



Social Media and User-Centered Design: Methods, Challenges and Requirements

A preliminary investigation

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Preface

Recent years have shown a worldwide growth pattern in social interaction in digital media. The challenging development of social media attracting many a user to create and share, to participate and collaborate, to network and consume is the theme underpinning this report. A study conducted in 2009 highlights that almost two in three active internet users have joined a social network site. The number of users who actively share content in social media is also on the increase.

Consequently, the interest in social interaction elements is massive in digital media industry, also in a Finnish context. Designing for social interaction in media products, services and content presents some challenges to the way designers, digital media producers, and decision makers outline their work. There's a call for a deeper understanding of the success of the social media sites, of the underlying needs motivating people to use them, and of the experiences they strive for and try to avoid. As the use of social media brings new factors to the table, for instance the content that is created or shared is often personal and at times even private, new user requirements on the service may arise.

MediaCity Content Testing at Åbo Akademi University has a long and thorough know-how in user testing and research in the field of user and viewing experience. The unit conducts academic research in close collaboration with media content companies, with the objective of unveiling the needs, preferences, and experiences of users, viewers and consumers of digital media content. MediaCity is also the associated member of the Finnish Digibusiness Cluster. In 2009, within the framework of the Cluster's network Sombiz, MediaCity performed a literature review on the theme of social media design. The study concludes in this current report. The main objective of the review is to shed light on whether social media influences the design of user-centered content and services in terms of new user requirements and new approaches to work. In relation to this, earlier user studies and the user testing methods applied in the field of user-centered design is explored. Great attention is devoted to the perceived motives and needs of the users and con-

sumers of social media sites. Finally, the study reports on the challenges vis-à-vis methods and approaches that social media poses on designers and media producers.

To illustrate successful social media is hardly an issue of making a still life painting but rather of presenting a series of snapshots. The landscape changes rapidly, user loyalty and willingness to collaborate and participate is not to be taken for granted, and regular updates of the design, content and services is part of the routine. Thereby, in all work relating to social media and social digital interaction, it is of great importance to strive towards a thorough understanding of the users and consumers of social media, of their preferences and needs. With this report, it is our aspiration to provide the reader with food for thought and valuable insight in the precious work in designing for successful social media.

Pleasurable reading,

MediaCity Content Testing

1. Introduction

1.1 Background

Social media design is about designing platforms and applications for social interaction and user generated content. According to Mayfield (2006) social media is a new kind of online media characterized by user *participation, openness, conversation, community, and connectedness*. Central social media platforms include blogging, microblogging, RSS, widgets, social networking, chat rooms, message boards, podcasts, video sharing, and photosharing (Universal McCann, 2008) and some of the most prominent social media platforms today are MySpace, Facebook, Twitter, Flickr, etc. (Holzapfel, 2008). Karahasanović & Følstad, (2008) give the following description of social media: *“Social media are systems and applications supporting content sharing and co-creation in sociable online environments. This includes solutions for media sharing (e.g. YouTube, Flickr), self presentation and debate (e.g. MySpace, blogs), social networks (e.g. Facebook, LinkedIn), referencing and recommendation services (e.g. Digg, Del.icio.us) and co-created knowledge resources (e.g. Wikipedia). Social media may also include technology platforms such as interactive television and mobile phones.”*

The keys to social media success are user participation, user loyalty, user motivations, and the interaction between people. The facilitation of flexible design, user centered content, collaborative content creation, and the establishment of social networks are some of the factors making social media attractive to users, producers and business organizations (Mannonen & Runonen, 2008). In the last couple of years we have witnessed a significant increase of social media and web 2.0 concerns in both business and leisure time contexts (Murugesan, 2007; Wigand et al., 2008). Only in the first half of 2008 for instance, 64 million new participants around the globe entered social media networks (Immediate Future, 2008). The total estimated global active internet audience is now 625 million (Universal McCann, 2009), of which nearly two thirds have joined a social network site with an increase from 57 % in a similar study conducted in 2008 (Universal McCann, 2008). Universal McCann (2009) conducted an extensive study on social media usage among 23 2000 active internet users in 38 countries during Spring 2009. This study showed that:

- Social consumption of digital content is either highly penetrated among active internet users or still growing rapidly.
- Consumers continue to flock to digital destinations in order to create and share content, but they are now becoming more selective in terms of where they are doing it (i.e. the tools of social media are starting to coalesce

- on to a single platform type, namely the social network).
- 17 % of active internet users globally now access the internet on the move, i.e. internet and social media use are becoming more mobile.
- Social media platforms are becoming more multi-media.
- The number of bloggers and social network users who have uploaded photos, videos, music and widgets has continued to rise since the last study conducted in 2007-2008.

According to Universal McCann (2009) *“every element of digital media is becoming socialized, providing marketers with new ways to engage a target audience like never before”*.

As social media is about the users actively contributing to the services (Multisilta, 2008), it is even more dependent on user involvement for its development and survival compared to other forms of media. It is particularly important for designers to understand end-users’ motives, preferences, and needs. The issues surrounding the question of how social media affects the design and requirements of user-centered content and user-centered design (UCD) methods have been investigated in the current report. The investigation was conducted within the frame of the Sombiz-project. Sombiz is a Social Media Business Network of Finnish social media and Web 2.0 companies, research institutions and other organizations and individuals operating in the field of social media. The objective of the Sombiz network is to link business, universities, government, and communities in order to build and boost the social media business ecosystem, which includes different kinds of development projects. It operates as a thematic network of the *Finnish Digibusiness Cluster* and is part of the government funded *Centre of Expertise Programme (OSKE)*. It is funded by the *Ministry of Employment and Economy*. (<http://www.sombiz.fi>)

Within the Sombiz-project, social media refers to digital media services, which are based on community and user generic content.

1.2 Objectives

The current investigation was conducted as a literature study during three months in 2008-2009 and the main objective was to investigate in what ways social media affects the requirements and methods of the design of user-centered content. As a background to this, the aim was further to look at how user studies have been conducted earlier, i.e. which methods have been utilized with regard to social media design, and what challenges and requirements do

social media pose on the development of and methods for user-centered content. Further issues that were addressed in the investigation concerned the question of why and how people use social media, i.e. for what purposes. The investigation was conducted as a first step in a project aiming at developing effective methods and tools for user-centered

social media design. The main findings of the current investigation are presented in chapters 2-3 and conclusions are made in chapter 4.

2. What motivates users of social media?

The increased interest in social media platforms is evident from the results presented above. However, it is still unclear what makes these applications so successful and what motivates social media usage (Obrist et al., 2008). The fact that it is the users themselves that create the content and maintains it creates a need to know and understand how and why people use social media, why social media is appealing, what makes the users stay loyal and continue using, producing and consuming content. There are only a few studies addressing these issues. However, social media in general depend on user participation and motivation in order to survive (Arguello, et al., 2006). Designers need to know which methods to use in order to gather information about users' requirements, needs, preferences and motives. The few studies that have been conducted in order to investigate how people use social media show that people use social media by consuming, taking part in and/or producing content. The question of why people use social media, i.e. what are the underlying motivational factors, has been addressed from theoretical perspectives as well as through empirical research. In general, from a historical perspective group belonging has been related to security, safety and survival, whereas a social psychological perspective claims that people want to belong to groups in order to:

- Gain support and to be encouraged.
- Create and establish an identity and to fulfill the need for a sense of belonging.
- Fulfill the need for recognition, appreciation, social status, control and leadership.
- Gain external control, for example the weight watchers.
- Gain and maintain social relationships and to interact with others.

