

Chapter 45

Critical Success Factors in the Development of Folksonomy–Based Knowledge Management Tools

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ABSTRACT

This chapter examines three important aspects of folksonomies: common design factors found in folksonomies, developmental patterns of mature folksonomies, and the identification of knowledge consumer behaviors that can act as metrics for the evaluation of a small-scale folksonomy. In identifying desirable design elements, a comparative examination of tags and objects was made using a study conducted at Lakehead University. From this project, an exemplar of an effective folksonomical data structure was derived. User behavior was examined and categorized to identify behaviors that can be monitored and measured as indicators of user satisfaction. The authors analyze the structures of a folksonomy and synthesize a practical model of an effective folksonomy in the context of knowledge management.

INTRODUCTION

In today's knowledge economy, companies struggle to find ways to collect, retain and reuse information as efficiently as possible. Control structures found in traditional Knowledge Management (KM) systems are difficult to maintain and require specialized knowledge and training to be effective (Davis, Studer, Sure, & Warren, 2005). Tradition-

ally, knowledge management experts are hired to develop complex hierarchies and ontologies to design systems based on pre-defined information structures (such as categories and relationships). Maintaining these systems and ensuring they continue to match the needs of an organization is a skilled art. If managed poorly, these systems have the potential to miscategorize and lose data. Additionally, overly rigid information structures can hinder the collection of information while overly

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ambiguous structures can draw information into a virtual black hole.

Recently, a new instrument has appeared in the knowledge manager's toolbox -folksonomy. Folksonomies represent a nearly diametrically opposite approach to traditional information organization. For example, while ontologies rely on knowledge management experts to develop specific functional definitions, folksonomies impose no preconceived definitions and allow group consensus to reinforce appropriate classifications that emerge organically.

Hierarchies attempt to organize information and give context to data through a branching structure while folksonomies allow for a multiplicity of contexts. Rather than working from the top down to build a structure and then insert data, folksonomies start at the data level and allow communities of knowledge for consumers to apply their own organization, in the form of tags and metadata, to whatever information they see as valuable. "Folksonomies [have allowed] communities of users to build structure on top of content using tags as annotations" (Dubinko, Kumar, Magnani, Novak, Raghavan, & Tomkins, 2006). As metadata grow, the context of the information also broadens and thickens. This process leads to folksonomies adapting to their communities' needs and offers a flexible strategy for maintaining dynamic information resources: "[S]ystems employing free-form tagging that are encouraging users to organize information in their own ways are supremely responsive to user needs and vocabularies, and involve the users of information actively in the organizational system" (Mathes, 2004).

One of the most frequently observed challenges of the use of folksonomies in knowledge management is the lack of control and structure around the use of tags (Peters, 2006): "A folksonomy represents simultaneously some of the best and worst in the organization of information. Its uncontrolled nature is fundamentally chaotic, suffers from problems of imprecision and ambiguity..."

(Mathes, 2004). However, it remains to be determined whether, in scaling down a folksonomy from its traditional global scope (involving millions of contributors) to a size more commensurate with corporate-sized KM solutions, there is enough metadata to make a folksonomy effective.

Large-scale social bookmarking sites (such as Del.icio.us or Redit.com) have been among the earliest adopters of using folksonomies to organize information. These sites have been drawing a great deal of attention from the web-surfing public and some now claim to have client bases in the millions (Del.icio.us, n.d.). There is a plethora of anecdotal evidence to suggest that these sites are both appreciated and effective tools for storing, finding, and sharing Internet-based resources – a form of social knowledge management. Much of the success of social bookmarking is attributed to its loosely structured approach to organizing data and the ease with which consumers can learn and integrate a folksonomical strategy. If this knowledge management strategy could be adapted to a smaller scale, one that more closely matches user needs in a business environment, the benefits to the knowledge management industry would be significant. As Mathes (2004) notes, "Folksonomies leverage the expertise of knowledge consumers to create an opportunity that has the lowest investment in time effort and cognitive cost to collect the information."

The purpose of this chapter is to examine the critical success factors in the development of a small-scale folksonomy and outline the key features needed to build a folksonomy that can be scaled to a size that might be more readily operationalized in organizations.

BACKGROUND

Folksonomies can be described as ad hoc information management systems that acquire their entire structure through the context created by the descriptive contributions from an interested

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