Thoughts on the Relationship of Knowledge Organization to Knowledge Management

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ABSTRACT: As the literature in both knowledge organization and knowledge management continues to flourish and address issues common to both fields, it becomes more difficult to delineate the boundaries of each discipline. By exploring the relationship between them, as well as the knowledge environment within which a knowledge management system must operate, it is clear that much of the functionality subsumed under the heading of knowledge management requires a strong knowledge organization foundation to support it. By understanding the differences between these two disciplines, as well as the areas of inquiry within knowledge organization that are essential to the successful implementation of knowledge management systems, a wide field of fruitful research directions becomes apparent for both knowledge organization and knowledge management researchers.

1. Introduction

We, the scholars, teachers, and practitioners in the discipline of knowledge organization, have been challenged by the editor of this journal to begin the process of defining the current state of our art as well as charting the trajectory of future research in the field (Smiraglia 2006). This task has many facets and will require that we think both about our discipline and about those that border, and sometimes surround it. One of those closely related disciplines is knowledge management. Because of the similarities in the name, as well as the mission, of these two disciplines, it makes sense to spend some time discussing their relationship, common ground, and differences.

My approach to this issue will be to address three issues that seem to frame the discourse in the knowledge organization and knowledge management literature. The first question is simply: Are knowledge organization and knowledge management the same thing? At times, it seems that these two disciplines are referred to as being one and the same. An analysis of the commonly accepted definitions from both fields' literature provides the necessary answer and is the focus of the next section. The second task is to determine whether knowledge organization supports the functions that together comprise a knowledge management system. Addressing these two issues allows a fuller discussion of the relationship(s) that exist (if any) between these two disciplines, and this takes place in Section 3. The last topic is fundamental to the challenge mentioned in the opening paragraph concerning the path of research within knowledge organization. In this last section, I explore the synergies between the two fields in question and identify those areas of research within knowledge organization that are supportive of both the organization of knowledge and its management within an organization.

2. Are Knowledge Organization and Knowledge Management the Same Thing?

Knowledge organization, as a discipline, is defined as the "organization of information in bibliographical records" (Hjørland 2003). This is, of course, too narrow a definition to fit the wide range of topics being undertaken by researchers in the field, and this is acknowledged by Hjørland when he includes a list of broader concepts also included in the organization of knowledge. Included in this list are references to the role of context in the organization of knowledge, such as the organization and the "social division of labor." The conceptual space of the discipline is also thoroughly outlined by Dahlberg (2006) to include both classification and environmental aspects.

Knowledge organization is undertaken for two basic reasons. First, knowledge is retrieved more effectively when its organizational structure is known or, in the best case, created specifically to enhance and optimize retrieval. Second, it is widely agreed that knowledge creation is a largely synthetic process that is supported and enhanced by well-organized existing knowledge structures. When knowledge acquisition activities are tuned to properly constructed knowledge structure, personal as well as organizational learning is greatly improved in both its efficiency and effectiveness. Thus, the inclusion of organizational or social influence in knowledge organization is crucial to its success and usefulness.

While having broad conceptual range, knowledge organization's focus remains the organization of knowledge, sometimes in a wide sense and sometimes very narrowly defined, for the enhancement of its retrieval and growth. Knowledge management, on the other hand, suffers from a much wider array of defining characteristics. This is largely the result of two of its fundamental features. First, it was initially defined within the context of "the organization" with all of the complexity and ambiguity inherent when a group of humans convene. This environment is subject to widely varying interpretations and this variance spills over to those entities defined within it. The second complicating factor is its genesis at the hands of the information technology group. The early literature regarding the use of knowledge management tools is driven almost completely by the use of various types of technology, some of which was created specifically for the management of knowledge. Some others are actually renamed and repurposed software from other applications. These two contributions to the genealogy of knowledge management have left it with a less-than-concise definition.

Knowledge management is most often defined as a system to capture, deploy, use, and review organizational knowledge (Hall 2006). Other definitions also include the terms generation, storage, distribution, and application, each directed toward organizational knowledge. It is apparent, based on these definitional terms, that the aim of knowledge management, along with the tools and techniques associated with it, is wide ranging and often involves large parts of the organization. It is also the case that these activities are usually driven by information technology designed to accomplish these tasks. However, the technology that comprises a knowledge management system represents only a portion of its meaning.

