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Understanding the participatory library through a grounded theory study

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ABSTRACT
Lankes and Silverstein (2006) introduced the “participatory library” and suggested that the nature and form of the library should be explored. In the last several years, some attempts have been made in order to develop contemporary library models that are often known as Library 2.0. However, little research has been based on empirical data and such models have had a strong focus on technical aspects but less focus on participation. The research presented in this paper fills this gap. A grounded theory approach was adopted for this study. Six librarians were involved in in-depth individual interviews. As a preliminary result, five main factors of the participatory library emerged including technological, human, educational, social-economic, and environmental. Five factors influencing the participation in libraries were also identified: finance, technology, education, awareness, and policy. The study’s findings provide a fresh perspective on contemporary library and create a basis for further studies on this area.

Keywords
Participatory library, library 2.0, social media, web 2.0, library users, grounded theory.

INTRODUCTION
Web 2.0 was a term coined by DiNucci (1999) and popularised by Tim O’Reilly (2005). Web 2.0 refers to the second generation of the World Wide Web that allows a greater degree of participation, individualization, collaboration and co-creation. Known as Library 2.0, a spin-off of Web 2.0, this new approach is opening up a new approach to libraries that is grounded in participation and an equal relationship with users (Casey & Savastinuk, 2007; Lankes, Silverstein, Nicholson, & Marshall, 2007; Maness, 2006). Some attempts have been made to develop Library 2.0 models (Chowdhury, Poulter, & McNemey, 2006; Holmberg, Huvila, Kronqvist-Berg, & Widen-Wulff, 2009; Xu, Ouyang, & Chu, 2009). However, most of the models have been achieved by obtaining evidence through professional literature and the personal experience and understanding of the authors; and they have focused more on technology and less on participation. Furthermore, as Nguyen, Partridge and Edwards (2012) observe, while people have tended to use the term “Library 2.0” when talking about the contemporary library, this term does not represent and reflect the true nature of the new and emerging modern library. As Lankes, et al. (2007) recommended, the nature and form of libraries need to be discussed and examined. They also suggested that an exploration of participatory library and participatory librarianship is crucial because there is a lack of theoretical, experimental, and operational studies in this area. Within this context, this study needs to answer two questions: (i) what are factors of a participatory library? and (ii) what factors may affect the “participation” in the university libraries, and how? The paper will first review literature on models of temporary libraries. Then it will discuss the method adopted by this study. Finally, the paper will report on the preliminary findings and then relate these to the existing literature.

LITERATURE REVIEW
In spite of the fact that “participation” in the library has been mentioned and discussed in some studies, no participatory library model has been reported in the literature. Furthermore, the “Library 2.0” term is more commonly used in the literature since it appears as a marketing term (Nguyen, Partridge & Edwards, 2012). The popular use of “Library 2.0” term in the literature is understandable. This section reviews Library 2.0 models that have been developed to date and then discusses the participation idea in the library. The purpose of this review is to inform what contemporary library models have been
developed and what methods of development have been employed.

**Library 2.0 Models**

Some Library 2.0 models have been developed and reported on. In a study by Chowdhury, Poulter, and McMenemy (2006), a Library 2.0 model for public libraries was proposed. The development of this model was primarily based on personal understanding and experience of the authors, and underpinned by five library principles (devised in 1963 by Ranganathan, a well-known librarian). The principles are: community knowledge is for use by everybody, every user should have access to his or her community knowledge, all community knowledge should be made available to its users, save the time of the user in creating and finding community knowledge, and community knowledge grows continually.

According to Chowdhury, et al. (2006), five principles are still applicable to the Public Library 2.0 model. The authors posited that Public Library 2.0 is a network of community knowledge which delivers access to and a repository for local content, along with connection space for local people. They stressed that the Public Library 2.0 model would be both a physical place and a virtual space that enables local people to access to local knowledge (Chowdhury, et al., 2006). The authors also noted that further studies are necessary to test and implement the model.

Some Library 2.0 models have been reported on as a result of the deployment of Library 2.0 in specific libraries. For example the model by Yang, Wei and Peng (2009) which was proposed by analysing and describing a subsection circulatory management (SCM) model of Library 2.0 that was already utilised in a university library. The researchers clarified differences between the traditional library management model and the SCM model of Library 2.0. They suggested that a Library 2.0 system should be constructed in form of modules or layers instead of linear management as its counterpart in the past. Yang, et al. (2009) proposed the system architecture of Library 2.0 with five layers: hardware foundation layer, system layer, resource and data layer, service management layer, and knowledge service layer.

According to these researchers, two lower layers, the hardware foundation layer and the system layer can be adopted directly by libraries because of the maturity of the technology solution. However, the other three layers need to be designed and developed in a specific manner for best suited to specific libraries. They also noted that the SCM Library 2.0 model is not formally accepted by the library circle. However, it is a good example for the library community to refer to when creating their own Library 2.0 models (Yang, et al., 2009).

Another practical example of the Library 2.0 model was presented by Pienaar and Smith (2008). These researchers described how an African university library developed their Library 2.0 model. Basically, the model was adapted from the Web 2.0 meme map of O’Reilly (2005). Based on the original Web 2.0 meme map, the researchers modified and added several components to form a Library 2.0 service model. As proposed, the model included six parts: enable e-Research; creation of an emerging technology committee; integration with e-Learning; federated search; patron 2.0; and use of Web 2.0 application and services. Similar to the SCM Library 2.0 model created by Yang, et al. (2009), the Library 2.0 model by Pienaar and Smith (2008) is a description of current practice in their libraries. The difference is that Yang, et al.’s (2009) model focuses on the architectural and technical aspect of Library 2.0 while Pienaar and Smith’s (2008) model presents the current situation of their library.

In a study by Holmberg, et al. (2009), a Library 2.0 model was proposed in the form of building-blocks. The model was developed on the basis of a five minute survey with only one open-ended question: What is Library 2.0? The respondents were library and information professionals who participated in the Library 2.0 workshop. The researchers used the co-word technique to analyse the responses. They analysed the occurrence and co-occurrence of keywords in the responses and visualised them in a form of a network map and clustering terms, and then produced a Library 2.0 model.

According to Holmberg et al. (2009), Library 2.0 must consist of seven building-blocks including interactivity, users, participation, libraries and library services, Web and Web 2.0, social aspects, and technology and tools. Among these components, interactivity is the most important part of Library 2.0 as it is used the most frequently in the responses.

Examining library websites in combination with a review of literature is another approach to create a Library 2.0 model. Xu, Ouyang and Chu (2009) visited eighty-one academic library websites and looked for their adoption and application of Web 2.0 tools. The researchers suggested four features and five essentials of Academic Library 2.0. They also proposed three Library 2.0 components including Library 2.0, User 2.0, and Information 2.0, and then visualised a conceptual model of Academic Library 2.0. The model presented three crucial components of Library 2.0 and its essentials. Several details were provided as an explanation and interpretation. The authors suggested that further studies should be done to revise and expand this Academic Library 2.0 model because it is only an initial step to fully explore the applications and implications of Web 2.0 in academic libraries.
"Participation" in the Library
The notion of “participation” has been used widely in various fields such as politics, management, marketing, services, research, and education, etc. In the library setting, “participation” has been mentioned by some researchers. For example, at the 2006 Computers in Libraries conference, Fichter (2006) defined Library 2.0 with a formula:

Library 2.0 = (Books ’n stuff + people + radical trust) x Participation

These terms are clarified as follows: "books ’n stuff" refers to materials that libraries have been provided for many years; "people" refers to librarians and staffs who serve users; "radical trust" and "participation" are the concepts that are necessary to deal with in the Library 2.0 setting. Libraries need to demonstrate their trust in users and staff. The trust will make participation possible. The participation should be at all levels including staffs, users, and within library systems.

Fichter emphasised the importance of participation in the Library 2.0. Participation is a “must-have” component of a Library 2.0. Without participation, and its enabler, trust, libraries will remain as they were in the past.

