



ITEE TECHNICAL REPORT #473

15 September 2010

TITLE:

Social Software and Interactions in Web Design: an in situ exploration of tools & methods to support designer-client communication.

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ABSTRACT:

This paper outlines the scope, approach and current progress of a thesis which is investigating the role that Computer Mediated Communication (CMC) plays in supporting the design process within the web design industry. Specifically, the thesis investigates designer-client communication, and explores the issues with technologies to support this communication. This research is situated within the field of Computer Supported Cooperative Work (CSCW). Web design businesses use a variety of CMC tools to support communication with their clients; however they must rely on general purpose tools which the client has prior knowledge of. Social Software solutions which can better support these processes have yet to become adopted within the industry. The research question for this work is how can Social Software be better designed to support designer-client communication within web design businesses? A platform that facilitates the creation of Social Software will be designed, deployed and evaluated in situ to investigate the problems and opportunities for Social Software within this space. An iterative design process will be used to develop and evaluate the platform through the use of ethnographic action research and design thinking methods. The aim of the platform is to reduce the challenges of introducing new software into web design businesses, and evaluate the platform through participatory design studies of developing new tools which better support the design process. The results of the platform will be used to inform a design framework for Social Software designers wanting to develop tools to support communication in this context.

REFERENCE:

Dekker, A. (2010). *Social Software and Interactions in Web Design: an in situ exploration of tools & methods to support designer-client communication*. Brisbane, Australia: ITEE Technical Report #473, University of Queensland.

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Social Software and Interactions in Web Design: an *in situ* exploration of tools & methods to support designer-client communication

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Author Keywords

Interaction Design, CSCW, CMC, Web Design, Ethnographic Action Research

ACM Classification Keywords

H.4.3 Communications Applications; H.5.3 Group and Organization Interfaces

CONTEXT AND BACKGROUND

The web design industry (including services such as web development and web marketing) is a modern design driven industry that provides services to other businesses. The focus of this industry is on the design and development of web sites, media and applications (Brickman et al., 2008). While larger corporations have

the infrastructure to develop these products internally, a majority of smaller businesses (which represent 97% of all Australian private businesses) enlist the services of web design businesses to create and manage their online presence. Although historically businesses have relied on semi-qualified individuals to produce these products, the increasing ubiquity of the Web as a consumer research and sales tool has led to businesses becoming more likely to engage professional web design firms.

Due to the multi-disciplinary nature of design (Bannon & Schmidt, 1991), web design businesses require continual and rich communication with clients and stakeholders throughout the design process (Diffily, 2008; Lawson, 2005). Designers are required to establish a common ground to better understand their target market, which assists them to successfully create products which best reflect the client, their business and their product.

Although face-to-face meetings are often the preferred way to facilitate this design process, time and resource constraints mean that the majority of correspondence is conducted digitally. These technologies require both the client and designer to use and monitor them throughout, and thus are often constrained to ubiquitous general-purpose tools such as Email and Instant Messaging. The use of these tools often carries over to support the internal communication processes, to help streamline the communication practices of the business.

CMC tools to support the design process within this context offer many benefits, such as the ability to share, discuss, annotate and document around artefacts by both the client and designer. The issue with these ubiquitous (and mundane) technologies is that they are general purpose, and do not offer functionality and awareness that has been contextually designed to support the designer-client communication processes. This can result in a variety of miscommunication throughout the design, leading to frustration from both the designers and clients, and sometimes resulting in delayed or substandard products.

While there are a variety of Groupware and Social Software systems which address the issues of general purpose CMC tools by providing a rich and persistent environment for communication (such as Google Wave), these applications have yet to become widely adopted by the web design industry for communicating with clients.

BACKGROUND

This research takes an Interaction Design (IXD) approach, focusing on the exploration of the web design process and its intricacies (Buchanan, 1992) within the context of the web design industry. There are a number of related bodies of academic literature, ranging from business focused areas such as Business Process Management and Knowledge Management to engineering/technology driven research such as Requirements Engineering, Information Systems, Service Oriented Architecture and Expectation Management. While both business and engineering disciplines will be explored throughout this research, the primary focus is based on the literature surrounding the *in-situ* design of CMC tools. Specifically, the fields that this research is situated within are CSCW and Social Software, including associated Human Computer Interaction (HCI) and Interaction Design (IXD) literature.

While there is a body of prior work investigating processes within web design (Dorn & Guzdial, 2010; Duyne, Landay, & Hong, 2002; Newman & Landay, 2000), these studies have focused more on the technical practice and problems of web design, rather than unpacking the existing communication processes within the industry. Despite this lack of academic literature, there are a number of online publications which are highly regarded by workers within the industry. These include A List Apart, 37 Signals, Sitepoint and the World Wide Web Consortium.

