

Knowledge Management

An Epistemological Perspective

Oxana Dubovik

MSc Management Information Systems and Innovation (2012/13)
Information Systems and Innovation Group
Department of Management
London School of Economics and Political Science

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ABSTRACT

Over the last decades, the topic of knowledge management (KM) has gained considerable popularity in academic and industry research. This literature review will use an epistemological angle of observation, to identify and classify the main perspectives through which KM has been discussed in the literature to date. On the one hand, a positivist epistemology implies the treatment of knowledge as data, and focuses on codifying it inside the domain of machines. On the other hand, an interpretivist stance recognizes knowledge as a socially constructed element, which stems from the multiple ways in which individuals construct reality. Effective economic utilization of knowledge is, instead, the objective of the pluralist perspective, whose focus is on the praxis implicit in the utilization of KM. In the conclusion, it is suggested that technological innovation is paramount in creating new, relevant streams of discussion within KM literature.

Introduction

Epistemology can be regarded as the study of knowledge, and is concerned with its scope and nature. Even though epistemological debate has been prevalent since the classical era of Greek philosophy, it is only in the 20th century that knowledge emerged as an economic concept (Alavi & Leidner, 2001; Iqbal & Mahmood, 2012; Nodoushani, 1999). In 1959, Edith Penrose developed a concept of “*competitiveness based on competences*”, where organizations are perceived as collections of resources (resource based theory of the firm). The amalgamation of these resources can potentially lead to the development of capabilities, and over time to competitive advantage, which is essential for organizational prosperity (Bakhr, 2008; Choo & Bontis, 2002; Doris & Rune, 2011).

In a more modern context, forces such as globalization, changing customer requests, technological advancement, and fluctuating economic and political circumstances, pressured organizations to look for new sources of competitive advantage (Earl, 2001; Iqbal & Mahmood, 2012; Martensson, 2000). In order to prosper in this hyper competitive environment, knowledge gained economic importance (beyond land, labor and capital) when organizations evaluated it as a rare, valuable, inimitable and non-

substitutable capability. It is this evaluation that lead organizations to attempt systematic management of knowledge (Earl, 2001; Martensson, 2000; Vo, 2012). The invention of the personal computer and, later, the Internet (amongst other technological advancements), propelled the epistemological debate into the technical sphere (Martensson, 2000). As the knowledge economy became an established concept, the process of efficiently and effectively “*creating, storing/retrieving, transferring and applying knowledge*” became known as knowledge management (Alavi & Leidner, 2001).

The aim of this research is to evaluate and synthesize appropriate literature, in order to identify relevant perspectives in the KM field with a postulation that KM can be viewed through an epistemological lens. In this literature review the taxonomy of KM perspectives will be based on the synthesis of knowledge definitions and organizational role of knowledge management, with critical outcomes of the specific stances discussed in the process.

The evolution of knowledge as a managerial concept will be addressed chronologically, with relevant definitions of knowledge, goals of KM and potential developments mentioned. The structure of perspectives and issues and KM are as follows:

Corresponding Author
Email Address: O.Dubovik@lse.ac.uk (O. Dubovik)

	Positivist Perspective	Interpretivist Perspective	Pluralistic Perspective
Knowledge is...	Explicit; data; power; justified true belief	Tacit; An organically evolved social phenomenon; highly-valuable information	Tacit & explicit; concepts are mutually convertible
KM Objective	Data codification; sourcing and describing information	Knowledge creation; efficient application; learning	Effective transfer of knowledge between employees
Basic Stance	Mainly empirical; main ideological construct in KM; ICT's are the source of knowledge	Socio-cultural view of knowledge; Knowledge is transferred from person to person	Pragmatic. Attempts to unite different views and apply them practically in organizations
Research Issues	Doesn't acknowledge importance of culture and social architecture	Ambiguous concept with no viable practical alternatives proposed	Right balance of tacit & explicit knowledge is hard to achieve and not always possible

Table 1. Literature Review Summary

The following section of the paper will discuss the perspectives in more detail.

Issues and Perspectives

The Positivist Perspective

The principal view in this perspective is that knowledge is universal, in other words knowledge is a "justified true belief"; an asset or value that people already possess that is believed to be true due to accumulation of information (Chiva & Alegre, 2005; Earl, 2001; Vo, 2012; Wallace *et al*, 2011). In this view knowledge, information and data can be interchangeable (data being defined an observation and/or a fact). Thus, knowledge can be characterized as information or access to information, an object or a process. The explicit nature of knowledge in this perspective that leads researchers and practitioners to believe that information can be extracted from professional individuals and stored or codified inside machines for other professional individuals to re-use (Alavi & Leidner, 2001; Chiva & Alegre, 2005; Kakabadze *et al*, 2003).

This approach to knowledge is deeply rooted in positivist science, but the origins of this view are not solely academic. First studied by economists and managerial scientists KM was influenced by the fields of psychology, computer science and systems theory. So whilst knowledge became established as an economic concept in academia, it did not gain wide spread industry acceptance straight away (Chiva & Alegre, 2005; Kakabadze *et al*, 2003). In the 1980's, corporate downsizing ("dumbsizing") strategies lead to the loss of valuable specialist information and expertise that took years to accumulate. Henceforth, KM became a prevalent topic in the corporate world. It became strategically evident that a need existed for storing employee knowledge and making its usage more efficient (Martensson, 2000).