Similarly, participation in the library was considered as one of the essentials (Xu, et al., 2009) and a building block in Library 2.0 (Holmberg, et al., 2009). Casey and Savastinuk (2006, 2007) viewed participatory and user-driven services as features of Library 2.0. They also stressed that user participation is one of the essential ingredients in Library 2.0.

The term “Participatory Library” was introduced in 2006 and presented by David Lankes, Joanne Silverstein, Scott Nicholson and Todd Marshall in 2007 at the Sixth International Conference on Conceptions of Library and Information Science – “Featuring the Future” (Lankes & Silverstein, 2006; Lankes, et al., 2007). These scholars featured the participatory library in the paper titled “Participatory networks: the library as conversation”. They presented an anticipated trajectory of library system development towards a truly participatory library where library systems merge, and library patrons are part of the system development process. Basically, the authors underpinned their paper with the “Conversation Theory”. The foundation of conversation theory is that knowledge is created through conversation. In other words, the core of conversation theory is very simple: people learn through conversation. In addition, libraries are in the knowledge business. Therefore, libraries are in the conversation business (Lankes, et al., 2007). Although the authors did not compare Library 2.0 to the participatory library, they implied that the participatory library is a more evolved version in comparison to Library 2.0. The use of social networking tools and Web 2.0 in current library systems sits at the periphery of the library. The true change must come from incorporating participatory concepts into the heart of the library (Lankes, et al., 2007).

Summary and Implication
The literature review found that there have been diverse types of contemporary library models called Library 2.0. While several of these models include participation as one of the Library 2.0 elements, there is an insufficient interpretation on this as most of the models have a strong focus on technological aspects or practical applications of Web 2.0 in a library.

Apart from several models developed by visiting and examining library websites, or surveying library and information professionals (five minute written survey), most of the Library 2.0 models are proposed on the basis of Web 2.0 principles, literature review, personal understanding, or reporting current status of the application of Web 2.0 in a specific library. In addition, the concept of “participation” is not new and it has been used in various contexts. However, there is little work discussing participation in the library setting. No participatory library model has been identified or reported on. This study will develop a participatory library model based on empirical data and grounded in the experiences of librarians.

THE RESEARCH PROJECT
The Research Aim
The research project aims to investigate the notion of the participatory library. In undertaking this aim the study seeks to identify the key factors that impact on the participation of library users and librarians within this new and emerging contemporary library model. In short, the study addresses two research questions: (i) what are factors of a participatory library? and (ii) what factors may affect the “participation” in the university libraries, and how?

Method
This research employed the Straussian grounded theory approach. Grounded theory is not intended to answer a specific question or to test an existing hypothesis (Pickard, 2007). Instead, it allows the researcher to systematically develop a model or a framework based on what is “grounded” in the empirical data (Corbin & Strauss, 2008; Pickard, 2007). Such characteristics of grounded theory make it suitable for the current research area where little knowledge or no research is available as discussed above.

Research Context and Research Participants
The research used 163 public and non-public universities in Vietnam (Ministry of Education and Training of Vietnam, 2011) as the site for data collection. Each university may have more than one campus library. Basically, the library’s organizational structure includes three main levels. The top level is for the library management board including a library director and one or two deputy directors. The second level includes managers and deputy managers who are in
charge of specific sections in the library (for instance, the ICT section, the information service section, and the cataloguing section). Under each section there are staff members who do not hold a managerial position.

The selection and recruitment of participants is an important task in qualitative data collection. Bryant and Charmaz (2007) emphasise that “it is necessary to locate excellent participants to obtain excellent data” (p. 231). This research used a theoretical sampling technique in order to recruit “excellent participants” for data collection. As this is part of a large research project, this phase of the project recruited librarians only. Library user recruitment and interview were intended for the next phase. Apart from two Australian university librarians, who were invited for the pre-test interviews (these two interviews were not analysed and taken into account the research results), six librarians from various university libraries in Vietnam were recruited for individual interviews, including four males and two females. These are highly experienced library and information science (LIS) professionals whose time in the industry was from three to twenty-one years. They held different positions in the LIS domain such as library directors, deputy directors, and ICT managers. These made them "excellent participants”.

**Data Collection**

Six individual in-depth interviews were conducted online via Skype. A software program called “MP3 Skype Recorder” was utilised to record the interviews. This specialised software automatically captured both streaming Skype audio and video as soon as the conversation started. The program operated in a silent mode so that both interviewer and interviewee were not distracted.

The length of each interview was between 50 and 70 minutes. Each interview had an opening, middle, and end part. The opening stage of each interview focused on setting up a comfortable and friendly atmosphere for the interview. The main stage of the interview included in-depth questions and answers conducted in a conversational manner. Below are the three main interview questions that were used in the six interviews:

(i) What can you tell me about your experience with using new and emerging technology such as blogs, twitter, youtube, and smartphones etc. as a librarian?

(ii) What can you tell me about the way the library uses new and emerging technology such as blogs, twitter, youtube, and smart phones in designing and delivering library services and programs?

(iii) We have been talking about the use of social media like blogs, twitter, facebook, and smart phones etc. to engage users in a more participatory way by both you as a librarian and the library more broadly. Can you tell me about how you or your library might encourage and support users’ participation without using technology?

The main purpose of the first question was to learn about the experience of the participant in their role as a university librarian. It was assumed that many participants would find it easier to discuss their own individual experiences before moving onto the experience of the library (broader) in the second question. The third question was often asked when the participant had already answered the first two questions and other questions that had arisen. The third question was designed to explore further information about non-technical aspects that were not discussed in the first two questions.

It was intended that the interview questions and follow-up questions needed to avoid using terminologies or jargon. As “participatory library” and “library 2.0” were not always terms with clear definitions, lay language was used in probing questions to orient participants to the phenomenon of study.

The interviewer played the role of an active listener who noted down interesting points and then posed more questions for further information as the interview progressed. This allowed the researcher to flexibly follow up with questions as the interview progressed to help participants to draw out and enrich their responses (Charmaz, 2006; Lloyd-Zantiotis, 2004). It also generated rich and detailed accounts of the individual’s experience. Furthermore, being flexible in the interview process allowed the discussion to lead to areas that may not have been considered prior to the interview but relevant to the research (Corbin & Strauss, 2008; Goulding, 2002).

All audio-recorded interviews were transcribed verbatim and noise and meaningless sounds (i.e. stutters, pauses, etc.) were removed. The transcripts were then translated into English. The English version of the transcripts was provided to the research team members to gain their support during the analysis process. English versions were also used for citation purposes in the writing up stage.

**Data Analysis**

The analysis procedure followed three steps of coding: open coding, axial coding, and selective coding (Corbin & Strauss, 2008; Strauss & Corbin, 1998). A technique called “constant comparison” was applied throughout the analysis stage.

Open coding involves “breaking down, examining, comparing, conceptualizing, and categorizing data in terms of properties and dimensions” (Strauss & Corbin, 1990, p. 61). The purpose of this open coding step is to develop provisional concepts. Through the process of constant comparison, these concepts are integrated into categories. Axial coding is crosscutting or relating concepts and categories to each other. In axial coding, the analysis is specifically focused on an emerging category (Corbin & Strauss, 2008). Selective coding involves the process of selecting and identifying the core category and systematically relating it to other categories. It involves validating those relationships, filling in, and refining and
developing those categories. Categories are integrated together to form the model (Corbin & Strauss, 2008).

