole point behind Science 2.0: by facilitating interactions within a given community, the conduct of research is accelerated and enhanced. In such an environment, a library or a virtual lab-space will have little control over the content. On the one hand this is a good thing: getting away from the top-down management of information and letting the research community communicate as it wishes. But at the same time, a certain amount of quality control is of benefit to all. Automated features that bring some order to the Science 2.0 environment are needed, particularly if they leverage the structure of the community or the communication. While author-disambiguation is not specifically a Science 2.0 problem, it provides an example of how uncertainty about identity (and about the research belonging to that identity) can be reduced algorithmically.

As CiteULike does not list the references belonging to each article, the part of the matching algorithm does not apply. However, one can turn the situation on its head and think of the users as the aggregating factor. If a user's profile lists several dozen articles as being of interest, then this is a type of citation. The names to be disambiguated could then be matched based on the profiles within which they are listed. When two articles written by a "Smith J" are listed in the same CiteULike user-profile, they are likely to be the same J. Smith.

If services such as CiteULike are to ever move beyond unsorted collections of documents, some structure must be automatically derived from their content. What is needed is an automated approach to author disambiguation such that as records are added to a bibliographic database, they are identified as belonging to the correct individual. Even if they were not 100% correct (in that a single "J. Smith" was split across two or more identities), the groupings would reveal the characteristics of the underlying data. This structure could then be exploited to provide an alerting or recommender

service that enables users to follow an author of interest, notifying them when that author has published a new article.

Conclusion

The authority control of instances of author names is an ongoing concern for the accurate measurement of scientific publication patterns. Research into author-name disambiguation is pursuing a range of approaches ranging from matching on the syntax of the names to more techniques that employ advanced statistical analysis. Yet the latter is of no use in identifying individuals who share the same name, and the latter has only been applied to small, curated datasets (i.e. containing only records with the full complement of metadata). The minimalist approach presented here offers a balance between accuracy and practicality. It is fast and scalable. In addition, because it relies on only two types of metadata, it can be adapted for use in Science 2.0 web services such as CiteULike where users share uncurated information. The application described here suggests that it does not always have to be the users that do the linking. Some automation (or a hybrid approach) would leverage the input of the community.

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THE USE OF SOCIAL MEDIA TECHNOLOGIES IN THE WORK PRACTICES OF INFORMATION PROFESSIONALS

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Enabled and underpinned by the use of the internet, knowledge and information take an increasingly prominent place in modern society. In recent years, developments in the internet technologies of social media and the increasing use of these tools have seen the web advance from a platform of information delivery to one that includes contribution and collaboration. As the technologies of social media create a second wave of innovation and opportunity in the organisational use of the web, this research paper examines the nexus of two important phenomena: various established information practices and the uptake of social media tools to facilitate or extend these practices.

Social media or web 2.0 technologies, such as wikis, blogs, microblogs and social bookmarking, are increasingly used within organisations in pursuit of their informational and communicative goals. Made popular in individualistic and open use on the internet, web 2.0 tools or social media are increasingly used as tools for information and knowledge work within organisations. McAfee (2009), who claims significant opportunities for improved organisational communication and knowledge work with the use of these technologies, uses the term Enterprise 2.0 to describe the use of social media in organisations. 'Enterprise 2.0 is the use of emergent social software

platforms by organisations in pursuit of their goals' (McAfee 2009, p. 73). This research investigates the detail of Enterprise 2.0; the use of social media within a variety of information practices in organisational contexts. It examines how information professionals embed the tools of social media in their practice and identifies the advantages, risks and transformations that may result.

Information agencies signal their willingness to incorporate social media in their practices with labels such as Library 2.0 that attempt to associate libraries more directly with the characteristic and technologies of web 2.0 (Black 2007). Bailey's (2008) 'Records Management 2.0' challenges the scope and theory of the records management tradition in the light of social media. The information sector at large looks to the new technologies of social media knowing that it must engage. Both Plutchak (2006) and Crawford (2006) challenge the use of such labels, suggesting that the radical change that is implied is hype and that innovation and adoption of social media will always be continuous and evolutionary – like all technologies before them.

This research is situated within current Australian and international attempts to provide explicit strategic and policy positions about the use and benefits of web 2.0 technology within government. A taskforce, established by the Australian Federal Government, reported in 2009, the many benefits and opportunities afforded by the adoption of social media in the work of government. The application of web 2.0 collaborative tools and interactivities to the processes of government is one of the three pillars of Government 2.0 according to the Australian Report of the Government 2.0 Taskforce, Engage: Getting on with Government 2.0. The report claims (p. 3) that 'as they have outside of government, these tools and practices can increase productivity and efficiency' within the government sector.

Yet, Nicolas Gruen (2010), the chair of the Government 2.0 taskforce subsequently states that 'Government 2.0 is ultimately about what individual agencies, and yes, individual public servants do to make it happen'. In accord with Gruen's advice, this research moves away from top-down strategy, policy and management that recommends and directs the adoption of social media and seeks

increased productivity and efficiency. It disregards the rhetoric of Library 2.0, Records Management 2.0 and Government 2.0. Rather, it investigates the everyday work of the information professional, observing, probing and seeking to understand more fully how social internet technologies are incorporated into various information practices. In doing so, this research uses a theoretical perspective of work and activity that has become known as practice theory.

Research using a practice-based approach exhibits a desire 'to shed new light on organisational phenomena by getting closer to the "real" work in organisations' and a move away from structural notions of organisations (Geiger 2009, p. 129). For Gherardi (2009), practice is located in the significant pattern of how conduct or activity takes place.

Theories of practice assume an ecological model in which agency is distributed between humans and non-humans and in which the relationality between the social world and materiality can be subjected to inquiry' (Gherardi 2009, p. 115).

This research investigates the materiality of the web based tools of social media and the social world of information work in which they are becoming embedded.

The research design is based on qualitative multiple case studies and grounded theory following Eisenhardt (1989) who claims that this research approach is especially suited to novel and emerging phenomenon. Grounded theory provides a systematic and explicit process for conceptualisation from data – theory is constructed (Charmaz 2006). Constructivist grounded theory (Charmaz 2006) enables the study of information practices and social media within the enterprise to be taken into a social realm – involving people and the complex interactions involved in the use of these technologies in the workplace.

Situated information practices that have incorporated social media within the everyday work activity are the case or unit of analysis. Information practices that are located within large and recognisable fields such as records management, archives or librarianship are examined. They are determined as discrete recognisable existing patterns of activity and selected for study if the information practice incorporates social media in the achievement of purpose.

Uses of social media may be contained within the organisation or straddle the organisational boundaries to include clients and external stakeholders. Organisations of both the public and private sector are included in the study and whilst the organisation itself may be a dedicated information agency, case studies are also drawn from the information practices within organisations with a broader purpose.

Narrative groups of practitioners within discrete information practices are formed to collect the story of how they collaboratively use and embed the tools of web 2.0 in their practice and what benefits, opportunities and challenges arise as a result. Because analysis of the collected data follows a grounded theory methodology, the number of case studies at the commencement of the research was not known – the research extends until theoretical saturation is reached (Charmaz 2006, p. 113). In grounded theory tradition, at its conclusion, this research provides an emergent conceptual framework for the use of social media in the information sector.

This interpretive approach is justified by the negligible amount of extant empirical knowledge about this specific use of social media and the emerging nature of the phenomenon that is under investigation. The research seeks to produce a deeper understanding of the way that social media is used. Gorman and Clayton (2005 p. 14) call for a greater use of interpretive research in the information sector, in order to uncover complex social conditions in the field. These authors suggest that rich, contextual data is more likely to present insights and perspectives in existing and emerging areas of information research than have been previously reported using positivist strategies.

This paper reports the emerging finding of this research and provides a grounded conceptual account of how social media are used in information practices, uncovering the pitfalls as well as the opportunities. The themes reported will include: participation imbalance, wherein the contributing 'voice' of some practitioners is never heard; confusion in the nature of information – formal or informal; and location and ownership of tools and contributions. This research will provide a theoretical foundation for a deeper understanding of the ongoing and emergent practical adoption of

social media in the work practices of information professionals. It will inform both practice and higher level management and policy direction.

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DESIGNING GAMES FOR TESTING INFORMATION BEHAVIOR THEORIES

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Abstract Games have long been used for purposes ranging from entertainment to military training. This paper presents the use of games, particularly physical forms of role-playing, for the purpose of testing information behavior theories. In it, case example games are examined, with particular emphasis on the way they have been used to study how cognitive authority for second-hand information is formed.

Introduction

This article describes the design of certain kinds of small physical pretence games, done for the purpose of using those games as information behavior laboratories. Games have a long history of use as teaching tools, going back at least 3000 years (Lainema, 2003). One of the most central was Kriegspiel, published in 1824 by Herr von Reisswitz and his son, and used to train Prussian officers to such an efficiency that the practice quickly spread to other nations. When officers retired and became businessmen, they took the idea of simulation-based training with them, giving birth to the practice of business simulation/games, still used in economics education institutions around the world (Henriksen, 2009).

In addition to student training, such games get also deployed in workplaces, for the purpose of improving corporate performance, in-house communication, and so on. They very effectively negate existing, problematic mental models (Tsuchiya & Tsuchiya, 1999) and

teach systemic thinking (as per Senge, 2006), as they themselves are highly controlled information systems capable of showing extended cause-and-effect phenomena (Harviainen & Lieberoth, in press). The games discussed in this article have been developed by combining traits from such organizational learning simulation/games and from live-action role-playing (larp), games where participants physically play fictional characters in fictive or altered settings (Brenne, 2005; Montola, Stenros & Waern, 2009). Tools from psychodrama (as per Moreno, 1953) have also been added, so as to facilitate the community-forming aspect of such games (as per Bowman, 2010). They were designed to be sufficiently realistic (simulation-like) so as to provide reliable results, yet not so realistic that participants would start looking for departures from reality instead of likenesses with it (as per Lieberoth & Harviainen, in press).

Ritualistic games as social information environments

Laboratory experiments are a part of the standard toolkit of information studies, particularly in information retrieval (Ingwersen & Järvelin, 2005). Experiments regarding activities other than searching and retrieval are somewhat more tricky, as the ability to sufficiently control the information environment becomes increasingly more difficult, the wider a type of information behavior phenomenon is researched.

Live action role-playing games are (almost) self-contained information systems (in the sense of system-that-informs; Buckland, 1991) with their own special information-environmental properties (Harviainen & Lieberoth, in press). Regardless of whether they are repeated or designed for just a single run, they are unique events and information environments with high interpersonal variance (Harviainen, 2007b). They nevertheless follow certain design principles (see Harviainen, 2009, for specifics), and written the right way, can be controlled as social information laboratories to a great extent.

As Boyer (2001) notes, a key trait of ritual activities is that they limit available information. This is also true of live-action

role-playing games (Harviainen & Lieberoth, in press). The reason for this is that such games are effectively temporary worlds, where the organizers are in charge of most information within them, but not in control of it (Harviainen, 2007b). Participants mostly act in them as if they were isolated from the outside world, and the system autopoietic (as per autopoiesis extended beyond biological systems; Brier, 2008), but in truth they will have brought with them a lot of information practices and earlier knowledge (as per Ingwersen & Järvelin, 2005). Without that material, the game would not even function (Crookall, Oxford & Saunders, 1987). The dissonance between the illusion of separation (liminality) and the existence of obvious game-external information sources creates a situation where the influence of social contracts on information behaviour becomes heightened and more visible (Harviainen & Lieberoth, in press).

Inside such temporary zones, frame-relevant information is accepted more readily (Lieberoth & Harviainen, in press). In other words, that which fits the liminal activity in question (in this case, a game) is appropriated into knowledge (as per Brookes, 1980; Todd, 1999) without much resistance, as it enables participants to make more sense of the activity (Harviainen & Lieberoth, in press). Of special interest to the laboratory approach is that what exactly counts as frame-relevant is something that the organizers can to a great extent define beforehand.

Information in liminal games exists in several key categories. The first crucial difference rests between information that is diegetic ("real within the context of the story"), extradiegetic (outside the game's reality, but influencing it), and information transmitted from outside of play to inside the game's reality (Harviainen, 2007b). Extradiegetic information consists of four sets of documents: setting material ("where and in what context the events take place"), character material defining things such as personality and goals, genre information (i.e. special rules on how to play in a manner fitting the game's concept template - for example, in a classic murder mystery, people do not leave the location no matter how logical that would seem) and game mechanics. All these are normally created as formal documents, and they contain the fabula (story seeds) from which actual play emerges (Fatland, 2005). Gaps

in the material are unavoidable, creating an accentuated version of what Wilson (1977) calls "incomplete world knowledge", about the fictional reality of the game.

The laboratory approach introduces pre-determined target data into the extradiegetic material, for the purpose of seeing information behavior regarding that data. Necessary variables are introduced into the concept as incentive-fabula, such as giving one character a strong desire to withhold certain bits of important information and two or more a likewise strong incentive to dig them out during play. Prayers on a Porcelain Altar, described below, is an example of this principle in action.

The information environment during play

During play, the information environment suddenly becomes pseudo-isolated, as the game is effectively a virtual space imposed upon a real place (Aarseth, 2001; Balzer, 2009). Information inside it is diegetic, i.e. storyworld-internal. Diegetic information exists as either mental or physical representations of extradiegetic material, with the game's requirements functioning as their indexing language (as per Mai, 2001). This includes also the character, the fictional persona a player uses during play: It is a subject representation, just one given a cognitive form (Harviainen, 2007b).

Practically all subject representations in a larp are of the predominantly content-oriented type (as per Soergel, 1985, and Hjørland, 1997), as players themselves construct them, and have no duty to provide easy access to them for other players (Harviainen, 2007b). While possibly causing problems for recreational game design, this fact makes laboratory applications of small larps actually more realistic. Other realism-adding factors are, for instance, the way people place value on even virtual possessions (Lehdonvirta, 2009), and the fact that laboratory larps, like educational ones, have to be intentionally designed for low levels of information-need uncertainty (ASK, as per Belkin, Oddy & Brooks, 1982) in order to be effective (Harviainen & Lieberoth, in press; Harviainen, in press). The pretence play itself is natural, as make-believe seemingly lies at the core

of all representational acts (Walton, 1990), so these are essentially just well-suited realism-additions that improve the experience.

Functional larp play consists of communication acts, which mostly deal with information behavior concerning in-game issues or the re-signification of play elements (Ilieva, 2010): Characters' goals are directly related to the acquisition, control and dissemination of game-relevant information. In layman terms, both such games' meaningfulness for the participants and the games' narratives are effectively highly localized information behavior, the performance of which is a pleasure-giving act (Harviainen, 2006). The performance nevertheless follows mundane patterns for such activity (see Wilson & Walsh, 1996, for examples), and is hindered by same factors as everyday information behavior. These all do, however, exist in accentuated form during play, due to heightened significance and narrative build-up (Harviainen, 2007b). This in no way makes them different, simply more visible. What differences do exist are issues of incentives, and can be dealt with through expert pre-design (see Harviainen, 2009, for examples). As play progresses, participants (via their characters) create information networks, turning the game-as-system into one with multiple index entries (as per Buckland, 1991).

When encountering inevitable information gaps during play, some players will resort to inventing the missing bits, and some will break the magic circle of play and either check the extradiegetic materials or consult the organizer. All these are potential problem points as far as laboratory applications are concerned. They can, however, be countered by keeping information laboratory larps sufficiently small, so that no drastic conflicts in diegetic facts can take place (see Harviainen, 2007b, for details). Furthermore, while the organizer has the power to overwrite the information content of any document (in the wide sense of "document" as including also objects and even virtual concepts, as per Buckland, 1997), or factual data, during play (Harviainen, 2007b), that power is in laboratory games to be used only for resolving conflicts or significant gaps.

In order to produce realistic results, the game has to run sufficiently free of external influence. For the same reason, it is best to use participation systems where players choose their own roles

based on short character descriptions, as this removes the risk of data corruption caused by organizer- made pre-expectations such as typecasting (the placing of certain players in certain roles by executive decision; see also McDiarmid, 2011, for this approach as a design basis), while to a good extent preserving the players' natural information behavior habits.

The play experience as an information environment is isolated because the barrier between it and the real world, commonly called the magic circle (Huizinga, 1939; Salen & Zimmerman, 2004), functions as an information barrier (as per Merali, 2004). It either blocks problematic information from entering play, or changes that which enters to a form that can be appropriated by the players (Harviainen & Lieberoth, in press). A functioning magic circle preserves the play (or ritual) experience. It, in turn, is sustained by participants through measures which the study of religion (based, in turn, on systems theory) calls boundary control (Galanter, 1999). These eventually form a loop, feeding each other through a strengthened play experience, after an initial period of cognitive uncertainty relating to expectations and interpretative problems functionally identical to the early stages of access to any new information search & retrieval system (as per Ingwersen & Järvelin, 2005). Fluid, powerful control measures make the border stronger, which makes the illusion seem more real, making in turn it easier and more natural to perform said control. Boundary control in these kinds of games consists of the participants' shared social need to not disturb the illusion, shared conceptions on what information elements and objects inside the magic circle are situationally relevant (as per Wilson, 1973), and a heightened reliance on cognitive auhorities. With successful boundary control, the game feels "real" to its players, making it their primary frame of reference during play (Harviainen & Lieberoth, in press).

Of particular interest in such border control to library and information science is the way players use berrypicking techniques to navigate game breaks that take place due to a lack of extradiegetic information. While normally connected to information retrieval (Bates, 1989), it appears that the same systems of picking convenient pieces of information is also used to solve information

gaps in ritualistic circumstances where direct questions would create breaches in the illusion (Lieberoth & Harviainen, in press). As we see below, not all players use it, though, as individual information behavior is indeed highly variable.

Observations on information phenomena in laboratory larps

I have, since 2006, been designing small live-action role-playing games that function not only as games (and sometimes artworks) but also as information behavior laboratories. In order to work, such larps have to balance the laboratory aspects and enjoyable play, the same way educational larps may not be too educational or too entertaining, in order to function, but neither can they do without a sufficient level of both facets (as per Henriksen, 2008). They likewise follow basic mini-larp principles established over the last two decades, as trying to develop new types of games at the same time as deigning experiments is not recommendable (Mäyrä, 2009). Therefore while each such game is a new artifact, they use very similar templates.

The key idea has been to write these games so that any information elements during play become very visible - including withholding and blunting. The first of these was the twelve-person A Serpent of Ash, designed so as to bring forth the presence of the intervening variables on information seeking described by Wilson (in Wilson & Walsh, 1996), particularly personal, emotional and social/interpersonal ones (see also Harviainen, 2007a). Data was collected by direct observation of play, a recorded debriefing and, later on, social media analysis, as players commented on their play experiences online.

The first key finding, after four observed runs done by myself, and organizer feedback from five more done by others, was that diegetic information would be revealed by participants in a consistent manner. There were, however, three different patterns in this, which could be detected and modelled. Feedback from the later runs confirmed this hypothesis: From the same starting points, players would basically follow together one of three paths of in-

formation seeking. From early on in play, it was possible to say which one it would be, but not beforehand. The key to which was chosen was based very much on who among the characters emerged as a diegetic cognitive authority (as per Wilson, 1983), the second-hand source seen as most "expert" regarding the situation at hand. This is consistent with Boyer's (2001) view of ritualistic activity as reliant on especially strategic information, i.e. information with an immediate concern or being related to certain categories essential to human interest (such as that which concerns others' reliability or sexual behavior).[1]

The other finding was that certain participants, even when given free rein and direct instructions to add new information (by inventing it) to that which they were given, refused to do so. Instead, they either repeatedly consulted the organizer on even small issues and for suggestions on how to reveal or ask for facts, or, in two notable occasions, decided that the information they were given was too limited, and subsequently refused to contribute.

The second test game, Prayers on a Porcelain Altar, was constructed in a similar manner. The game was designed after the classic "murder mystery" template, but with less significant a subject as its topic (8-10 drama students solving the events of their drunken binge the night before). The characters were given reasons not to distribute essential information, and strong incentives to acquire it from others. Interpersonal variables were intentionally intensified by conflicting character natures. Furthermore, the balance was designed so that no character would have any real basis to act as an authority in the situation. The larp-artifact was then put in the hands of players, with no interference from the organizer until the allotted 1,5 hour run-time was over.

In every single run out of the 22 documented ones, a strong game- internal cognitive authority emerged.[2] The systemic-analysis

[1] A Serpent of Ash deals with the survivors of a religious cult whose leader has died, which means suitable strategic information, in additional to that of general interest, is available in abundance during play.

[2] The game master or designer is by default considered an expert and a cognitive authority regarding the game, but is a game-external one. If the game master plays a

approach showed that in such constrained environments, if no cognitive authority is introduced beforehand, such an authority nevertheless appears. Certain participants seem to be able to dominate the information environment of a given situation, by combining personal charisma and the successful bartering of situationally important tidbits of information (as per Wilson, 1973) into an image of "being in the know" - even when they actually are not.

This was especially obvious in the case of a distracting element intentionally included in the material (blood on sheets and a missing person). During the runs, some people exhibited obvious interest in this sidetrack, well and beyond its impact as described in the setting material. One player (of a run I did not attend), in a personal message, complained that this particular potential sidetrack "ruined the game" for him, as it should have, according to him, realistically taken precedence over all other game events.

A run of Prayers done by myself in Norway in 2009 also displayed an exemplary case of border control measures: The characters being theater school applicants, two of them (both played by professional actors) started accosting the third one to perform his application exam piece, which he claimed to have been a monologue from Goethe's Faust. They furthermore teased him with small details about it. Within the game's fictional reality, this is of course natural, but the problem is in that the average larp player is not a classical actor, and the player may not be able to even remotely perform what the character could. This creates an immediate information gap, a potentially unsolvable one, which threatens the illusory reality. To protect it, others started shielding the "threatened" character and, with him, the magic circle of play ("Hey, maybe he doesn't feel like repeating it.") - effectively working as information blunters for everyone (as per Baker, 1996). This is typical, as players constantly use low-level blunting to counter information not suitable for their desired play experiences (Harviainen, in press).

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character, that character as a cognitive authority is value-judged just as all the others. Some players may, however, use out-of-game knowledge to judge a game master -played character as a potentially superior information source (Harviainen, 2006).

A gap nevertheless took place, but due to an unexpected reason: The player, against everyone's expectations, actually knew Mephistopheles' monologue by heart, allowing his character to suddenly recite it in the original German. Given that everyone expected the situation to be managed by misdirection (i.e. a boundary control measure), the possession of the actual information caused the illusion of play to momentarily break. This is especially significant, because it shows how pre-expectations on expertise mold our information behavior, particularly that which concerns the expertise itself.[3]

Later laboratory larp designs, The Critic as Artist and The Tribunal took advantage of these findings. Again, a clear cognitive authority was intentionally left out. However, in both games, the characters were given explicit tools for claiming and contesting authority, but the same amount of actual diegetic information. What resulted was again a parlaying of self- presented importance into gaining status as a cognitive authority whose data (and, subsequently but only secondarily, opinion) weighed more than that of others (on opinion versus knowledge, see Buckland, 1991). What variance appeared took so based on personal charisma and play preferences, factors which have been documented before as having a significant impact on information behavior during play (Harviainen, 2006). Players furthermore reported enjoying the authority contests and the way they could control information sharing, meaning that such processes may seem natural to people partaking in them also outside of play.[4]

Another notable finding regarding play preferences was that when it comes to strategic information as a commodity, inflation rarely appears. In contrast to, say, the value of diegetic money (or even character life; Faaborg, 2005), many people consider it logical to

[3]In a similar manner, an apparent lack of expertise in another relevant field may result in dismissal of actual expertise in the primary area. For example, leadership skills tend to get disregarded in simulations, if the potential leader has trouble with the technical interface (Lisk, Kaplancali & Riggio, in press).

[4]The same reactions were detected regardless of playing group: Critic, for instance, was originally run at an interactive arts festival, but has since been used also in schools, other art festivals and a retirement community.

keep withholding - or publicly emphasizing - certain points of information until the play ends. So-called "narrativists" (players who consider the creation of an interesting overall story to be the main purpose of playing; Kim, 1998) form a clear exception to this rule, as they prefer seeing all the proverbial cards played to maximal effect. While possibly unrealistic information behavior outside of game-play, this does point, again, to personal variables as a highly significant factor in it.

The Tribunal brought forth also other elements. Besides a laboratory larp, it is also an educational game designed to raise awareness of the mechanics of totalitarianism. In its intended target settings, it encourages players to pass onto their characters their own knowledge of how a kangaroo court would function, and how a system-wide corruption would influence justice and individual integrity. It thus on one hand allows the discussion of risky topics through the shield of the characters.[5] On the other hand, this causes a risk of out-of-play concerns affecting the in-game information behavior: A player's knowledge of the subject's risks was occasionally noted during debriefing as the reason why a character would not share certain information. This is consistent with the way people sometimes avoid certain types of information behavior during a game due to interpersonal, out-of-play reasons (Harviainen, 2007b) - the two most prominent of them being a dislike of a certain player and the potential chance of romantic misunderstandings. It shows that the implicit social contracts regarding play as a pseudo- autonomous information system are constantly being re-evaluated by the participants.[6]

During play, in all the test games, boundary control and the desire for optimal experiences directed players-as-characters towards berrypicking techniques, whenever gaps appeared. While mostly taking place in cases of incomplete world knowledge, it also car-

[5]That the characters are given the names and stereotypical traits of animals assists in this safe distancing.