The foundation of CSCW research is the emphasis on understanding the context of a workplace in being able to design solutions which fit within the environment. Context can be identified through a combination of factors, including the users which inhabit the space, the physical and technological environment and the social structure within the environment (Dourish, 2004). Greenberg (2001) examines three frameworks/theories that involve designing around particular context: Situated Action (Suchman, 1987), Activity Theory (Nardi, 1995) and Locales Framework (Fitzpatrick, Mansfield, & Kaplan, 1996) and identifies that these factors are not only important when realising the context, but that the context is dynamic, adapting over time to both internal and external situations. Greenberg's work emphasises the importance of designing applications based on observations and a situated understanding of work practice.

Within CSCW, the design and implementation of systems to support communication has often been referred to as Groupware. "Groupware reflects a change in emphasis from using the computer to solve problems to using the computer to facilitate human interaction" (Ellis, Gibbs, & Rein, 1991). Groupware has been an effective method of realising CSCW theory; however there are problems in the real-world adoption of these tools. "Email and b-boards are well known, but few other groupware prototypes and products have done as well despite considerable effort. Successes exist, but progress is slow and can lead in unanticipated directions" (Grudin, 1994).

Groupware is required to fit in within existing business processes, as well as be able to adapt to these processes

over time. Grudin (1994) states that to develop successful Groupware, designers must "identify a group's problem and match the computer solution to it". Grudin outlines eight challenges that designers of Groupware must take into account when designing new communication tools. An emphasis of Grudin's work is that designers of Social Software should build on top of existing tools in use, rather than attempting to replace them with more context-aware solutions.

Social Software is a more recent term which is based on ideas within Web 2.0 (O'Reilly, 2007), and is used to describe "software that supports group interaction", rather than point to point methods of communication (Shirky, 2003). Whereas CSCW/Groupware is primarily based in research labs, and traditionally focused on the context of activities within the workplace, Social Software is focused on Web 2.0 style commercial tools, with individuals participating in social groups, including services such as Facebook and Twitter.

Social Software has unique implications within the context of this thesis, as its widespread adoption by the general public has led to new considerations and practices with regards to communication tools. An extension to the study of Social Software is the developing field of Enterprise 2.0, which "describe how these same [Social Software] technologies could be used on organizations' intranets and extranets" (McAfee., 2006).

RESEARCH QUESTION

This thesis will explore the nature of communication within web design businesses, specifically the support that CMC tools can provide for collaboration between designers and clients. The research seeks to understand why, despite years of research into computer-supported collaboration, Social Software is not in widespread use within this environment. The research question is therefore, *how can Social Software be better designed to support designer-client communication within web design businesses?* The aim of this research is to explore how Social Software can be designed and introduced into web design businesses to better support communication processes by building on the knowledge and practices stored within the communication tools already in use.

A primary aim of Social Software is to provide rich and dynamic methods of communication in a persistent and shared environment (Shirky, 2003). Social Software provides a level of awareness and presence (Dourish & Bly, 1992) by offering implicit sharing of information and media, rather than requiring explicit sharing as in traditional CMC tools. Although Social Software provides many advantages over traditional communication methods for supporting the client-designer communication process, the reliance of ubiquitous methods of communication result in a lack of adoption of these tools.

RESEARCH METHOD

An iterative two pronged approach will be taken to address this research question: on the one hand to understand current practices through contextual interviews and ethnographic studies, and on the other the incremental development and *in situ* evaluation of an

enabling platform which facilitates new Social Software to better support customised communication between web design businesses and their clients. The results of this process will be synthesised to yield a set of design principles that will be embodied in the final version of the Social Software platform. The platform will be used to inform a design framework which aims to assist in the design of CMC tools to support client-designer communication.

The methodology that has been chosen for this research is inspired by Design Thinking and Ethnographic Action Research (EAR). Design Thinking is a design methodology that focuses on “the full spectrum of innovation activities with a human-centred design ethos” (Brown, 2008). Design Thinking comes out of architecture and art disciplines, and assists in understanding how the design process can be applied to other disciplines. EAR is a user centred approach which focuses on iteratively designing for users within a particular context. EAR is a combination of ethnographic and action research methods “we use ethnography to guide the research process and we use action research to link the research back to the project’s plans and activities” (Tacchi, Hearn, & Ninan, 2004).