Data analysis in grounded theory is done simultaneously with data collection (Bryant & Charmaz, 2007; Corbin & Strauss, 2008; Glaser & Strauss, 1967; Tan, 2010). This means the data analysis starts right after the first interview. The analysis results (initial concepts and categories) will be the basis for the second interview. However, in this research, the first two interviews were conducted and analysed separately (the second interview was not based on early categories which emerged from the first interview). Until the third interview was completed, all three interviews were combined to establish initial categories. Based on these categories, some additional interview questions were added to the forth interview to validate and further explain the emerging categories. This way did not violate grounded theory rules. Rather it helped to avoid too early categories arisen from the first interview that might mislead the subsequent interviews. Manual and computer-assisted analysis was done concurrently. MAXQDA 10 software program was used to help organise codes and interview transcripts during the analysis process.

PRELIMINARY RESULTS

The research project is still in the early stages of data collection and analysis. On the basis of the six completed interviews, five initial categories have emerged as factors of the participatory library including technological, human, social-economic, educational, and environmental. In addition, a potential core category named “facilitation” has also been identified (See figure 1). The categories listed below are not in order of importance.

Selected quotations from the interview transcripts have been included to illustrate the discussion points.

Factors of Participatory Library

Technological Factors

It is not a surprise when technology was one of the factors highlighted by all participants. Technology is not everything but, as one participant noted: “it plays a significant role” in the library. “It is a key factor” as we can see many temporary library services are based on technological advancement. Technology refers to hardware, software, and web 2.0 and social media.

Hardware included mobile and handheld devices, laptops, network infrastructure, etc. Talking about the insufficiency of hardware for participation, a participant said “not every student can afford a smartphone or an ipad. Our library offers laptops for loan but the quantity of laptops is limited”. Another participant discussed the availability of her university’s infrastructure: “our university is the university of technology. One hundred percent of students here are equipped with laptops. The university has a wireless network system throughout the campuses so that students can use internet, laptop, handheld devices, etc. anywhere”.

Software included various types such as free, commercial, open, and self-developed software; each has its own pros and cons. For instance, a participant stated that “free software is cost effective but less controlled”. Another one shared: “some of our software programs, for example the library management system including OPAC is not easily compatible with Web 2.0. Hardware and software together create a basic foundation for participatory library services.

Educational factors

e.g.: General education
Professional development

Social-economic factors

e.g.: Financial resources
Awareness
Policies

Environmental factors

e.g.: Virtual space
Real-life space

Figure 1. Participatory library: a preliminary model.
Besides this, Web 2.0 and social media were indispensable and were one of the most important factors for participation. Such emerging technologies created new abilities, new opportunities and new environments for participation. Technologies keep people “updated”, keep the library “open”, enable “sharing, connection, and contribution”, and “encourage and invite people to be involved”.

**Human Factors**

The human factors were also important in the participatory library. These included two main stakeholders: librarians and users. One of the crucial roles of librarians was to facilitate and took care of participatory services. One participant stressed: “the role of the librarians is to focus on customer services. The professional and technical work is not the first priority. The important thing that we pay attention to is service for users. Our first priority everyday is to answer their (users) questions online, respond to their comments, and deal with all other types of questions coming from them in a real time”.

Users were also key stakeholders. They are the target of every library service. It is noteworthy that in the participatory library, users were not only the people who used services. “Contribution ability of users is infinite. Once they (users) are allowed to propose their ideas, they feel themselves as part of the library, they feel that their voices are listened to and respected, they will actively contribute to the development of library resources and services. They may be a kind of librarian”, a participant expressed. It is also notable that users include not only internal people like students and staff members. Users include the public and external users as well. Once the information and services of the library are made available on the internet, for example on Facebook and Youtube, the public can access and share their opinions on these services. Therefore, “not only one library and its official users but many other libraries and user communities can learn from each other, can share information with each other, can contribute to each other and together develop”, a participant emphasised.

**Educational Factors**

Education was a common concern among participants. A good education program can produce qualified librarians who are able to facilitate and provide better services to users. One participant expressed his regret that “at the time of my LIS course from 2005 to 2009, web 2.0 and emerging technologies were not integrated into the curriculum”. Another participant gave a reason that “LIS education programs did not update students with emerging technologies; so currently many librarians do not have much motivation to learn about new technologies”. Education was also about professional development for librarians. As one participant stated that after his development of a web 2.0 based system for his library, “the challenge is to ensure librarians can understand, use and take full advantage of the system. Perhaps helping librarian to adapt to the system is the most difficult task. In fact my library also has a Facebook site, a Twitter and a YouTube accounts. But librarians are not really interested in because of their ICT skills”.

Education focused not only on technological issues but also on customer service skills. “The library and librarians need to create an encouraging environment for participation, for example creating a favourable physical environment and having a friendly attitude. This will create a favourable reputation regarding participation when users move online. A welcoming environment is very important but it is often overlooked and hasn’t really been integrated into the LIS courses”; another participant highlighted. Education also helped users to be familiar with emerging technologies and to be aware of services being offered and ways to make use of these services. A participant shared her library’s success story: “...They (users) love the high tech services. The deployment of services based on web 2.0 has satisfied their expectations, made their dreams come true. They responded very actively and enthusiastically. However before doing these, we had to organise many offline activities. For example, organising courses, workshops, book and technology fairs etc. to train users, to introduce and promote new services”.

**Social-economic Factors**

Social-economic factors included resources, mostly finance, awareness, and policy. Financial issues were a concern of many participants. Monetary investment, in many cases, was the determining factor of good participation in a library. Similarly, all participants considered “awareness” as a pivotal issue. Awareness will lead to plans, policy, and deployment of new services. Many participants believed that currently libraries have not appreciated 2.0 and social media. “My library has not viewed this (web 2.0 based service) as an official service”, a participant shared. Another participant stated that “deploying web 2.0 based services is not what many universities want to do. They do not want their librarians to stay online for chatting”. “I recently visited some libraries and asked managers. They honestly answered that they don’t think Web 2.0 tools are good for the library; web 2.0 is something impractical”. A participant compared: “the biggest difference is that libraries in developed countries consider Web 2.0 based services as their main services or even the core services”. Awareness was also involved in students, one of the main stakeholders in the university libraries. A participant said: “Once students are aware of these technologies and their benefits and once they are fond of playing with new things they will find ways to apply them into the library”. However, as another participant believed, “the library has not yet created a playground that is attractive enough for users to join in”.

Importantly, among stakeholders, “the awareness of library managers is more important because it has a greater
impact”, a participant asserted. “With a managerial role, managers can foster and plan for the development of the library...They can encourage or discourage their staff to deploy new things. Also, they are able to persuade their superiors (university management board) to support their application of new things”. At a higher level, awareness will be developed and changed to “policy”. This might be the library policy, institutional policy, or national policy. Once the policy is made and it encourages the development of emerging technologies in the library, things should become easier. Otherwise, “the application will face challenges and will remain spontaneous”.

Environmental Factors
It was interesting that participation in the library, as acknowledged by participants, occurred in not only the virtual but also in the physical library setting. A participant believed that “in order to have effective virtual services, the library must have a real environment for effective communication and contribution”. It was noted that a favourable environment is important. “Our library has decorative plants which create comfortable and tranquil spaces. We also have slogans such as "books are precious assets", “the library is your home” etc. When users are in such spaces they feel very comfortable to work, study and participate in the library activities”, another participant added.

One participant shared the way his library encourages and facilitates participation: “Without technologies we still have other ways to get users involved. For example, my library establishes a club named “Friends of the Library”. This club gathers people who love the library. They are students, lecturers, and administrative staffs... They can contribute to the library in various ways such as looking for sources of materials for the library, suggesting new or commenting about the library services. They also support the library by promoting library services, introducing library services to users, shelving and filing materials, labeling books, and cleaning etc.”

Barriers and Enablers for Participation
The interviews identified the following five main barriers that affected the participation in university libraries: finance, technology, education, awareness, and policy.

The financial barrier was critical and it might influence the others (for example technological and educational factors). Most participants believed that the monetary investment into the development of new and emerging technologies in libraries is limited, especially in the state university libraries. Insufficient financial investment leads to a low adoption of participatory technologies. As one participant stated “laptops, mobile and handheld devices such as smart phones and ipads are not widely used because their prices are very expensive. Not many people especially students can afford them”. Another participant supposed that the technological factor might be a barrier and said “I recently visited some university libraries where I saw librarians still have to use dated Pentium III computers and CRT monitors”.

