

# Position paper: CSCW and the Web 2.0

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**Abstract.** This position paper argues that CSCW systems could benefit from adopting social structures as found in many Web 2.0 communities possibly adopting social incentives as a persuader of sustainable system usage.

## Introduction

When designing Computer Supported Cooperative Work systems for globally distributed organizations there is a need to consider the emotional value proposition that the systems offers the Knowledge Workers that are to use it. In particular there is a need to design for motivation. If we observe Social Web 2.0 Software it caters as much to emotions as to logic, but most current day software design methods are more concerned with the logic in the applications, than they are on the emotional impact of the application or its entertainment value. Social Software is both motivating and engaging and it enables human-to-human interaction in new and immersive ways. The interaction itself is computer mediated, but the systems success lies in models for human-to-human interaction. Today however most design methods are focused more on human-to-computer interaction in the sense that they address the modeling of the highest level of usefulness or usability. They are not aiming a modeling an emotional experience.

# User Centered Design

Today the most popular methods for user experience design are based on the User Centered Design paradigm, thus placing the end-user at the center of all efforts in the system design. User Centered Design is the de facto industry standard<sup>1</sup>. User Centered Design (UCD) can be defined as the: "...active involvement of users for a clear understanding of user and task requirements, iterative design and evaluation, and a multi-disciplinary approach" (Mao et al, 2001). Some theories from the early nineties such as the socio-technical models (Dix et al, 1998) also address motivation, but they have not received much attention since then. With UCD computer systems are built to satisfy end-users genuine needs for solving specific logic tasks in an environment, thus taking into account the context that the end users have to act in (Raskin, 2000). UCD typically addresses the specific tasks that the end-user is *supposed to be solving*. Preferably these tasks are uncovered or validated by observing employees conducting their work. UCD's focus is on attaining the highest possible level of usefulness in task completion. Some studies have however shown that this is not always be the best measure for system success. Hauck & Weisband (2002) describes a system that objectively seen was made more usable, but that was not really what the end-users wanted or felt they needed.

Computer Supported Cooperative Work systems are designed employing many methods but UCD as an industry standard plays a large role for most system design: You observe what the end-users ideally are supposed to be accomplishing by investigating fixed goals and sub-tasks.

## Designing CSCW's for Knowledge Workers

When designing for Knowledge Workers you have to take many things into account. One interesting thing is that Knowledge Workers have a lot of freedom in what they are actually doing and how they are doing it. Blue collared workers simply have to operate the interfaces they are given (whether they like it or not). If a blue collared worker is not pressing the buttons on the cash register, he is fired

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<sup>1</sup> <http://ui.oracle.com/>, <https://www.sdn.sap.com/irj/servlet/prt/portal/prtroot/docs/library/uuid/ba649466-0d01-0010-488a-d95cac6e0631>, <http://www.sun.com/usability/index.html>, <http://ibm.com/services/us/igs/pdf/ucd-at-ibm-consulting.pdf> - and [http://msdn.microsoft.com/library/default.asp?url=/library/en-us/dnanchor/html/anch\\_uidesigndev.asp](http://msdn.microsoft.com/library/default.asp?url=/library/en-us/dnanchor/html/anch_uidesigndev.asp)

for not conducting his work. Knowledge Workers on the other hand have freedom of choice; they might choose not to adopt a CSCW system provided by their organization, if they don't feel there is something in it for them (Bansler and Havn, 2002).

Knowledge Workers can decide to solve their tasks in their own way. For instance they might cover their document sharing needs by sending emails, effectively leaving all the knowledge and documentation sitting on a mail server non-accessible to anyone else in the organization.

A central point is that CSCW systems are in fact *competing* with other software applications: Mail clients, instant messaging, word processors and browsers are claiming attention (as is the manager that suddenly showed up asking a questions). These design challenges might require new design methods.

## Motivation

Knowledge Workers can often be suffering from 'Time Famine'. Time famine is a term coined by Leslie Perlow (Amabile et al, 2002) referring to the fact that Knowledge Workers often have more than a full plate, when it comes to activities that they might be expected to engage in. The same people that organizations expect to: invent the new products, services and the organizations of tomorrow are under enormous time pressure. This is in particular a problem when designing systems to support innovation and ideation since research indicates that employees suffering from time famine would be less likely to get fresh ideas (Amabile, 2002). Furthermore the ever growing demands of enhanced efficiency have a negative effect on intrinsic motivation (Amabile, 1998). This poses a problem since intrinsic motivation is often what drives people to perform, for instance staying up late working on a concept or project. Put bluntly it is overly optimistic to expect Knowledge Workers to readily supply: ideas, innovations concepts or specialized domain knowledge of business processes, if the corporation they are in do not all ready have a well established corporate culture of sharing information and ideas (Cynthia and Harrington, 2001). There is no reason to assume that information sharing and spontaneous content providing would occur. In study Bansler and Havn (2002) found the clear need for incentives if Knowledge Workers were to take part in contributing; they wanted something in return, even if it was just social acknowledgement.