[6]Personal variables may also affect in-game information behavior. For example, something diegetic that cuts too close to a player's personal traumas may cause a significant break (Schick, 2008).

ried over to diegetic information seeking. It appears that people have a tendency towards subtle, somewhat ineffective information searches, when it comes to interpersonal situations, as the berry-picking was what players during debriefings reported as "trying to act realistically". Direct questions were used, up to and including the level of outright (diegetic) hostility, but those were perceived as breaches of communication etiquette, except in the cases of a character being seen as either an information blunter, withholder, or both. In my opinion, this arises from the fact that the larp information environment is particularly suitable for bringing forth also the embodied aspects of information behavior (as per Brier, 2008), because of the combination of characters and the players' physical presence inside the magic circle of play. Further experiments on this particular question are certainly needed, however.

Due to the laboratory design of these games, one aspect of in-game information behaviour has been so far nearly undetected in them. Certain larps, like cults and imagistic rituals, function by extending their participants' anomalous states of knowledge (Harviainen, in review). The state of needing information but not knowing what kind of information enhances the emotional arousal of a situation of which a participant cannot make full sense. Studying this would require separate experiments (or close examination of such a game, from early design to observed actual play and debriefings), as extended ASK is nearly incompatible with the clearly definable elements discussed above.

Debriefing and analysis issues

Given that these laboratory games are used to study phenomena (various facets of information behavior) that are hard to quantify, their proper analysis is very difficult. At best, the results should be seen as tendency- indicative, as signs of probable information behavior. Such research, given that the subject is social information networks, also benefit from the situation: In artificial realities, one can conduct certain types of experiments so that external validity (applicability outside the experimental situation) can be easily increased without losing internal validity (control over factors),

which is something very rare (Castronova, et al., 2009). If designed well, these games will produce data from which can be extrapolated knowledge of more mundane information behavior. They do require multiple runs each, so as to create enough variance to account for players' personal preferences (Harviainen, 2006) and possible blunting. Yet, given the presence of said blunting and preferences, the end results will be, done in sufficient numbers, all the more realistic.

As these are all ephemeral artifacts, works that effectively vanish as they are "completed" (Frasca, 2001; Ahlroth, 2008), they have to be supervised thoroughly, and the design stage also documented well, so as to isolate each information trait introduced for observation. One set of data is gained during play, another (possibly completely different) after it, during debriefing and potential interviews. This is because the game produces "normal" reactions, the events after it only reflection on those reactions. Given the human tendency to form narratives from even random activity, the latter will be inevitably biased. This too, however, gives us data - on how past information behavior is re-defined later on, due to subtle or overt changes in the present information environment.

The reflective part is also the reason why post-game reports done after the debriefing are so important. One of the key advantages of these laboratory experiments is that the participants love them, and that means they like to talk about them afterwards, to the designers, other players and also outsiders. Here social media enters the equation, as it offers an excellent way for players to expand their discussion about the game, while also leaving extra data about it for the designer's eyes and future documentation.

Another advantage is that as these games are well-liked, other people besides the designer will run then, possibly even making local translations. The organizers then send play reports to the original designer. While this is not reliable data per se, they do produce some added value: The play reports contain data about the unfolding of events. If those events were (as they should) prepared for in the original design, i.e. they involve the key information elements, they can be used as corroborating or correcting evidence for the patterns detected during laboratory runs. This is particularly useful since play habits too suffer from the cultural variables described

by Hofstede (2001). Furthermore, each such report at the very least aids in fine- tuning the artifact (game script) for future use.

Discussion: The next stage?

The process of developing laboratory games has only begun. These are tools that engage the mind in a special fashion (Lieberoth & Harviainen, in press). That they motivate people to continue playing (Lainema, 2003; Tsuchiya & Tsuchiya, 1999) is but the start. They also inspire players to both seek extra information relating to the activity beforehand (Vartiainen, 2010) and to keep processing the game's traits and content afterwards (Lainema & Saarinen, 2009).

One current experiment is As They Should Be, a benevolent data mining game developed by the author for corporate use, based on the findings of Critic as Artist. It is an organizational inquiry tool (as per Argyris & Schön, 1996), which applies the laboratory approach for analyzing information environments by way of, not in, larp play, for the purpose of service improvement.

The logical next step would be to create similar experiments using crossmedia and pervasive games, as those blend with mundane activities and already contain useful attachment points for the study of information behavior (see Kocher, Denward & Waern, 2009, and Montola, Stenros & Waern, 2009, respectively, for examples). They also contain the embodiment element of larp, something which online games - as useful as information laboratories those can be - do not. Optimally, laboratory larps could eventually be combined with educational larp design, creating learning games with a better than current assessment system. This would be a step towards making them more certainly teach elements to levels beyond situational or fragmented learning (as per Kim, 1993). And, at some point, towards fully incorporating the laboratory approach with simulations of the kind described by Klabbers (2000) as "mode III", i.e. "learning environments in which the learners are given the opportunity to interactively build their own system of resources and rules[, and

which provide] conditions for the interactive self-reproduction of social systems."[7]

As noted above, the key to such use is in making sure the games work on multiple levels - as both games and as research projects. This is no more difficult than embedding other types of multi-layering in larps when they are designed (see Harviainen, 2005). Given that a game is enjoyable because of the very obstacles (rules, etc.) it contains (Suits, 1978), all that is really necessary is making the information material being studied an integral part of the design, not an add-on.

Conclusions

So, what do we essentially have here? Easily designed, highly controlled social information environments, into which the organizer can input data while knowing the key variables. They are observable during their run-time, and can if necessary be recorded, as can their debriefings. By changing incentives, and incentive intensity levels, the designer can also observe changes in information behavior patterns. Furthermore, if the game is good, the players will want to speak about it to great extent afterwards, as well as spread the game to new audiences. While not reliable as experiments to a great extent, the new runs too provide data on how that particular system seems to work, and how reliable the initial findings are.

This is but a preliminary stage. Experiments with such games seem to point towards there being definite templates, or patterns, of information behavior, governed by social contracts and expectations. Through artificial restrictions, we bring both the patterns and the rules governing them to the fore. They can then be compared to more clinical data, as well as earlier experiments with similar games. Like other laboratory experiments, these game-tests

[7]Many current-day larps already effectively match Klabbers' criteria, but the laboratory approach methodology does not yet allow for that level of creative freedom when it is in use.

are not totally reliable, but that is the nature of any experiment with a human factor.

These experiments have one further advantage worth mentioning: Done well, they are great experiences for all involved. People love games, and it shows. When was the last time you did a laboratory experiment on information activity, and got the participants to shout "This was great! I want to take this home with me and run it for my friends!" when it ended? I get that all the time, plus the actual data results.

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ON SOCIAL MEDIA AND DOCUMENT THEORY

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General outline of the study

There is a growing body of research that accentuates the importance of employing a socially, culturally, and linguistically oriented analytic framework when studying information and knowledge (Duguid & Brown, 2000; Talja et al, 1999; Hjørland & Albrechtsen, 1995; Frohmann, 2004a; Hjørland, 2011). A wide variety of contextually oriented approaches have been employed in the study of equally diverse subject domains, including scholarly communication (Kjellberg, 2010), the production of scientific knowledge (Knorr Cetina, 1999; Bazerman, 1985), professional information seeking (Johannisson & Sundin, 2007), and information retrieval (Hjørland, 2002). There are, however, few conceptual and empirical inquiries in Library and Information Science (LIS) that manifest such a contextual credo in the study of the relationship between informational aspects of social media and the conditions of documentation, archiving, and cultural heritage.

The goal of the present study is to contribute to contextually oriented social media research by discussing how blogs about three-dimensional virtual worlds, from a document theory perspective, can be conceptualized as documentation of the virtual worlds to which they pertain. The document theoretical view of blogs is further analyzed from a joint LIS and postmodern archival science perspective, where the archival notion of record is used to explore virtual world blogs as a potential information source in archiving efforts directed towards virtual worlds.

An empirical case study of World of Warcraft blogs (described below) is used as an example of how document theory and the concept of records in postmodern archival science can provide a fruitful social constructivist analytic framework in this particular area of research. In order to crystallize the above stated research aims, the essential theoretical underpinnings of the inquiry will be briefly presented in the following section.

A short introduction to document theory, the concept of record, and the theory of remediation

Document theory – pioneered by Otlet (1868-1944) and Briet (1894-1989); modified and reintroduced into LIS research by scholars such as Frohmann (2004b), Francke (2008), and Windfeld Lund (2009, 2010) – is a contextually cognizant approach that accentuates the material, and consequently the contextual and processual, nature of the document (Windfeld Lund, 2009, 2010). What should be considered a document is a topic that has been discussed extensively in both historical and contemporary academia (cf. Buckland, 1997, 1998; Francke, 2005; Frohmann, 2009). However, strong reasons to define the concept of document using a heuristic approach has been put forward by, among others, Francke (2005) and Frohmann (2009). For the purpose of this study, Winfeld Lund's definition of documents as "any results of human efforts to tell, instruct, demonstrate, teach or produce a play [...] by using some means in some ways" will be employed (Winfeld Lund, 2010, p. 743). In this view, it is plausible to conceptualize blogs as documents.

From a document theory perspective, blogs are thus essentially cultural, social, and historical constructs that are shaped by the situated document practices that create them (Francke, 2008; Windfeld Lund, 2009, 2010). Coupled with a view of information as a fundamentally social phenomenon, mediated through people, artefacts, and technologies (Francke, 2008), the study of blogs, from a document theory point of view, becomes a reasonable way of investigating how virtual world blogs remediate and represent the virtual worlds that they are about. The theory of remediation will be used as a supplementary theoretical tool to understand and analyze the

relation between the virtual world and blogs about it, and how one represents, remediates, and reforms, the other (Bolter & Grusin, 1999).

The attempt to understand and explore the social nature of documents – a central tenet of document theory – resonate with the notion of record, a fundamental concept in archival science as well as one of the most basic units of the archive. In traditional archival thought, the record is a neutral object that provides authentic information about the context of its creation (Thomassen, 2001). However, postmodern archival science asserts that the record is socially constructed and, furthermore, accentuates the need to develop new archival frameworks and practices on the basis of this viewpoint (Cook, 2001; Trace, 2002).

Case study – methods and materials

The document-centered theoretical framework described above was operationalized in a case study of how the landscape alternations of the original continents of World of Warcraft's game world – brought about by the release of the expansion pack Cataclysm in December 2011 – were represented in 40 World of Warcraft blogs. How were the drastic changes to the familiar surroundings of the game world, hitherto unchanged since the release of World of Warcraft in 2004, represented in the blogs? Which representations of the landscape metamorphosis were frequent in the World of Warcraft blogosphere, and which were uncommon? How were the representations interrelated?

The case study was guided by the following research questions: (i) what are the characteristics of and variations in the remediation and representation of the virtual world World of Warcraft in the studied World of Warcraft-related blogs? (ii) How does research-based knowledge of the remediation and representation of World of Warcraft in the studied blogs inform a working approach to how virtual worlds could be archived?

The World of Warcraft blogs that form the empirical basis of the present case study were found using the blog search engines Technorati and Blogpulse, and the blogrolls of the blogs identified

this way. All of the blogs were written in English and active at the time of data collection. Relevant blog posts were identified using the blogs' built-in search tools and folksonomic tags, and selected for analysis using purposive sampling (Wildemuth, 2009). The data was analyzed using co-word analysis, a content analysis-method designed to measure the frequency and co-occurrence of linguistic units (words, pairs of words, phrases) in a body of text (Courtial, 1994; Callon, et al., 1983; He, 1999). Multidimensional scaling (MDS) was used to visualize the interrelations between the indexed terms in a two-dimensional network maps suitable for qualitative interpretation (Holmberg, et al., 2009). The analysis was performed using BibExcel, an infometric computer software tool written especially for this purpose (Persson, 2006). Co-word analysis was chosen as the method of data analysis because it allows for efficient identification, quantification, and interlinkage of the dominant modes of linguistic expressions – representations – in a large set of texts, as well as an easily accessible way to synthesize and present these results in a graphical representation well-suited for qualitative analysis.

Findings and contributions

The present inquiry, consisting of a case study and a first attempt to establish a document theory-centered analytical framework for social media research, yields both conceptual contributions and empirical findings. Conceptually, the study contributes to the discussion of how virtual world blogs – employing document theory and a postmodern archival science view of the concept of records – can be conceptualized as documentation of the virtual worlds to which they pertain. Furthermore, the study stresses the importance of future research that continues to explore how informational dimensions of social media relate to questions of documentation, archiving, and cultural heritage. Additionally, it would be of great interest to investigate how abstract, research-based, insights of this kind can be operationalized in order to develop tools and frameworks to be used in the archiving of virtual worlds.

Empirically, the results of the case study of World of Warcraft blogs indicate that there are distinct regularities in the frequencies and relationships of the concepts used to represent the changes made to the World of Warcraft game world. These results support earlier observations (Yeo, 2007, 2008, 2011) of the highly heterogeneous documentary qualities of informal forms of communication such as blogs. The case study does, however, show that the dominant mode of representation of World of Warcraft-related topics, sentiments, features, activities, and events in the studied blogs is an internal, narrative, perspective where the bloggers' experiences of participating in, interacting with, and just being in the game world – via their characters – are given an central position. The dominant mode of representation, distinguished by a focus on "internal" features, such as narrative and experience, can be contrasted with the "external" character of more peripheral representations, where elements such as graphics, game design, and task-oriented World of Warcraft gameplay are important.

The present study is a part of a doctoral research effort. In future inquiries, I will seek to illuminate the underlying social factors that directly influence and shape the creation of blogs. Also, I wish to explore how these social factors manifest themselves in the construction of blogs.

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HOW TO STUDY SOCIAL MEDIA PRACTISES IN CONVERGING LIBRARY SPACES

Making the case for deploying co-presence ethnography in studies of 2.0-libraries

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Introduction

Ethnographically inspired methods have in recent years been successfully applied in Information Science (IS) research on different forms of social media related practices (c.f. Sundin & Francke 2009a; 2009b, Kjellberg 2010). This paper aims to contribute to an emerging discussion on the use of this methodological approach for analysing and comprehending consequences of the 2.0-turn in public libraries. Drawing on the experiences of a one-year long ethnographic study of everyday work-related social media practices in a Swedish public library, I suggest that there are significant epistemic benefits of using the ethnographic approach in this field. By shifting focus to everyday practices and routines in local settings, new features of the 2.0-phenomena are accentuated, contributing to different understandings of the role of social media in public library development.

However, doing ethnography in this setting also constitutes an epistemic challenge. The 2.0-turn has contributed to transforming public libraries into assemblages of mediated and non-mediated settings where content is continuously flowing between disparate, but converging spaces. Such a research-field contests traditional under-

standings of central features of ethnographic research, such as the conceptualization of fieldwork, the role of the researcher and her relation to the object of research. In the following text I propose a way to address this issue by introducing STS-researcher Ann Beaulieu's (2010) epistemic strategy of co-presence as a method for approaching converging library spaces ethnographically. This strategy, I argue, provides means for keeping the epistemic benefits of the ethnographic approach, while considering the particular conditions of 2.0-environments. I will commence by further explaining my conception of 2.0-libraries as converging spaces, followed by a discussion of the conditions of such a field with regards to intellectual conventions in ethnographic research. I will then clarify how co-presence constitutes a powerful methodological tool for IS-research that expands our knowledge of Library 2.0 and its consequences.

About the study

The study referred to in this text is an ethnographic study aimed at providing a research-based understanding of how public libraries enact the 2.0-shift and its consequences in everyday work-related practices and routines. For one year I exploratively followed and analysed work practices pertaining to social media at one of the larger public libraries in Sweden. The library in question was reorganized in 2007 and, in connection with that, a new department called Digital Content and Presence was initiated. The department, hosting three to four co-workers, had as its main purpose to rebuild and manage the library web site as well as "create a digital presence" for the library. The latter meant making sure that the library was actively using different social media, such as Facebook, Youtube, and Twitter and kept up-to-date with the latest developments in the Web 2.0 field.

I contacted the library manger in June 2010, and was permitted to commence with a digital study in September 2010. In this part of the study I observed and participated to a limited extent in the library's activities in different digital environments. I focused on those platforms categorized as social media in everyday language, such as the social networking site Facebook, the micro blog Twit-

ter, two blogs run by the library, and also the library's Youtube channel. In October 2010 I additionally started spending a couple of days a week at the library, observing and participating in the day-to-day activities at the department. During this period, the workers were asked to write logbooks describing their work activities. Additionally, interviews with library managers on different levels in the organization were conducted.

By localizing the 2.0-phenomenon in a particular setting it is possible to understand its production as embedded in local institutional routines, which, I argue, diversifies and deepens our understanding of its consequences. Hence, the emphasis on everyday, situated actions, which the ethnographic approach suggests, provides IS with the opportunity for novel insights into the 2.0-turn in library development. Bearing these benefits in mind, an answer to the challenges the 2.0-enviroments provide for IS-researchers is called for as to be able to continue developing this methodological approach for this object of research.

Converging library spaces

Adjusting the camera before filming what was intended to be a Youtube clip of a colleague giving a book presentation, one of the participants in my study – an IT-librarian – turned to me and said:

You know, we like to expose the activities that take place here as much as we possibly can. It's not our strategy to produce separate web content. Instead we try to present what goes on in here /.../ with a different twist depending on the channel we use.

This episode exemplifies a set of practices that I observed in my study, which renegotiated understandings of place in – and for – library work. The use of movies, photos and text to mediate different library events and activities in diverse online environments – preferably those categorised as social media – contributed to turning library space into an assemblage of mediated and non-mediated settings. Also, content continuously flowing between these and other connected settings added to contesting the boundaries defining library space. However, although borders were frequently crossed, a powerful adhesive prevented fragmentation by pulling the wide ar-

ray of spaces together. As one of my informants described their work:

We're thinking of it as storytelling. It's a powerful story of the library... and we want people to participate in our work. That's our main purpose for using social media.

This practice of storytelling, I realized, played an important role of binding different library spaces together. In other words, narrating practice produced a sort of convergence.

This can be related to the notion of Convergence Culture put forward by media researcher Henry Jenkins (2008). He describes contemporary media landscapes by using the concept of convergence, meaning

/.../the flow of content across multiple media platforms, the cooperation between multiple media industries, and the migratory behaviour of media audiences who will go almost anywhere in search of the kinds of entertainment experiences they want /.../ In the world of media convergence, every story gets told, every brand gets sold, and every consumer gets courted across multiple media platforms /.../ This circulation of media content – across different media system /.../ depends heavily on consumers active participation. Jenkins 2008, pp. 2-3

The storytelling by my informants could, from this perspective, be interpreted as an enactment of a media culture of convergence framed by the particular socio-material setting of the library. The ethnographic approach – designed to study social and cultural phenomena in everyday action (Murchison 2010) – provided me with the basic tools that enabled me to get close to these events. However, it required a renegotiation of traditional ethnographic understandings of my research field, my access to it, as well as my role as a researcher within it.

Ethnography and convergence

The first time I accessed my research field I spend a couple of hours on my living room sofa reading through the log-archive on the library's Facebook page. The weeks that followed I made it my daily habit to check and respond to the library's Twitter feeds, their

blog updates and their status up-dates on Facebook. Without even visiting the library I had entered some of the converging spaces of the research-field and started my ethnographic study.

The notion of field as equating a specific place where the researcher has to be physically present has typically been a requirement for ethnographic investigation (Hammersley & Atkinson 2007, Beaulieu 2004; 2010). In line with this, face-to-face interactions have often been treated as a prerequisite for gaining the everyday and intimate knowledge associated with ethnographic studies (Marcus 1998). Consequently, mediated relations to the field of study are sometimes approached as a barrier to ethnographic rapport (Beaulieu 2010). However, as explained above, physical place was but one – although equally important to considerate – of many converging spaces constituting my research field. With online environments as important constituents, mediated practices were crucial for me both to engage in and investigate. Finding an epistemic strategy to embrace the particularities of my research field, which would enable me to deconstruct the notion of mediated interactions as perceived obstacles, was therefore pertinent.

From co-location to co-presence

I found my strategy in recent approaches accentuating "networks", "flows" or "streams of practices" as objects of ethnographic study (c.f. Mol & Law 1994, De Laet & Mol 2000, Beaulieu 2010). Not equating field with physical place permitted me to study practises and engage with informants in multiple settings, not giving priority to any one setting in particular. Designing my study in this way turned out to be both preferable and necessary to get close to the everyday work-related practices I aimed to study. Thus, for a study of a library of converging spaces, thinking co-presence rather than co-location proved to be an important move. Beaulieu (2010, p. 454) describes the epistemic strategy as follows:

Co-presence decentralizes the notion of space without excluding it. It opens up the possibility that co-presence might be established through a variety of modes, physical co-location being one among others. Not only does it enable the researcher to take mediated set-

tings very seriously (insofar as they are means or resource for being co-present), but it also does not exclude face-to face situations. Co-presence as a starting point enables a more symmetrical treatment of forms of interaction.

Deploying the epistemic strategy of co-presence and focus on "streams of practices" rather than a single physical place, allowed me to closely follow the actions of informants through different settings and places. Moreover, this enhanced the possibility of understanding the connection between the library environment and other settings, thus establishing the links to more widely dispersed media practises as I suggested above. In this way co-presence draws the attention to what can be seen as intersecting worlds present in libraries constituted by converging spaces.

Concluding remarks

Analysing and comprehending consequences of the 2.0-turn in public libraries using ethnography provides IS with novel possibilities of gaining original insights into this shift in library development. Applying recent strategies, such as the notion of co-presence, have the possibility of further enriching these insights. Focusing on "streams of practices", as well as following the work of informants through different spaces, provides the foundation for a better understanding of the new skills required by librarians when their workplace is not restricted to a physical place but dispersed in many converging spaces.

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GEO-ENCODING OF LOCAL SERVICES AND INFORMATION

Virtuaalipolku.fi

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Abstract The presentation describes the development of public library web services by analyzing a map mash-up service virtuaalipolku.fi(In Finnish, URL name virtuaalipolku = virtual path) developed by Hämeenlinna public library in Finland. The first aim of the paper is to demonstrate (Q1) what is the combination of Internet technologies the service platform applies. The second question is to assess (Q2) how the application of geo-encoding technologies within a library service alter library use among citizens and visitors. Case virtuaalipolku.fi provides an example about how the library web service can be designed and provided for the users, resulting a platform for citizens for creating and distributing user-generated and geo-encoded digital content. Moreover, the case provides information about how the convergence of Internet technologies may change the role of public libraries as service providers in the future.

Framework

The paper aims to contribute the empirical literature on Library 2.0 development (Casey & Savastinuk 2006, Holmberg et al. 2009a, 2009b) by analyzing the functionalities and uses of a new digital public library service. Geo-encoding of library services has been previously studied e.g. by Cervone (2008) and Powell et al. (2010). The framework applied on the emerging pattern of inform-

ation behavior related to the use of library services is based on the approach of cognitive constructivism (Ingwersen 1999, Kulthau amd Tama 2001.)

Methods and materials

The research applies content analysis (Neuendorf 2002), a code inspection method (Ganssle 2010) and webometric methods (Thelwall 2009). The source code and map data (74 maps) for code review and content analysis were gathered from the web site in March and August 2011. Data for longitudinal in-linking analysis was gathered using both linkdomain search command on Google's database and Search Tempo Link analysis Tool[1] on bimonthly basis between November 2010 and August 2011. Three transcribed interviews with project personnel and project documentation were gathered and analyzed to define the original uses the service was designed for.

Results

Technologies applied in the service

Geographical encoding of digital content is an Internet technology gaining popularity also among public libraries. (Powell et al. 2010). Virtuaalipolku.fi is an Internet mash-up service utilizing Google Maps platform, the related API[2] and KML code[3] into new or existing digital contents. The geo-encoding tools allow users to link geographical locations and route descriptions into an Internet service, resulting location-aware digital collections maintained by the library staff. The service is built on an open source content management system (CMS) Joomla installation, allowing the generation of dynamic web pages and various social media functionalities. New content can be included into service without programming

[1] http://www.seo-forensics.com/cgi-bin/bl.pl
[2] Applied Programming Interface
[3] KML is a XML schema applied in Google Maps service and API. See Wernecke (2008)

experience. The CMS's social media elements encourage participation and the generation of user-generated content.

In addition, the service aims at bridging the Internet service and the physical world by applying QR codes[4] on locations around the town. For example, QR codes on targets (in the web service or/and in the physical environment) allow users to gather information directly to their mobile devices[5]. However, user adoption of these functionalities remains unlikely especially among the elder population. Another risk is that several competing technology standards, such RFID, may gain the position as the dominant design in this area.

Functionalities and uses of information

The service has been funded by the ESF -project "The Places and Contents of Information Society" and developed by the Hämeenlinna library's project personnel during 2010. Although the content of the service was originally focused on informing the library users about cultural events and significant historical locations around the town, the map themes are not limited to include cultural events and sites only. Instead, after the launch of the service, other activities have emerged to be included to the service.

The uses and the users of the service

The local audiences have adopted the service. For instance, a map about local cross-country skiing routes has been viewed for over 100000 times by March 7th, 2011. Discussions related to the most popular maps have emerged.