The outdated LIS curriculums were also an obstacle. How a librarian was trained will directly affect what he or she does in the library. It is likely that staff won’t be able to deploy great participatory library services or create a “favourable environment” for participation if he or she was not trained in customer services skills, and was not familiar with emerging technologies. A participant observed: “many university libraries do not have an ICT team while the librarians were not well trained to deal with technological and technical problems. Some non-ICT professionals can address several technical issues but they are not able to do this properly”. Since LIS schools have not provided their students with necessary knowledge and skills, “libraries have not paid enough attention to professional development and self-development programs”, a participant remarked.

The “awareness” and “policy” also had a great influence on the adoption of new technologies and introduction of innovative services in libraries. Most of the participants asserted that university libraries have not seriously considered web 2.0 and emerging technology based services. For example, “our library has just considered web 2.0 as a marketing tool. It is a secondary communication channel”; “it is not necessary”; “...they are something impractical”. A participant observed: “currently, university library management boards have not paid much attention to this (web 2.0)”. The reasons given were “because of their awareness” and “our closed policy”. This participant questioned and explained: “why our government often blocks Facebook? Because social networks like Facebook, Youtube, and Twitter are owned by other countries therefore it is hard for Vietnam to control the information content. There is a lot of reactionary information out there”. It is challenging for libraries to deploy new and emerging technologies because the policy does not encourage. “Our libraries can develop such technologies only when Vietnam has its own social networks, for example a “Vietnamese Facebook” or the like”, he concluded.

It is noteworthy that some barriers might impact on the others. For example technological and educational barriers might be improved if there is an improvement of the financial issue, or an increase of monetary investment in technology and education. Meanwhile, other barriers like awareness and policy were more rigid and harder to change. It should be also noted that once barriers are improved or removed they should become enablers.

DISCUSSION
It is notable that this study identified five categories as important factors of the participatory university libraries but none of them was regarded as the “core category”. It was perhaps quite early to assign a category as the core category. Actually, “facilitation” was in consideration as the sixth category and potentially to become the core category. Below is the rationale for this.
Almost all participants acknowledged that web 2.0 and social media are powerful and have a great impact on what users, librarians and libraries do. “They (web 2.0 and social media) have changed the way people live, the way people work, the way people learn, and the way people think”. Similarly, “the librarian must work more quickly and effectively”. Such features are the nature of web 2.0 and social media; they exist objectively rather than depend on the subjectivity of human. Also, “without technologies we still have other ways to get users involved. For example, “my library establishes a club named Friends of the Library...” This means that there were different ways for users and librarians to be involved.

However, the question is that why they were not really involved? No doubt five barriers, as discussed above, were the reasons but more importantly, there was a lack of “facilitation”. Most participants emphasised the importance of facilitation as they said their libraries manage to create “a favourable environment”, both virtual and physical; or “a playground that is attractive enough for users to join in”. Also, “the deployment of web 2.0 based services has satisfied their expectations and made their dreams come true. They responded very actively and enthusiastically. However before doing these, we did organise many offline activities”. This shows that “facilitation” was crucial for participation in the university libraries. Facilitation is potentially becoming a core category however, it is necessary to have more data in the next interviews to validate this category.

This study’s findings do not uphold several existing Library 2.0 models as these models mainly focus on technical and architectural aspects of Library 2.0 (Pienaar & Smith, 2008; Yang, et al. 2009). Meanwhile, the current findings are more close to the general Library 2.0 model by Holmberg, et al. (2009) and academic Library 2.0 model by Xu et al. (2009). In comparison to the current study, Holmberg, et al. (2009)’s model has some common components. For example the building-blocks of “technologies and tools” and “Web and Web 2.0” are similar to “technological factors” of the current study; the building block named “user” is similar to (or actually belong to) the “human factors” of the current study; its “social aspects” is similar to the “social and economic” factors. The main difference is that this model considers “interactivity” as the most important part while the current study emphasises the “facilitation” for participation. In relation to Xu et al. (2009)’s model, this model is quite brief as it has only three main components: Librarian 2.0, Users 2.0, and Information 2.0. The first two components are similar (or belong to) the “human factors” of the current study. The key difference is that this model views “Web 2.0” as the centre while the current study highlights the facilitation.

LIMITATIONS OF THE STUDY
This research may have some possible limitations. Firstly, the participants were from university libraries in only one country therefore the research findings may not always be applicable to other countries. However, the representativeness is not intended for this study and it is not the characteristics of qualitative studies. Secondly, participants in this study are librarians who are one of the main stakeholders in university libraries. The findings may be more diverse if they include ideas from other participants like library users. Thirdly, as this study is part of a large research project, and the data collection and analysis is still in progress, more interviews are needed in order to further explain and validate the findings, and to establish a more complete participatory university library model.

CONCLUSION
This study has preliminarily found five factors of the participatory library and identified five areas affecting participation in the library. It is interesting that while participants acknowledged that Web 2.0 and social media are powerful and potential for libraries, university libraries have not taken full advantage of these emerging technologies. This is because the influential factors appeared as barriers rather than enablers. More importantly, there was a need for the “facilitation” that would make participation feasible; and especially the participation needs to occur at the core functions of the library rather than periphery (Lankes et al., 2007).

ACKNOWLEDGEMENTS
The research reported in this paper was conducted as part of a PhD research project in the Science and Engineering Faculty at the Queensland University of Technology, Brisbane, Queensland, Australia. The authors would like to thank librarian participants in Vietnam for the generous contribution of their time and thoughts to this research.

NOTES
A category scheme or an example of codes and categories was not included due to the length limit. However, it can be available upon request.

REFERENCES


Introduction, Search and Navigation

Welcome to the eighth electronic edition of the Proceedings of the Annual Meeting of the American Society for Information Science and Technology. Although generally organized in the same manner and sequence as earlier print publications, articles in this edition use Portable Document Format (PDF) files, with integrated images, graphics, and other material. Addresses to websites and other Internet locations may or may not be active hyperlinks, depending on individual author decisions.

Continuing this year is an integrated schedule and table of contents, clicking on any session title will open the paper or session description.

Post-publication corrections will be posted to the copy of the Proceedings available online at http://www.asis.org.

| Publication, copyright, etc. |
| ASIS&T Governance, Conference Committee, and contribution reviewers |
| Preface from Conference Chair |

>>> Click here to open the ASIS&T 2012 Annual Meeting Proceedings of Final Papers, Panels and Posters <<<

Use Adobe Acrobat Reader to view submissions
(may be downloaded from http://www.adobe.com). Please be patient, the package is quite large.

Some statistics from previous digital editions:

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http://www.asis.org/asist2012/proceedings/openpage.html 26/02/2013
About ASIST&T

The American Society for Information Science and Technology, ASIS&T, is an association of information professionals leading the search for new and better theories, techniques, and technologies to improve access to information. Among its membership are information specialists from such fields as computer science, linguistics, management, psychology, librarianship, engineering, law, medicine, chemistry, and education; individuals who share a common interest in improving the ways society stores, retrieves, analyzes, manages, archives and disseminates information, coming together for mutual benefit.

The Society is a nonprofit 501(c)3 professional association organized for scientific, literary, and educational purposes and dedicated to the creation, organization, dissemination and application of knowledge concerning information and its transfer. The Society provides education and conference programs, highly-regarded publications and journals, and other professional services for information systems developers, online professionals, information resource managers, librarians, record managers, and others who bridge the gaps between research and application, and between developer and user.

The mission of the American Society for Information Science and Technology is to advance the information sciences and related applications of information technology by providing focus, opportunity, and support to information professionals and organizations.