These general approaches are also applicable to the use of social media and the creation of and participation in user generated content. However, Shao (2008) more specifically addressed the question of what the appeal of user generated content in media is from a uses and gratification perspec-

tive. According to his analyzes, content is *consumed* in order to *fulfill the need for information, entertainment, and mood management*. The analyzes further show that people *participate through interacting with the content as well as with other users and for enhancing social connections* and it further shows that people *produce content for self-expression and self-actualization*.

As already mentioned there is still a lack of wide spread empirical research addressing the question of why and how people use social media. The studies that have been conducted show that people participate in and contribute to social media for a number of reasons, which are related to social, emotional, and cognitive aspects, among others. The results from three studies, which are presented below, give a more thorough overview of the different motivational factors that are involved in social media usage.

1) Motivational factors motivating people to take part in social media in general (Moore & Serva, 2007):

- Self Expression
- Self Esteem (including respect, positive reinforcement)
- Reputation (such as social standing, status)
- Reciprocity (moral obligation, fairness)
- Power (influence, ownership)
- Knowledge (seeking information, self efficacy)
- Empathy (compassion, understanding)
- Emotional support
- Egotism (attention getting, peer recognition)
- Egoism (personal gain, generation of employment)
- Collaboration (articulation of ideas, development of insights)
- Belonging (combat loneliness, sense of comm.)
- Altruism (benevolence, concern for community)

2) Motivational factors and purpose for participating in Wikipedia content creation (Nov, 2007):

- Social "People I'm close to want me to write /edit in Wikipedia."

- Career “I can make new contacts that might help my business or career.”
- Protective “By writing/editing in Wikipedia I feel less lonely.”
- Enhancement “Writing/editing in Wikipedia makes me feel needed.”
- Understanding
- Values “I feel it is important to help others”
- Ideology “I think information should be free”
- Fun “Writing/editing in Wikipedia is fun”
- Importance Examples
- Motivation

3) Motivational factors for participating in open innovation design (Antikainen & Väättäjä, 2008):

- Fun
- Sense of influence and self enhancement, seeing own creations
- Social aspects, such as relationships, reciprocity, altruism
- Reputation and career creation
- Rewards

Besides the question of what motivates people to participate in social media, it is also important for designers and creators of social media to understand what determines user loyalty to social media services and to understand how to develop and maintain user loyalty. There is currently not sufficient knowledge in regard to how loyalty is generated and kept. However, one study addressing the question of why users lose loyalty to online communities (Brandtzæg & Heim, 2008), found that lack of interesting people or friends is the most frequent reason for leaving an online community or using it less. Other reasons that were identified in the study were low quality content, low usability, harassment or bullying, the participation was too time-consuming or isolating, low trust, the community being over-commercialized, dissatisfaction with community-moderators, and unspecified factors, for example the community is boring. According to Arguello et al. (2006), end-user loyalty is dependent on whether online communities provide the benefits and experiences that members seek.

3. Social Media and User-Centered Design

The role of the media user is now more about actively producing media content and less about passively consuming it (Vanattenhoven, 2008). Hence, as social media engages the end users even more than other forms of media, the user-centered design (UCD) process would seem to be well-suited to deal with the particular challenges of social media (Burns, 2008). User-centered design places the user and his or her activities within social and cultural contexts in the center of a design process. User-centered design (UCD) is a process where users are involved in the design and the development of a product.

According to the international standard ISO 13407, user-centered design includes the following parts:

- Requirements gathering – understanding and specifying the context of use
- Requirements specification – specifying the user and organizational requirements
- Design – producing design and prototypes
- Evaluation – carrying out user based assessment of a product

Although the standard (ISO 13407: Human-centered design

process) defines a general process for including human-centered activities throughout a development life-cycle, it does not specify exact methods. However, traditional UCD methods include contextual inquiry, user requirement analysis, usability evaluation, task analysis, focus groups, formal heuristics, user interviews, surveys, card sorting, participatory design, among others, where different methods are employed at different stages of the design process (cf. Kuniavsky, 2003).