The proportion of user-generated content is growing. While a half of the included maps (25) were authored or ordered by the project staff during 2010, the other half a (25) of maps are now

[4]Quick Response (QR) code is a method for representing information in the form of a 2D bar code, originally applied in car manufacturing industries.
[5]Requires a built-in camera and an QR reader application. These are included in most smartphones.

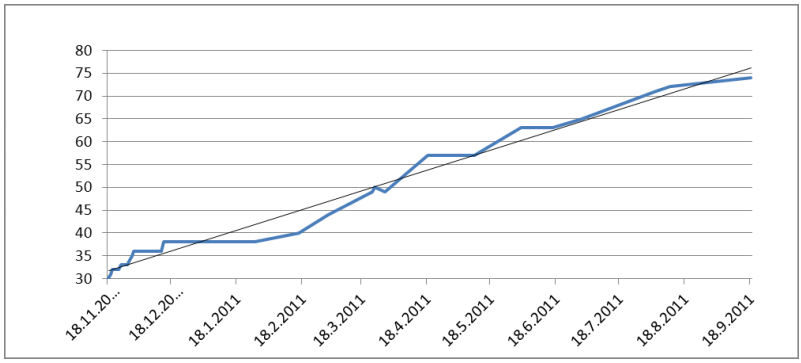

Figure 1. Amount of maps in Virtuaalipolku.fi

generated by external contributors. Currently, 40%[6] of them are individuals as the majority 60%[7] of represents organizations such as municipal authorities, societal associations or a firm. The majority of the content created by the library staff is based on online articles already on a Häme-Wiki[8] platform, whereas the content generated by the external authors is either of their own individual creation, or provided by the organizations they represent.

Conclusions

The combination of Internet technologies applied in virtuaalipolku.fi may be conceived as an innovative solution in the context of public libraries. The platform provides both useful and valuable information and functionalities for the local inhabitants and visitors of Hämeenlinna city and region. User feedback helps increasing the quality of the public service. Diffusion of virtuaalipolku.fi's technology combination and cross- sectorial service model to other municipalities and public libraries within foreseeable future is likely to

[6] 4 of 10 individual authors excluding project and library staff.
[7] 6 of 10 individual authors excluding project and library staff.
[8] HämeWiki is a modified wiki platform for user-generated articles about the culture and history of Häme Region.

occur. More qualitative data on the user service adoption patterns will be gathered during 2011. The use of both user-generated and edited content has allowed the introduction of a library service into which equally individuals, public and private service providers and societal associations can contribute information and interact with peers sharing various interests. User-generated content increases the quality of the existing local services by combining scattered information into one web platform. Besides providing geographical information, virtuaalipolku.fi represents an innovative type of public library service encouraging to user participation in knowledge production in local context. The content platform allows the incorporation of information related to seemingly distinct leisure time activities into one platform. As a consequence, the access to information among the ICT-literate active population about local public services and facilities can be improved significantly. Virtuaalipolku.fi service has potential for improving public sector's efficiency by lowering cross-organizational boundaries between municipal service providers.

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CRITICAL ABOUT CLUSTERING OF TAGS

An intersectional perspective on folksonomies

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Introduction

Folksonomies and social tagging systems have been proposed as a possible solution to counter the marginalising tendencies of large universal classification systems [10]. The aim of our presentation is to discuss the implications of critical theory and the concept of intersectionality to the interpretation and use of tag clusters as representations of viewpoints. In spite of the wealth of empirical research on folksonomies and clustering of tags together with examples of critical perspectives focussing on marginalisation in the context of folksonomies (e.g. [1]), no comprehensive critical approach to tag clusters has been presented.

Method

Our argument of the practicability of intersectionality as a framework of understanding the nature of tag clusters is based on the review of earlier literature together with a grounded theory based empirical analysis of a set of Flickr tags similar to those used by Huvila [6]. Analysed tags were based on a list of common aesthetic adjectives collected in an earlier empirical study of Jacobsen et al. [7]. The tags and tag clusters were retrieved from Flickr using the basic search function and built-in clustering functionality. A total 112 clusters were analysed using close reading and visual content analysis. The validity of the conclusions were tested using a series of ad hoc tests based on the analysis of the clustering of national

representations using the names of five Nordic countries (Sweden, Finland, Denmark, Norway and Iceland), "America" and Germany as clustering tags. The procedure of retrieval and analysis of the tags and clusters was the same as with aesthetic adjectives.

Intersectional perspective

Theories on intersectionality have in the last decades become increasingly prominent in analyses of situations and processes relating to identity categories such as the ones Staunæs refers to as the "classical background categories of gender, ethnicity, race, age, sexuality and class"[11]. More recent studies often include for example religion and functionality in these *intersectional categories*, but which classifications are relevant to study in a specific case are not seen as given beforehand. One of the central aspects of intersectionality in relation to multiple viewpoints in tagging is the questioning of ideas about exclusive categories. Categories are instead seen as intersecting, fluid and socially constructed. Intersectional theories also bring forth the importance of that people from different intersectional categories should be able to express themselves. Self-expression is seen as important both in terms of their identities and opinions in general, and in relation to identity categories. For example, one woman cannot speak for all women, because of the existence of other identity categories that maybe are taken for granted (especially if they represent majorities) and hidden.

Deodato [4] suggests that tagging provides an opportunity for librarians to release some of the traditional control and empower users, marginalised or not, to create their own structures of organising knowledge. Olson and Fox [10] associate self-representation with "such user-centred technologies as social tagging [that] may exist as a means for singular users to identify with multiple realms, creating a dynamic and user-organized social classification system."

In spite of the open participation and use of ad hoc keywords, as a whole, folksonomies tend to represent majority views as any other KO systems (e.g. [3]). Huvila [6] proposes as a conclusion of a study of aesthetic representation in Flickr folksonomy that tag clusters can be used as candidate representations of predominant

'viewpoints'. The related tags of a certain tag form a tentative representation of the meaning of that particular tag. For instance, if adjective 'cute' is related to tags girls, cats and dogs, these categories may be seen as tentatively cute in the context of the particular folksonomy.

Discussion

On the basis of the earlier literature it is clear that the pluralistic potential of folksonomies has major limitations. As a whole, folksonomies have a tendency to emphasise majority viewpoints even if they allow pluralism on the level of individuals and groups. We suggest, however, that a critical reading of tag clusters may provide a practicable framework for alleviating some of the theoretical and practical shortcomings. We agree with the conclusions of Huvila [6] that tag clusters are related to viewpoints but emphasise at the same time that the relation of these two notions requires further elaboration.

Firstly, we suggest that there are analytically usable parallels between tag clusters and intersectional categories in the sense suggested by an intersectional perspective. From an intersectional point of view, clusters combine categories, point to different directions within the tagging system and mix different levels of representation including perspectives (and opinions), form and content. The practical benefit of an automatic identification of tag clusters is that it is possible to expose new marginalised categories without prior knowledge of their existence. The empirical analysis of the tag clusters in Flickr data gives evidence of the plausibility of the proposal. The clustering of tags related to adjectives like *graceful* exposes three major categories of gracefulness (birds, dance and women). Anecdotal experiments with other types of tags such as Finnish (two clusters related to design/architecture and music) and Swedish (four categories: flag/food/ikea/blue/yellow, music, women and cars) reveal similarly intelligible clusters. According to the analysed material, the possibilities to adjust categories could probably add to the 'intersectional possibilities' of folksonomies. The analysis of tag clusters might be refined by transparency of

trust relations in KO systems [8] and by using certain explicit user-produced expressions of identity and viewpoint.

At the same time, it is necessary to consider the possible limitations of perceiving tag clusters as functional categories. First, the co-occurrence of certain tags is not necessarily an indication of the existence of a viewpoint. Secondly, the automatic construction of clusters (i.e. clustering algorithm) has a major influence on the sections that become visible and the ones that are marginalised. In the essence, the clustering algorithm may become a new poorly understood force of marginalisation without critical analysis of the results and use of other complementary methods of exposing otherwise hidden categorisations. Thirdly, in contrast to the urge of Feinberg [5] of more transparency, the heterogeneity of the participants of the tagging communities and the relative anonymity of individuals can make it difficult to judge what viewpoints are represented and how. Even if the tags and user profiles would be transparent similarly to the clustering methods, the motivations of tagging are not necessarily intelligible without further elaboration. Finally, the attempts to improve the usability of clusters by refining categorisations are also controversial. Revisions based on an explicit attachment to a group identity or trust relation could reduce the diversity of represented viewpoints and imply a risk of ghettoisation of viewpoints. All attempts to refine clusters may also be criticised of being evaluative. The concept of "noise" [2], the perceived existence of 'wrong' tags or suboptimal clusters and the strive for refining clusters are related to acts of marginalisation comparable to an implementation of a hegemonic classification system. Simultaneously with exposing certain viewpoints, they can marginalise others and reduce the possibility for serendipitous discovery of potentially meaningful categories of information. Olson proposes and demonstrates the applicability of an idea of serendipitous consciousnessraising as an antidote to ghettoisation of certain topics or perspectives [9]. In her view, serendipitous searches and systems give the possibility to put forward and raise awareness of marginalised viewpoints. Not only to find something that proves to be valuable but also to be exposed to other viewpoints and be shown that they exist can be meaningful.

Conclusions

As a conclusion we suggest that there is a general need for a critical perspective to categorisations such as tag clusters and the consequences of the acts of categorisation in the context of folksonomies. In contrast to the assumptions that folksonomies empower marginalised viewpoints, their creators and users should be increasingly aware of their potential to enforce hegemonic categories. Secondly, we suggest that explicit measures (similar to Olson's consciousnessraising) are needed in designing and using tagging systems to counter their marginalising tendencies.

The present study can be implications both for tagging system constructors, users and in research. If users are given more power to express opinions and categorise, one question that arises from a critical point of view is whether this also brings a larger responsibility for how categorisation is done (for further discussions on responsibility, transparency and trust, see for example Feinberg [5]). Creators of tagging system might benefit of considering the consequences of the different functions of the systems, how to guide users to use or prefer a particular function, how to present search results (e.g. how to provide tools for selecting a particular criteria of relevance) as well as how to construct intersectionally representative algorithms for clustering tags. To emphasise popularity and majority is only one alternative to present a selection of documents, and even if it would be perceived the most relevant one, there are possibilities to expose less popular marginal categories that might be relevant for specific groups of users.

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THE USE OF BLOGS IN LIS ONLINE COURSES

A Case Study

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Introduction

Blogs are a major player of the Web 2.0 wave. They are "easy-to-update web site characterized by dated entries displayed in reverse chronological order" (Stefanac, 2006, p. 230), enabling people to quickly share with their families, friends, or even the entire web population their thoughts, reflections, and emotions online. These characteristics have gained blogs popularity in educational settings (Divitini, Haugalokken, & Morken, 2005; Glogoff, 2007; Huck, 2007; Lin et al., 2006). Previous studies have acknowledged that blogs function as reflective devices and interactive devices with respect to their pedagogical benefits (Deng & Yuen, 2009). For example, Brescia and Miller (2006) as Ferdig and Trammell (2004) have found that educational blogging provides students opportunities to engage in reflective thinking process and express themselves, which could help relieve emotional stress. Stiler and Philleo (2003) found that writing educational blogs encouraged the students to think deeper and reflect on more issues. Recognizing blogs as interactive devices, Ferdig (2007) found blogs to be a shared space for collaborative and cooperative learning. Researchers found that blogs afforded social reflection and helped connect online learners by enabling them to express their feelings, socialize, and support each other in learning activities (Dickey, 2004; Farmer, 2004).

Many research studies have been conducted to understand the impact of blogs in the context of higher education in various academic disciplines including science (Brownstein & Klein, 2006), business (Williams & Jacobs, 2004), teacher education (Stiler & Philleo, 2003), pharmacy (Bouldin, Holmes, & Fortenberry, 2006), nursing (Shaffer, Lackey, & Bolling, 2006), language learning (Ducate & Lomicka, 2005), and Library and Information Science (Virkus, 2008). In Virkus' (2008) paper, the author described the experiences of the Institute of Information Studies of Tallinn University in introducing ICT, including Web 2.0 technologies, in LIS education, and claimed that integration of Web 2.0 technologies into LIS education is an important challenge for LIS educators. In this paper, we will discuss a case study that investigates the use of blogs in teaching an LIS online course: Social Software and Libraries. The rest of the paper is organized as follows: we first describe the class context including the class

design, the students' demographics, and the evaluation mechanisms. Then we present our original plans for data collection and analysis, and contrast those plans with the data we actually received and analyzed. We then present our preliminary findings, followed by our future research plans.

Social Software and Libraries

Social Software and Libraries (SSL) is a popular technology elective course in a Master of Library and Information Science (MLIS) program at a major Canadian university. To date, the course has only been offered online. The MLIS program is a professional program which generally entails three terms of coursework with a co-op option. Some students are working professionals in the field.

In winter 2011, the SSL instructor used Edmodo (http://www.edmodo.com) as one of the platforms for the course. Designed for educational purposes, Edmodo is a microblogging site which enables students and instructors to send notes, links, files, alerts, assignments, and events to each other. With an interface very similar to Facebook, Edmodo eases the students from learning a new information system

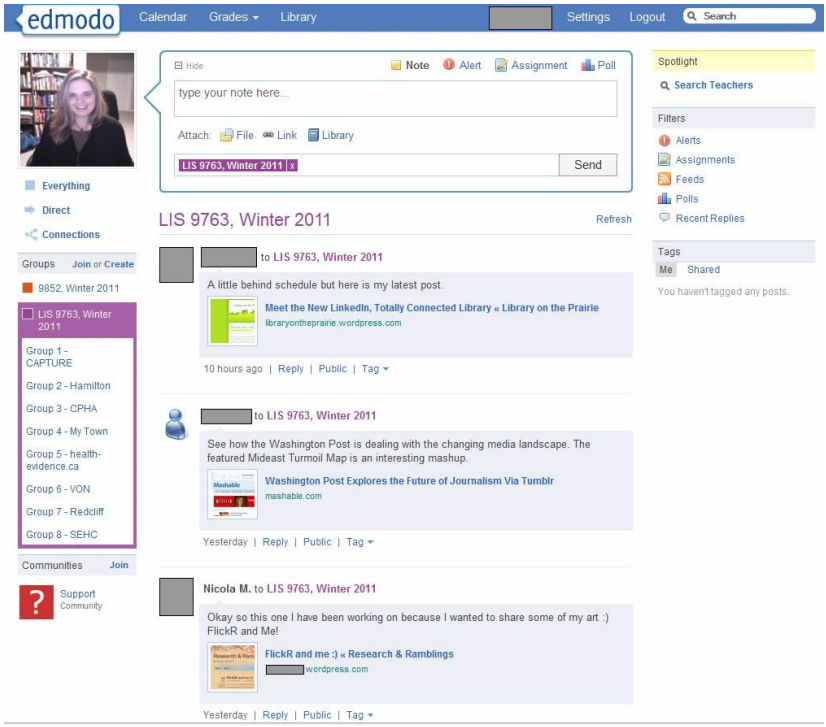

Figure 1. A Screenshot of the Social Software and Libraries Class' Edmodo Site

in the class. Figure 1 shows an anonymized screenshot of the class' Edmodo site.

There were 39 students enrolled. The students' learning progress and learning outcomes were evaluated through three aspects: class participation, individual assignments, and group assignments. As a form of class participation, the students were required to post a minimum of 10 personal blog entries throughout the term using WordPress. Although not required, the students were encouraged to post microblogs to Edmodo. Students completed two individual assignments as well as one group assignment: the final project. Each group consisted of four or five students, and there were eight groups in total.

In addition to providing frequent Edmodo posts, the instructor posted a weekly WordPress blog entry containing the week's lesson. For synchronous interaction, the instructor hosted an optional online group chat session in Meebo for one hour per week.

Data Collection and Data Analysis

The research question that we originally sought to answer in this case study is how do blogging and microblogging impact LIS students' learning experiences in an online course? We administered a survey at the end of the term in April 2011 to understand the participating students' learning and collaboration experiences in this online course, and their perceived use of weblogs and microblogs. We planned to collect the students' microblogs and weblogs and analyze the usage patterns, e.g., the types of microblogs (links, announcements, replies, etc.), the purposes of weblogs (reflection on course materials, discussion on group project, etc.), and statistics about microblogging and blogging (the number of microblogs and weblogs per week, the maximum/minimum number of microblogs and group posts, etc.) We planned to include both individual and group level analysis for understanding the effects of blogging and microblogging on individuals' learning experiences and the group activities. We received ethics approval for the study, and waited for the class to end to collect data.

Unfortunately, due to a low survey response rate (n=12) and a small number of students who consented to the use of their microblogs and blogs in this study (n=5), we were not able to conduct the study as originally planned. However, we found that the blogs of the five students who consented to the use of their blogs presented an opportunity for using Potter's (1996) discourse analytic approach to understand how these students experienced the course through the discourse presented in their blogs. This approach to blog analysis has been used successfully in the past by one of the authors (Neal & McKenzie, 2011).

Both authors read the participants' blogs several times to get preliminary understanding of the content and the role of blogs in the course. One author completed the analysis in several iterative

stages. In keeping with Potter's approach to discourse analysis, she approached the blogs as constructed within a community of learners who were engaged in publicly sharing their collective educational experiences. She looked for language that would, in effect, describe their

community-shared learning journeys with social media technologies and their applications in library settings. As a result of this analysis, she found the following interpretative repertoires:

1 Definitive growth occurred in the students' understanding of social media throughout the term.

2 Past experience influenced students' experiences with class activities.

3 Quasi-public informal sharing of personal learning experiences led to a sense of community among the students.

Conclusion

We have been investigating how students use blogging in carrying out learning activities of an online LIS course: Social Software and Libraries. It seems that blogging is a valuable tool for students to reflect on their experiences and for instructors to track students' development throughout the term. The findings of this study contribute to the research effort of exploring best teaching practices about integrating Web 2.0 technologies in online classes. Future research will incorporate additional qualitative analysis of these students' blogs and microblogs. Since the instructor will be teaching this course again in fall 2011 and winter 2012 using similar online modalities, additional data collection will also be possible.

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A COMPARISON OF DIFFERENT USER-SIMILARITY MEASURES AS BASIS FOR RESEARCH AND SCIENTIFIC COOPERATION

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Introduction

New web-technologies can facilitate scientific and business work and research in many ways. The critical aspect is which structures and methods are to be used to elicit the best out of the existent resources? The information-overload is present in all-day life and sciences. Recommender systems try to solve this problem and have not only established in e-commerce, but also in the collaborative web, such as on Social-Bookmarking platforms [Heck/Peters 10]. In this paper, we analyze a database of records found on Bibsonomy, CiteULike and Connotea – three Social-Bookmarking Systems for scientific references – and explored the tripartite connection of users, documents and tags by three measurement methods. We concentrated on two research questions concerning the recommendation of similar users: 1) Are there differences when we apply different coefficients (Dice, Cosinus, Jaccard-Sneath)?, and 2) Are there differences when we apply shared documents or shared tags?

Related work

Different algorithms have been developed and analyzed to get the best performance for recommendation. We can decide between three methods: content-based and collaborative filtering recom-

mender systems and hybrid forms of these two [Peters 09, Szomszor 07]. Social-Bookmarking Systems (SBS) mainly concentrate on the users' activities and therefore on collaborative filtering (CF), more precisely folksonomy-based CF: In a SBS, where user bookmark resources and tag them by keywords, the tripartite user-resource-tag connection can be used to recommend similar resources and also similar users. So far many algorithms concentrate on cocitation analysis [Van Eck/Waltman 08] and resource recommendation [e.g. Liang 08, Zanardi/Capra 08, Zhen/Li/Yeung 09], few on user recommendations [Luo et al. 08]. Comparisons of different similarity measures and algorithms can be found in [Cacheda et al. 11], [Egghe 09] and [Hamers et al. 89]. [Rorvig 99] concentrates on the visual exploration of measures based on different scaling methods. In this paper we also compare different coefficients, but in the second step compare the differences between user recommendation based on resources on the one hand and based on tags on the other.

Methods

In this paper we use the Dice, Cosinus and Jaccard-Sneath coefficient to measure the similarity between users of the SBS Bibsonomy, CiteULike and Connotea and analyze the different ranking results concerning the users' information needs. According to [Van Eck/Waltman 08] a similarity measure (they used it for cocitations) should fulfill two conditions:

1 The similarity between two users should be maximal if the "profiles differ by at most a multiplicative constant" (p.1654).

2 There should be no similarity if the authors have nothing in common, i.e. any cocitations and in our case any bookmarks or tags.

All three coefficients satisfy these conditions. Instead Pearson's correlation coefficient doesn't satisfy the conditions and shows some weaknesses (see e.g. Van Eck/Waltman 08), which was also discussed before by [Ahlgren/Jarvening/Rousseau 03]. In their paper they showed, among other things, that the Pearson correlation used for co-citation analysis has shortcomings when expanding the data

$$S_{DiDj} = \frac{2g}{a+b} \quad \text{Dice} \qquad S_{DiDj} = \frac{g}{\sqrt{a*b}} \quad \text{Cosinus} \qquad S_{DiDj} = \frac{g}{a+b-g} \quad \text{Jaccard-Sneath}$$

Figure 1: Similarity coefficients used, where a is the number of single bookmarks or tags of User A, b the number of single bookmarks or tags of User B and g the number of common bookmarks or tags.

sample, even if only zero-vector values are added (further discussion on the topic is also done by e.g. [Leydesdorff 05], [Leydesdorff/Vaughan 06], [Schneider/Borlund 07a] and [Schneider/Borlund 07b]).

Our database contains 13,762 bookmarks from CiteULike, Connotea and Bibsonomy, in our case scientific articles chosen from 45 physical journals. 10,498 of them are diverse articles, matched via DOI, title and UT-code. These bookmarks were tagged with 36,433 tags. We deleted the tags containing '%import%", "%jabref%" and "%upload%" because these tags don't semantically describe the content of the bookmark they are generated to and the "file-import" tags were proposed automatically by CiteULike if a user imports his files. After this clearing we had 35,881 tags, which we revised further: lines and underlines were deleted, the plural forms replaced by singular forms and English words spelling with 's' replaced by American spelling with 'z'. This gave us 8,233 unique tags. We count 2,473 unique users who bookmarked the articles, 1,974 of them tagged their bookmarks.

We left out users who have only one bookmark because they would highly influence the results, i.e. user-pairs who have one bookmark in common and both only one bookmark at all, cause a similarity of 1. It would be important for a user-recommender system to set a threshold: either a user should have a minimum on bookmarks and/or he should have a minimum on similar bookmarks with another user, before this user is recommended to him. The last aspect can also be regulated by the user himself with the help of a slider, so the user can determine the amount of similar users who are recommended to him [see Knautz 10 for resource-recommendation]. CiteULike has a minimum of 20 resources a user must have in library before he gets resource recommendation. Leaving out all users

with less then two bookmarks, we have 6,430 user-pairs who share at least one bookmark.

Results

Differences between Coefficients

Analyzing our three coefficients we found correlation between user similarity based on resources and user similarity based on tags: In both scenarios Dice and Jaccard-Sneath gave similar results – the latter showing minor similarity value – cause the measure are quite similar (see [Egghe 10]). In contrast Cosinus gave different ranking results: It can be said, that Cosinus distinguishes between the allocation of the resources and tags between a user-pair [Hamers et al. 89]. The question is now which ranking of similar users serves best for the test-users' needs? If the test-user is searching for new resources, he might like a similar user who has bookmarked many resources.

In table 1 user "dchen", who has 214 bookmarks, would be recommended user "caortiz" on rank 10 with a Dice similarity of 0.0185. Using Cosinus the similarity is 0.0967, with which "caortiz" would be on rank three (Dice) or rank four (Cosinus). But for "dchen" the two bookmarks of "caortiz" possibly wouldn't much help him for further research, contrary the 214 articles of "dchen" might be a good library for "caortiz". If "dchen" would have less than 214 bookmarks, he would be more similar to "caortiz". Concerning the research aspect for "caortiz" this would be a shortcoming for him.

Differences between tag- and resource-based similarities

Analyzing the user similarity based on tags, the coefficients provide similar results. The interesting 214 66 dchen kkims 0.0571 0.0673 aspect is the different ranking between similar users based on tags on the one hand and on resources 214 26 dchen kedmond 0.05 0.0804 on the other hand.

