

# Design Principles to Encourage Adoption of Social Software in Organizations

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## ABSTRACT

We discuss two design principles to support individual and group information sharing needs in organizations, and present OpnTag, a social system that incorporates those principles. We discuss how the principles potentially encourage adoption of social software in organizations.

## Author Keywords

Social systems, group dynamics, information sharing

## ACM Classification Keywords

H.4 [Information Systems]: Information Systems Applications

## INTRODUCTION

While social computing has emerged as a phenomenon among distributed communities, specific challenges of group and collaborative use of social systems in organizations, such as how groups access and use information and what social interfaces best support group activities, are not fully explored. The benefits of social systems in organizations will materialize only if an active user community continuously deploy and share information. However, in order to reach and maintain a critical mass, using the tool must be in every individual's best interest. This means that social tools must refrain from focusing solely on the value of the user-created content for the organization and also try to address the information management needs of the individuals who are going to be the real users of the system over time. We suggest the following design principles can help achieving this goal:

### 1. Maintaining individual ownership and control over shared information

Social tools provide significant enhancement in utility, cost, and ease of information sharing over desktop tools, which makes them a preferred choice of users. However, in social systems tags and annotations potentially augment content with one's perspectives and context, creating economic advantage for both the organization and the individuals. As such, tools need to provide a complete, persistent sense of the degree to which information that an individual creates or consumes is his/her own and the amount of control s/he has over the use of that information. This carries over strongly to organizations, where the information is creative,

analytic and/or work-related. We believe that in order to encourage adoption, social tools must enable a model of information organization and management that while incorporates safe and efficient means for group information sharing, allows individuals to maintain ownership and control over the information they deploy in the system.

### 2. Supporting an advanced notion of groups and communities

Research suggests that when personal information is shared with a group, the way it is used, managed, and shared changes [1]. This emphasizes the need for social tools to improve group information sharing, particularly if they are to be used in organization where there are usually tight regulations on who can share what with whom. Our previous research showed that users often hold back from sharing information in a group in anticipation of loss of control and influence, and loss of credit for their work [3]. Our study suggested that when group dynamics are clear enough to convey to the users how their information will be used within the group, they are better able to make an informed decision regarding how much they want to share within the group. In real world, users' definition of groups and communities varies rather continuously along several dimensions including size, visibility, and membership. The information sharing dynamics of the group/community are then determined by variations of these dimensions; i.e. open/limited number of members, public/private visibility, and open/moderated/closed membership (Table 1). We believe that in order to best support group interaction and collaboration, the notion of group and community in social system must resemble the way face-to-face trust is shaped in real life and between real people; enabling users to define, control, and understand various aspects of the groups they belong to.

Table 1. Group and Community Continuum

	Group Visibility	Membership	Member List Visibility
Community	<i>Public</i>	<i>Open</i>	<i>Public</i>
Club	<i>Public</i>	<i>Moderated</i>	<i>Members</i>
Team	<i>Public</i>	<i>Fixed</i>	<i>Public</i>
Clique	<i>Owner</i>	<i>Closed</i>	<i>Private</i>

## OPNATG

OpnTag [2] is a social utility for note taking and book marking that we developed with these principles in mind. The fundamental unit of information storage in OpnTag is the *memo*, a tagged textual annotation that may optionally link to a web resource. Memos can function as bookmarks, notes, or wiki pages and are organized based on their intrinsic metadata (e.g. who owns or created them and when) and the tags applied to them by various users. Each memo has an *owner*, which controls who owns the memo and thus can edit and delete it, and a potentially restricted *audience*, which controls who can see that the memo exists and read it. Both the owner and the audience can either be an individual or defined as a *group*. Furthermore, a memo may exist in either the individual or the group *space*. A user's personal space contains all memos created, edited, or tagged by the user. Likewise, a group's space includes all the memos created in the group space or specifically made visible to that group. Within a user's personal space, only that user may create, edit or tag memos whereas within a group's space, any member of the group may do so.