3.1 User-Centered Methods in Social Media Design

The UCD process has been widely and successfully used in HCI (Human Computer Interaction) design, which is social interaction design’s precursor. Although social media design would seem to benefit from such a development process, an investigation of the employment of UCD processes in the design of 16 of the most prominent and successful social media services and platforms of today (Holzapfel, 2008), such as Facebook, MySpace, Twitter, Flickr and so on, showed that the developers did not implement a standardized UCD-process or UCD-methods in the development of the service. Instead the platforms, applications and services

were developed from the designer's own needs or his/her previous knowledge about the target groups, in combination with spontaneous user feedback.

However, most of the designers gave credit to the users for shaping the design of the site (Holzapfel, 2008). Implementing a UCD process and UCD methods in the development of social media may still be useful for developing successful social media services and platforms (cf. Holzapfel, 2008). The need to gain insight into users' requirements, motives and needs increases as more social media platforms and applications are developed (which increases the competition for the users), and also because niche social networking and Enterprise 2.0 are likely to increase (Kirkpatrick, 2007; Perez, 2008; Universal McCann, 2009). Further, along with the businesses' increased interest in social media (cf. Barnes, 2008), the need for user research grows due to the complexity and specialization of some business organizations (Holzapfel, 2008). UCD approaches and methods that actually have been employed and explored in social media design include:

1. Axioms, guidelines, and user patterns describing well designed products, common problems and solutions (cf. Holzapfel, 2008; Obrist et al., 2008). Most of the literature written on social media design has focused on these design principles, however as social media projects are diverse it is difficult or impossible to apply the same rules and guidelines to all varieties of social media design (Kuniavsky, 2003; Holzapfel, 2008).

2. Traditional UCD methods, such as field studies, ethnographic studies, interviews, online and offline questionnaires, interviews (cf. Heim et al., 2008), and combinations of methods, for instance card sorting and personas (cf. Derboven & Uyttendaele, 2008) etc. However, these methods have difficulties mapping social requirements as their focus is on the user and the context of use (Lievens, et al., 2008).

3. New approaches utilizing social media, which provide new possibilities for conducting user research and involving the end-users throughout the innovation process (Heim et al., 2008). Methods and tools that have been explored are, for instance, blogs utilized for diary studies, online experience sampling (cf. Chen & Nilan, 1998), online tools for identification of end-user patterns of media use, and new technologies such as living labs for user, context and social requirements analysis (cf. Niitamo et al., 2006; Pierson & Lievens, 2005). Further, interviews, focus group discussions, surveys, design probes and usage diaries have been used in an open web laboratory (Näkk & Virtanen, 2007). Test environments can be created within an existing social media platform, by linking the test environment to a social media platform, or by creating a new social media platform for the test environment.

Although a plethora of methods have been employed and explored in the design of user centered content in social media, there is still a lack of empirical evidence on advantages and disadvantages of different methods and tools (Karahasanović & Følstad, 2008). According to Heim et al. (2008) existing methods for capturing user requirements and evaluation are not flexible enough to capture the fast and unpredictable changes in the contexts of use, users' preferences and competences, the new application areas and community dynamics. Hence, new, flexible and cost-effective methods for collecting data on users, their requirements, and level of satisfaction are needed (Heim et al., 2008).

3.2 Challenges and Requirements

As already mentioned, social media applications differ from the traditional task-oriented applications that have been studied within the general Human Computer Interaction framework. Besides focusing on traditional metrics such as speed, accuracy, and task completion, these new applications address issues such as user experience, co-creation, creativity, social exchange, and entertainment. Further, the development of these new applications is based on the active involvement between end-users and not merely on user-system involvement. (Heim et al., 2008)

The development process in social media includes several elements such as the establishment of a community, content development, management and also the development of new software solutions (Karahasanović & Følstad, 2008). According to Girgensohn and Lee (as cited in Multisilta, 2008) designing social media websites, services and applications are faced with a variety of challenges, like encouraging user participation, fostering social interaction, and promoting visibility of people and their activities. According to Arguello et al. (1998) the main challenges facing online communities, for instance, are much more psychological compared to other forms of media and software. The key psychological challenges are related to user behavior, motivation, attitudes, loyalty, social interaction and social organization.