The vision of ASIS&T is to establish a new information professionalism in a world where information is of central importance to personal, social, political and economic progress by

- Advancing knowledge about information, its creation, properties, and use.
- Providing analysis of ideas, practices, and technologies.
- Valuing theory, research, applications, and service.
- Nurturing new perspectives, interests, and ideas.
- Increasing public awareness of the information sciences and technologies and their benefits to society.
ASIS&T OFFICERS AND COMMITTEES

2012
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• Standards: Mark Needleman

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Conference co-Chairs
Shanju Chang, Crystal Fulton and Julia Hersberger

Track Chairs

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  • Sanna Talja
• Sanda Erdelez
  • Catherine Johnson
  • Chirag Shah
• Hsiao-Tieh Pu
  • Luz Marina Quiroga
  • Gerry Benoit

2012
Conference Proceedings
Proceedings Editor
Andrew Grove
The 75th anniversary of ASIS&T marks a milestone in the association’s history, but also in the development of Information Science. As we celebrate this anniversary, we are reminded of the many achievements in our field, including new topics and research developments across the areas within Information Science and the adoption and integration of new methodological approaches to exploring new phenomena.

This year’s conference theme is "Information, Interaction, Innovation: Celebrating the Past, Constructing the Present and Creating the Future." To celebrate ASIS&T’s 75th anniversary, three tracks, Information, Interaction, and Innovation, were formed, spanning the diverse subject areas of the twenty-one Special Interest Groups (SIGs) currently functioning within ASIS&T. To accommodate authors and reviewers around the world, deadlines were extended to April for papers, panels, workshops and tutorials and to June for posters, demos and videos.

A total of 146 papers, 57 panels, 157 posters, 10 demos/videos, and 14 workshops were submitted to the conference. As ever, there was strong competition among submissions, and we appreciate everyone’s contributions. The reviewing process saw the following presentations accepted for our anniversary program: 40% papers, 58% panels, 65% posters, 60% demos/videos, and 100% workshops. Many thanks go to the reviewers who volunteered their time to consider submissions and provide comments to assist in the final selection of presentations.

We are fortunate to have Professor Edward Y. Chang, who has led Google Research in China since 2006, as a keynote speaker. His work with big data provide a relevant and timely addition to the conference, offering food for thought as we move forward in Information Science.

This year’s conference also featured a twist on the usual keynote presentations. The first session of the conference featured a “One Minute Madness” session, in which paper authors and panel moderators took one minute to describe and entice
conference attendees to attend their session/presentation. This session provided a useful glimpse into sessions, enhancing the usual conference programme schedule.

Many people are due thanks for the success of conference planning for this 75th anniversary of ASIS&T.

First, we would like to thank track chairs who facilitated the review process efficiently and effectively. Thank you for helping us through this process!

Track 1: Information

Michael Olsson, Communication Studies, University of Technology Sydney

Sanna Talja, Institutionen for ABM, Uppsala Universitet

Track 2: Interaction

Sanda Erdelez, School of Information Science & Learning Technologies, University of Missouri

Catherine Johnson, Faculty of Information & Media Studies, University of Western Ontario

Chirag Shah, School of Communication and Information, Rutgers University

Track 3: Innovation

Hsaio-Tieh Pu, Graduate Institute of Library & Information Studies, National Taiwan Normal University

Luz Marina Quiroga, Department of Information and Computer Science, University of Hawai’i at Manoa

Gerry Benoit, Graduate School of Information and Library Science, Simmons College

A new Student Activities Committee was created this year to coordinate opportunities for students to become involved as the future scholars of ASIS&T. Committee members included John Carlo Bertot, College of Information Studies, University of Maryland College Park; Stephanie Haas, School of Information and Library Science, University of North Carolina at Chapel Hill; Candy Schwartz, Graduate School of Information and Library Science, Simmons College; Katie Shilton, College of Information Studies, University of Maryland; and Barbara
Wildemuth, School of Information and Library Science, University of North Carolina at Chapel Hill. Doctoral student activities planned for this year included a Student Design Competition, Award-Winning Papers, and Doctoral Seminar on Research and Career Development. In addition, a panel addressing the needs of MLIS students and early career professionals was offered through Special Interest Group for Digital Libraries (SIG DL) and moderated by June Abbas (School of Library and Information Studies, University of Oklahoma).

A special day long anniversary event, “History of ASIS&T and Information Science and Technology Worldwide,” was offered by the 75th Anniversary Task Force. Our thanks go to this committee for their coordination of anniversary events with the regular conference programming. Committee co-chairs are Robert V. Williams, School of Library and Information Science, University of South Carolina, and Toni Carbo, Drexel University College of Information Science & Technology. Committee members included: Marcia Bates, Department of Information Studies, University of California, Los Angeles; Sarah Buchanan, University of Texas at Austin School of Information; Eugene Garfield; Trudi Hahn, College of Information Science & Technology, Drexel University; Kathryn La Barre, Graduate School of Library and Information Science, University of Illinois at Urbana-Champaign; Michel J. Menou; Julian Warner, Queen’s University Management School, Queen’s University Belfast; and Dick Hill, ASIS&T (Ex-officio).

And last, but certainly not least, our thanks go to ASIS&T President Diane H. Sonnenwald (School of Information and Library Studies, University College Dublin) and to Dick Hill and his team for their ongoing support throughout the conference planning process.

We hope you enjoyed this special 75th Anniversary Annual Meeting!

Shanju Chang, Crystal Fulton, and Julia Hersberger
### Detailed Conference Program

| 8:30 | SIG Cabinet Meeting |
| 10:00 | Chapter Assembly Meeting |
| 12:00 | New Members / First Conference Brunch |