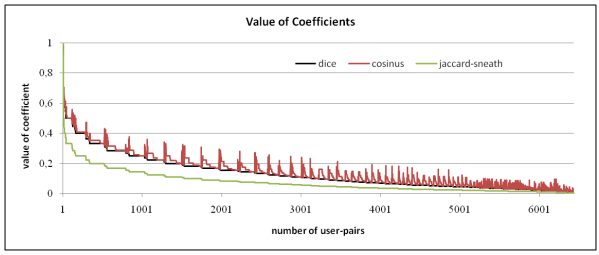

Figure 2: Value of coefficients by number of user-pairs: user-similarity based on bookmarks, source: Bibsonomy, CiteULike, Connotea.

common bm	bm dchen	bm user2	user1	user2	Dice bm	Cosinus bm
18	214	58	dchen	weeks	0.1324	0.1616
17	214	58	dchen	ghunter	0.125	0.1526
11	214	52	dchen	kdesmond	0.0827	0.1043
8	214	66	dchen	kkims	0.0571	0.0673
6	214	26	dchen	kedmond	0.05	0.0804
5	214	25	dchen	katiehumphry	0.0418	0.0684
4	214	15	dchen	tathabhatt	0.0349	0.0706
5	214	105	dchen	rodney	0.0313	0.0334
3	214	9	dchen	waitonhill	0.0269	0.0684
2	214	2	dchen	caortiz	0.0185	0.0967

Table 1: Similarity between user "dchen" and other SBS users based on common bookmarks (bm), ordered by Dice, source: Bibsonomy, CiteULike, Connotea.

common tags	tags dchen	tags user2	user1	user2	Dice tags	Cosinus tags
31	175	64	dchen	weeks	0.2594	0.2929
25	175	68	dchen	ghunter	0.2058	0.2292
20	175	29	dchen	kedmond	0.1961	0.2807
41	175	259	dchen	rodney	0.1889	0.1926
25	175	102	dchen	andreab	0.1805	0.1871
16	175	35	dchen	kkims	0.1524	0.2044
54	175	564	dchen	michaelbussmann	0.1461	0.1719
20	175	107	dchen	paulschlesinger	0.1418	0.1462
14	175	36	dchen	jeevanjyoti	0.1327	0.1764
23	175	176	dchen	bronckobuster	0.1311	0.1311

Table 2: Similarity between user "dchen" and other SBS users based on common tags, ordered by Dice, source: Bibsonomy, CiteULike, Connotea.

Apart from "ghunter" and "weeks, who both have the greatest similarity value either based on tathabhatt 0.0349 0.0706 214 9 dchen waitonhill 0.0269 0.0684 resources were taken into account. User similarity based on tags may have advantages over the one 214 2 dchen caortiz 0.0185 0.0967 based on resources: There might be more and different similar users which wouldn't be found over the resources, and tags may inform the user, in which context the other users read the resource. If "dchen" is searching for project partners, the tags can give him an impression of the article's content the other users are interested in and therefore of the users' research field.

Conclusion

The advantage of a user recommender system is that we could offer three recommendations: similar users for possible cooperation, relevant resources connected with users who "know" the research field (here the user himself can filter the results looking only at resources bookmarked by specific expert users), and tags which are assigned by specific expert users and lead to relevant resources. The user-recommendation therefore offers a further aspect which cannot be fulfilled with direct resource or tag recommendation. We also

found out that there is a great difference between user recommendation based on shared resources and based on shared tags. Another aspect is the user's needs: Is he searching for cooperation partners or for relevant resources? This is important for similarity measurement and the ranking of the results for a single user. Further research has to be done on this field. A new question is if there are features which could be integrated in user recommendation, for example information about which of the bookmarked papers the user has already read or which he dislikes. On CiteULike a user can now state of he has read an article or will read it; there is even a "Like it" button. These features might give further information about a user, which will be helpful to find cooperation partners and narrow the hugh amount of relevant resources. Our further research tries to implement these aspects as well as to combine recommendation based on tags and on resources. Another investigation should also be the testing of subjective. Different measures ask for different criteria and lead to different results, which require a detailed comparison. As several authors demonstrated (e.g. [Ahlgren/Jarvening/Rousseau 03], [Schneider/Borlund 07b]) the choice of a specific measure is oftendifferent proximity and similarity measures.

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EXAMINING THE USES OF INTERNET AND SOCIAL MEDIA AMONG MEN AT MILITARY CONSCRIPTION AGE

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Extended abstract

The key elements of social media, community and interaction, may increase individual's active participation in various aspects of social life via the Internet, and offer opportunities for building communities around specific health issues. Social media applications can provide an open platform for sharing ideas, experiences, opinions and concerns on health issues (Murray et al., 2008). Also they can offer a variety of technical features (e.g., status updates, media sharing, application hosting, asynchronous linking, group forming) that are well-suited for supporting different information behaviours (Wohn et al., 2011). Research on social media in Information Science have focused, for example, on information behaviour on different social networking sites (Jansen et al., 2011) and social information uses of Facebook (Wohn et al., 2011).

Literature on health behaviour change seeks to answer the question of how to create and deliver relevant, interesting and informative health messages to persuade individuals to adopt healthier behaviours (Noar et al., 2007, p.673- 674). The Internet provides many health promotion applications that utilize elements of social media to have an effect on health behaviours. Many of these applications are integrated in portals or social networking sites (e.g., Facebook). Some applications allow challenging friends through Facebook or Twitter to attend to physical activity. In some applications users can share detailed personal health information, and some even provide tailored, personalized health information. (Fernandez-Luque et al., 2010.) Social media may bear health-enhancing potential through several mechanisms, which include increasing perceived social support and interconnectivity among individuals, or adapting social media as a communication platform for health promotion in public health campaigns (Chou et al., 2009). Despite these benefits, social media has also negative characteristics: for example, it is easier to disseminate unreliable or erroneous health information (Chou et al., 2009).

Age has been stated to be the strongest predictor of both social networking and blogging in the USA (Chou et al., 2009), and this phenomenon is obvious also in Finland (Statistics Finland, 2011). According to Statistics Finland (2010) 83 percent of 16 to 24 year old Finns have registered as a social network service user and 62 percent of men of this age follow some social network service at least daily. From Finns of this age 80 percent use the Internet for instant messaging and 50 percent have followed some blog during the last three months. Chou et al. (2009) argue that health communication efforts utilizing social media will have the broadest reach and impact when the target population is the younger generation. Also Brennan et al. (2010, p.650) support this view by stating that new media, including social-networking technologies, offer a potential mechanism to spread healthy-eating messages and engage young people on their own terms. According to Boulos and Wheeler (2007, p.20) health care providers should become social enablers, providing situations that become positively ”addictive”

so that patients (and other people interested in health) can gather, learn from, and support each other, to improve health outcomes.

This paper relates to a multidisciplinary research project (MOPO) where the expertise of several disciplines, including Sports Medicine, Information Studies, Cultural Anthropology, Medical Technology, and Electrical Engineering, are brought together. The project pursues to decrease the potential social marginalization of conscription-aged Finnish men by engaging them towards an active lifestyle by setting up an intervention which utilizes also social media. The aim of this paper is to investigate the conscription-aged men's use of the Internet and social media services to find the best channels for reaching them. The results of the study reported here may be utilized in selecting and possibly differentiating channels for health communication when setting up the intervention.

The study population consists of all men at military conscription age in the Oulu area in Northern Finland in 2010 (n~1000/year). In Finland military service is mandatory, with option of non-military service or total objection, and annually all 18-year-old men are called for military service. Therefore, conscription-aged men provide a large, population based representative sample of Finnish young men. In 2010 a collection of cross-sectional data was gathered at the Oulu region call-ups where approx. 1000 men were present and of whom 60 percent filled in a questionnaire. The questionnaire contained several health-related themes including various items about physical activity behaviour change, information behaviour, and the use of Internet and social media. The collected data were analysed statistically using Statistical Package for the Social Sciences (SPSS) version 19.0.

The respondents were from 17 to 22 year old men (mean age 17.9). Their access to the Internet from home and frequency of its use were surveyed including the devices used for accessing it and the perceived importance of the Internet. The purposes for the Internet use among young men were asked, as well as the use of different social media services including the time in hours per day, and the reasons for the use. Young men were also asked whether they provide content to the Internet, what kind of content, whether they have their own homepages or blog, or do they follow discussion

forums or write on/take part in discussions on these forums. In this paper we focus on analysing the answers to these questions about the Internet and social media.

Majority of the respondents (84.3%) reported to use the Internet daily and 89.9% had a computer with the Internet access in their own room or apartment. Of the respondents 40.2% used the Internet 2 to 4 hours a day and 39.0% less than that. The most used social media services were Facebook (83.4%) and MSN Messenger (63.1%). Few of the respondents had their own web-page (5.3%) or blog (5.6%), and 16.4% followed blogs actively. Discussion forums, in turn, were followed actively by almost half of the men (45.1%), but only 14.6% took part in discussions on these forums. More than half (63.6%) of the respondents considered an own Internet access as important, and almost as many of them (59.2%) found it important to be in touch with friends with the help of the Internet.

This study provides an overall view of the use of the Internet and social media among mainly 18 year old young Finnish men in 2010. As expected young men were active Internet and social media users. This supports the conception that social media can serve as a good channel to spread health information and engage young men on their own terms. Using social media as a channel enables us to encourage active participation and provide social support for the young men when planning the setup of the intervention in 2011 and 2012. Our future studies aim at decreasing social marginalization and promoting physical activity of Finnish conscription aged men by engaging them in an active hold of everyday life activities. These preliminary findings along with the further analysis on the gathered data will be utilized as basis for the forthcoming studies.

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WIKILEAKS COMMENTS

A Qualitative Investigation

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Internet comments are part of User Generated Content (UGC), where users expand on, critique, and express their ideas about various topics in news and non-news contexts.

The current study focuses on WikiLeaks—a non-profit media organization that seeks to deliver important news and information to the public—and aims to explore WikiLeaks' worldwide impact amongst readers of three online newspapers, as expressed through reader comments. Each of the newspapers—The New York Times in the United States, The Guardian in the United Kingdom and Ynet in Israel—is a major, popular channel of communication in its country. This study aims to characterize and analyze the main themes as expressed through reader comments. The two primary research questions are: 1. What are the main themes that are expressed in the comments? 2. Is there a difference among the three online newspapers concerning the themes expressed through the comments?

The research findings may facilitate improved understanding, for both the layman and for media or information researchers, of the power and impact of the media and information on our daily lives.

This paper presents an analysis of comments which were collected on December 1st 2010, three days after the WikiLeaks editors began releasing huge amounts of leaks from all over the world. The researcher conducted a content analysis on a sample of the comments. The author entered the word "WikiLeaks" in the search engine of each newspaper on 1 December, 2010. Various answers

were retrieved, but the author decided to focus on articles that did not concentrate on a specific event, but rather on those relating to the WikiLeaks phenomenon from a wide, general perspective, as expressed in some cases in the editorial columns or the opinion pages. The researcher chose one article from Ynet with 197 comments, one article from The New York Times with 376 comments, and one article from The Guardian with 358 comments. A sample of 597 comments was selected: 200 from The New York Times, 200 from The Guardian, and 197 from Ynet. The comments from The New York Times and from The Guardian were randomly selected by drawing every third comment from each newspaper. All Ynet comments were selected. The descriptive statistical analysis and the content analysis were conducted on these 597 comments. The second phase of the research involved a statistical descriptive analysis and the third phase involved a content analysis. In order to classify the comments, the author divided each comment into units of meaning, which comprise the units of analysis. A unit of meaning can be a phrase, a sentence, or several sentences that convey one message. The term was coined by Henri (1992), who argued that computer-mediated communication messages had more than one unit of meaning, and that one should define its own relevant unit of meaning. The 597 comments consisted of 1200 units of analysis. Each classification was assessed by a single classifier and then cross-checked by a second classifier.The final percentage of agreement for all coding decisions was 92%, suggesting that the coding classification used was reliable.

The next sections present the main findings. The content analysis reveals differences between The New York Times, The Guardian on one hand and Ynet on the other. In both The New York Times and The Guardian the Wikileaks issue is of major interest, attracting much commenter attention. In The New York Times the Wikileaks topic comprises about 27.70% of total units of analysis and includes various aspects such as: for and against Wikileaks, for and against Assange, Wikileaks' value, impact and policy. In The Guardian the Wikileaks issue is larger and accounts for 42.72% of total units of analysis and includes the same aspects. This broad category: Wikileaks that was found in both The New York Times and

The Guardian, reflects readers' interest in the pure phenomenon of Wikileaks, as readers try to convey their support or protest against this phenomenon, discussing its value, policy, and impact. These findings may be associated with those of Kisilevich, Rohrdantz, and Keim (2010), who examined user comments on Flicker, claiming that comments may relate to the photo quality; in our case, comments relate to Wikileaks' quality. It is interesting to note, however, that in Ynet, the situation is quite different: only 7.66% of total units of analysis can be categorized as general comments about Wikileaks.

The second large theme in The New York Times and in The Guardian is transparency. Actually, in The New York Times this issue is equivalent to the previous issue of Wikileaks (27.70% of total units of analysis). The transparency issue accounts for 15.47% within The Guardian and does not appear at all in Ynet. There is no doubt that openness and transparency are important to The New York Times and The Guardian readers, who, through their comments, assert their desire to see more transparency, honesty, and truth both in politics and journalism, characteristics, some claim, that may be found in Wikileaks. These two large categories within The New York Times and The Guardian, can be associated with the IPI model (Gunther and Storey, 2003), which posits that when people perceive some effects of a message on others, they react accordingly. In our case, readers of the two newspapers saw the major themes attracting the attention of commenters, and thus continued the discussion thread in those two main directions: Wikileaks and transparency.

The next issue within these two newspapers is miscellaneous: 18.54% of total units of analysis within The New York Times and 15.89% within The Guardian. This category is built up of very small categories which reflect the notion that readers use the comments as a free channel of communication to make their voices heard on various subjects related and unrelated to the articles' content. The miscellaneous category strengthens Lee's (2010) assumption that reader comments on Internet news sites enable people to publish their personal opinions that would have never been considered as

newsworthy, but can now be considered a common element of online journalism.

A further examination into The New York Times categories shows the next category to be politics (14.37% of total units of analysis), in which most of the comments (8.33%) relate to politics and democracy. The following major category is for and against the article author and The New York Times (11.66% of total units of analysis). This category reveals commenters' voices and attitudes towards the journalist and the newspaper itself, and mainly negative attitudes towards both (7.70%) are expressed.

The next two issues presented in The Guardian are quite similar in size: for and against the article author and The Guardian (10.16% of total units of analysis), and politics (9.69% of total units of analysis). There appear to be more comments against the journalist and the newspaper (6.23%) than comments that support both (3.92%). These two last findings echo the findings found in The New York Times.

It is intriguing to observe the various main themes appearing in Ynet. The largest issue focuses on opinions for and against the article author (24.39% of total units of analysis), while the second focuses on opinions for and against the Israeli prime minister (22.99% of total units of analysis). These two issues may be similar in size, but in the first category readers protest against the article's author (18.46%) while the second (that supports the prime minister) reflects commenters' tendency to comment and express their ideas on themes not directly related to articles' content, but on those that presumably bother and occupy them. The first part of findings reiterates previous findings within the two other newspapers, where commenters used comments to oppose the journalist and the newspaper.

That a large section of comments focused on an unrelated theme may be associated with the SIDE model, introduced by Walther, DeAndrea, Kim, and Anthony (2010). Certain studies have claimed that when CMC includes visual anonymity, the SIDE model predicts greater conformity to the apparent consensus of the group (Lee, 2006, 2007; Postmes, Spears, Sakhel, & de Groot, 2001). In our case, commenters showed conformity to other commenters,

as readers began to write about an unrelated theme—the Israeli prime minister. Other readers were attracted to this subject and continued the discussion, although unrelated to the Wikileaks phenomenon.

In sum, findings suggest that although some of the main themes expressed in reader comments were repeated in the three newspapers, there are differences between The New York Times, and The Guardian on one hand and Ynet on the other. This difference may represent another culture of discourse or argument in Israel in contrast with America or the United Kingdom. In Israel, commenters seem not to comment on issues expressed in articles, but rather exploit this channel to lash out at the article author or to support the present prime minister. One reader begins and others continue conducting the discussion in this direction. On the contrary, in America and in the United Kingdom, where there is a different culture of discourse or argument, commenters express their ideas, mostly on topics related to the article itself.

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LOOKING FOR LOVE IN ALL THE RIGHT PLACES

Defining Success in the World of Online Dating

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Introduction

Dating websites are a frequently studied form of social media where people measure the outcome: Did I find a partner? While users of these sites have this clear measure, researchers have not examined the explicit outcomes of such activity. Instead, past studies have focused on the characteristics of individuals who use online dating sites (Stephure et al., 2009; Sautter et al., 2010), how individuals represent themselves on different online dating websites (Hancock & Toma 2009; Ellison et al., 2009), and the search strategies individuals utilize to find a partner (Fiore et al., 2010; Hitsch et al., 2006). Our study fills a gap in social media research by examining publically available success stories collected through a systematic random sample from success sites affiliated with three of the most popular online dating websites in the United States, Match.com (n=544), eHarmony (n=213) and OkCupid (n=61).

How Dating Success Sites Work

Submitting a success story to an affiliated success site is a straightforward process. Individuals first authenticate using the account they originally utilized on the website and then submit a story along with a description of the current relationship status, often determined from a controlled vocabulary including: Dating, En-

gaged or Married. The act of entering information on a success site is an expression that at least one member of the couple views the outcome as a "success". Couples also have the option to include location information, tips for other daters, and specifics about their relationship. The structures for this information vary across site, with Match.com having the most structure, and OkCupid giving the most freedom. Success sites are a simple, measurable expression of a successful social media outcome.

Findings: Three Dimensions of Success

Our exploratory study seeks to understand what social media success looks like in online dating. We examine three dimensions of the success stories included on the three online dating success websites: 1) The location of the "successful" couples, 2) The varying definitions of success between sites based on the user---defined status and 3) The lexical content of the stories submitted to these sites to identify cultural dimensions associated with success on each site. The findings represent a unique examination of the distribution of online dating activity that has a very specific outcome (success defined by the user) in the United States. Our findings demonstrate that dating websites may have inherent cultural dimensions that lead to adoption by certain subsets of the population looking for a certain relationship outcome. These findings have implications for all forms of social and participatory media and inform future research that extends beyond online dating websites.

Our first finding demonstrates that there is no regional bias in site utilization; people use these dating sites with consistent frequency across the United States. There is, however, an increased likelihood of overall site use as population density rises. For example, online dating activity occurred at a higher frequency in the high population density states of Texas, California, Michigan, New York, Florida, and Virginia, while there were no participants from the low population density states of Montana and South Dakota. There are, however, low population density islands. For example, there are 6 profiles from Match.com that are listed as being from a small town in the southern US with a population of 3,000. This

is the fourth highest number of success stories for any city, in the US. The top three cities with the highest number of success stories in our sample are Houston (n=11), Chicago (n=9), and New York City (n=8). This anomaly and preliminary analysis of the stories associated with these profiles suggests that social networks in the real world do influence online social network adoption in the case of online dating sites. This is an interesting area for future research.

Our second finding is that the measures of "dating success" are different for each of the three web sites. This finding is illustrated in Table 1. eHarmony's success stories are mostly comprised of married couples (84%), whereas the number of married couples on Match.com (46.7%) and OkCupid (23%) is significantly lower. Additionally, the number of eHarmony and Match.com success profiles increases from Dating through Engaged to Married, whereas OkCupid's frequency decreases from Dating through Married. Success on eHarmony is defined as marriage, whereas success on Match.com is more evenly split. OkCupid users most commonly define success as "dating." This has important implications for the measurement of success of relationships in social media. Success is contextual and participant defined. With future studies we will explore how different measures of success become self---perpetuating on dating sites, or change over time as clients evolve. One also might expect the clientele on online dating sites to turn over more regularly than other forms of social media. Understanding these rates of change may provide an additional, implicit measure of success.

The third finding demonstrates a difference in the content of the words utilized in the success stories. The most used word within each set of stories was the name of the dating website where individuals met. This illustrates that when describing a successful relationship individuals refer to the mechanism in which they met at a very high rate. One of the most frequently used phrases that % Within Site of Each Status appeared in almost half of the profiles was a derivative of "Thank you (Online Dating Site)." This indicates that the technology utilized for finding a partner was a salient aspect of the success stories and that the couples may attribute some level of their success to the technology.

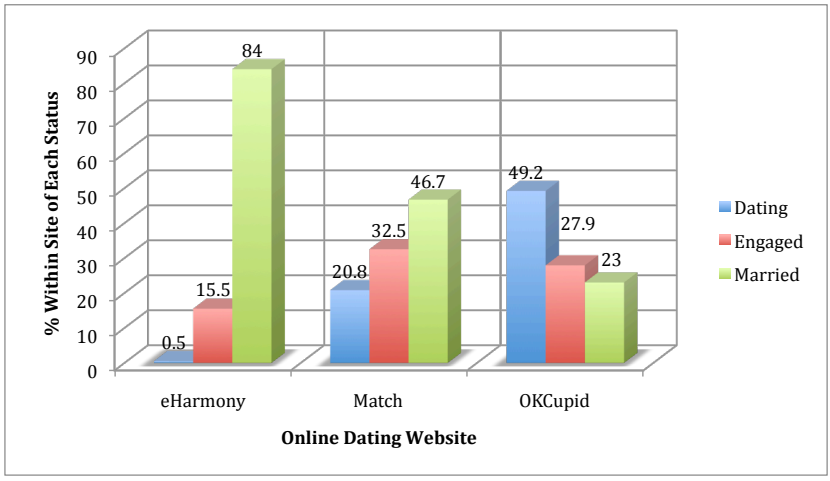

Table 1: What "Success" looks like for different Online Dating Websites

Additionally, Both eHarmony and Match.com success stories were found to have a higher frequency of phrases related to more serious aspects of relationships, such as "the rest of my life," "rest of our lives together," and "asked me to marry." OkCupid success profiles were found to have a higher frequency of phrases dealing with the situational aspects of dating such as "we decided to meet," "on the phone," and "to get to know." This demonstrates that individuals that utilize different dating sites have different definitions of success and highlight different aspects of the relationship process, possibly related to or determined by the status of their relationship. The motivation for the different definitions between online dating websites is unknown, but as noted earlier they may also be associated with cultural dimensions inherent in each website.

Our three findings from this exploratory study of online dating websites provide a first glimpse into success measurement among social media users. These findings direct future work to qualitatively analyze the success stories themselves, and extend our measurement of success through interviews of couples not reflected in the current sample. These steps will help to build a better understand-

ing of online dating site adoption and what constitutes success in a particular type of social media.

Although the study analyzed online dating websites that are primarily utilized in the English speaking world, these findings and the proposed follow on studies are salient to other social media technologies. Individuals utilize social technologies differently and although much of this usage is dictated by explicit cultural attributes, there may be many implicit cultural attributes that dictate adoption and utilization of certain technologies. Measuring success in social media use begins with sites like these, where the measure is clear and user defined. The explicit and implicit cultural aspects of "success" may dictate and influence information behavior by individuals that utilize these websites, and as a result, may further contribute to the establishment of a subculture within the technology.

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BEHAVIOURAL TRACES AND INDIRECT USER-TO-USER MEDIATION IN THE PARTICIPATORY LIBRARY

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Abstract Participatory information spaces including social media platforms provide affordances for users both to leave behavioural traces of their informational activities and to find such traces from other users, a.k.a. user-to-user mediation and social navigation. Special focus in the paper is on affordances for indirect user-to-user mediation by 'trace leavers' and 'trace finders' in a participatory library setting, particularly in the physical 'Library 2.0'. The paper presents a holistic approach, viewing human, physical, and digital information resources as supplementary parts of an integrated library platform that functions as an enabling space for creative practices like user participation and user-to-user mediation. Such a library may be seen as a participatory medium that can facilitate and support users to develop necessary participatory competencies in all facets of the presented life cycle of information behaviour. Truly participatory libraries thus provide more affordances for users both with regard to leaving behavioural traces (create, store, share) and to following such traces (find, learn). The paper points to both low-tech and hi-tech examples including mobile and ambient technologies with rich potentials for facilitating user-to-user mediation and social navigation.

Introduction

"Homo Ludens impinges on his environment: He interrupts, changes, intensifies; he follows paths and in passing, leaves traces of his presence everywhere." [1]

When interacting with information spaces like the Web or libraries, users may leave marks or traces of their activities that may guide other users to find and use information resources. Examples of such behavioural traces are worn covers, dog-eared pages and handwritten notes in books; left-behind books on a table; user-generated topical tags and ratings in online catalogues; edits in wikis; web site log files of user visits; and much more [e.g. 7, 16, 28]. As will be elaborated further below, behavioural traces can be physical or digital, intended or unintended by the 'trace leaver' being in direct or indirect contact with the 'trace finder'.

New affordances, i.e. actionable properties [23], for users both to leave behavioural traces and to find and follow behavioural traces from other users, have been key drivers in the development of new participatory information spaces including social media platforms. Tagging, rating, editing, and re-mixing are examples of participatory activities and user-to- user mediation [1] leaving behavioural traces that can be found and followed by other users. This kind of social navigation [6, 7] deals with users' behaviour that is guided by the behaviour of other users; "moving through an information space and exploiting the activities and orientations of others in that space" [7, p. 277].

This paper briefly outlines a framework for discussing affordances for behavioural traces, user-to-user mediation and social navigation in a participatory library setting ('Library 2.0'). Special focus is on such affordances for indirect, asynchronous, user-to-user mediation and social navigation facilitated by behavioural traces 'left behind' by users in the physical Library 2.0.

Many Library 2.0 approaches and discussions have focused on web- based solutions like blogs, wikis, tagging, social network sites, etc., for user participation [e.g. 9, 22]. This paper presents a hol-

[1] Constant Nieuwenhuis cited in [12].

istic approach, viewing human, physical and digital information resources as supplementary parts of an integrated library platform that functions as an enabling space for creative practices like user participation and user-to-user mediation.