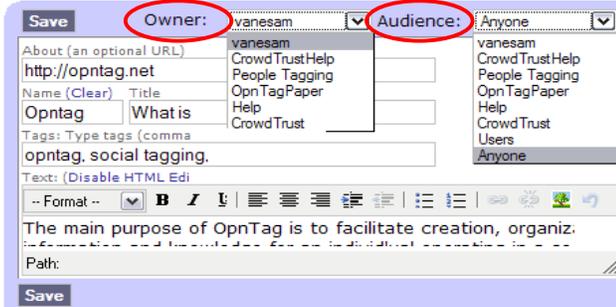


Figure 1. An individual memo in OpnTag with owner and audience list including both the individual and his/her groups

## GROUP MANAGEMENT IN OPNATG

Groups in OpnTag allow a set of people with a shared interest to create a context for selective information sharing and a collective space within which they can actively collaborate to create, edit and organize information either publicly or in private. Because groups have their own views of entries assigned to them and their own tag lists, a group can be a very convenient way for sets of people to get a more focused view of their data than by searching or browsing through the main page. A number of special groups exist: "Users" which includes all individuals registered with the OpnTag instance, "Unknown" which includes the anonymous, unregistered user, and "Anyone" which includes both groups and thus represents truly public access.

Membership in a group is voluntary. Users can choose to be members of as many such groups as they want, and can create as many groups as they want. For each group created, the creator specifies the group's visibility (one of "Members Only", "Users", or "Anyone"), and the visibility of the member list (same options as group visibility plus "Private", meaning no one would know of user's

membership in the group except for the user himself). The visibility of the memos, tags and member list of a group is restricted by the visibility of the group itself (e.g. it is not possible to make a group visible only to its members, but make its member list visible to anyone). By using various combinations of group and members list visibility, users can create groups with different dynamics and then restrict the visibility of their memos to any of these groups, including the "private" group consisting only of oneself.



Figure 2. Group definition page in OpnTag, with group and member list visibility features

## ENCOURAGING ADOPTION

We believe OpnTag's advanced group functionality encourages adoption of social software in organization. The joint concepts of ownership and audience management ensure that users retain control and credit over the artifacts they dispose in the system. Although a group can be specified as the designated owner of a memo, each memo is also visibly attributed to its individual creator, thus ensuring that each group member gets proper credit for the contributions s/he makes to the group's shared information space. Only a memo's creator can modify ownership, but any member of the owning group can change a memo's audience. This design choice allows the creator of a memo to decide whether access restrictions of a memo should be controlled collectively or individually.

By supporting both a personal and a group space, OpnTag provides users with an environment with all of the benefits of a personal information management system in terms of control over organization, access control, and exploitability, but with unambiguous personal ownership and control of the information stored in it, making it safe, efficient, and convenient to share information and take advantage of others' shared information.

## DEPLOYMENT

OpnTag was first released in June 2005, and has since been in two experimental deployments. The first deployment was in CrowdTrust, a small start-up company (8 members, including designers, developers, and marketers) focused on creating collective intelligence solutions and active in the development of OpnTag. The CrowdTrust team has been using OpnTag for information management and sharing within the organization for over a year. Separate groups have been created to serve different information sharing

purposes: the "CrowdTrust" group (public group; member list visible to members) is the main group that all the corporate staff are members of. Issues relevant to all team members such as meeting plans and agenda, meeting minutes, competing companies, similar products, and potential customers are shared between staff by creating memos either in the CrowdTrust space, i.e. in situations where any CrowdTrust member is expected to contribute; or in member's personal space visible to CrowdTrust, so that other CrowdTrust members can also see it. There are also two other groups, each with a selected subset of corporate staff as members: "CrowdTrust Help" (public group; member list visible to members) used by developers for communicating help materials on company's product to the customers; and "CrowdTrust Board" (both group and member list visible to members), used by company board members for discussing management issues. The separation of issues between various groups and ensuring that only relevant people are engaged in discussion related to each issue has made OpnTag a valuable resource and an essential part of our daily activity.

Our second deployment was in an educational context. In the fall of 2007, OpnTag was successfully used as the main course information and interaction system for ETEC522, an

online course on educational technologies offered by the University of British Columbia. Students used it for both their own information management within the course and for conversation and sharing resources with the rest of the class. All communications pertaining to the whole class would happen through the public ETEC522 group which all the students plus the instructor were members of. Besides, students created separate teams of three through which they would share information and material for their individual course projects. Easy, universal adoption of the tool in this context plus the fact that it was successfully utilized as the sole method of communication throughout the course confirmed success of OpnTag in terms of both utility and usability.

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