As already mentioned, user-centered design and existing methods are challenged by new application areas, fast changes in users' preferences and context of use, and the new trends within the field of social media. The main challenges and requirements that social media poses on user-centered content creation can be summarized as follows:

- 1. The diverse, dynamic and ever-evolving nature of social media and its context of use** (cf. Heim et al., 2008).
- 2. The difficulties of traditional methods in mapping social requirements** since their focus mainly is on the user and the context (Lievens et al., 2008).

3. The increasing trend and development of mobile social media (Multisilta, 2008).

4. The international reach of social media (Universal McCann, 2008).

5. The importance of user experience (cf. Nov, 2007; Preece, 2001), i.e. psychological and social aspects such as usage behavior, social interaction, social organization, motivations, attitudes, and loyalty as well as enjoyment, aesthetics, and fun. These kinds of issues are more difficult to measure, observe and define compared to mere usability.

6. The continuous updating of guidelines and user patterns, which is required due to the ever-evolving and dynamic nature of social media. (Holzapfel, 2008)

7. Social media design should serve both individual users, communities, and the co-creation of content (Batterbee, 2003; Heim et al., 2008; Light 2004). Here the challenges for the designers are to motivate user involvement, such as participation and content creation as well as to create applications that are easy to use for novice or elderly users.

8. Difficulties prototyping social media, which is due to the ongoing, episodic nature of social media, including the response solicitation from others (instead of being discrete actions that end with a function or operation's conclusion), the fact that users' activities usually don't have specific goals, as well as the fact that the character of a community takes time to develop. (Holzapfel, 2008)

9. The platforms or systems for social interaction need to be evolvable to fit new needs, account for changing tasks and incorporate new technologies. (Holzapfel, 2008)

- From the perspective of the researchers, a research tool should be easy to use and effective at yielding results that should also be easy to analyze. (Heim et al., 2008)
- User research shouldn't overburden participants with questionnaires, interviews, focus groups etc. (Heim et al., 2008)
- Clear and simple design of service and tools are needed as participants, for example, are not willing to use too much of their time to fill in a questionnaire or learn how to fill in a questionnaire (Heim et al., 2008).

According to Näkki and Antikainen (2008) the employment of social media as a tool for user research in the design process requires the planning of methods, tools, guidelines and schedule, as well as a strategy for the user administration, i.e. how to attract users, how to activate them, and how to commit them. Incentives and rewards should be used in order to motivation participation (Antikainen & Väättäjä, 2008). Although open innovations, living labs and other forms of research methods and environments utilizing social media in the design process enables easy engagement of users as co-creators, an improved dialog between users, designers and researchers, the involvement of users through the entire design process etc., there are still some issues that need to be considered. The openness of these kinds of applications or platforms might increase the threshold for participation and it also raises the question of IPR management (Näkki & Antikainen, 2008). This makes it important for researchers to provide the participants with clear guidelines and information about the issues (Näkki & Antikainen, 2008).