User-to-user mediation already exists in physical libraries, for example, users exchanging opinions of music, books and other materials at the shelves, or in book clubs where users meet and discuss books they have read. User-to-user mediation can also occur in quite simple and 'ready-at-hand' ways, though perhaps not always thought of as acts of user-to-user mediation, as, for example, the dog-eared or left-behind books mentioned above. The aim of this paper is to create more awareness about such existing practices as well as to point to new augmented affordances provided by mobile, pervasive, ambient, and location-based technologies that could be used to facilitate user-to-user mediation and social navigation in a physical Library 2.0 setting.

A higher degree of involving users' activities and skills in the mediation of information resources may create more engaging, inspiring, playful, and stimulating library spaces that can circulate more information resources among the users – and not least: this may also create more engaged users feeling more ownership of the library.

Library 2.0 across social, physical, and digital affordances

As defined by Holmberg et al. [17, p. 677], "Library 2.0 is a change in interaction between users and libraries in a new culture of participation catalysed by social web technologies". The creator of the term 'Library 2.0', Michael Casey, recognized that physical libraries are important when developing new affordances for user participation: "The heart of Library 2.0 is user-centered change. It is a model for library service that encourages constant and purposeful change, inviting user participation in the creation of both the physical and the virtual services they want, supported by consistently evaluating services" [3]. In a similar vein, Lankes [21] sees the

library users as important players in the development of "a truly 'participatory' library".

In the holistic approach to user participation and user-to-user mediation outlined in this paper, the model in Fig. 1 below is essential [1, 2]. The model shows how the multi-modality of different human, physical, and digital parts of the library may be looked upon as an integrated whole; as supplementary and supportive parts for one another. This integrative interface of a library comprises the totality of all contact surfaces, access points and mediation flows between users and human, physical, and digital information resources. Human information resources comprise users, staff, and other human players in the library. Physical library resources include printed books, journals, flyers, etc., on display devices like shelves, tables, etc. Digital library resources include digital text, audio and video available through online files, databases, web pages, etc.

Examples of mediation flows (single arrows in Fig. 1) between information resources could be users talking to each other ('human -> human') or flyers in the physical library pointing to library web pages ('physical -> digital'). Mediation flows can be combined into longer chains and loops across all modalities in the model. See more examples in [1].

On this background, the outlined integrative interface comprises all affordances for how the user in the center of the model can take active part and interact across social, physical, and digital information spaces in the library – important in a participatory library setting. In other words, the presented approach suggests thinking affordances, design, usability, user participation, and behavioural traces across all contact surfaces between users and information resources – and not only such features in digital interfaces.

Affordances for user-to-user mediation in the whole information behaviour life cycle

In the participatory library outlined above, different affordances for user-to- user mediation are essential: How well do library interfaces allow users to leave behavioural traces by creating, storing and

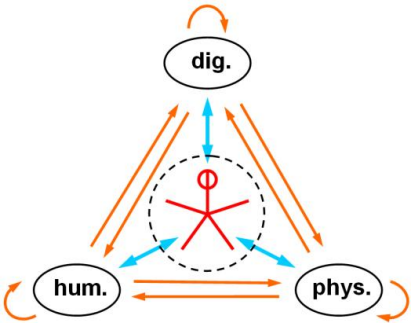

Figure 1. Integrative multimodal interface model [1, 2]. User in center within 'socio-cognitive-embodied' context (broken line circle) interacts (double arrows) with human (hum.), physical (phys.) and digital (dig.) information resources. Between resources are mediation flows (single arrows). See more details and explanations in [1].

sharing informational content, and how easy is it for users to find and learn from such content in all parts of the library's integrative interface as modelled in Fig. 1?

In Library and Information Science (LIS), human information behaviour has been defined as "the totality of human behavior in relation to sources and channels of information, including both active and passive information seeking, and information use" [30]. The framework outlined in this paper unfolds the view on human information behaviour by dividing it into five main facets – key facets in LIS research – dealing with how humans create, store, share, find and learn when handling different kinds of informational content, cf. Fig. 2.

The notion of 'information use' in Wilson's definition above is thus expanded into more facets in order to comprise augmented affordances for users' information behaviour in a participatory library setting.

The resulting 'stick man' in Fig. 2 represents the user in Fig. 1; a user who can handle information in different ways in different situations. The order of the five facets should not be understood strictly linearly, as different types of information behaviour can occur in different order in different informational processes.

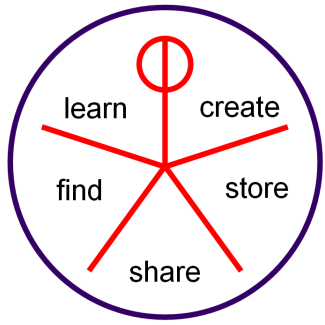

Figure 2. Simplified 'life cycle' model of human information behaviour.

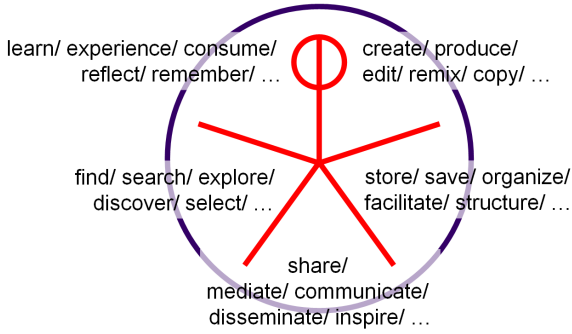

Figure 3. Extended 'life cycle' model of human information behaviour.
Participatory libraries provide affordances for users to participate actively in all five facets.

In Fig. 3 below, more verbs related to human information behaviour have been added to the five facets. The dots indicate that even more verbs of course are possible. Some verbs may also overlap different facets in the model.

Traditionally, libraries have mainly provided affordances for users to participate actively in the two facets find and learn in the information behaviour life cycle model. In a truly participatory library, there are 'affordances 2.0' for users to participate actively in all five

main behavioural facets in the model. That is, besides the traditional facets find and learn, users should also be able to create, store and share informational content as part of the integrative library interface, e.g. in online catalogues, wikis, blogs, or in the library's physical settings.

In other words, participatory approaches like Library 2.0 provide more affordances for user-to-user mediation both with regard to leaving behavioural traces (create, store, share) and to following such traces (find, learn).

Direct and indirect user-to-user mediation and social navigation

As already indicated in the introduction, user-to-user mediation and social navigation are closely connected; user-to-user mediation thus provides communicative cues including behavioural traces that may guide social navigation. As noted in the introduction, social navigation deals with "moving through an information space and exploiting the activities and orientations of others in that space" [7, p. 277]. In other words, social navigation deals with activities of users being guided by other users' activities that have been mediated in some way between users in a given space. Human, physical and digital parts of libraries (Fig. 1) function as important means for such user-to-user mediation that may guide social navigation as will be elaborated in more details in this section. Table 1 below is based on a differentiation between direct and indirect social navigation [cf. 6]. As shown in Table 1, direct user-to-user mediation and social navigation deal with users in direct, synchronous, contact with other users, whereas indirect user-to-user mediation and social navigation deal with users in indirect, asynchronous, and often anonymous contact, with left-behind behavioural traces as mediating means between the users. In Table 1, two extra differentiating layers have been added;

(1) whether the user-to-user mediation and social navigation take place in physical or digital spaces

Table 1. Typology for direct and indirect user-to-user mediation and social navigation.

• direct, synchronous, user-to-user mediation and social navigation
  ○ in physical spaces
  ▪ intended; e.g. face-to-face conversation
  ▪ unintended; e.g. overhearing conversation
  ○ in digital spaces
  ▪ intended; e.g. chat
  ▪ unintended; e.g. overhearing chat in virtual worlds (e.g. Second Life)

• indirect, asynchronous, user-to-user mediation and social navigation
  ○ in physical spaces
  ▪ intended; e.g. messages on notice boards, physical tags
  ▪ unintended; e.g. dog-eared pages, left-behind books
  ○ in digital spaces
  ▪ intended; e.g. links, tags, ratings, comments
  ▪ unintended; e.g. recommender systems

(2) whether the 'trace-leaving' activity is intended or unintended by the 'trace leaver'.

For example, a user may discover behavioural traces in the shape of books left behind after use on a table by other users in a physical library (cf. Fig. 4a). This indirect user-to-user mediation may not be intended by the 'trace leavers' but is perceived by the 'trace finder' in his or her indirect social navigation.

Whereas affordances for links, tags, rating, comments, etc. in indirect user-to-user mediation and social navigation are well-described in research on digital Library 2.0 approaches [e.g. 9, 22], affordances for indirect user- to-user mediation and social navigation in the physical Library 2.0 have been less investigated.

In a study [1] of users' information behaviour in two Danish public libraries, observed users looked through shelves and trolleys containing newly returned materials (Fig. 4b). In this indirect user-to-user mediation and social navigation, users explored and exploited other users' behavioural traces, here in the shape of newly returned books. Such activity may lead to serendipitous findings

Figure 4a. Indirect, *unintended* user-to-user mediation in physical library: left-behind materials

Figure 4b. Indirect, *unintended* user-to-user mediation in physical library: newly returned books

of information resources not known or not planned in advance [1, 2]. One of the libraries in the study had shelves with user-to- user-recommended books (Fig. 4c). The same library also provided tabs with smileys and ratings ('Giggle', 'Sob', 'Shock', 'Yawn', etc.) for users to attach to books they liked or disliked (Fig. 4d). This is an example of an affordance for indirect and intended user-to-user mediation and social navigation in the physical library with obvious parallels to tagging and rating in library online catalogues [e.g. 3, 9, 18] or on social web sites like LibraryThing.com.

Augmented affordances for user-to- user mediation in the participatory library

Mobile, pervasive, ambient, and location-based technologies connect physical and digital information spaces. For example, by mobile phones able of displaying information from physical objects enriched with RFID chips, 2D barcodes, etc. [e.g. 4, 15, 25, 29]. These technologies provide new affordances for indirect user-to-user

Figure 4c. Indirect, *intended* user-to-user mediation in physical library: reader-to-reader-recommended books

Figure 4d. Indirect, *intended* user-to-user mediation in physical library: 'opinion' tabs attached by users to books

mediation and social navigation by leaving and finding digital behavioural traces in physical spaces.

So far, libraries have focused on transferring web services like searching, reservation, reference service, etc., to mobile platforms [e.g. 5, 8]. These approaches have thus mainly been concerned with the two facets find and learn in the information behaviour life cycle model in Fig. 2. In a physical Library 2.0 setting it would be interesting as well to let users create, store, and share information with mobile phones, for example, by using mobile phones to track and show tags, ratings, reviews, and other behavioural traces, digitally attached by other users to physical information resources in the physical library. Similar affordances for augmenting physical spaces with digital, informational 'layers' are already provided as applications for smartphones by companies like Layar.com.

Augmenting physical environments with communicative devices can also be in the shape of so-called ambient interfaces [e.g. 11, 14, 25, 29]. Using visual cues, sound, and other sensory modes for representing aggregated behavioural patterns by users to other users in a library could be a means to stimulate user-to-user mediation and

social navigation. It could be fountains with the height of water representing how many materials have been borrowed so far during a day. It could be dynamic wall maps with light diodes visualizing how many users are in different library sections as tracked by sensors and counters. This would be a case of indirect user-to-user mediation by displaying aggregated and anonymized behavioural traces from many users. Such playful installations could motivate users to fall into conversation with other users, and could stimulate curiosity and guide social navigation: what to do and where to go in the library.

The ideas and examples in this section can only capture a small fraction of how new technologies can stimulate and support user-to-user mediation and social navigation in libraries. In the years to come, it will be interesting to see how new augmented affordances for user-to-user mediation and social navigation in physical libraries can be combined and integrated with already existing 'ready-at-hand' and low-tech affordances like the examples illustrated in Fig. 4a-d above. Mixing and bridging such human, physical, and digital modalities may enable new ways of facilitating both 'trace leavers' and 'trace finders' in a participatory library setting.

Concluding remarks

This paper has presented a framework for discussing affordances for user-to- user mediation and social navigation, for leaving and following behavioural traces of user activities in a participatory library setting. Special focus has been on affordances for indirect user-to-user mediation and social navigation in the physical Library 2.0 where users' activities may be guided by traces left of other users' activities. In this context, the paper has pointed to low- tech as well as hi-tech examples across human, physical, and digital modalities with rich potentials for further development and integration that may facilitate both 'trace leavers' and 'trace finders'.

In continuation of the introductory quote, the outlined integrative library interface in Fig. 1 may be seen as a participatory medium and an enabling and engaging multi-purpose space – an 'open-minded space' [27] – for Homo Ludens, the Playing Man [19].

If truly participatory libraries shall emerge – that also provide more playful platforms – a key point in the paper is that all interfaces in such libraries should be designed to provide more affordances for users with regard both to leaving behavioural traces (create, store, share) and to following such traces (find, learn).

However, allowing users to leave more traces of their activities across human, physical and digital modalities in the whole integrative library interface is a challenge for traditional library thinking. If user-generated access points to information resources shall co-exist together with library- generated access points there will be a need for new ways of sharing quality control and presenting navigational overviews in library interfaces. In this context, it is important to address issues of privacy and information overload when handling behavioural traces. In this process, it is essential that library users are supported to develop creative practices and participatory literacies [e.g. 10, 13, 20, 24, 26] in all facets of the presented life cycle of human information behaviour.

A higher degree of involving users' activities and skills in the mediation of information resources may revitalize the library as a social platform for knowledge sharing and support the evolution of more engaging, inspiring, and playful library spaces.

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THE CREATION OF A PERSONAL SPACE ON THE INTERNET

Self presentation and self-disclosure in blogging

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Theoretical background

Computer-mediated environments (CME) in general and the Internet in particular allow users to create and develop virtual identities and spaces that occupy neither space nor time (Papacharissi, 2002). McKenna and Bargh (2000) proposed four domains in which social interaction via a CME differs from other conventional media: relative anonymity, attenuation of physical distance, reduced importance of physical appearance and greater control over the time and pace of interactions. Of particular relevance to the present study are the notion of anonymity and the control that CMEs such as blogs allow individuals over their interactions with others. According to Suler (2004), anonymity is the concealment of identity that becomes possible when people have the opportunity to separate their actions online from their in-person life style and identity; they feel less vulnerable about self-disclosing because whatever they say or do cannot be directly linked to the rest of their lives. Self disclosure is the "act of reveling personal information to others (Archer, 1980, p.183). This propensity an individual has for revealing personal information relates to the content of the self-presentation they choose to display (Jensen Chau & Gilly, 2003). This study investigates self-presentation and self-disclosure in personal blogs functioning as virtual personal spaces.

Blogs are one of the newest forms of online self-presentation and self-disclosure that has been facilitated by the Internet. Blogging services offer users different options in terms of anonymity. Bloggers can choose to be totally anonymous, pseudonymous or identifiable (Qian & Scott, 2007). They can also choose the way they present themselves in their blogs and the nature of the information they disclose. Being able to control the content posted in their blogs as well as the limited interactivity of blogs which permits bloggers to control comments from their readers allows them to create a virtual space where they feel secure and comfortable to write. This is what Gumbrecht (2004) called a "protected space." He asserts that blogs have become increasingly popular because unlike other communication technologies such as instant messaging, blogs allow bloggers to limit the level of interactivity with their readers. As a result, blogs tend to be less adversarial and more reflective in nature and are perceived by bloggers as protected spaces.

Methods

This study examines the following questions regarding the creation of a virtual presence in blogs:

1 How do bloggers self-present in their blogs and what role does this personal space have in the bloggers' life?

2 To what extent the perception of a blog as a "personal space" allows bloggers to disclose personal information?

3 What kind of personal information is included in the bloggers' self-disclosure?

4 To what extent bloggers know their readers and how the readers' comments influence the bloggers' self-presentation and self-disclosure?

The study was conducted for one month (December 15 to January 15, 2011) using an online survey. The blogs in the sample were selected from the 'personal blogs' category in two Israeli blog directories and it consisted of regularly maintained personal blogs written in Hebrew. The content of each blog was examined to verify that it

did not serve any commercial or marketing purpose. Three hundred blogs matching the above specified criteria were identified in the two directories. Of the 300 bloggers initially contacted, 82 responded to the survey representing a 27.33% response rate. The majority of respondents were female bloggers (80.5% n = 66) between the ages of 18 to 45 (82.9%). This finding concurs with Nowson & Oberlander's (2006) study that found that personal blogs are dominated by female bloggers but contradicts findings in previous bloggers' surveys (Bronstein, in press; Herring et al., 2005;; Viegas, 2005; Yu, 2007) in which the majority of respondents were males. Concurring with findings in other studies (Bronstein, in press; Herring et al., 2005; Li, 2005; Viegas, 2005) the majority of respondents in this study had a college education (69.5 % n = 57).

The data analysis consisted of two phases. In the first phase a statistical analysis yielded quantifiable demographic data about the participants, about different elements of self-presentation and self-disclosure and about the effect their readers have on their blogging practices. The second phase consisted of a content analysis of the bloggers' textual answers to open-ended questions. Phrases as the minimal information unit were identified and then coded into their respective categories by constantly comparing these phrases to the properties of the emerging category to develop and saturate the category.

Findings

The way bloggers present themselves in their blogs and the nature of the information they choose to disclose are central issues in understanding the creation of a virtual presence on cyberspace. Findings show that the majority of bloggers that participated in this study created an anonymous virtual presence; they maintained some kind of anonymity by identifying themselves using a variant of their real name (18.3% n =15) or a pseudonym (61% n = 50); only 20.7% of the bloggers displayed a personal photo. This tendency for self-presentation does not concurs with findings from other studies in which the majority of bloggers identified themselves by their real

names and posted a personal photograph of themselves in their blog (Bronstein, in press; Guadagno et al, 2008; Viegas, 2005).

The perception bloggers have of their blog as an enclosed and protected space could partly explain why the majority of respondents disclosed personal information. Findings show that 84.1% of respondents frequently disclose personal information in their blogs. Guadagno et al (2008) explain that when individuals perceive themselves to be anonymous, it may change the way in which individuals communicate on the web because they experience a sense of depersonalization. Thus, while blogging, individuals may disclose information that is more revealing than they realize. This assertion is supported by findings in this study because when asked about the kind of information they disclose in their blogs, 75% of respondents reported that they tended to expose their "sensitive side", 55% said they frequently reveal embarrassing information about themselves and 59.7% attested that they take down their defenses when blogging. The textual description respondents gave of the role their blogs have in their personal life confirms the notion that they perceive it as a personal space. Findings from the content analysis revealed that respondents describe their blogs as: (1) a place to express themselves freely and an outlet for feelings and emotions; (2) a tool that helps them share information and connect with people with whom they have something in common; (3) a place to keep record of their lives.

Schiano et al (2004) claim that the blogger's primary audience is the blogger himself because blogging is often used as an outlet for thought and feelings. Findings of this study support this statement, 67.1% of respondents said that it was not important for them to get to know their readers and 52.4% reported that they do not think about their readers when blogging. Guadagno et al (2008) asserts that bloggers have heightened private self-awareness what brings them to be focused on their internal states thus limiting the resources that can be devoted to others. This suggests that bloggers might disclose information with less regard to how others perceive it. Other studies (Nardi et al., 2004; Papachirissi & Rubin, 2000; Walker, 2000) provide a different explanation by stating that social norms prevailing on the Internet allow bloggers to express

themselves in a less stressful way, perhaps explaining why bloggers did not take into account the reactions of strangers when disclosing personal information.

Findings of this study will show that blogs have become a communication genre strongly related to individuality, self-representation and self-disclosure that serves the purpose of personal expression well and represent and ideal medium for creation of an online presence.

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LINGUISTIC AND CULTURAL DIFFERENCES IN CONTENT MANAGEMENT

Indexing and titling in multilingual and multicultural blogosphere

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Introduction

The final paper reports part of the results of an on-going study, which topic is linguistic and cultural differences in multilingual and multicultural blogosphere. The preliminary results with the Finnish language material clearly show how the idea of indexing diverges partly fundamentally between information professionals and blog-writers.

In the abstract the theoretical background as well as motivations for the study and some general viewpoints are discussed.

Background and significance

To convey meaning we need to communicate, use language, and this is not always an easy task in a globally united yet linguistically and culturally separated world. Libraries and tools for information documentation and retrieval are not only living a new renaissance, but also encountering new problems. How to provide relevant information in today's global life? What are the obstacles? How do we face them?

In the World Wide Web (WWW) information is commonly published by other than professionals on knowledge management, and

the content is in its character mostly so called social media and disseminated by others than traditional publishing channels. At the same time the border between writers and non-writers, and fiction and non-fiction has become blurred. In the information science Library 2.0 era is discussed (Widén-Wulff & al. 2008, 842).

The starting point for the definition of 'blogs' (also known as weblogs) is often form instead of content (see e.g. Blood 2000; Gillmor 2004; Ojala 2005). In this study the emphasis is specifically on subjective and text-form diary-type blogs, which are further here referred to as blogs. As a text type the material represents web prose, which is creative, dialogical and oral like but stylized writing in weblogs, chats and discussion forums (see the term's origin in Niemi-Pynttäri 2007).

English, Finnish and Russian belong to different language groups, but more important difference is that Finnish is culturally very Finnish and Russian very Russian, whereas English is globally very common lingua franca, i.e. used in communication between persons not sharing a mother tongue.

Traditionally language (cf. Bühler 1965) and texts (cf. Reiss 1977) are considered to serve three basic functions – to represent, express and appeal. The functions are bound to communication. In informative function (to represent) language is used to refer to the reality, and the topic is in the foreground of the communicative intention. In practice it is involved in every message. For example encyclopedias and lectures represent informative text type. In expressive function (to express) the emphasis is on the sender of the message, as is case in expressive text types like in poems and in drama plays. In vocative function (to appeal) the emphasis is on the receiver. For example commercials and election speeches represent vocative text type. Nevertheless, in practice texts often include characteristics of several text types, and for instance, memoirs are close to expressive text type, but in their nature also informative. (Vehmas-Lehto 1999, 71-73) Jakobson (1981) distinguishes six functions of language, which are referential, emotive, conative, phatic, poetic and metalingual. In his opinion the functions impact in parallel resulting on the simultaneous existence of different functions in different situations and language use manners. (Ibid, 22-27)

The Jakobson's model has been especially popular in the study of reception of cultural products, and it has been used as a framework as well as a tool for analysis. It takes into consideration different kinds of contexts, is multifunctional (it is not necessary to reduce discourse into one function at a time) and with the help of it the communicative action or result of an action can be analyzed in detail. (Kovala 2005) We can assume web prose to include mainly attributes of expressive and informative text types, but its indexing may be also closest vocative or emotive, and thus not primarily to pass on informative content metalingually. In this study the focus is on emphasis of different (dominant and secondary) functions and on their tension (cf. Kovala 2005).

In the study indexing (documentation) is understood in coherence with the standards of the field (ISO 5963-1985, 2) as the "act of describing or identifying a document in terms of its subject content".

In this study different discourses of information storage are explored. At a general level discourse can be defined to refer to language use in social context (Pälli 2003, 22). It is also noteworthy to realize, that although discourse is a substantive, it means also doing something and active processes. In the center of the analysis is thus human action. (Lehtonen 1994; Potter & Wetherell 1990; Pälli 2003).

As a research method is used discourse analysis, which is context-bound study of human activity (Fairclough 1992; Olsson 2004, 2). It is not reasonable to characterize discourse analysis as a distinct research method, but more as a loose theoretical framework (Potter & Wetherell 1990; Suoninen 1992, 125), in which different emphasizes in focus and methodological applications are allowed (Jokinen & al. 1993, 17-18). Discourse analytical methods have been scarce in the field of librarianship and information science research, although the interest has been growing (Hedemark, Hedman & Sundin 2005, 17). The starting points of discourse analysis have been discussed in several articles, but it has seldom been used as a method for empirical studies (Talja 1998, 18). However, discourse analysis is a natural choice, when we think of the key element in our field – information. Talja (1997, 70; 1999, 460) describes information

Country	*1. language*	*2. language*	*in all (50)*
Finland	Finnish – 10 samples	English – 10 samples	20
Russia	Russian – 10 samples	English – 10 samples	20
United states	English – 10 samples		10

Table 1: The research material (blogs) by country and language

as being concerned with what people do with language and what language does to people.

In this study blogs are analyzed as cultural products, since languages and the thinking they reflect mainly stem from cultural needs for expression (see Suojanen 1993; Slater 1998). Language is not static (see e.g. Varantola 1990; Aitchison 1991; Wierzbicka 1997; Lehtonen 2000; Katan 2004) and therefore also their documentation (indexing) is tied with time and the surrounding culture (Nykyri 2010).

Aims, material and methods

This study analyses different ways how bloggers provide textual tools for information retrieval and enables finding information from their blogs. The four language and culture pairs analyzed are American English, English as lingua franca, Russian and Finnish. On blogs written in Russia and Finland even samples written in mother tongue and English are selected. The total sample is in all fifty blogs, from which ten most recent updates are collected. The analyzed material covers thus 500 text samples.

The material collection bases on theoretical sampling (see Seale 1998, 329; Strauss and Corbin 1990, 176-179) and its criteria are diary-like content, provision of indexing terms[1] for the readers, similar search features of the used platform, and the background of the author, and the publication country and language.

[1]Different blog-platform providers use different kinds of terms. For example, in Wordpress the term "tags" is used for the keywords which describe the content, whereas in Blogger they are referred to with the term "tunnisteet".

