Chapter 30
Design Solutions Guided by User Behavior:
A Practical Inquiry Approach

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ABSTRACT

Tagging systems design is often neglected despite the fact that most system designers agree on the importance of tagging. They are viewed as part of a larger system which receives most of the attention. There is no agreed method when it comes to either analyzing existing tagging systems or designing new ones. There is a need to establish a well-structured design process that can be followed to create tagging systems with a purpose. This chapter uses practical inquiry methodology to generate a general framework that can be applied to analyze tagging systems and proceeds to suggest a design process that can be followed to create new tagging systems. Existing user behavior while tagging is the main guide for the methodology.

INTRODUCTION

User-centric approach in information systems tries to discover how users' behavior is affected by the design of the system. With users in mind, user-centric design tailors how the information system is constructed according to the user group that is expected to interact with the system. This chapter introduces the concept with social tagging by following a methodology that is focused on providing solutions to specific problems. After a solution is found, the methodology suggests ways to expand it to similar problems within the domain.

Social tagging has been linked to Web 2.0 technologies. Most of the current online systems employ tagging to support retrieval, categorization or ranking of shared content. Tagging is also provided as means for self-organization and future reference. For such diverse functions, social tagging has been studied extensively. Researchers explored tagging starting from answering the question of "why do users tag?" to modeling tagging behavior.

Tagging is a low-cost attachment of metadata since it is done voluntarily by non-expert users. It is also considered to be a democratization of the classification process where people have their say on the different aspects of the content (G. Smith, 2007). The return value of tagging has two dimensions; one dimension concerns the user and the other concerns the designers of the system.

From the system designer's point of view, tagging is favored over expert indexing since the latter is expensive and time consuming. Tagging is done by far more users who will do it for free most of the time. Quality might be questioned in this case, but research conducted by Heymann and Garcia-Molina (2009) showed that 50% of the keywords used by expert indexers were also used by free-lance taggers.

Although tags are considered useful to the support of the system in many ways, it is sometimes problematic. One problem that can be associated with this freedom is that users can be unpredictable as to which type of tags they may provide (or provide tags at all). Existing online systems that allow tagging are bound to continue to support freedom of tagging and deal with the problems that arise from that such as tags used for self-reference. The designers of these systems usually state the reasons behind adding tagging in their help sections, but they do not enforce users to tag accordingly. The main issue here is to preserve users' freedom while tagging and benefit from their tags to support the web content. Attempts to solve this problem have previously all focused on working around the outcome of tagging. An immediate concern of allowing users to tag freely is that tags can be exploited in spamming. They can be used to promote products and services that are not of direct benefit to the tagged resource. Other problems were linked to tagging that was directly influenced by taggers motivations. Researchers propose three possible ways to overcome the problems that were identified with tagging; identification-based (detection), rank-based, and interface-based (prevention) (Heymann, Koutrika, & Garcia-Molina, 2007). This chapter presents a method based on interface-based (prevention) solution.

According to Liu (2000) there is always a need to incorporate methodologies that depend on the social aspects of information systems rather than the technical aspects. This need drove research into incorporating theories and methods that enable the consideration of people within the system of information. Organizational semiotics (OS) and activity theory (AT) are examples of theories that have been used in research to accommodate people as an integral part of the information system.

The questions that this chapter is based on call for changing the existing behavior of users in a certain context by understanding how they interact together. The research aims at contributing to the practice of a problem that has been developed and used. Existing tagging systems are studied in order to verify the problem and propose a solution by following practical inquiry methodology.

Background

A 'tag' is defined as a user-generated keyword and "A lightweight way to enhance the description of online resources to improve their access through broader indexing." (Trant, 2009, p. 1). When tagging is conducted in a shared context, it is called 'Collaborative Tagging'. According to Golder and Huberman (2006, p. 1), "Collaborative Tagging describes the process by which many users add metadata in the form of keywords to shared content". Systems with tagging capabilities enable users to add terms that classify or describe certain content. In that way, users add different tags to the same content depending on the way they see it, which provides diverse views for the same content. One image can be tagged many times which allows it to be grouped in many categories depending on these tags. An image of a flower can be tagged as 'flower', 'spring' or 'yellow' and can be found using any of these terms. Tags can also take the form of content evaluation. Reddit.com allow their users to rank content using 'up' and 'down' tags which reduces

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