Knowledge management has another side to it, and this consists of the organizational processes and systems that must be in place in order for the technological tools to work. The imposition of a knowledge management system requires certain changes in organizational behavior. These include, but are by no means limited to, the mechanisms used to collect organizational knowledge, processes that allow the sharing of organizational knowledge, and methods of encouraging the use of knowledge by organizational members that have not had a hand in its development. Each of these organizational requirements brings with it serious obstacles. The collection and dissemination of organizational knowledge often faces significant resistance from knowledge holders due to the perception that as they contribute their knowledge to the organization their value as experts diminishes. Sharing of explicit knowledge is relatively easy given its codified structure, but the sharing of tacit knowledge requires a great deal more time and patience, not to mention the organizational requirement that the knowledge holder and knowledge seeker must spend significant time together, possibly limiting management's flexibility. Once sharing mechanisms are developed, the "not invented here" syndrome exists within organizations just as it does between them. Thus, knowledge created in one part of the firm might not be met with open arms by others if the perception of the organization is that the group receiving the knowledge is somehow weaker because they are dependent on others.

With its beginning in an organizational environment with competing priorities, by a group with a clear technological bias, knowledge management should be understood as a bundle of disciplines that must all work in concert, rather than a single-minded

tool for the management of knowledge. For a knowledge management system to be successful, it must bring together the proper organizational and technological processes and tools, and these must both be well-aligned with the organization's strategic goals. Even with all of these in place, the definition of success of a knowledge management system is problematic. To an even larger extent than many other information technology tools, it is very difficult to measure the effectiveness of knowledge management systems in terms readily compatible with most decision-making models. It is difficult at times to attribute revenues or cost reductions to a knowledge management system. Its benefits are usually much more subtle and require a longer-term view to see clearly.

From these two definitions, it is clear that there is great commonality between the fields of knowledge organization and knowledge management. Both center their efforts on the use of knowledge in an organizational setting. Both are also cognizant of the role played by the organization in its knowledge manipulation. But, beyond their similarities, these two fields are separated by significant differences in approach. Knowledge organization is concerned with the creation of classification and search mechanisms created for knowledge as a "thing." In other words, knowledge organization tends to be somewhat knowledge-centric in its methodology, and that is to be expected since knowledge and its organization is the primary target of these methods.

Knowledge management takes a somewhat different approach. Rather than taking static knowledge as the primary objective, knowledge management implementations tend to view knowledge as a dynamic entity. Knowledge management systems are concerned with knowledge capture, sharing, deployment, and distribution. Each of these terms denote motion, and knowledge in motion is a key to successful knowledge management system implementation.

Are knowledge organization and knowledge management the same thing? It is important to note that in none of the terms contained in the definition for knowledge management is the notion of knowledge organization mentioned. However, the organization of knowledge is strongly implied in many of them such as use, storage, and application. They are not the same thing, but they are certainly related, and the manner of their relationship is discussed in the next section.

3. What Is Knowledge Organization's Role in Knowledge Management?

Before addressing this question, a more in-depth discussion of the nature of knowledge within organizations, and within knowledge management systems, is necessary. Despite what we would like to believe about the journey from data through information to knowledge, there is no smooth or predictable pathway between them. The transition from data and information to knowledge is bumpy and uneven (Styhre 2003). Not only is it a rough transition, it is highly unpredictable as to the manner in which knowledge is formed, and the knowledge formed is likely to differ greatly between organizations as well as between individuals within the same organization. This inconsistency is one of the main drivers behind the development of knowledge management systems. It is also one of the difficulties faced during their development. System developers are faced with the acquisition of knowledge from multiple sources with varying levels of quality, scope, and depth.

Besides its unruly nature, organizational knowledge does not stand still for very long. Within an individual, knowledge continually grows, fades, expands, and contracts, and the same can be said for an organization. Organizational knowledge grows with experience, shrinks when people leave or forget, and moves during the process of knowledge sharing and transmittal. As with its creation, its dynamism is also a two-edged sword. The continuously changing knowledge landscape is a good reason for the implementation of a knowledge management system to help dampen the rapidity of the changes, but that same movement makes the capture and control of knowledge very difficult and can, under severe circumstances, render the system moot.

As knowledge grows and moves throughout an organization, its contextual nature will cause its value to vary depending upon where in the organization it is located, when it is evaluated, and what format it is in (Srinivasan 2004). Knowledge is highly contextual, and this contextual nature will, again, change the manner in which it can be managed. A knowledge management system should be able to deliver knowledge to the proper person, at the proper time, and in the proper format in order to maximize its value. However, the determination of the proper context can be a difficult task, as many knowledge users are not aware of the contextual nature of the knowledge they use until after they begin to use it, making it very difficult for the designers of knowl-

edge management systems to predict and plan for these contextual contingencies.