This study focuses on examination of the linguistic methods, which are used to describe the content of the blogs, and the functions of the indexing. The method used is discourse analysis. Indexing is reflected to the functions and text-types found in the actual blog texts. When analyzing cultural differences the comparison pairs are Finland, Russia and United States, and in their linguistic aspects Finnish, Russian and English (as American English and lingua franca) are explored.

The research questions are:

- What kinds of functions the indexing and titles of blog texts reflect? What kinds of motives are found in the documentation of subjective blog writings?
- Are there differences in style and function of blog indexing and titling?
- Are there clear documentation discourses between specific countries versus languages versus certain background of the authors? – What kind of customs exists in the Finnish versus American versus Russian versus international material?

Indexing is reflected to the content of the blog texts, titles and search possibilities. The focus is on functions and styles. For example the geographical place of writing or reference is interesting also from the perspective of information seeking, and it can be expressed in many different ways (cf. Lindgren 2005).

Results

Despite of their universality and growing popularity blogs as a form of social media are still little studied (see Kjellberg 2010). The linguistic and cultural aspect of social media information seeking, described in the research plan, represents a unique approach. The topic of the research concerns directly the most challenging tasks within information science today, which is to achieve a better understanding of the fundamentals of human information behaviour, and the ways in which it changes over time (see Bawden & Robinson 2008, 9).

Research on indexing of social media is useful for all the aspects of the production, management, and seeking of digital information resources. The study clarifies the nature of subjective web communication by exploring its documentation, and thus helps to specify the traditional documentation sources. The cross-disciplinary approach brings new perspectives to the research field and helps to develop the research analysis method by borrowing expressive and useful concepts and tools especially from communication studies. The project has also a novelty value in describing a rich variety of culture and language bound problems in the development and study of multilingual and multicultural blogosphere. The results of the study are useful as well in private as in public sector for actors and developers involved in global Internet communication and social media.

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TEACHING SOCIAL MEDIA IN LIS

A bridging approach

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Introduction

People use social media in many situations and contexts of their everyday life. These interactions and arenas entail enormous amounts of information and have also changed the ways many people interact and communicate. Scialdone, Rotolo and Snyder (2011) identified themes for which social media has had large impact and how these are relevant for curriculas and goals of iSchools and information science departments: "social media communities, ownership, privacy and governance of user-generated content on social networks, and how social media may impact education and learning at all ages" (Scialdone, Rotolo & Snyder, 2011, p. 514).

The concept social media is elusive, and definitions depend on the context where it is applied, commonly with a focus on technology or marketing. Social media courses are often offered by commercial education companies. The majority of these are practically oriented and focus on the use of social media from a commercial perspective, as in business advantages, and marketing, or on specific technological tools and arenas. Courses taught in academic disciplines have previously had similar narrow foci. Swedish universities currently offer social media courses in disciplines such as media studies; education; and informatics.

As demonstrated by Scialdone, Rotolo and Snyder (2011), many aspects of social media are closely connected to areas already studied within many LIS curriculas. Furthermore, LIS is well equipped

to understand and handle complex information problems due to its interdisciplinarity. However, teaching social media in a meaningful way for LIS presents a number of challenges. We suggest that in order to make the concept useful in LIS contexts, it is important to understand some basic mechanisms and dimenstions of acitvities and behaviours in social media arenas that goes beyond technical solutions and marketing strategies.

Course example: Social media and social interaction

To illustrate our approach, we present an example from a course offered by the Swedish School of Library and Information Science: Social media and social interaction, 7.5 ECTS, to students on the undergraduate and master's levels in the LIS programmes and the web content manager programme. It was developed with the intention to provide a general , overall perspective on social media. Other courses given at the department focus on specific social media tools and arenas, including The theory and practice of blogs; Filesharing and Internet politics; and Programming for dynamics, interactivity and integration.

The learning outcomes of the course used in our example are: that the students will have the competence to describe and discuss use of social media, social interaction and arenas where social interaction can occur; and to synthesize central theories and concepts concerning social interaction and virtual communities. We believe that it is necessary to go beyond technical applications and solutions and the commercial marketing perspective to understand, and thus be able to use, social media in a meaningful way in LIS related professions. This connects to another challenge in teaching social media which is related to balancing elements in the course related to either theory or practice. This challenge is neither new to LIS, nor unique for social media: other current LIS examples include aspects of knowledge organization; digital library development; and content management. Finding an appropriate balance depends on factors such as local practices in the curricula and the level of the course.

Theoretical grounding - three themes

The literature used in the course example have been organized into three themes: theoretical points of departure; motivations for participation; and contexts and applications. The literature belongs to a variety of interdisciplinary research fields, such as computer-supported cooperative work, computer mediated communication, information science, and psychology. A guide to approaching the literature is provided to the students, as the bulk of the literature is research papers, whilst the course is given to undergraduate students. A n additional effect of this is that the students are introduced to scientific writing and methodology early in their education.

Theoretical points of departure

Theoretical perspectives on social media and related topics make the point of departure for the course. In the initial part of the course, definitions of social media such as social network sites (SNS), are introduced and discussed (Steineld, Ellison & Lampe, 2008). This part of the course also covers concepts and applications of information sharing and active participation in several contexts such as scientific collaboration and open source software development. (Ellis, Oldridge & Vasconcelos, 2004; Lassi & Sonnenwald, 2010; Neale, Carroll & Rosson, 2004).

Motivations for participation

Identifying and implementing the right motivations for participation is crucial for the success and longevity of a venture of increasing interaction using social media. The body of literature in this theme represents a broad take on information sharing and active participation. Nardi and colleagues (2004) present the results of an interview study about the motivations of bloggers. Nonnecke, Preece and Andrews (2004) have studied what posters and lurkers think of each others' roles in a virtual community. Lassi and Sonnenwald's (2010) have synthesized previous research, resulting in a

taxonomy of factors that may affect the design, adoption and use of a Web based system for information sharing and collaboration.

Contexts and applications

The majority of course literature falls into this theme and includes papers in which several contexts and applications come into play (boyd & Ellison, 2007), as well as papers focusing on specific contexts and applications. Examples of these are: an online pregnancy and mothering group (Ley, 2007); World of Warcraft (Nardi & Harris, 2006); a financial discussion board (Herrmann, 2007); Facebook (Ellison, Lampe & Steineld, 2009); and social tagging networks (Ding et al., 2009).

Practical applications - course assignments

The course assignments have been designed to bridge the theoretical focus of the literature and social media tools. In the first assignment we asked the students to contribute to a new collaborative initiative about social media, namely the wiki Sociamediapedia. Each student contributed two wiki posts about central theories, concepts, phenomena or tools related to the course. Subsequently they were asked to add to, modify, and make connections between the other students' contributions. The second assignment was to analyze activities and interaction in Internet forums of the students' own choosing, and to connect their observations to theories and concepts within the themes above, such as participation, roles, status, and privacy. The final assignment was to develop a social media strategy for a web site using their knowledge of motivations for active participation and information sharing.

Principal contributions

With our example we have demonstrated an approach to teaching social media in LIS that bridges the gaps between theory and practice, and, furthermore introduces a perspective concerning social interaction to the current technology and marketing focused teaching approaches. We have also identified a body of research

from different research fields that contribute to a broad theoretical understanding of social media concepts of importance for LIS and other fields.

Our students have learned to develop strategies for introducing and developing interactivity on the Web, using their knowledge of motivations for sharing information and active participation in social media. Furthermore, the students have used the central concepts and theories in analyzing specific arenas for social interaction and contributed to a wiki on social media.

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II

DOCTORAL FORUM

INFORMATION-RELATED ACTIVITIES IN A SOCIAL MEDIA AND PUBLIC LIBRARY CONTEXT

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Introduction

The aim of this paper is to present an ongoing research project concerning social media and public libraries. These two constitute an interesting information-rich context. The relationship between social media and public libraries (also called Library 2.0) can be seen as a combination of the following building blocks: technology and tools, Web 2.0, social aspects, users, participation, libraries and library services, and interactivity (Holmberg et al., 2009). Social media is often categorized as a tool for communication and entertainment, but different information activities are also an inherent part of social media. Social media tools have affected the expansion of information, the rate of expansion and the gathering of human information (Allard, 2009). Therefore, research interest into the information behavior and practices is essential. Fisher & Julien (2009, p. 342) specifically mentions Web 2.0 as a source of vast material for information behavior research. Savolainen (2011) also indicates that there is a need for more research in social media and its implications in everyday life information seeking and sharing. Information activities also constitute an important part of public libraries, and one of the main purposes of libraries is to disseminate information and culture. Wilson (2008) does, however, point out the lack of research into information behavior in the public library setting.

The focus on information-related activities in a social media and public library context makes the theoretical framework of information practices a suitable starting point. Savolainen (2008, pp. 2-3) defines information practice as "a set of socially and culturally established ways to identify, seek, use, and share the information available in various sources such as television, newspapers, and the Internet.". Information practice starts out from a social perspective, where information activities initiate from interactions between members in communities instead of the motivations of an individual user (McKenzie, 2003; Savolainen, 2007). The following activities are entailed in information practices: seeking, accessing, creating, using and sharing information (Savolainen, 2007; Tuominen, Talja, & Savolainen, 2005).

Research questions and aim

The aim is to investigate the interface between users, library professionals and social media. The focus lies partly on the users' interest in interacting with the library through social media and what kind of information activities and practices come into question. The focus is also on the challenges and opportunities library professionals face considering social media in their everyday work: the way they interact with users through social media and to what extent they think libraries should be involved in social media. Specific research questions are: 1) What are the expectations, intentions and motivations of users concerning library activities and social participation on the Web? 2) What kind of possibilities, resources and motivations do library professionals have in adopting, developing, maintaining and supporting social media services? And 3) What are the inherent information activities in social media services provided by public libraries?

Methods and data gathering

The empirical work of this project is divided into two phases. The first phase is a survey study among library profeesionals and users and was carried out in autumn 2010. The goal with this study

was to get a broad overview of the use of social media and libraries and opinions about social media services in public libraries.

This study consists of two questionnaires, one aimed towards users and the other towards library professionals. The user questionnaire was distributed through nonprobability quota sampling at the Turku International Book Fair and at the Turku City Main Library. A total of 741 responses were collected. The library professionals in public libraries in the area of Finland Proper received invitations to participate in a web questionnaire. The answering rate was 30.4% which should be considered reading the results.

The second phase is a content analysis of Facebook pages of public libraries in Finland Proper. The goal is to study the inherent information activities observable in this setting. This study is still in progress and its results will not be discussed in this paper.

Preliminary results

Results from the user survey show that when it comes to information activities on the Web, users generally engage in the following: seeking, reading/viewing, communicating, creating and contributing. The most common of these five activities are the traditional seeking, reading and communicating. The creating and contributing activities that are often strongly connected to the notion of social media are not as widespread as the traditional activities. Seeking engages up to 93% of the users on a frequent basis, while creating engages 37% and contributing 30% of the users.

Over half of the users support the implementation of social media services in public libraries. The results do, however, indicate that the users do not necessarily see social media and public libraries as parts of the same context. Users tend to base their opinions on their previous experiences of libraries and not necessarily on their experience of social media. They do, for example, prefer contacting the staff face-to-face and show a relatively low interest in virtual reference, although they generally enjoy the communication possibilities of the Web. Users also expect and find traditional features of the library catalog such as promptness, reliability and usability as more important than possibilities to influence the content or that

the catalog has many users. The social media activity that interests the users the most has to do with reading reviews written by other users and library staff, while the interest for contributing and especially creating activities is much lower. Worthy of note is that the users in the survey still put the most weight on anonymity and regulations. Almost 70% of the users want to remain anonymous when writing comments on the library web site and over 80% consider it important that the library have rules for what the users write on the library web site.

The prime motivator for users to engage in library activities on the Web seems to be a sense of community with the library. They are not concerned with getting any recognition or rewards for participating. The users that show the most intentions and interest for taking part in social media activities in the public libraries are 10-16 year olds, frequent library users and those who generally enjoy creating content on the Web.

Results from the survey among library professionals show they are primarily motivated by the possibility of developing the library and its services. The available resources for social media services in the public libraries are sufficient considering skills and financial means, the big exception is time. It is evident that the lack of time and staff are the biggest problems concerning the implementation of social media in public libraries. The library professionals still show interest in working with social media services. They, however, show more interest in writing blog posts than in activities that are more explicit about interaction with users, such as leading book discussions, giving virtual reference or offering users the ability to connect with the library on social networking sites such as Facebook.

Conclusions

The survey results indicate that there are many inherent possibilities in implementing social media services in libraries. Both users and library professionals are familiar with social media services overall. The library professionals also believe that social media services could open the door for new users and improve the library web services.

Interactivity seems to be one of the core issues in the context of public libraries and social media. Library staff and users are, in one way or the other, prepared to participate in Library 2.0 activities. The interaction between these groups is still not given. Library professionals seem to be most interested in informing activities and most of the users are interested in keeping up their roles as readers and seekers. The challenge for libraries is to find social media services that are of use to library users and to activate the group of users who are willing to participate.

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USERS' CULTURAL IDENTITIES, ROLES AND OPEN ACCESS IN SECOND LIFE

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Abstract I'm PhD-student in digital culture at the University of Turku. My doctoral thesis is focusing on the individual roles and cultural identity, in the Second Life virtual world as an operating environment as well as Open Access activity in the virtual world. My title is "User's roles and cultural identities in the University of Rockcliffe in Second Life."

Background

My research focuses on users' cultural identities, roles and the impact Open Access activities in Second Life (SL). Users in three different themes are studied: education, enterprises and entertainment (the three 'Es'). These three 'Es' form vast numbers of different areas and environments in virtual worlds.

In my research, Education Life the first 'E' representatives originate from Rockcliffe University. The university's special feature is that it is open to all and works on the Internet. Further, it is a non-profit, non-accredited, informal association of instructors from various universities and colleges around the world.

I chose Rockcliffe University as my research subject since it is open to everyone and has an excellent research library that operates on an open access principle. The library is the heart of university where one can find research materials, tools, advice and contacts to study and carry out research or just pass the time.

I had the idea to review enterprise and business life (second 'E') in SL at Nokia's island; however, this has been put on hold for the present.

My third 'E', entertainment, comes from the Berlin1920's project. It is a popular role-playing game created by the Dutch historian Jo Yardley who wanted to recreate the atmosphere of Berlin in that era. There are some 50– 70 residents and 100 visitors in Berlin.

Virtual worlds are a part of social media, a process in which individuals and groups construct shared meanings in content, communities and networking. The project investigates how virtual communities affected by the individual user roles, cultural identity and the Open Access principle are adopted in the customer, teacher or student positions.

Methods

I examine how the user consists of a single cultural identity in different contexts; how the open access activities affect the cultural identity formation; and how the open access activity appears in different roles. My material is collected from interviews, videos and images from my research areas in Second Life. Although Second Life is almost a copy of our real world, it should be examined on its own premises. Cultures in virtual worlds comprise people - and people are a requirement for the culture to exist.

While I use text content analysis as a support method in my research, I aim to use semiotic qualitative visual content analysis as my main research method. Semiotic visual content analysis is seldom used in cultural research, at least in Finland and Europe; however, I aim to exploit this method in my research because of the clear visual impulse in virtual worlds.

I am especially interested in images and moving pictures. Image material and multiple identities have become more important for Internet researchers since people are taking and publishing pictures on Internet more than ever. Visual material on the Internet has been previously examined almost exclusively as a technical expression.

Semiotic visual analysis is not a new method. Philip Bell, Theo van Leeuwen and Rumiko Oyama have presented its use in the Handbook of Visual Analysis (2001). Bell describes precise hypotheses; clearly defined concepts of variables and values are the sine qua non of visual analysis (Bell 2001). According to van Leeuwen, Barthes' semiotics and iconography deals with the same basic questions about what and how to submit images, and what ideas and values the images contain. The difference between barthesian semiotics and iconography is that barthesian semiotics only examines the image itself and the cultural meanings of the capital, whereas iconography also pays attention to the image production, life context and history (van Leeuwen 2001).

Professor Andrei Košir from the University of Ljubljana states that we can look and analyse images in many ways. He also maintains that we should analyse the content of digital images so that we use semi-automatic procedures for understanding the significance of image content (Košir 2004) Images are spatial or regional and consist of individual objects. Using qualitative content analysis for images must take into account the image objects, the importance of relationships to each other, as well as the time dimension. My research aims to determine if it possible to create a picture about individuals' multi-identities and roles in virtual worlds by using semiotic qualitative visual analysis.

Semiotic visual analysis is an interesting way to trace how multiform virtual world services, as social media services, affect users' identities and roles. Although virtual characters are currently anonymous, anonymity is beginning to disappear as we link them to other social media services like Facebook, Twitter or Delicious.

In this case, real people and their friends form the virtual character and their virtual friends. What happens when the real identity and virtual identity is connected? My study aims to discover how users can manage multiple identities and roles in virtual cultures using image analysis as the method. I apply the content analysis described by Philip Bell and Marcus Banks to the textual and visual material (Further research Bell 1997; Morphy 1997)

Avatars as visual embodiments are most interesting and important when studying identities, visual lands, places and scenes. In

Second Life, buildings, landscapes and environments are partly given to the users or residents by Linden Lab. Users can buy, rent or build homes and other buildings and environments by themselves. There is still always something old, borrowed and new and perhaps even blue.

What is common with open access, roles and cultural identities?

In my research, the premise is that a virtual world, in this case Second life, is a virtual extension for people, a new environment and part of augmented reality. Money and permission barriers in virtual worlds are as strong as in real life.

Many researchers of culture, such as Peter Adler, Tom Boellestorff and Stuart Hall, have defined cultural-identity as the fundamental symbol of a person's existence (Adler 2002, Boellestorff 2008, Hall 2003). Cultural identity is an elemental form which develops throughout life. Social relationships, environments, language, religion and education all affect our cultural identity and roles. This also applies to virtual worlds.

Second Life offers its users the possibility to create or build original content using solids called 'prims' (3D geometric shapes). Users are allowed to create their own avatar - their representation in the virtual world - and change its looks as much as they want. These creative objects, as all objects, belong to intellectual property rights and licenses.

Open access and virtual worlds

Open access principles are globally accepted and are most useful in virtual worlds to reach large numbers of users. Open access is also connected to research, education and in the general access of information in virtual worlds. How these principles affect the users' way to handle their identities is also an important question.

It is more common to discuss open source elements among virtual worlds - open access and openness activities are often linked to scholarly publishing and repositories. Open access in a virtual world can be interpreted as free access to virtual environments; the free

opportunity to create objects, avatars and services; and to freely share them.

Openness and open access have spread widely among education institutions (like Open University, Rockcliffe University, etc.) and libraries. Rockcliffe Library is an excellent example of the open access spirit in Second Life.

Second Life has been created using open source programs; and although users have created most of the objects in it, commerce and money is around all the time.

As most users do not have the required technical or programming skills, they must rely on the help or services from other users. It is also possible to acquire services and objects by buying them from other users or residents with Second Life's own money, the Linden dollar. If you do not have any money, you have to create objects yourself or get 'freebies' or 'free stuff'.

Open access in virtual worlds concerns free culture such as fees.

The terms 'libre access' and 'gratis access' are mainly used to categorize intellectual property, computer programs according to the licenses, and legal restrictions that cover them in the free software, open source communities and in the broader free culture movement.

'Libre Access' means free of both cost and permission, while 'gratis access' means free of cost. Peter Suber and Stevan Harnad, who are widely viewed as de facto leaders of the open access movement, have further developed and publicly discussed these two definitions.

I discussed (by email) these definitions with Peter Suber who maintained that it makes perfect sense to use the gratis/libre distinction in virtual worlds like Second Life.

I also asked (by email) for Stevan Harnad's opinion. He takes the opposite view – his vision being more limited than Suber's. He believes that the terms should only be used in connection with scholarly publishing. Despite these different opinions, I intend to use these definitions of open access in my research to diversify the concepts. The term open access also needs to be clarified regarding different types of environments. For the present, however, it seems that virtual worlds are a wild environment in the open access area, and for this reason we need to generate discussion on the issue.

As we use virtual worlds for education, especially with publicly-maintained higher education, it is important to offer equal and open possibilities to learn.

License

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THE DANISH DIGITALIZED CULTURAL HERITAGE AND ITS USERS

Usage, search strategies and findability on the internet

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Abstract In this Ph.D. project three different cultural heritage resources on the web are studied with a triangulation of methods. 1) The users' navigational strategies to reach the resources and their usage of them are examined by web log analysis. 2) User attitude and experiences are collected through resource specific web surveys. 3) A findability analysis is made to measure how easy the resources are found on the web. Finally, the results from the different angles are compared for correlations.

Introduction

Denmark has increasingly digitized its cultural heritage in large scale during the 2000s. The collections of digitized materials include substantial amounts of texts, books, pictures and movies. A large part of the collections are made available on the Internet, and the question arises of *how* and *to what extent* these collections are actually used? The Ph.D. project focuses on the public's use of digitized cultural heritage in everyday life. The project studies the digital collections of the memory institutions, operationally defined as the collections that have conjointly been saved and then digitized by the archives, library and museum institutions (including audio-visual archives) in order to limit the investigation. The project focus is on the relations between the users' (search) behavior,

search strategies and the findability of the cultural resources, e.g., are the collections easily found by the users or are they invisible on the web?, and who are the users and are they searching for work or leisure purposes?

Purpose and aim

The project has two main purposes. The first is to gain an understanding of the usage of the digitized Danish cultural heritage online and its users. That is, to identify and analyze the use of digitized cultural heritage resources online - primarily in everyday life. This includes the users' information searching behavior and their intentions and experiences of using digitized heritage resources.

The second purpose is to analyze the information searching behavior in relation to findability as the degree of *findability* of the content may explain some of the search behavior. The closely related concept of digital visibility is said to be a key driver for traffic to sites in the web (Nicholas, Huntington, Williams, & Dobrowolski, 2006). This part of the project includes the study of how findable the resources are online, e.g. if the resources and their content are indexed by Google.

Framework

The starting point in the research project is the relationship between user, information and information system. In this case the information system consists of both the local information systems (database or content management system) and the web as a whole (including web search engines).

From the users point of view the issue is the interaction between user actions, information behavior and search strategies, which may be visualized as a stream of user interactions. From the system point of view the system both generates the feedback to the users' actions and is responsible for the findability of the information in the system.

Information on the web is published in some sort of information system, which is made public on the web through a web server. How findable the information is depends on many things, but the

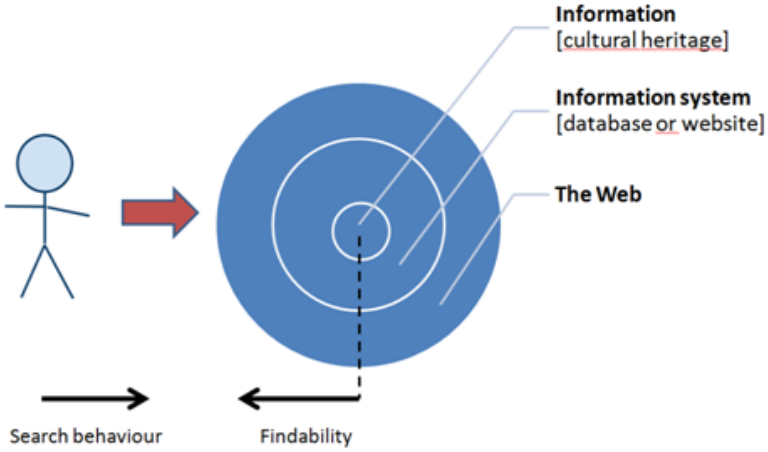

Figure 1. User interaction with cultural heritage information embedded on the web.

user always has to find her way on the web the resource containing the information objects (as illustrated in Figure 1 below).

The information resources have two levels: object and resource. Objects are the information, the single pictures, videos and texts containing the cultural heritage. On the resource level there are navigational functions like internal search and categories together with general information. The resource level is folded around the collection of objects, and is a layer that has to be penetrated to reach the objects. This division is important when looking on search strategies and navigational ways on the web. In Figure 1 the information (object) and information system (resource) are shown as circles within the outer web circle.

Research questions

Whether, and how, the user finds the cultural heritage information depends on factors both on the system side (e.g. findability) and the user herself (e.g. information need, motivation, level of information literacy). The project research questions (RQ) deals with different aspects of the research problem. RQ 1-4 are mainly descriptive in nature and leads to correlation questions in RQ5.

RQ1: What do the users do in the cultural heritage resource?

From system log files it is possible to single out specific search sessions and to follow a user through a session. It is often not possible to track a user across different sessions – this depends on the availability of sufficient IP-number and session-ID information in the specific logs. The log file data will, however, be sufficient to explore the moves and tactics, the two most basic levels of the four levels of interaction (Bates, 1990; Jansen, 2009). In addition, it is important to study both the navigation and the queries of the user (Mat-Hassan & Levene, 2005), as the two behaviors are two sides of the same coin. Several quantitative usage measures are relevant and interesting, e.g. bouncing rate, depth and length of visits and the number of object looked at (Nicholas et al., 2006).

RQ2: How do users find the cultural heritage resource?