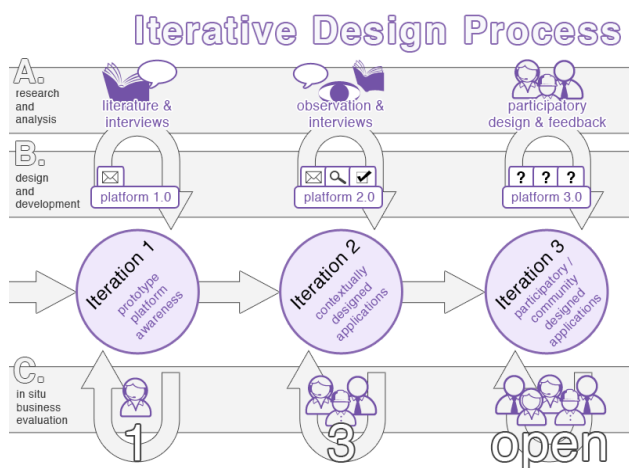


Figure 1. Iterative Design Research Methodology.

The overall methodology for this research follows an iterative design process, focusing on three major iterations (Figure 1). The focus of these iterations is to engage with the context, design an enabling platform to act as an intervention, and evaluate the platform *in situ*. The steps within each iteration are Research, Design, Implementation, Deployment, Evaluation and Reflection, and are based on concepts from Design Thinking and EAR methodologies. A number of businesses will be engaged through each iteration. Earlier iterations will focus on businesses associated with myself to mitigate and work through issues regarding deployment, while later iterations will focus on independent businesses, to ensure that the evaluation findings are unbiased.

Iteration 1 (February - November 2010): The goal of this iteration is to understand the problem space through contextual interviews and exploration of existing Social Software solutions. A platform will be developed based on these findings, which will focus on the collection, aggregation and sharing of information stored within

existing communication tools. The platform will offer a single application, which provides an interface to view shared communications. This iteration will focus on a single business.

Iteration 2 (December - June 2011): The goal of this iteration is to refine the platform based on the findings from iteration 1, and understand the problems (or successes) with the adoption and use of the platform. The emphasis of this iteration is to use participatory design methods to develop new applications to support communication within the web design business. The platform will be deployed into additional businesses; to explore how these contextually designed applications can support communication around the design process within other businesses. This iteration will also focus on the development of an API, which will assist in iteration 3.

Iteration 3 (July-January 2012): Based on the design of the second iteration, the third iteration will focus on participatory design to develop new applications that support the communication process. As well as deploying the platform in additional businesses, the platform will be made publicly available for download and deployment within non-associated businesses. The focus of this iteration will be to take a hands-off approach and see how web designers can develop their own applications through the API provided by the platform. The evaluation for this iteration will be focused on highlighting best practices when developing software within this context, as well as pitfalls that are encountered.

CURRENT SITUATION

This research is currently within the design phase of the first iteration, and has so far discovered a number of findings that will be used to inform the platform being developed, as well as the design framework.

Interviews: A series of contextual interviews were conducted to better understand the problems with existing communication tools and processes within web design businesses. Ten interviews (of 30-60 minutes) were conducted with participants actively working within the industry (from 1 to over 9 years’ experience). The interviews were focused on gathering qualitative data, and were semi-structured and conversational in structure. A number of findings emerged from this study, in particular that email is a preferred method of communication, and despite its problems is the backbone of the communication processes within these businesses.

Review of Social Software: A study was conducted to evaluate and categorise existing Groupware and Social Software research that focuses on supporting business communication (not limited to the context of web design). Both general purpose and context aware Social Software solutions were examined, and categorised based on the coding method by Penichet et al (2007). 122 tools were evaluated, specifically on the ability to provide 2-way integration with existing communication methods. It was found that only 54 tools (45%) provided any integration, with most integrating with Microsoft Office.

Platform: The design of the enabling platform (which collects, aggregates and shares knowledge from existing

communication tools) is based on Groupkit (Roseman & Greenberg, 1996). The aim of the platform is to provide a base in which new Social Software applications can be design, developed and deployed within a business without competing with existing communication tools.

The next step in the research process is to complete the implementation of the platform and subsequently deploy and evaluate it *in situ*.

BIOSKETCH

My background is in Interaction Design, focusing specifically on the contextual design, development and deployment of systems. I have degrees in Information Environments, Multimedia Design and Information Technology from the University of Queensland. I have also worked in the web design industry for the previous five years, running a small web design company in the Ipswich region. I have been previously involved in multiple research projects exploring Social Software within unique contexts for the Australasian CRC for Interaction Design (ACID).

Start date: August 2008 (with 8 months interrupted)

Estimated completion: September 2012

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