Due to many of the characteristics already discussed, organizational knowledge is highly dispersed (Styhre 2003). It exists in the organization's people, procedures (both official and unofficial), documents, stories, and software and can be found in the office, cafeteria, factory floor, and on the noon flight to Chicago. Unlike the approach taken in many knowledge organization undertakings, knowledge management system designers must contend with knowledge that takes many forms and exists in many places. The tacit/explicit dichotomy so often discussed is just a starting point in the classification of types of knowledge that must be identified and harvested to be managed. All tacit knowledge is not created equal. System designers must choose the source of the knowledge to be gathered based on the quality of the knowledge, the approachability of the source, and the political realities of organizational politics. There is no map to guide the designer, and an unfortunate choice of knowledge source often is not uncovered until the knowledge has been codified and embedded in the system.

This all leads to the conclusion that knowledge, while it is most certainly an important organizational asset, cannot be managed like the other assets of the organization (Huang & Kuo 2003). Its very nature works against its effective management. It cannot be managed effectively using the same top-down, rational processes used on other, more predictable assets. Unfortunately, it is these same characteristics that make it extremely valuable to a firm in creating innovative solutions to problems and deriving competitive advantage from new ideas. The role and characteristics of knowledge within the organization play a key role in the way it is dealt with in the knowledge management system, and that relationship is vital to understanding the relationship between knowledge organization and knowledge management.

These characteristics of knowledge present certain challenges to the knowledge management system. They can be categorized into three types: motion, structural, and temporal. After discussing these challenges, we can address the question of whether knowledge organization is part of knowledge management. The challenge of motion to knowledge management is mentioned above, and it centers on the dynamic nature of organizational knowledge. The management of any moving thing is made easier by the motion being predictable and controllable. Knowledge has neither trait, and in fact grows more quickly with fewer constraints put upon it. The challenge to the knowledge management system is to predict the changes in organizational knowledge in order for its storage and searching facilities to maintain their effectiveness while remaining flexible enough to absorb any unanticipated changes to the knowledge base.

Knowledge management researchers continue to search for effective ways of managing tacit knowledge, but at the present the vast majority of knowledge contained in knowledge management systems is explicit in nature (Hall 2006). Though some of this has been created in an explicit manner in documents and the like, knowledge contributed by people in the organization has been codified in some manner to enable its introduction into the organizational knowledge base. Codification is just the first example of the structural challenges facing system designers. The codification process typically involves the configuring of tacit knowledge in such a way that it can be expressed in written form, whether in electronic documents or searchable databases. However, this process is fraught with opportunities for incomplete, incorrect, or simply irrelevant knowledge to be captured and included in the knowledge base. In addition, the codification process tends to strip much of the contextual richness of the tacit version away, as well as the bumpy path by which the knowledge was created, removing some of its value. The challenge to the knowledge management system is to maintain as much of the context and history of the knowledge in order that the user might be able to utilize this background.

Codification does not necessarily imply order. Codified knowledge can exist in prose, tabular, graphical, or any other form that can be expressed on paper or a computer screen. Technically, sound and light can be considered examples of explicit knowledge as well. But there is no guarantee that these explicit knowledge chunks are in any way structured or ordered. In many instances, they are stored in a file in the order they are received, or by author, or subject, but rarely with any significant metadata to describe their content or provenance. Recent research in the knowledge management literature suggests that this semi-structured knowledge, while difficult to manage, is often a source of great value to the organization (Huang & Kuo 2003), but the ability of the users to retrieve this knowledge is often hampered by their inability to search using anything other than keywords.

The knowledge contained within a knowledge management system is typically rather narrow in its scope (Srinivasan 2004). This narrow definition is often the result of organizational processes that constrain the scope of knowledge to only that necessary to perform the duties of the organization. It can also be the result of a lack of vision on the part of organizational members or system designers. However, organizational knowledge being what it is, a narrowly defined knowledge base can bring about a chilling of knowledge growth and a restriction of competitive advantage due to that lack of growth. The challenge to system designers, as well as system owners and users, is to provide the flexibility and opportunity to include knowledge that is complementary to that required for the immediate tasks at hand.

The need for a broad knowledge base notwithstanding, it is crucial that the knowledge base of the organization be aligned with its knowledge needs (Mercer et al 2005). This alignment allows the knowledge to support the processes of the organization as well as fostering the creation of new knowledge in the same, or related, fields. However, the determination of what constitutes aligned knowledge is often open for debate. Thus, the challenge is to ensure that the reasonable knowledge needs of all members of the organization are met without requiring the knowledge base to expand beyond its ability to be searched effectively. An alignment of the knowledge management system with the needs of the organization provides the best chance of the system's success, but that alignment can be elusive, especially when dealing with an entity like knowledge.