Users may reach the cultural heritage resources in a number of different ways. On the web there are three basic forms of navigation (Levene, 2010):

1 Direct navigation.

2 Navigation through links.

3 Navigation using a Search Engine.

The log files contain referring URL's including search terms from the referring search engine. What kind of need do the search terms

indicate the users have, informational, navigational or transactional (Broder, 2002)? And are they looking for known items or known collections? Or do they have general information needs and arrives to the heritage collections in trying to solve them, not looking for cultural heritage in particular? Finally, how navigates the users to the resources?

RQ3: How findable is the heritage resource and its objects?

Morville defines findability in *Ambient findability* as follows (Morville, 2005):

a. *The quality of being locatable and navigable.*

b. *The degree to which a particular object is easy to find or locate.*

c. *The degree to which a system or environment supports navigation and retrieval.*

As Morville's definition shows findability operates on different levels, both on object level (b) and on system level (c). He also discusses the quality of and the degree of findability, which implies that findability can be quantified at some scale. Information on the web is published in some information system (e.g. content management system, blog or database) and the information system is then available on the web. Because of the complexity of web publication findability is constantly changing and hard to calculate, but it might be the most important aspect on information on the web in this era of search engine use.

The plan is to use an analysis protocol and measure attributes at both resource and object level. The aspects and attributes measured will be derived from research in relevant areas, e.g. web information retrieval, search behavior and information architecture, but also from best practice in the fields search engine optimization and web usability (e.g. Enge 2009). Attributes and factors like the following will be studied:

- Is the resource/object catalogued, e.g. in Bibliotek.dk[1]?
- Is the resource/object indexed by the web search engines?
- Is the object downloadable?
- Does the object have a unique URL?
- What media type is the object?
- Are there any web 2.0-functions (e.g. share-buttons) in relation to the object?
- To what extent has the object metadata?
- How high is the Google PageRank-value of the object?

It will be attempted to calculate a findability score out of the answers in the protocol. If this is not feasible the resources and objects will be classified into different groups depending on the degree of findability.

In addition, findability might be seen as a part of the field of webometrics (Björneborn & Ingwersen, 2004; Thelwall, 2009). But findability is more than link analysis. Reachability through links is one important part of findability, but there are other equal important parts and these might not be classified as webometrics.

RQ4: Who are the users and what are their thoughts on the cultural heritage resources?

Research question 4 is answered primary with Web surveys, one in each of the studied resources. The aim is to gather data to go get a better picture of the users. The log files contain just behavioral traces of the users actions, not any data about the users or their needs.

The Web surveys could be connected to one or several approches, e.g. Information horizon (Sonnenwald, Wildemuth, B, & Harmon

[1]http://bibliotek.dk Bibliotek.dk is a library catalog containing all publicly funded collections in Denmark.

2001), Serious leisure (Stebbins, 2007) or Savolainen's ELIS (Savolainen, 2007). But information seeking and tasks in a professional context could also be of interest (e.g. Byström & Järvelin, 1995). On a more theoretical level may the everyday practice of de Certeau (strategy, tactics and resistance) be suitable for RQ4 and as a mean to connect all the research questions in a more theoretical way (Certeau, 1984).

RQ5: Correlations between the results from RQ1-4

The mainly descriptive RQ1-4 are put in relation to one another in RQ5. The studied cultural heritage resources are of different types and from different institutions, and contain different kinds of objects, e.g. text and video. That is both a strength and a weakness, but hopefully some patterns will emerge. Possible correlations might be:

- Is there a connection between how users find the resources and the usage of the resources?
- Is there a connection between the usage of the resources and the degree of findability of the resources?
- Is there a connection between how users find the resources and the degree of findability of the resources?
- Are there differences/similarities in the search behavior in the different resources?

Research design

The study is quantitative and in the overlapping area between several research fields: webometrics, information seeking and retrieval and web search. Research question 1 and 2 will be answered with analysis of log files from the studied heritage resources. The log analysis will be complemented with web surveys attached to the resources as a way to get a better picture of the users (RQ4). To answer research question 3 the studied resources are evaluated with a findability scheme to arrive at comparable findability scores.

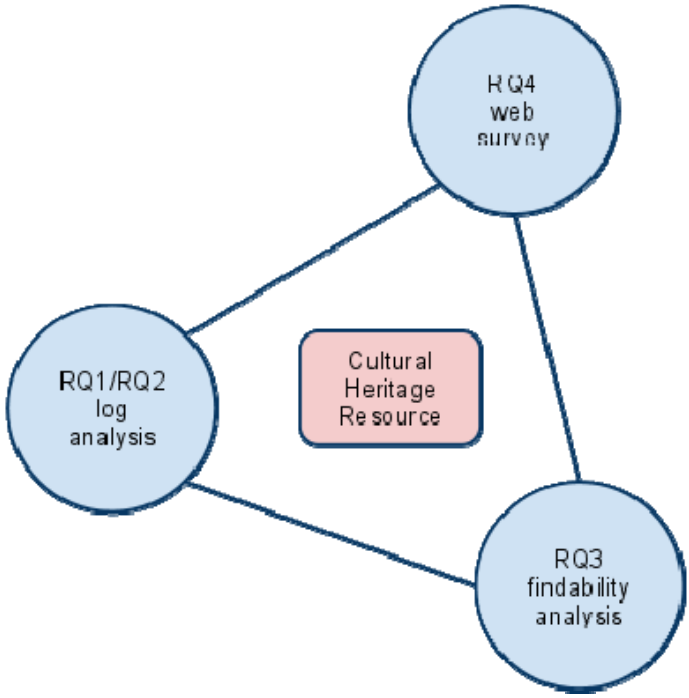

Figure 2. Illustration of the interconnections between the project research questions.

The setup forms a methodological triangulation. The log analysis, the web surveys and the findability analysis are put in relation to the five research questions as illustrated in Figure 2 below. RQ5 are the lines connecting the other research questions in the circles.

Progress and status

The following cultural heritage resources will be studied:

- *Art Index Denmark*[2] (Kunstindex Danmark) is a database covering a large part of the holdings in the Danish Art Museums from The Heritage Agency of Denmark. The website also includes a dictionary of Danish artists and pictures of some works.
- *Bonaza*[3] is a Youtube-like service from Denmark's Radio (DR) which contains popular videos from the archive of DR.
- *Guaman Poma Inca Chronicle*[4] at the Royal Library is a widely used digitized book; maybe the most read online ebook in Denmark.

At the time of writing (March 2011) work is being carried out on the log files to explore their possibilities and limitations, what data can be found in each of the data sets and which questions can be answered (RQ1+2). The findability protocols for RQ3 are under construction. Six aspects of web findability have been identified and factors for measurement chosen.

The work with RQ4 is planned for fall 2011 as the survey is based in preliminary findings in RQ1-3. RQ5 will be addressed late in the process, probably in summer 2012.

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[3]http://www.dr.dk/Bonanza/index.htm
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SOCIAL MEDIA RESEARCH AT SWEDISH SCHOOL OF LIBRARY AND INFORMATION SCIENCE

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Introduction

Social media is one of several highly prioritised research themes at the Swedish School of library and information science. It was initiated in December 2009 and was a year later awarded a 5 million SEK research grant for the period 2011-2013, funded by Borås University. Social media is a broad and challenging research area with activities ongoing or being initiated in most disciplines within the social sciences and humanities. The strength of LIS, and our research theme, is the tradition of understanding information and information technologies broadly and from a multitude of perspectives. Our research aims at investigating the co-production of social media and social relations. Where are society, institutions, professions and organizations taking social media, and where does social media take us?

In this abstract you will find a short presentation of three emerging doctoral projects connected to the social media research at the department.

Emma Forsgren: Information related activities and social media in business organizations

The focus of this dissertation research is on private sector business organizations and their interaction with new social media sites and services as both information resources and virtual workspaces.

As ICT developments generate new ways of communicating, collaborating and defining organizational goals, what is their impact in relation to the execution of work tasks; to attitudes; ways of working; and on the arrangement and perception of work environments themselves? These questions form the basis of my research. Organizations of specific interest are 'young' workplaces where the information culture is unconventional and where the use of new social media technologies are evolving which can be compared with established more traditional workplaces. The attitudes and behaviors of both staff and management will be investigated and analyzed.

While social media, internally and externally, put individuals and groups in novel and often challenging situations, familiar and well-understood commercial imperatives and pressures persist. What then is the intersection between old and new technologies and work patterns within the organization, which must adapt and evolve in order to thrive? By investigating how, why, where and when information activities relating to new media are conducted, new requirements, demands and ways of working within organizations might be captured. This is of importance not only to system designers but also for more general and academic researchers of human information behavior. By undertaking such research we can learn something about ourselves at the same time as providing the basis for improvements in order to function successfully as a commercial organization in an increasingly complex information society.

David Gunnarsson: Webometrics and visualization of Social Media data

This project aims to develop methods for aggregating, analyzing and visualizing social media data. The overall purpose is to develop new methods and to redevelop existing methods for analyzing real world social media data. The main area of interest for this project is how communities, opinions and sentiments develop or change over time.

The problem lies in finding suitable and scalable methods for extracting relevant data from social media as well as finding methods for visualizing the data in an appropriate way. The graphs and

the clusters of the various entities in social media are not static – they change over time. I find it interesting to study how they change which for example could give grounds for forecasting or an indication of if a certain campaign is successful or not.

The project is in its start up phase and the first part will be to investigate the boundaries for webometrics as well as evaluating the current main methods within the field. The preliminary title of the project is *Aggregating, analyzing and visualizing social media data through webometrics.*

Maria Lindh: Cloud computing services in organisations ethical dimensions, implications for information management, information professionals

There have been suggestions that implementation of cloud computing in organisations will further great change, both for the traditional software companies as well as for those working at traditional IT departments (Barnatt, *A brief guide to cloud computing*, 2010). Some also indicate that there will be a shift in the need of IT competence (Jackson, Shift to cloud requires fresh IT skills, Computerworld 2011-05-05), changing from more practical IT skills to strategic and development skills concerning overall information management strategies in organisations.

Recently one Swedish municipality decided to implement Google Apps, since it was free of charge and "the best". They were proud of being the first municipality in Sweden using this service and had seriously reflected on every problem in using it. This case raised concerns on the ethics in their efforts. Studies show that public organisations already use cloud computing to a great extent. One year ago The Legal, Financial and Administrative Services Agency in Sweden made a survey, where 40% (out of 300 answers) of the participating public organisations said they already had adopted cloud computing.

My research aims are to examine the changing role of information professionals when information management change due to imple-

mentation of cloud computing, and the ethics of cloud computing in the management of organisations' information.

DEVELOPING PUBLIC LIBRARY SERVICES BY MEANS OF PROJECTS

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Introduction

Developing public library services usually require project-organized approach. Libraries can broaden their expertise by recruiting professionals outside the library field for the needs of the development projects. Multi- professional project groups can be regarded as a new tool or a new practice for developing library services.

Research task

The research question is: "How are the Finnish public libraries developing their services by means of projects?"

The answer is sought by examining development activities in a nationwide project 'Library Spaces and Concepts in the Information Society' (2008-2011), which is a part of European Social Fund programme. There are three regional libraries participating in the project with their own subprojects. Each subproject has several simultaneous development targets. The study is focusing on each project group to follow up the formation of a single development target and its development processes as a temporal narrative. The development process is examined from the perspective of the project group.

The present study aims at describing the development activities, i.e. what is really occurring on the projects. The study also examines what kind of collaboration the project teams are doing

with various actors, and how is multi-professionality employed in the development work.

Theoretical framework

The theoretical framework is constructed from separate elements since there is no ready-made model to apply. According to Blomquist et al. (2010), insufficient attention has been paid to the activities of the developers working in projects; this gap is most evident in the study of multi- professional project groups. Moreover, the concept of 'development work' has been poorly defined. Common to such definitions is that the development work is seen as an attempt to change the organization's activities or to improve its work methods. The definition difficulties may be due to the fact that the target, scope, organization form and the basis for development activity may vary significantly from one organization to another. (Toikko and Rantanen, 2009)

Development work in private business and public administration is often organized as projects. 'Project' is also an ambiguous concept. In the traditional project management literature projects are viewed as independent tools for achieving change, not as a specific organizational form. The research of the project management tradition has been divided into traditional system-model-based and social science-based process-oriented approach. (Blomquist et al. 2010)

The present study builds upon the theory of the temporary organization theory. Lundin and Söderholm (1995) suggest four concepts that are related to different phases of the life cycle of the temporary organization: action- based entrepreneurialism, fragmentation of commitment building, planned isolation and institutionalized termination. The project team is seen as a temporary organization, which has different features from those of a permanent organization. Action is a primary concept in the theory of temporary organizations. This theory does not pay any special attention to interaction with other organizations during the project's life cycle; hence Johansson, Löfström and Ohlsson's model (2007) for analysing the relationship between development projects and

their permanent organization is relevant in this study. In particular, account has been taken of the identification of local situated actions, because action, activities and actors within projects are not independent, but inextricably linked in episodes. Thus there is the need to contextualize the project and understand its scope (Blomquist et al. 2010).

In theory-in-use approaches it is natural to talk about the ways and means of action. Differences in development practices can be described by answering to the questions who, how, what and why. With these questions the activities of the development can be described, analysed and compared. (Räsänen, 2007) Development work can be primarily perceived as reflective activity, in which case the development process phases and tasks cannot be determined in advance. Toikko and Rantanen (2009) propose five development tasks to be included in development work. First, development always requires justification: what is developed and why? Second, development activities have to be organized. Third, development is concrete action and its analysis. Fourth, evaluation is linked to development work. Finally, the development also aims at the dissemination of new services and products.

Research methods: data collection

This study is carried out as a case study with action research approach in which the narrative change accounting (NCA) and episodic interviews are used as key research methods.

NCA is a method for producing organizational change narratives. The aim is not only to describe the progress of development events but also to give an account of how the informants explain their own behaviour and make it understandable. The theoretical background of NCA is based on social psychology and theory of social action, called ethogeny, developed by Harré and Secord and later especially by Harré. It includes also approaches from historical research, movie script and ethnography. (Laitinen, 1998) In Finland, NCA has mainly been used in adult education research.

The central concepts of NCA are episode, account and negotiation. Writing of the episodic progress narrative is the first step

in the description of a development process. It includes editing the data collected throughout the development process and then choosing the episodes to be arranged in chronological order as a first listing of the change narrative. The key episodes will be chosen when the episodic progress narrative has been finished. In this study the key episodes were the basis for the individual interviews. The aim is to collect additional information about the course of events and views of people involved in the development. The aim is to produce a change narrative that describes as well as possible the development process from the interviewees' perspective. (Laitinen,1998) The episodic interview method is based on Serge Moscovici's theoretical system of social representations. The episodic interview employs the advantages of both the narrative interview and the semi-structured interview by paying attention to episodes that appear to be relevant to the focus of the research. (Flick, 2000.)

The empirical data of the present study were collected in 2009-2010 (see Table 1). The data consist of nine interviews as follows:

- Project group A ('promoting media literature'): project manager and project worker
- Project group B ('virtual culture path'): project manager and two project workers
- Project group C ('media lounge'): project manager and three project workers

Data analysis

The episodic progress narratives are structured as follows: 1) date 2) place 3) what, who 4) issues, ideas (events and actions, quotes from the data) 5) type of data 6) episode (perceptions and thoughts of researcher's from episode) 7) themes and guiding questions of the study.

Identified development phases and tasks are also connected to the episodic progress narratives. Writing the episodic progress narratives can be seen as the first round of data analysis.

Writing of change narratives (in this study: development narrative) is in progress; negotiating about the content of the narratives

Table 1. An overview of the empirical data

Phase	**Type of data**
Writing the episodic progress narrative Throughout the data collection process (spring 2009 – winter 2010)	Official project meetings - field notes of researcher Project planning meetings - part of them recorded Follow-up meetings - recorded (a total of 8.5 h) Blogs of project groups Other materials – project plans, baseline surveys, memos of official project meetings, e-mail correspondence with the informants
Collecting of the accounts At the end of the data collection process (winter 2010)	Nine individual episodic interviews with informants (a total of 34 h) - recorded and transcribed.
Negotiating about the change narrative with the interviewees (summer 2011)	Development narratives of project groups to be read and commented for informants

with the interviewees will take place in summer 2011. Detailed research questions will be derived from selected themes after writing the development narratives of each project group.

For discussion

The collected data of the research is focusing on the phases of action- based entrepreneurialism, fragmentation of commitment building and planned isolation, while the last phase, that is, institutionalized termination will not be examined. Is this a problem?

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III

ADDENDUM

WRITING FOR WIKIPEDIA AS A LEARNING TASK IN THE SCHOOLS INFORMATION LITERACY INSTRUCTION

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Introduction

In this presentation, we report findings of a pilot study where students of an upper secondary school wrote Wikipedia articles as a group assignment. Our aim was to investigate whether and how writing articles for Wikipedia, based on independently found information, serves the goals of information literacy instruction. We also wanted to find out how an authentic learning task, such as writing articles to be published on a public forum such as Wikipedia, influence students' conception of their learning task, as well as their approach to it.

Wikipedia is based on the voluntary participation of a large global community committed to write, rewrite and update its contents. In school assignments it has, however, been regarded as an unreliable information source (e.g., Achterman 2005, Morrissette 2008) which students are advised not to use. An alternative viewpoint is to regard Wikipedia as a public wiki where students may participate in collaborative knowledge construction. In information literacy (IL) instruction this means that the focus is turned from information seeking and consumption to writing and responsible use of information on a public forum. Wikipedia has explicit

guidelines of the accepted practice in writing, using sources and citing them. In school assignments, these guidelines form the framework which students have to consider and reflect on. Open publication of articles furthermore makes the requirements authentic (real world vs. school based norms) which may be an important motivational factor in the learning process (Every, Garcia & Young 2010, Forte & Bruckman 2010). Writing for Wikipedia also has potential in helping students to understand Wikipedia as an information source, how its contents are created and how to critically evaluate the information it offers.

Research Questions

1 How do students' approach and experience school assignments with the goal of collaboratively producing texts to be published on Wikipedia?

2 How does writing texts for Wikipedia based on independently found information serve the goals of information literacy instruction?

This study was conducted as a pilot study. In addition to the research questions, another important goal of the study was to learn about the process in order to be able to formulate more focused research questions for the main study. Further, we wanted to test how suitable our data collection methods were in a classroom environment.

Data collection and analysis

Data was collected during two eight-week courses in an upper secondary school in the City of Tampere, Finland, during Spring term 2010. Ten students participated in the first course in Geography and sixteen students in the second one in Biology. The students were organized into eleven project groups.

In the first course, we collected basic data of students by a prequestionnaire, observed the weekly meetings in the PC class, and interviewed the groups at the end of the course. In the second course, we replaced observation by interviews; each group was in-

terviewed twice during a classroom session. The interviews focused on what the students had achieved so far in their project, what they were currently working on, and what they were planning to do next. The teachers were interviewed both before and after the courses.

Recorded interviews were transcribed and exposed to a conventional content analysis, as were the observation journals. Published Wikipedia articles were split into sentences and mapped to sources cited by students to see how information had been processed. The text was analyzed through a sentence-by-sentence plagiarism checking procedure.

Summary of the findings

Influence of Wikipedia

The students reported that the prospect of publishing their articles on Wikipedia influenced their work in several ways. They were careful to mark their citations in a correct manner, and verify the facts they presented. One group admitted that if only the teacher had read the article, they would not have been marked citations so conscientiously. To assess reliability some students compared information from different sources. Writing style was important as they perceived that anyone could read their texts in Wikipedia. The language needed to be fluent, correct, and sound reliable. The analysis of articles sentence-by-sentence revealed that, although the share of copy-pasted sentences exceeded 10 percent in two groups, there was no indication of copy-pasting in the texts by six of the eleven groups.

Collaboration

The findings revealed a diversity in the way students approached and implemented collaboration: 1) a shared goal and working together, 2) shared goal but working separately, and 3) no shared goal and no collaboration. The amount and level of group work also varied at different stages of the process. The general trend was that planning the task was done collaboratively, but information

seeking separately. Choosing information sources for the article was done collaboratively but writing the text was divided although following a mutual plan. Finishing the article and transferring it to Wikipedia was done slightly more often separately.

Students learning experiences

Students reported several positive aspects of the Wikipedia project. Writing for a public forum felt more meaningful (albeit more challenging) than writing traditional papers. The students gained a deep understanding of their topic from reading and comparing information from several sources. They reported learning how to search, evaluate, and use information in an appropriate way, and how to publish on Wikipedia. One student had learnt a new way of acquiring and processing information: a new way to learn. Many students also valued the independent choice of topic, and information sources. However, quite many students worried that reading the standard textbook would better have prepared them for the maturity exam. Some students also experienced the publication in Wikipedia as stressful.

Discussion

The findings show that writing for a public forum such as Wikipedia reflected several core elements of information literacy instruction. The students worked conscientiously on their task, were careful to mark citations in a correct manner, made an effort to find reliable information, evaluated information sources, and carefully compared information to other sources to ensure its reliability. They also paid attention to the writing style of the text to make it appropriate as a Wikipedia text.

Students' experiences showed that writing on Wikipedia served both learning goals in subject contents and IL-related skills. Difficulties in finding a balance between these two goals have been reported in earlier studies. Many learning experiences related to Wikipedia suggest that students might have got a deeper understanding of it as an information source. This is important since students search Wikipedia often. Does the experience of the parti-

cipatory writing on Wikipedia help to find criteria to assess Wikipedia articles, and expand this knowledge to other information sources remain an open question.

The assignment supported independent information seeking, as well as team work. Students shared and discussed information, and collaborated in producing and publishing text. However, the findings also revealed a diversity in the amount and level of collaboration. The observed diversity in collaboration raises many questions: Why different groups adopt varying strategies – if any - in collaborative knowledge construction? In what phases of information searching, assessing and use working together is productive; where coordinated work of individuals is more beneficial?

The findings also revealed clashes with the traditional school curriculum as the course fell outside the curriculum plan for the upper secondary school where much focus is centered on the maturation exam. This caused stress among some of the students, who felt that the course consumed time that instead could have been spent preparing for the exam. This also illustrates the slow transformation of traditional structures, such as school curricula. They present learning goals for new literacies and independent learning side by side with subject content goals. However, school practice does not give an equal value for these learning goals.

The pilot study was useful in further refining our research questions and methods. We found that we will need to fine-tune the interview questions to be more specific in the main study, as some of the students' replies remained fairly unspecific. The need to acknowledge and further understand the mechanisms behind the variety of ways to approach groups work also needs to be elaborated. We realized the benefits of using questionnaires for some of the questions, including group work approach and general information habits. The main study will also include psychometric measures of the students' sense of identity, personality as well as approaches to studying, which will further deepen our understanding of the students' attitudes and behaviour.

The main study

We will collect data for the main study during April-May 2011, and expect to report findings from the preliminary analysis of this data at the conference.

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IMPLICATIONS OF THE WEB 2.0 TECHNOLOGIES FOR PUBLIC LIBRARIES INTENDING TO FACILITATE ALTERNATIVE PUBLIC DISCOURSE

Leif Kajberg

Abstract

In these times, public libraries in many countries have increasingly come under pressure from developments within the information landscape. Social networking forums such as Facebook, Flickr, MySpace, Twitter, YouTube and social tagging provide an opportunity and challenge to the kind of services the public library produces and to the societal role and institutional identity it assumes for itself. Thus, not least because of the massive digitization of information resources, the proliferation and popularity of search engines, in particular Google, and the booming technologies of Web 2.0 public libraries find themselves in a very complex situation. In fact, the easy-to-use technologies of Web 2.0 challenge the basic principles of information services provision undertaken by libraries. The new digital information environment and social software tools such as blogs, wikies and social networking sites have fuelled a discussion of the future of public libraries as information providers. After all there seems to be a need for public libraries to reorient their aims and objectives and to redefine their service identity. At the same time search engines, and especially Google, are increasingly becoming under scrutiny. Thus, analysis results referred to show that the conception of information and the underlying purpose of Google differ from those of public libraries. Further, an increasing amount of criticism is being directed at collaborative

spaces (typically Wikipedia) and social networks (e.g. MySpace) and it is pointed out that these social media are not that innocent and unproblematic. In discussing the survival of public libraries and devising an updated role for libraries in the age of Google and social media, attention should be given to fleshing out a new vision for the public library as a provider of alternative information and as an institution supporting information democracy. In coming to grips with information democracy, attention is given to public libraries as democratic spaces and the role public libraries can play in hosting and organising electronic discussion forums on, among other things, current political issues. Also, the concept of the political library is revisited. Can this dusty concept be revived and how does it interact with today's mushrooming social networking media? In exploring the opportunities of public libraries as spaces of e-discussion, a handful of Danish projects concerned with involvement of citizens in political and community-related e-discussions are reviewed including a project pursued by the Aarhus Municipal Libraries (Denmark). The Aarhus project entitled "Demokrateket" considers proactive mediation of community information and the creation of physical virtual fora allowing citizens to shape the political agenda. Further, attention centres on what a recent Danish report on public libraries in the knowledge society has to say about these matters. The results of literature searches done on public libraries and how they relate to and apply social media such as Facebook, Youtube and Twitter reveal that the majority of items on public libraries and social media address "conventional" and non-controversial applications. Current LIS professional literature on the implications of Web 2.0 technologies for libraries and their service provision tends to emphasize the new social software tools and media as information assets to be integrated in existing service offerings. The Web 2.0 social media are typically seen as opportunities and means for supplementing, enhancing and enriching the existing mix of library-related services and facilities. Briefly, Google and interactive technologies such as wikis and blogs are considered new devices in the library service provision toolbox. Also, social network media can be used to highlight and boost public library services and make the library more visible to existing and potential

users. In addition, public library presence on Facebook provides a branding opportunity and presents a possibility for the library to adjust its public profile . A perfect example of this outgoing and market-oriented approach is the stream of infotainment-like news spread by many libraries in trying to capture the interest of users and those registering as friends or fans of the library on Facebook. But in relying on social media solely for increasing visibility, market demand-orientation and even tivolisation, the library can be entering a process of smoothly adapting itself to the era of neoliberalism, late globalisation, down economies, retrenchments and New Public Management. In adhering to the required role of maintaining neutrality and an inoffensive profile, the library's educational and empowerment functions may suffer. At a Nordic research seminar concerned with European public libraries today and in an historical context (December 2010) a colleague from Sweden observed that, on Swedish ground, the concept of the political library and the notion of a library that deliberately and actively provides sessions and meetings, alternative viewpoints and info packs about controversial societal/community-centred issues and concerns would could run into trouble. The study presented here aims to analyse the ways in which public libraries can strengthen their survival capacity by drawing upon the new Web 2.0 technologies available and develop new roles. An analysis is conducted of selected writings covering such key notions as social software applications, collective intelligence and digital socialism. Also revisited is the dated concept of the political library. Based on observations emerging from the analysis a revised role is outlined for public libraries in the era of digital information and Web 2.0 with a special focus on information democracy and the library's function as a neutral information provider in a Google-dominated commoditized information world. Besides, the intention is to shed light on the nature, viability and conditions and opportunities of information democracy within the framework of today's social networking media.