| 1:00 | MINUTE MADNESS |
| 3:30 | ASIS&T Online Education Initiatives: Driving the Future  
Diane Rasmussen, Neal, Linda C. Smith, Jacob A. Ratliff and Julia Khanova  
Semantic Metadata as Linked Data Building Blocks  
Joseph Busch, Marjorie Hlavak, Marcia Zeng and Gail Hodge  
In Search of a Unifying Principle: Archives, Knowledge Management, Library Management, and Records  
Paul Wester, Peter Chiomenti, Chad Doran, Sandra Hirsch, Julian Warner and Heather Pfeiffer  
"How Much Change Do You Get from 40 $?" – Analyzing and Addressing Failed Questions on Social Q&A  
Chirag Shah, Marie Radford, Lynn Connaway, Erik Choi and Vanessa Kitze  
Exploration of Dynamic Query Suggestions and Dynamic Search Results for Their Effects on Search Behaviors  
Chirag Shah, Jingjing Liu and Roberto González-Ibáñez  
Favorite Websites Understanding Prior Knowledge of Teens’ Mental Models of Public Library Websites for Teens  
Robin Naughton and Denise Agosto  
Third Space as an Information System and Services Intervention Methodology for Engaging the User’s Deepest Levels of Information Need  
Carol Kuhlthau and Charles Cole  
Collaborative Hierarchical Clustering in the Browser for Scatter/Gather on the Web  
Weimao Ke and Xuemei Gong  
Unreliable and Uncertain Annotators: Evaluating Rater Quality and Rating Difficulty in Online Annotation Activities  
Peter Organisciak, Miles Efron, Katrina Fenlon and Megan Senseney  
How Do Libraries Use Social Networking Sites to Interact with Users  
Dora Yu-Ting Chen, Samuel Kai-Wah Chu and Shu-Qin Xu  
Barriers to Collaborative Information Seeking in Organizations  
Arvind Karunakaran and Madhu Reddy |
| 5:30 | Leadership Development  
(If planning to attend, please check the box on the registration form as reservations are required)  
iSchools and L-Schools: Converging or Diverging Communities?  
Irene Lopatovska, M. Cristina Pattueii, Marcia Bates, Michael Buckland, Manija Daibello, Samantha Hastings and Tula Giannini  
In Search of a Unifying Principle: Archives, Knowledge Management, Library Management, and Records Management (continued)  
Paul Wester, Peter Chiomenti, Chad Doran, Sandra  
The Evolution of Information Behavior Research: Looking Back to See the Future  
Lisa M. Given, Heidi Julien and Donald Case  
Digital Liaisons: Shifting Borders in Interdisciplinary Collaborations: Special Interest Group Digital Libraries  
June Abbas, Tina Jayroe, Michael Leach, student presenters  
The Interdisciplinary Study of Information  
Steve Fuller, Laurie Bonnici, Rick Szostak and Jenna Hartel |
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<tr>
<th>Time</th>
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<td>7:00</td>
<td>Welcome Reception/SIG Rush</td>
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<td>8:30</td>
<td>Student Reception / Student Design Competition Kick-Off</td>
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<td>8:00</td>
<td>Educating a New Cadre of Experts Specializing in Digital Collections and Digital Curation: Experiential Learning in Digital Library Curriculum Krystyna Matusiak and Xiao Hu (Innovation)</td>
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<td>Preparing for the Academic Job Market: An Interactive Panel for Doctoral Students Karen Miller, Naresh Kumar Agarwal, Carolyn Hank, Barbara Kwasnik, Elizabeth Liddy, Sanghee Oh, Susan Rathbun-Grubb, Soo Young Rieh and Howard Rosenbaum (Information)</td>
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<td>Crossing the Divide: Putting Information Seeking Research and Theory into Computer Science Practice to Make Information Search Systems and Services More Effective for the User Carol Kuhlthau, Marcia Bates, Donald Case, Charles Cole, Brenda Dervin and Karen Fisher</td>
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<td>Books and Book Chapters in the Book Citation Index (BCI) and Science Citation Index (SCI, SoSci, A&amp;HCI) Loet Leydesdorff and Ulrike Felt</td>
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<td>Identifying Content and Levels of Representation in Scientific Data Karen Wickett, Simone Sacchi, David Dubin and Allen Renear</td>
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<td>Time and Space in Collaborative Information Seeking: The Clash of Effectiveness and Uniqueness Roberto Gonzalez-Ibañez, Muge Haseki and Chirag Shah</td>
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<td>Information as Exclusion: Towards a Critical Understanding of Everyday Life Harrison Smith</td>
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<td>Keynote Speaker: Edward Y. Chang</td>
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<td>State of the Art/Science: Visual Methods and Information Behavior Research Jenna Hartel, Diane Sonnenwald, Anna Lundh and Nancy Fried Foster</td>
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<td>From Vision to Reality: The Emerging Information Professional Sandra Hirsh, Marcia Bates and Prudence Dalytime</td>
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<td>Information, Interaction and Innovation in Consumer Health: New Directions at the Intersection of Information Science and Informatics Tiffany Veinot, Maria Souden, Yunan Chen, Ellen Rubenstein, Chuck Friedman, Catherine Arnott Smith, Barbara Wildemuth and Lynne Howarth</td>
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<td>Coming Across Academic Social Media Content Serendipitously Ixchel Faniel, Adam Kriesberg and Elizabeth Yakei</td>
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<td>Improving the User Experience of Professional Researchers: Applying a User-Centered Design Framework in Archival Repositories Jessica Meyerson, Patricia Galloway, Randolph Bias</td>
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<td>Information Seeking through Microblog Questions: the Impact of Social Capital and Relationship Pengyi Zhang</td>
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<td>Examining Preferences for Search Engines and Their Effects on Information Behavior Irene Lopatovska</td>
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<td>Measuring Science: Emerging Tools for Analysis of Federal R&amp;D Investments</td>
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<td>Emerging Trends in Metadata Research Heath Lea, Mouaison, Susan Rathbun-Grubb, June Abbas, Jane</td>
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<td>Information Outsiders of the 21st Century: Access and Implications for Information</td>
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<td>Design and Evaluation of a System to Support Collaborative Search Robert Capra, Annie</td>
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<td>Old Data, New Scheme: An Exploration of Metadata Migration Using Expert-guided</td>
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<td>International Reception</td>
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<td>Unwiring and Rewiring for the Knowledge Future</td>
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<td>Denise Bedford, Richard McDermott, Gordon Vala-Webb and Jack Udinich</td>
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<td>Humanistic Information Science</td>
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<td>Jack Andersen, Melanie Feinberg, Jonathan Furner, Jens-Erik Mai and</td>
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<td>Understanding Information and Knowledge Sharing in Online</td>
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<td>Communities: Emerging Research Approaches</td>
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<td>Hsin-liang Chen, Anatoly Gruzd, Xiaohong Liu and Eric Meyers</td>
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<td>A Personal Information Management</td>
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<td>Scheme Using Shared Labels and Implication Links</td>
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<td>Gaurav Dubey and Xiaolong Zhang</td>
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<td>Crowdsourcing for Usability Testing</td>
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<td>Di Liu, Randolph Bias, Matthew Lease and Rebecca Kuipers</td>
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<td>Knowledge Retrieval for Scientific Literatures</td>
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<td>Chun Guo, Renuka Chinchankar and Xiaozhong Liu</td>
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<td>Applying Human Computation Mechanisms to Information Retrieval</td>
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<td>Christopher Harris and Padmini Srinivasan</td>
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<td>10:30</td>
<td>New Directions for 21st Century Digital Collections</td>
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<td>Amelia Abreu, Amelia Acker and Carolyn Hank</td>
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<td>Ten Years Later: Information and Policy in the Aftermath of 9/11</td>
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<td>John Carlo Bertot, Nadia Caidi, Ursula Gorham, Paul Jaeger and Katie</td>
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<td>Transformation or Continuity? The Impact of Social Media on Information:</td>
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<td>Implications for Theory and Practice</td>
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<td>Jutta Haider, Isto Huvila, Andrew Cox,</td>
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<td>The Notion of Relevance in Teacher Information Behavior</td>
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<td>Anne Diekema and M. Whitney Olsen</td>
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<td>Children's Perceptual Cognitive Factors in Book Selection and Metadata</td>
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<td>Schema: Pilot Study</td>
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**Notes:**
- "I Just Don't Know What I Don't Know": A Longitudinal Investigation of the Perceived Usefulness of Information to People with Type 2 Diabetes
- Beth St. Jean

**References:**
- [ASIS&T 2012 Annual Meeting | Program](http://www.asis.org/asist2012/proceedings/frontmatter/program12.html)
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<td>The Other as a Research Agenda for Information Science</td>
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<td>Kathryn La Barre, Michael Buckland, Lai Ma and Charles van den Heuvel</td>
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<td>Library and Information Science in the Big Data Era: Funding, Projects,</td>
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<td>Vincent Lariviere, Richard Marciano, Michael Koo and Stephen Downie</td>
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<td>The Origins of SIG-III and Its 30 Years’ Journey: Visions and Reflections</td>
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<td>Daniel Alemneh, Toni Carbo, Nadia Caïdi, Anatoly Gruzd and Abebe Rorissa</td>
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<td>Citizen Users and Interactivity on Government Environmental Agency Web Pages: An Analysis of Colony Collapse Disorder Information</td>
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<td>Reid Isaac Boehm and Vandana Singh</td>
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<td>Things My Doctor Never Told Me: Bridging Information Gaps in an Online Community</td>
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<td>Ellen L. Rubenstein</td>
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<td>Integrated ACE Model for Consumer Health Information Needs: A Content Analysis of Questions in Yahoo!Answers</td>
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<td>Ming-Hain Phoebe Chiu and Chi-Chuan Wu</td>
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<td>Consumer Health Information Searching Process in Real Life Settings and Cognitive Activities</td>
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<td>Yan Zhang</td>
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<td>Web-based Education Throughout the Library &amp; Information Science Curriculum: Diverse Challenges, Opportunities, and Perspectives</td>
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<td>Diane Rasmussen Neal, SelenaY Aytaç, Margaret E.I. Kipp, Lynne Y. Williams and Catherine Johnson</td>
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<td>Information Visualization State of the Art and Future Directions</td>
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<td>Staša Milojević, Chaomei Chen, Loet Leydesdorff, Jason Priem and Scott B. Weingart</td>
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<td>Learning to Discover: Youth Information Literacy in the “I” Digital Age</td>
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<td>Dania Bil, Senda Erdelez, Jamshid Beheshiti and Ross J. Todd</td>
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<td>Content Divide: Africa and the Global Knowledge Footprint</td>
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<td>Shimelis Assefa, Abebe Rorissa, Daniel Alemneh and Kendra Albright</td>
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<td>Bibliometric Characteristics of Political Science Research in Germany</td>
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<td>Pei-Shan Chi</td>
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<td>Exploring Alternative Cyberbibliometrics for Evaluation of Scholarly Performance in the Social Sciences and Humanities in Taiwan</td>
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<td>MuChyun Tang, Chunmei Wang, Kuanghua Chen and Jieh Hsiang</td>
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ASIS&T 75th Annual Meeting
Baltimore, Maryland
October 26-30, 2012