The temporal challenge to knowledge management stems from the trend of *a posteriori* organization rather than *a priori*. Unlike the typical database design process that requires data to be organized prior to its collection, most knowledge management systems rely on methods such as knowledge maps and concept maps to provide some order to the organization's knowledge only after it has been discovered (Liebowitz 2005). This is, at least partially, defendable due to the turbulent sea of knowledge inherent in many organizations. However, the post-collection organization of knowledge is very likely to provide an incomplete picture of the organization's knowledge structure. In database design, a common pitfall is to design the tables and relationships based on existing data rather than analyzing what data the organization might need and making provisions for those data at the outset. The result is often a database that cannot accommodate all possible organizational data needs and must be reworked (at great expense) or becomes increasingly ignored in favor of other, more useful data tools. Knowledge management systems that organize their knowledge based on the knowledge collected prior to the mapping are subject to the same limitation, but these shortcomings will not be as obvious as a data point without a corresponding attribute. Omissions in knowledge management systems usually take longer to identify.

These structural challenges strongly suggest that knowledge management cannot exist successfully without sound knowledge organization as a foundation. But, the knowledge management literature spends very little effort detailing the importance of an organized knowledge base to the success of knowledge management systems beyond the use of knowledge maps and concept maps as described above. Some authors suggest that the use of taxonomies and controlled vocabularies will assist in the retrieval aspect of knowledge management systems, but mainly for those knowledge bases that are reasonably well structured. From the knowledge organization perspective, despite its importance to knowledge management, authors whose aim is to establish a research agenda for knowledge organization tend to give little time to knowledge management issues (McIlwaine 2003). Knowledge organization should form the foundation for knowledge management, but only if the research in the field aligns with the needs of the knowledge management system.

4. KO/KM Research Parallels

There are at least four areas of knowledge organization research that parallel the issues facing knowledge management system designers. Some of these are currently very active and need no stimulation to continue. A good example is the work being done on organizationally influenced knowledge organization. The recent ISKO proceedings (Budin et al 2006) are replete with knowledge organization research focused on a specific industry or organization. This type of research, when combined with a better understanding of organizational knowledge needs, will result in much more effective knowledge management systems as well as better informed organizational members.

A fundamental issue in aligning the knowledge organization system with the organization's knowledge needs is the ability to create useful knowledge structures before the process of knowledge gathering begins. Relying on empirically-based knowledge

structures such as knowledge maps risks the creation of an incomplete or haphazard knowledge organization system. This issue requires research based not only within the realm of knowledge organization but also within organizational behavior as well as strategic management.

Organizational knowledge is dynamic as well as often being unstructured. Both of these issues would benefit from mechanisms that could speed the classification of various types of knowledge articles, such as the research currently surrounding textual analysis. Increased speed of classification could lead to more rapid assimilation of knowledge and more efficient distribution to its appropriate recipient. But, rapid classification is only half of the issue. Classification schemes must be constructed to be easily adapted and searched by multiple users simultaneously. This need is partially covered by research into thesauri and other multiple-language access methods.

It is unlikely that we will ever completely remove the need for codification of tacit knowledge, so research into methods for codifying and classifying tacit-based knowledge will always be useful. Narrative analysis, textual analysis, and other streams of research seem promising here, but until the ability to read minds is fully implemented, we will always search for ways to organize tacit knowledge beyond the expert directory approach currently in use by many knowledge management systems.

These research directions represent only a few areas of knowledge organization research that might also be of use to knowledge management scholars and practitioners. They are also issues that must be addressed if knowledge management is to mature into a competitive asset of the organization. These research areas can be viewed as practical means of applying knowledge organization methods and concepts to the improvement of organizational processes within a knowledge management framework.

5. Conclusion

The purpose of this paper is to help delineate the disciplines of knowledge organization and knowledge management, to discuss their similarities and differences, and to identify where they might intersect and provide fruitful areas of research. In doing so, a discussion of the characteristics of organizational knowledge and the influence those characteristics have on the knowledge management system is important as a means of providing context to the discussion.

Knowledge management and knowledge organization are not the same discipline, but they are tightly bound to one another, especially when one considers how knowledge is used by organizations. Knowledge management systems are designed to capture, manage, and disseminate knowledge to appropriate organizational members in a manner that is consistent with both the long and short term goals of the firm. Implicit in that definition, and of significance to knowledge organization researchers, is the manner in which those activities take place. Knowledge capture methods, organization and retrieval schemes, and the ability to align knowledge structures with the organization all clearly exist within the purview of knowledge organization. Knowledge management systems can provide a framework within which knowledge organization "happens," and it is incumbent upon researchers from both fields to seek out the commonalities.

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