The theoretical framework provided for the present study draws on inspiration from not least Doctor's piece on justice and social equity in cyberspace (Doctor, 1994). This article was published in the early days of the Internet characterised as they were by enthu-

siasm, euphoria and a fascination of the promising new potentials and possibilities represented by the new global medium and utility. Revisiting the somewhat idealistic ideas, notions, conceptions and projections that arise in the first, pioneering and booming years of the Internet from a contemporary information democracy perspective is one of the objectives of the analysis reported here. Characteristic to the pioneering years of Internet and "the Information Super Highway" is the fairly optimistic and in some respects even idealistic tone. Today, things are more complex and we are seeing the commercialisation of the Internet, "abuse" of the Internet (hacking, theft of money and identities and other types of crime) along with the "hedonistic" take-over (e.g. through the spread of porn).

In analysing the conditions and opportunities for information democracy in the sense of Web 2.0, explorative studies are needed to map politically-related information universes, information transfer and information use. The Digital Age with its new social media invites political engagement, but the era of digitization is also an age of despotic political leader styles, persistent and irremovable power structures, spin doctor-driven politics and infotainment. At least these features seem part of the reality in many countries. Power structures are opaque and various sorts of extra-parliamentary opposition groups, NGOs and grassroots initiatives in specific areas face barriers and difficulties in having their message heard. Thus, libraries need to rethink their role and mission in a democratic society and the way they support and catalyse democratic processes.

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THE USE OF SOCIAL MEDIA IN THE WORK PRACTICES OF INFORMATION PROFESSIONALS

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Abstract Enabled and underpinned by the use of the internet, knowledge and information take an increasingly prominent place in modern society. As the technologies of social media create a second wave of innovation and opportunity in the organisational use of the web, this research paper examines the nexus of two important phenomena: various established information practices and the uptake of social media tools to facilitate or extend these practices. The paper reports an investigation of practices in which information professionals include the tools of social media and the theoretical outcomes that follow. This research provides a deeper understanding of the way that social media can benefit information practices.

Introduction

In recent years, developments in the internet technologies of social media and the increasing use of these tools have seen the web advance from a platform of information delivery to one that includes contribution and collaboration. Social media or web 2.0 technologies such as wikis, blogs, micro-blogs and social bookmarking, are increasingly used within organisations in pursuit of their informational and communicative goals. Made popular in individualistic and open use on the internet, web 2.0 tools or social media are increasingly used as tools for information and knowledge work within organisations. McAfee (2009), who claims significant opportunit-

ies for improved organisational communication and knowledge work with the use of these technologies, uses the term Enterprise 2.0 to describe the use of social media in organisations. 'Enterprise 2.0 is the use of emergent social software platforms by organisations in pursuit of their goals' (McAfee 2009, p. 73). This research investigates the detail of Enterprise 2.0 in a specific sector; the use of social media within a variety of information practices in organisational contexts. It examines how information professionals embed the tools of social media in their practice and identifies the advantages, risks and transformations that may result.

Information agencies signal their willingness to incorporate social media in their practices with labels such as Library 2.0, which attempt to associate agencies more directly with the characteristics and technologies of web 2.0 (Black 2007). Bailey's (2008) 'Records Management 2.0' challenges the scope and theory of the records management tradition in the light of social media. The information sector at large looks to the new technologies of social media knowing that it must engage. Both Plutchak (2006) and Crawford (2006) challenge the use of such labels, suggesting that the radical change that is implied is hype and that innovation and adoption of social media will always be continuous and evolutionary – like all technologies before them.

This research is situated within current Australian and international attempts to provide explicit strategic and policy positions about the use and benefits of web 2.0 technology within government. A taskforce, established by the Australian Federal Government in 2009, reported the many benefits and opportunities afforded by the adoption of social media in the work of government. The application of web 2.0 collaborative tools and interactivities to the processes of government is one of the three pillars of Government 2.0 according to the Australian Report of the Government 2.0 Taskforce, *Engage: Getting on with Government 2.0*. The report claims (p. 3) that 'as they have outside of government, these tools and practices can increase productivity and efficiency' within the government sector.

Yet, Nicolas Gruen (2010), the chair of the Government 2.0 taskforce subsequently states that 'Government 2.0 is ultimately

about what individual agencies, and yes, individual public servants do to make it happen'. In accord with Gruen's advice, this research moves away from top-down strategy, policy and management that recommends and directs the adoption of social media and seeks increased productivity and efficiency. It disregards the rhetoric of Library 2.0, Records Management 2.0 and Government 2.0. Rather, it investigates the everyday work of the information professional, observing, probing and seeking to understand more fully how social internet technologies are incorporated into various information practices. In doing so, this research uses a theoretical perspective of work and activity that has become known as *practice theory.*

Research design

Research using a practice-based approach exhibits a desire 'to shed new light on organisational phenomena by getting closer to the "real" work in organisations' and a move away from structural notions of organisations (Geiger 2009, p. 129). For Gherardi (2009), practice is located in the significant pattern of how conduct or activity takes place.

Theories of practice assume an ecological model in which agency is distributed between humans and non-humans and in which the relationality between the social world and materiality can be subjected to inquiry' (Gherardi 2009, p. 115).

This research investigates the materiality of the web based tools of social media and the social world of information work in which they are becoming embedded. Bjorkeng, Clegg and Pitsis (2009, p. 145) describe practice as:

novel patterns of interaction developed into predictable arrays of activities, changing and transforming while at the same time continuing to be referred to as "the same".

A negotiated, shared and recognisable way of working collectively means that practices shift and evolve from a relatively firm, but not fixed, foundation. Bjorkeng et al. (2009) extend practice theory and offer theoretical constructs to describe the 'becoming' of a practice. However, this research finds greater value in the perspective that information practices, as they adopt the tools of social media, are

existing practices that are embracing a new materiality and will morph and be transformed as a result.

The research design is based on qualitative multiple case studies and grounded theory following Eisenhardt (1989) who claims that this research approach is especially suited to novel and emerging phenomenon. Grounded theory is used and provides a systematic and explicit process for conceptualisation from data – theory is constructed (Charmaz 2006). Constructivist grounded theory (Charmaz 2006) enables the study of information practices and social media within the enterprise to be taken into a social realm – involving people and the complex interactions involved in the use of these technologies in the workplace.

Situated information practices that have incorporated social media within the everyday work activity are the 'unit of analysis' (Yin 2009). Acknowledging the widespread use of social media in many other fields of endeavour, this research attends only to information practices in order to reveal the activity and patterns in the use of social media for the purposeful management and communication of information. In doing so, this research considers the 'invisible' work of organising and managing information that is 'severely underrepresented in the theoretical literature' (Bowker & Star 2000, p. 9).

Information practices that are located within large and recognisable fields such as records management, archives or librarianship are examined. This research extends across these recognisable fields within the information sector in order to attend to commonality and convergence, and, staying true to practice theory, to ignore any artificial separation which may have accumulated over time. It heeds Nicholas et al.'s (2008, p. 2) insistence that:

Information professions are insular and tribal and what happens outside their strictly defined discipline boundaries are not their prime concern, even though the user and internet are busy blowing up and redrawing these boundaries.

Information practices are determined as discrete recognisable existing patterns of activity and selected for study if the practice incorporates social media in the achievement of purpose. Uses of social media may be contained within the organisation or straddle

the organisational boundaries to include clients and external stakeholders. Organisations of both the public and private sector are included in the study and whilst the organisation itself may be a dedicated information agency, case studies are also drawn from the information practices within organisations with a broader purpose. Whilst the private and public sectors are very different environments, it is the detailed nature of information practice that is under investigation and both commonality and difference are revealed by grounded theory analysis and accommodated in emergent theory.

Narratives of practice are collected from two sources. Firstly, they are obtained from recent literature, which reveals myriad descriptions and stories of the practical use of social media in information work. An extensive review of the literature has built a repository of descriptions of practice and narratives of social media use in information work, which serve as data for this enquiry. Secondly, narrative groups of practitioners within discrete information practices are formed to capture the story of how they collaboratively use and embed the tools of web 2.0 in their practice and what benefits, opportunities and challenges arise as a result. The researcher digitally records the narrative for subsequent transcription. To date, twenty written accounts of practice and three verbal narratives from groups of practitioners have informed this emergent theory. However, this paper does not claim theoretical saturation (Charmaz 2006, p. 113); rather it reports early conceptual findings. Data collection will continue until, in grounded theory tradition, the analysis of additional data does not alter the constructed conceptual framework for the use of social media in information practice.

Emerging findings

The early findings of this research provide a grounded conceptual account of how social media are used in information practices, uncovering the pitfalls as well as the opportunities. The constructs of practice that are reported in this section of the paper are: *the nature of collected community knowledge; re-imaging and re-positioning information agencies; autonomy, agility and innovation; and projects:*

planned and orderly. These constructs form the basis of a larger theoretical framework of practice.

The nature of collected community knowledge

The use of social media by organisations to consult a larger body of voluntary and un-defined contributors for a particular purpose is frequently referred to as *crowdsourcing* (Bojin et al. 2011). This research finds that when information practices engage in crowdsourcing the sought after contribution is additional knowledge.

Facts, figures and objects are one aspect of the knowledge that is contributed by community via social media in their participation in information practices. The public is invited to contribute the names of people and places to assist in completing the record of objects in collections. Digital photograph collections are enlarged as community members deposit digital copies of images in their custody, frequently via the popular Flickr platform. Various digitised objects and memorabilia that are in keeping with a collection are added by individuals from their private collection.

Knowledge is also contributed and constructed in social tags that are applied to information objects by the public. Such tags surround the object with the descriptive language of the user, aiding retrieval and mapping and defining knowledge trends in their accumulation. The knowledge patterns built by social tags quickly adapt to shifts and innovation in the domain of interest.

Holley (2009) describes a large-scale, historical newspaper digitization project in which optical character recognition processes and technologies fail to meet user expectations or to produce a quality of reproduction that guarantees full text retrieval. Digitisation of ageing newspapers, however, is key to their preservation and wide availability. Ambitiously, social media technologies were custom built for this project and the public was given a role in enhancing the quality of the digitised newspaper text. In this practice, the language skills, availability of time and motivation to become involved saw community knowledge in action and resulting in the enhancement of the data representing myriad newspaper articles. The community contribution of contextual knowledge combined

with language capability was reported to surpass contracted and dedicated approaches to textual data correction (Holley 2009).

One collecting organisation constructed photographic exhibitions on Flickr to push the organisation's collection to a wider audience and to purposely invite and capture the knowledge of the community about the realities and contexts that surround the images. The opening lines of the exhibition ask directly, *do you recognise any of the people or places in these photographs?*, engaging the audience and evoking their memory and knowledge of these photos as soon as they visit the Flickr exhibition. As well as providing a viewing platform for photographic images, Flickr facilitates the capture of free form commentary about each object. It this way, individuals viewing the exhibition can contribute their personal and tacit knowledge of the circumstances that surround the photo that has been exhibited. They are able to tell the stories of the events that are portrayed in the photographs.

"The comments have greatly increased our knowledge of nearly half of the 45 images in the Flickr album". (Faulkner, 2010, p. 9). This collecting organisation uses the contextual knowledge of its audience to update its own corporate records of the collection of photographs and thereby captures and records community knowledge that is otherwise unlikely to endure. In the process, the findability of the objects in traditional searching systems is improved. Community knowledge is invited and used to extend and deepen the contextual corporate record of an image.

At times the collected knowledge of the community is in the form of unspecified and unstructured prose or anecdote. Stories of an individualist nature are collected using social media in public library practices that support local knowledge collections. Opportunities are reported *to develop the collection to unprecedented levels of depth and diversity* using community participation and social media. This extension to the acquisition of local studies resources adds to those provided by historians, genealogists and journalists. The different and varied insights and perceptions of individual community members enrich the collection. *More rounded characters* and richer memories and anecdotes are captured.

Reimagining and repositioning information agencies

Nicholas et al. (2008, p. 2) claim that the core information professions 'have been rocked, and, in some instances, derailed, by the digital transition'. A sense of digital insecurity and a desire to use social media to establish and enhance appearance is revealed in the information practices of this study. At times social media is used to be seen to be being involved in the Web 2.0 world, to be relevant and to be digitally savvy and engaged. Information practitioners claimed that social media gave opportunity to present libraries in a *different space*, to *reimagine* an organisation and a service and to *re-invent libraries in action*. 'The service would have a "cool factor"' (Holley 2009, p. 4) and the digital reputation of the organisation enhanced.

Deeper change and repositioning is noted in some stories of practice that incorporate web 2.0. Any alteration of image is due to significant and enduring new patterns of practices and paradigms of work and service. An archive for the electronic storage of documents about endangered language is one such example. With a purpose of preserving and disseminating documents about languages that are in decline, these practitioners are vitally aware of the sensitivities that surround their work revealing that:

endangered language communities and their speakers are under pressures and deprivations, which are, in many cases, the causes of the decline of their languages (Nathan 2010, p. 112).

Thus, this archive has the special circumstances of requiring a variable and granular set of access levels that are dependent on complex circumstances.

The practitioners within this archive looked to the social networking sites of Facebook and MySpace to find models and solutions that would allow depositors to manage the relationship and degree of access that is given to individuals who request viewing rights to specific endangered language documentation and communication with its author. They acknowledge that the popularity and prominence of Facebook and MySpace has paved the way for

them to be able to convince their contributors and audience of the benefits of this approach.

The archive is no longer essentially defined by its data repository function, but is reconceived as a forum for conducting relationships between information providers (usually the depositors) and information users (language speakers, linguists and others) (Nathan 2010, p. 112).

The archive shifts from a disseminating service that brokers intricate and sensitive access protocols of diverse information to one that enables greater empowerment and participation of those that lodge their documents and those that seek to read them. The archive has become the people that engage with it and their relationships.

Autonomy, agility and innovation

Web 2.0 approaches and technologies are largely adopted for specific purpose rather than mainstreamed, and are often implemented as solutions to immediate problems or needs in information practices. The tools are readily accessible and are often agilely implemented outside the jurisdiction of corporate information technology departments.

One information practice described the troubled implementation of an electronic resource management system, which had resulted in a large increase in the volume of problems surrounding access to electronic resources. The situation could not be resolved via isolated emails, phone calls and ad hoc communication – *no-one could keep track of priorities or identify effective processes and procedures.* Pressured by this immediate and critical situation, a group of key practitioners adopted a blog as a knowledge base and describe it as their custom troubleshooting tool. It is on this blog that the vast numbers of issues resulting from the problematic implementation are recorded. With careful structuring of the information, posts to the blog provide an overview of problems and their solutions and the causes and frequencies of reported access incidents. Social media is used in-house for an agile solution to a significant prob-

lem that requires coordinated communication and management of information.

Subsequent to this agile and autonomous response to urgent need, the corporate IT group implemented and offered access to formal bug tracking software. This information practice declined the opportunity to switch to the corporate software because they valued their knowledge base and the autonomous and self-defined processes and procedures that had been developed. Web 2.0 tools proved an empowering, agile and immediate solution for an untenable set of circumstance.

Information practices that achieve specific and specialised work find the tools of social media customisable to their purposes and needs. Chen (2009, p. 252) claims that cataloguing is a 'field in transition', as it responds to the 'rapidly evolving digital environment'. A non-roman cataloguing practice which employs a large number of dispersed, part- time employees is guided in its work by unique guidelines, policy and procedure documents that require frequent updating. This practice requires a digital workspace that is not dependent on web maintenance staff. A blog is used because it offers timely updates and autonomous management, thereby meeting the specific needs of a niche information practice.

Projects: planned and orderly

The majority of stories of practice describe the incorporation of social media into information work as careful, planned and considered. Rationales for this include the need to use resources wisely and to seek tangible benefit from the activity. The matching of tool to audience and purpose is carefully considered, as is the human resource needed in an on-going capacity for an organisation to maintain its social presence in media such as Facebook or Twitter. In one description of practice, the practitioner notes that the orderly planning process seems contradictory to the nature of social media which encourages immediacy and experimentation.

The planning for this has been in progress for some time now which in itself seems at odds with social media and in particular

Twitter which is such a short and sharp sort of tool (Faulkner 2010, p. 12).

Yet, as if by nature, an information professional's approach to using social media is one of caution and planning. In the extreme, it involves working parties, prototypes, testing and beta versions.

Many aspects of design for online environments were considered by information practitioners in their planned approach to the use of social media. *We designed it to make the most important features visible within a single screen and to ensure that post are consistently created with the same basic information, we created a template.* Such commentary reveals comprehensive and thoughtful preparation in the use of social media.

Information practitioners, in the planning of activity using the tools of social media, consider the position of the parent body. One group, aware that their planned foray into Facebook for interacting with students sat outside the norms of official communication channels, strategically prepared a justification to counter any possible institutional concerns. Benchmarking and comparisons of competitor's use of Facebook were conducted and brought to the table when broader approval was necessary. It was also important to practitioners that they not appear to be using Facebook for anything other than professional activity.

Use of the tools of social media in isolated information practices often paved the way for enterprise adoption. The use and value of social media for discrete purpose and in small-scale projects piqued the interest of the organisation at large. Inadvertently, information practices had performed pilots for larger adoptions of social media.

Analysis and evaluation of use is prevalent in information practices that incorporate social media. The obtaining of data revealing the number and timing of specific types of access and interactions feature in the narratives of practice. Interpretations of collected data steers the way for fine-tunings or future developments. Once social media is in use, change is based on evidence and evaluation.

Information practitioners are concerned with the risk of using social media, particularly when their technologies of use and the information and communication that follow are in the public domain. Practitioners also expressed a concern and developed a strategy to

deal with inappropriate content that may be received by the public. The risk of the possible demise of a popular social networking site was weighed and contingencies considered before use.

Much of the knowledge captured from participating community members usingsocial media tools remains isolated from traditional corporate systems. Community knowledge collected by an open social platform such as Flickr remains separate from the formal systems supporting the organisation's collection. As it is captured, it remains isolated and part of a specific project. Across this divide, the information practitioner forms a conduit, validating and transferring contributed community knowledge which has earned its way into the stored corporate memory. A *level of moderation* is at play. The transfer of community contextual knowledge to the corporate knowledge base is rarely automatic. In an alternative, but equally cautious approach, audience newspaper text 'correction' is reported by one practitioner as being entered directly into the corporate system. Yet all previous version of the text are kept and are visible.

A current awareness service was initiated by information professional using a free and public blog publishing tool and a number of blogs were established. However, over time, the information agency became uncomfortable with the use of public tools and the global access that followed. They *realised that they might pose some security and liability risk to the Corporation* and acted to select appropriate blogging software that could continue the service and be hosted internally. The use of social media in information practices confirms the trend toward Enterprise 2.0 (McAffe 2009) whereby social media tools, as appropriate, are only accessible within the organisation.

Conclusions

This research finds that the practices of information professionals are replete with the use of social media and are richly extended and transformed as a result. Descriptions of information practice that embrace social media abound in the literature and many more occur in the workplace without report. The use of social media in information practices is currently shrouded in practice-led innovation and

debate and is needy of research and theoretical underpinning. This research sets out to theorise across the written and verbal stories of practice and to establish patterns of practice that will inform professional activity. It seeks to develop a framework to conceptualise the use of social media in the information sector

This paper presents a preliminary theoretical account of practice that includes the constructs of *the nature of collected community knowledge; re-imaging and re-positioning information agencies; autonomy, agility and innovation; and projects: planned and orderly.* It provides a theoretical foundation for a deeper understanding of the ongoing and emergent practical adoption of social media in the work practices of information professionals. It will inform both practice and higher level management and policy direction. Glaser (1978, p. 5) claims modifiability is an important and desirable characteristic of a grounded theory. As new data comes to hand it can be considered, and minor or significant modifications can be made to an existing grounded theory. Thus the theoretical outcome of this research lends itself to extension in both small and large proportions in ongoing research, which is an ideal situation for this fast-paced field of study.

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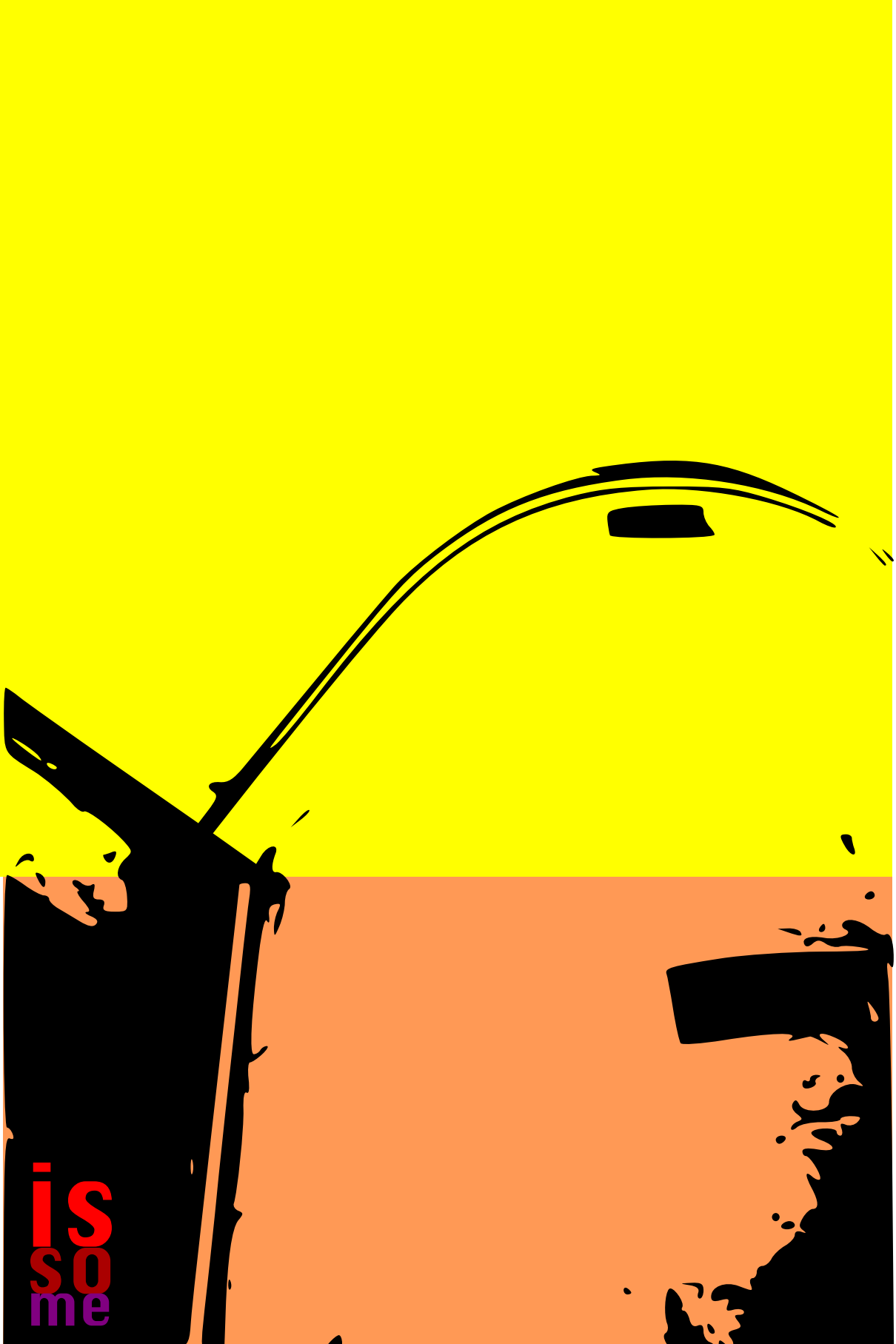
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