"Information, Interaction, Innovation: Celebrating the Past, Constructing the Present and Creating the Future"

Click here to view conference proceedings

Celebrating the 75th anniversary of ASIS&T, this conference provides a great opportunity to reflect on our past and current research practices and to chart potential pathways for the future. This year’s conference theme, Information, Interaction, Innovation, embraces our anniversary while encompassing the different threads we bring together in information science.

The ASIS&T Annual Meeting is the main venue for disseminating research centered on advances in the information sciences and related applications of information technology. Building on the successes of the 2010-2011 conference structures, ASIS&T 2012 offers an integrated program achieved through 3 reviewing tracks. Each track is supported by a team of co-chairs and respected reviewers to ensure high standards and quality. Reviewers, as experts in their fields, will assist with a rigorous peer-review process.

The 75th Anniversary Task Force of the American Society for Information Science and Technology (ASIS&T) announces a Special ASIS&T 75th Anniversary Event, "The History of ASIS&T and the History of Information Science." This special 75th Anniversary event will explore the 75 year history of ASIS&T and the longer history of information science and technology worldwide. Registration and additional fees apply. Click here for more information!

Track 1: Information
Including submissions related to metadata, information retrieval, organization of information, information management, knowledge management, classification, information architecture, copyright, bibliometrics and infometrics, data analytics, bioinformatics, and information policy.

Track 1 Chairs:
Michael Olsson, University of Technology, Sydney (Michael.Olsson@uts.edu.au)
Sanna Talja, Uppsala Universitet, Institutionen for ASM (sanna.talja@abm.uu.se)

Track 2: Interaction
Including submissions related to information behaviour, information sharing, human-computer interaction, collaboration, gaming, visualization, social informatics and social media.

Track 2 Chairs:
Sanda Erdelez, University of Missouri (ErdelezS@missouri.edu)
Catherine Johnson, University of Western Ontario (cjohn24@uwo.ca)
Chirags Shah, Rutgers University (chirags@rutgers.edu)
Track 3: Innovation
Including submissions related to emerging technologies; Web 3.0; new practices, methodologies, applications and/or services in digital libraries, digital humanities, education, emergency response, e-Research and other contexts; cloud computing; new theories and paradigms in information science; foundations of information science.

Because each of these tracks represents a generic aspect of information science and technology, each may be focused by additional elements such as types of:

- Organizations – schools, universities, research institutes, government, for-profit corporations, non-governmental organizations, not-for-profit organizations
- Information – by topic, genre, type, size, medium, etc.
- Technology – smart mobile phones, tablets and other personal computing devices, wearable technologies, blogs, wikis, ebooks, hypermedia, telepresence
- Information consumers – from children to older adults, from front-line employees to managers to CEOs, from individuals to large groups
- Information workers – librarians, database and system developers, information managers, information architects, archivists
- Contexts – entertainment, edutainment, education, history, learning, health, science, etc.
- Research theories and paradigms – including new emerging theories and evaluation of existing theories and paradigms
- Methods – qualitative, mixed, etc.

Track 3 Chairs:
HT Pu, National Taiwan Normal University (htpu@ntnu.edu.tw)
Luz Marina Quiroga, University of Hawaii (lquiroga@hawaii.edu)
Gerry Benoit, Simmons University (gerald.benoit@simmons.edu)

Student Activities Committee
If you are a doctoral student and wish to become involved in ASIS&T, please contact a member of this committee:

John Carlo Bertot, University of Maryland College Park iSchool (jbertot@umd.edu)
Stephanie Haas, University of North Carolina at Chapel Hill (shaas@email.unc.edu)
Candy Schwartz, Simmons College, Boston (candy.schwartz@simmons.edu)
Katie Shilton, University of Maryland (kshilton@umd.edu)
Barbara Wildemuth, University of North Carolina at Chapel Hill (wildemuth@unc.edu)

For more information, please contact:
Conference Chairs
Shanju L. Chang, National Taiwan University (sjlin@ntu.edu.tw)
Crystal Fulton, University College Dublin (Crystal.Fulton@ucd.ie)
Julie Hersberger, University of North Carolina (jahersbe@uncg.edu)

Local arrangements and logistics
Richard Hill (rhill@asis.org)

Important Dates
1) Papers, Panels, Workshops & Tutorials
   Deadline for submissions: April 30th
   Notification to authors: June 8th
   Final copy: July 15th

2) Posters, Demos & Videos:
   Deadline for submissions: June 10th
   Notification to authors: July 20th
   Final copy: August 9th

(All deadlines: midnight, Greenwich Mean Time)
ABSTRACT
In this paper we describe the formatting requirements for ASIS&T Conference Proceedings, and offer some writing recommendations. Please review this document even if you have submitted to the ASIS&T Annual Meeting before; this format represents a substantial change from previous years. We have endeavored to select a format that is consistent with spirit of the publication, and readable both on the screen and on the printed page. In addition to the new format, please note that: (1) submissions should be uploaded to the conference system as a single PDF file; (2) submissions should adhere to the length limit for the venue venue (papers = about 10 pages or 7500 words – page count will vary depending on figures, tables, bibliography, etc.; panels, posters and others = up to 4 pages, about 1,250 words; workshop/seminar proposals do not need a template as they do not appear in the Proceedings); (3) figures may be in color, but should be legible in black and white; and (4) citations should conform to the APA style conventions (the author-date method). Thank you for submitting to ASIS&T 2012!

Keywords
Guides, instructions, author’s kit, conference publications.

INTRODUCTION
This format will be used for the submissions that are published in the conference proceedings to give them a consistent, high-quality appearance. Please follow the simple guidelines set forth in this document; if your paper is accepted, it will ease the transition from submission to publication and it will ensure that your paper is the correct length. The page limit for each submission type is in the ASIS&T 2012 Call for Participation, which is located at http://www.asis.org/asist2012/.

The easiest way to format your paper so that it complies with the standards set forth in this template is to download this document from the conference website, and replace the content with your own material. The template file contains the proceedings’ formatting styles (e.g., Normal, Heading, Bullet, Table Text, References, Title, Author, and Affiliation); pouring your own content into this file and applying the appropriate styles should make it easier to format your submission.

PAGE SIZE AND COLUMNS
On each page your material (not including any header or footer information) should fit within a rectangle of 18 x 23.5 cm (7 x 9.25 in.), centered on a US letter page, beginning 1.9 cm (.75 in.) from the top of the page, with a .85 cm (.33 in.) space between two 8.4 cm (3.3 in.) columns. On an A4 page, use a text area of the same dimensions (18 x 23.5 cm.), again centered. Right margins should be justified, not ragged. Beware: depending on your own preset preferences, Word may change these dimensions.