Attention and intrinsic motivation are key factors in designing systems for Knowledge Workers, if there are many things they could be doing, why would they go to a CSCW system and start documenting processes or possibly filing their ideas (for others to steal)? What would motivate system usage? Those are questions that CSCW designers have to be able to answer or counter by clever design. The hardest part of designing a successful CSCW system for Knowledge Workers is to actually have the system adopted by the end-users. They have to like the system so much, that they will prioritize spending time on supplying content such as: ideas, suggestions and process documentation. In comparison designing e.g., the navigation of existing content is not a big design challenge, it

is a challenge on another level. The main challenge becomes to address the intrinsic motivation at design time, so that the attention of the Knowledge Workers can be captured.

There is a need to investigate how we can design for motivation and sustained attention. If a corporation for instance would want to build a system to address innovation and ideation in a globally distributed organization, how could you as a designer solve that task? How would you address motivation? What methods could you employ to ensure that Knowledge Workers actually took part and provided ideas and information? I would argue that the CSCW designer's toolbox is mostly empty, when it comes to directly addressing these issues in an explicit and formal manner. We lack the methods.

## Web 2.0 Social Software has Motivated End-Users

Comparing CSCW to Web 2.0 social software, the end-users of the latter are spending huge amounts of time contributing and spending load of attention on other users content. In websites like: Myspace.com, Facebook.com and YouTube.com intrinsic motivation is soaring and these websites engage end-users to contribute with plenty of content. This type of software is seemingly catering to some basic human need of sharing and interacting with others. Although these applications are made for entertainment (and add revenues) it is important to note that they are probably also setting the expectation level for the next generation of Knowledge Workers entering the organizations. The younger generation will most likely expect more human-to-human computer mediated interaction in their workplace.

A concrete example of design results that UCD would not necessarily provide formalized strategies for: Web 2.0 software makes social awareness of other user's activities much easier and highly visible. It is clearly stated that you are not alone online. This is just one of many strategies for bolstering the community feeling. In figure 1 below direct attention to other user's current activities is made explicit and highly visible:

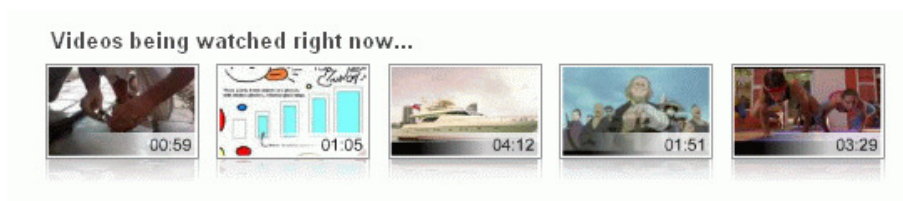


Figure 1. Design element from the index of [www.youtube.com](http://www.youtube.com) (June 2007). "Videos being watched right now"; the user gain the consciousness that other users are also watching video clips. In a CSCW system you will not find a list stating: "These documents are being edited right now".

Most importantly Web 2.0 community applications enables end-users to both give and receive emotional pay off's. In figure 2 below a common visual design pattern a star-rating system (marked with a dashed box) is employed. The stars shows the other community user's anonymous evaluation of the content.



Figure 2. The index page of www.youtube.com June 2007, there are many indicators of other systems users, there is the “Videos being watched right now”, there is a “Community”-pane and also there is a star-rating system (marked with a dashed box) and also an indication of how many times featured videos have been viewed in total. All these elements are indicating and raising the awareness of a social context.

In general Web 2.0 applications address the end-user *intrinsic motivation* in ways that are currently difficult to describe and even more difficult to prescribe. What would a motivational design framework look like for CSCW systems?

Current CSCW system design methods don't explicitly recommend possible use of informal communication as a lever for system adoption but we can observe Social Web 2.0 systems with informal communication as a focus that are nearly addictive. At least in theory it should be possible to tap into the dedication found in social web 2.0 software, when designing internal CSCW systems for Knowledge Workers.

## Position

When designing CSCW's to facilitate collaboration and content sharing there is a need to better understand the human-to-human computer mediated relationship, rather than the human-to-technology relationship that many modern design methods mostly emphasize. CSCW system designers can learn and be inspired by Web 2.0 by observing how users are given the opportunity to experience each other via technology rather than only focusing on how people experience and interact *with* the technology itself. Naturally usability and Human Computer Interaction cannot be ignored, but it might not be the main challenge or most important design criterion, when designing systems, that are to engage multi-disciplinary Knowledge Workers globally e.g., in ideation and product or process innovation. The main challenge lies in providing a system that *persuades of its own usage* in free competition with the many other possibilities and offers that Knowledge Workers have.

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