Besides these challenges and requirements, further requirements and solutions specifically targeting user research and UCD of social media have been suggested. These include:

- Keep research aligned with the fast changing state of the art. (Karahasanović & Følstad, 2008)
- Include different kinds of users (i.e. average users, non users, active users). However, getting users motivated to participate in a studies are generally challenging. (Karahasanović & Følstad, 2008)
- An improved dialogue between software developers, designers, and content managers, and the community members seems to be required. (Karahasanović & Følstad, 2008)
- Research techniques should have a clear role in the development process. (Heim et al., 2008)
- It should be easy for designers and developers to summarize the results in different ways. (Heim et al., 2008)

4. Conclusion

A multitude of traditional and new approaches to user centered research and design in social media has been explored and new methods and tools are under development (Karahasanović & Følstad, 2008). However, there is still a lack of empirical evidence on the advantages and disadvantages of these methods (Karahasanović & Følstad, 2008). Although there are challenges and issues regarding UCD in social media and although the most prominent and successful social media platforms, so far, have been developed from a designer's perspective in combination with spontaneous user feedback, user research might still be useful for developing successful social media services and platforms (cf. Holzapfel, 2008). The need to gain insight into users' requirements, motives, experiences and needs increases as more social media platforms and applications are developed (which increases the competition for the users), and also because niche social networking and Enterprise 2.0 are likely to increase (Kirkpatrick, 2007; Perez, 2008). Further, along with the businesses' increased interest in social media (cf. Barnes, 2008), the need for user research grows due to the complexity and specialization of some business organizations (Holzapfel, 2008).

As mentioned earlier in the present report, social media design needs to serve and support both individual users, communities, and the co-creation of content (Batterbee, 2003; Heim et al., 2008; Light 2004). Social media and the context of use are fast changing, unpredictable, and highly dependent on the mass of users and their loyalty. Further, there are also fast changes in user preferences and competencies (Heim et al., 2008). For instance, user requirements and preferences might change due to experiences with other, new applications or services. Also, with regard to social media good usability is not enough, instead user experience issues as well as psychological and social issues need to be addressed in the evaluation and design of social media (Nov, 2007; Preece, 2001). However, there is a lack of wide spread research related to these issues. All these factors make it difficult to design social media applications using traditional or general models and design processes (which are based on planning and manuscripting). For the same reasons, it is also difficult to develop one business or development model that would apply to every single social media application design project.

As already stated, user centered research and a UCD approach has the potential of being very valuable in the design of social media services and platforms. However, the UCD process as a whole might not be appropriate for every social media design project. Instead the user-centered design and user-centered methods should be adapted to the

needs and demands of the specific project and its target group. For instance, designing a prototype of a social media service or platform might be challenging as the development of a social service or platform requires contributions from users. However, with insight into the target group's needs, expectations etc. as well as factors related to user motivation and loyalty, an early prototype could be designed (O'Reilly, 2005). Traditional usability testing of the prototype would be valuable at this stage in order to decrease the risk of functional and technological failures. The social media service or platform could then be further developed by spontaneous user feedback, as in the cases of several social media platforms today, or by user feedback in the form of user research utilizing standardized methods (O'Reilly, 2005). The need for the latter is likely to increase as the nature of social media evolves and becomes more specialized. Further, as the nature of social media is diverse and ever-evolving, an on-going analysis of how it evolves is required in order to increase the chances of user loyalty and needs fulfillment (Ovaska et al., 2008). Ovaska et al. (2008) also state that more user research is needed regarding the existing social media services and platforms in order to gain a deeper insight into and understanding of questions related to user motivation and loyalty, which could then be implemented in the design process.

To conclude, the difficulty in developing a model for user-centered social media design stems from the rapid changes in usage patterns and technological advances that are reshaping the new media landscape. There are fast changes in what is considered successful social media design. Knowledge resources such as guidelines and design patterns need continuous updating. Successful models developed today might be out of date tomorrow. The difficulty is also due to the diverse nature of different social media applications, including diverse target groups, the purpose of the application or service etc. Further, in order to maintain user loyalty there is a need for a deep understanding of more psychological aspects of the users, such as needs, motives, preferences and so forth. However, by developing and employing standardized methods for user-centered research in the field of social media design and by remembering the importance of keeping up an on-going dialogue with and analysis of the users after the social media platform of service has come alive, the chances of the users staying loyal to the service or platform increases as well as the chances that new users will join in.

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