TYPESET TEXT
This year we are requiring that submissions be prepared in PDF to facilitate the review process. Later versions of Word (including Word 2007) allow you to create PDF directly from your Word document by selecting “Save as” and “PDF or XPS” from the hierarchical menu. Remember that reviewers may either print your file or read it on the screen; it is prudent to check the appearance of figures on a black and white printer.

Title and Authors
Your paper’s title, authors and affiliations should span the full width of the page in a single column 17.8 cm (7 in.) wide. The title should be in Arial 18-point bold; use Helvetica if Arial is not available. Authors’ names should be in Arial 11-point bold, and affiliations in Arial 11-point (note that Author and Affiliation are defined Styles in this template file).

To position names and addresses, use a single-row table with invisible borders; the easiest thing to do is to use the table included in this document and modify it as necessary. For example, if only one address is needed, use a centered tab stop to center the names and addresses on the page; for two addresses, use two centered tab stops, and so on. For more than three authors, you may have to put some address information in a footnote, or in a named section at the end
of your paper. Please use full international addresses and telephone dialing prefixes. Leave one 10-pt line of white space below the last line of affiliations.

Abstract and Keywords
Every submission should begin with an abstract of about 150-200 words. The limit on the abstract length is 300 words; abstracts exceeding 300 words will be truncated. The abstract should be in the left column of the first page under the left half of the title. The abstract should be a concise statement of the problem, approach and conclusions of the work described. It should clearly state the paper's contribution to the field.

Normal or Body Text
Please use a 10-point Times Roman font (Times New Roman in Microsoft Word on the PC) or, if this is unavailable, another proportional font with serifs, as close as possible in appearance to Times Roman 10-point. On a Macintosh, use the font named Times and not Times New Roman. Please use sans-serif or non-proportional fonts only for special purposes, such as headings, pseudocode, or source code, and not for the main body of the paper.

First Page Copyright Notice
Leave 3 cm (1.25 in.) of blank space for the copyright notice at the bottom of the left column of the first page. In this template a floating text box will automatically generate the required space. Note however that the text box is anchored to the ABSTRACT heading, so if that heading is deleted the text box will disappear as well. You should edit this box as appropriate to your situation or needs.

Subsequent Pages
On pages beyond the first, start at the top of the page and continue in double-column format. The two columns on the last page should be of equal length.

References and Citations
The accuracy and completeness of the references is the responsibility of the author. Your references should be published materials accessible to the public. Internal technical reports may be cited only if they are easily accessible (i.e., you provide the address for obtaining the report within your citation) and may be obtained by any reader for a nominal fee. Proprietary information may not be cited.

The format for citations in text for bibliographic references follows the Publication Manual of the American Psychological Association (5th ed., 2001). Citation of an author's work in the text should follow the author-date citation method: the surname of the author(s) and the year of publication should appear in the text. For example, “Smith (1999) found that...”; “other researchers (Black & Tan, 2000) discovered...”. Formats for citation of electronic references are given on the APA web site: http://www.apastyle.org/elecref.html.

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Table 1. Table captions should be placed below the table.

References should be in 10 point type (using the same font as the document’s running text), and should be listed alphabetically at the end of the submission using an unnumbered style with a hanging indentation. The References style from this template should be applied to the text of your citation.

There are examples of this citation style at the end of this document. The references cited in this paper are included for illustrative purposes only.

SECTIONS
Section headings should be in Arial 9-point bold, all capitals (Heading 1 Style in this template file). Use Helvetica if Arial is not available. Sections should not be numbered.

Subsections
Subsection headings should be in Arial 9-point bold with initial letters capitalized (Heading 2). (Note: For sub-sections and sub-subsections, a word like the or of is not capitalized unless it is the first word of the heading.)

Sub-subsections
Headings for sub-subsections should be in Arial 9-point italic with initial letters capitalized (Heading 3).

FIGURES/CAPTIONS
Place figures and tables at the top or bottom of the appropriate column or columns, on the same page as the relevant text (see Figure 1). A figure or table may extend across both columns to a maximum width of 17.78 cm (7 in.).

Captions should be Arial 9-point bold (Caption Style in this template file). They should be numbered (e.g., “Table

Figure 1. Figure captions should be centered and placed below the figure.
1" or “Figure 2”), centered and placed beneath the figure or table. Please note that the words “Figure” and “Table” should be spelled out (i.e., “Figure” rather than “Fig.”) wherever they occur.

Papers and notes may use color figures, which are included in the page limit; the figures must be usable when printed in black and white, but you can take advantage of the fact that many readers will be accessing and reading your paper on the screen.

Inserting Images
Please insert images in such a way that they are included in your PDF file. Unlike past years, we are requesting that you deposit a single PDF file (not a zip file) in the submission system. This will greatly expedite the review process.

Table Style
The style of the text that you use in tables is up to you, although there is a special Arial 9 point Table Text style (in this template file) that you may use for consistency. If you do not use this style, then you may want to adjust the vertical spacing of the text in the tables. Generally, text in each field of a table will look better if it has equal amounts of spacing above and below it, as in Table 1.

LANGUAGE, STYLE AND CONTENT
Spelling and punctuation for ASIS&T 2012 papers may use any dialect of English (e.g., British, Canadian, US, etc.) provided usage is consistent. Hyphenation is optional. To ensure your paper is written appropriately for an international audience, please pay attention to the following stylistic conventions:

- Write in a straightforward style.
- Try to avoid long or complex sentence structures.
- Briefly define or explain all technical terms that may be unfamiliar to readers.
- Explain acronyms the first time you use them – e.g., “Digital Signal Processing (DSP)”.
- If possible, use the full (extended) alphabetic character set for names of persons, institutions, and places (e.g., Gronbæk, Lafrenière, Sánchez, Universität, Weißenbach, Züllighoven, Århus, etc.). These characters are included in most versions of Times, Helvetica, and Arial fonts.

In general, submission style should follow the forms given in the *Publication Manual of the American Psychological Association* (5th ed., 2001). For papers reporting on research, the background and purpose of the study should be stated first, followed by details of the methods, materials, procedures, and equipment used. Findings, discussion and conclusions should follow in that order. For papers reporting on best practices or other aspects of information science, the authors should strive for a structure that will be clear to their intended audience. Consult the APA Publication Manual for details as needed.

PAGE NUMBERING, HEADERS AND FOOTERS
Please submit the review version of your paper with page numbers centered in the footer. These page numbers will be removed from the final version of accepted papers (page numbers, headers, and footers will be added for the proceedings), but we have found page numbering helps reviewers communicate with authors.

PRODUCING AND TESTING PDF FILES
Please be sure that your PDF file falls within the page limit for your submission category; we reserve the right to return papers that exceed the stated length limits to their authors. Be sure that the PDF file can be read and printed using the Adobe Acrobat Reader, Version 9; the Adobe Acrobat Reader is free, and may be downloaded and installed from [http://www.adobe.com/products/acrobat/](http://www.adobe.com/products/acrobat/).

CONCLUSION
We recognize that this template is a bit different from the publication template that the ASIS&T Annual Meeting has used in previous years. We have made these changes for several reasons: we want the proceedings to have a consistent and professional look, and we are applying best practices readability guidelines to dictate some important layout parameters.

We hesitate to give too much advice about content; we feel that ASIS&T authors are capable of writing excellent research papers. Please remember a few simple things: be clear about what you have done, and distinguish your accomplishments from your future plans; situate your work by citing appropriate related work, and specifying your work’s unique contribution to the field; and finally think carefully about what readers will take away with them—how do you want to influence the field? Why will others cite your paper?

ACKNOWLEDGMENTS
This template was adapted for use at the ASIS&T 2012 Annual Meeting from several sources, including the existing ASIS&T Annual Meeting template, and the template used for the 2009 ACM SIGCHI Conference proceedings. We would like to thank all of the people who worked hard to design these templates.

REFERENCES


The columns on the last page should be of approximately equal length.