An efficient and modern way of codifying data at the time presented itself in the form of information

and communication technologies (ICT) (without which the scientific perspective of KM would not be feasible). KM in this perspective is defined as the "ability of organizations to store, value, and manage [...] knowledge" (p. 79, Vo, 2012), typically using advanced technology to transfer knowledge between employees (Chiva & Alegre; 2005; Earl, 2010). Technology in this perspective is a day-to-day aid to the knowledge worker. Incrementally systems here are viewed as knowledge providers (instead of people) and the aim of KM here is utilization and re-cycling of explicit knowledge, encapsulation of information, efficient exploitation of knowledge and cognitive mapping (Alavi & Leidner, 1999; Earl, 2001; Martensson, 2000; Kakabadze *et al*, 2003).

The progression of the positivist perspective is embedded in technological development. A more modern influence in this technocratic view has arisen from progress in quantum computing and development of artificial intelligence. The underlying assumption here is that advance technology will be able to make rational assessments and synthesize knowledge in a way that can make sense to people (Kakabadze *et al*, 2003). In summary, the perception of knowledge in this paradigm is scientific, however (due to the nature of KM research) there is no unified term. In this research is it called the "positivist", but other terms are also present in research, for example essentialist, cognitive and functionalist, to name a few (Blosch, 2001; Chiva & Alegre, 2005; Tsirakas *et al*, 2012; Vo, 2012).

The Interpretivist Perspective

Regardless of its popularity the logic of the positivist perspective has been criticized. This logic states that knowledge already exists in organizations and has to be systemized by the organization in order to be exploited (Martensson, 2000). Taking root in Foucauldian ideas of power and knowledge ("exercise of power perpetually creates knowledge") (Foucault, 1980: 52), it is the negative connotation of this top-down approach that has encouraged the evolution of the

debate beyond positivism (Kakabadze *et al*, 2003). Alavi *et al* (2006) argue that individual power and competition within the firm can potentially lead to "knowledge hoarding behaviors" (p. 197) and that these kinds of behaviors can decrease the effectiveness of the economic utilization of knowledge.

Another critical examination of the positivist paradigm is that it does not recognize the importance of social architecture and culture inherent to knowledge. In other words the interpretivist perspective insinuates, that the KM process is also influenced by the social environment and communication within the organization. This contrasting perspective puts value on the social context of knowledge and stresses that information is embedded in the social environment. So the focus is shifted away from treatment of knowledge as a commodity and towards the study of knowledge in socially constructed organizations (Alavi *et al*, 2006; Vo, 2012).

Knowledge in this paradigm is mostly a tacit concept, tacit meaning private information that needs to be made public. Knowledge is further defined as a network of practices, an "organically evolved social phenomenon" that is acquired through participation and resides in variety of mediums and contexts (Day, 2005; Martensson, 2000; Vo, 2012). It is a "state of knowing", a process of applying expertise or a capability to influence action (Alavi & Leidner, 2001). In contrast to the positivist view (which doesn't explain how data becomes knowledge), information in the interpretivist perspective is not equated to knowledge. Knowledge is more as high-value "information possessed in the minds of individuals". This process only begins with data or facts, but the filtering of this information by a specific community of users gives it value. This process is affected by individual beliefs and attitudes in a greater context of corporate culture (Alavi *et al*, 2006; Martensson, 2000).

Information systems are an important component in this paradigm, but it is the quality of the individual and the level of the support organization provides that is a major factor in influencing KM (Blosch, 2001). As opposed to the positivist view, the people ("knowers") are at center stage in this paradigm, with ICT becoming a back up function (the vision being that the use of technology will result in enhanced communication and participation between employees). ICT is simply used as a "knowledge café" or a "water cooler" meeting point that provides a pathway for knowledge transfer, sharing and creation within and outside of organizational boundaries (Alavi & Leidner, 2001; Earl, 2001; Kakabadze *et al*, 2003).

KM in this paradigm aims to create new types of knowledge and intellectual capital through learning, unlike the positivist perspective that focuses on finding, capturing and stockpiling the right type of

content. The ultimate goal of the interpretivist view is to apply knowledge to the right context. KM practices aim to promote sociocultural networks within organizations, which help distribute knowledge amongst employees and thus increase economic productivity (Alavi & Leidner, 2001; Alavi *et al*, 2006; Earl, 2001).

Researchers, who explore social concepts in KM, just like the positivist colleagues, do not have a universally accepted term for their research; the terms include community and network model, socio-cultural perspective and behavioral school of KM (Alavi & Leidner, 2001; Earl, 2001; Kakabadze *et al*, 2003; Tsirakas *et al*, 2012). But the perspective itself is not without flaw, as cultural and social interactions can be hard to define rationally. Alavi *et al* (2006) and Blosch (2001) suggest that this paradigm lacks detailed practical analysis that knowledge managers need in organization to relate complex epistemological notions to reality.

As Earl (2001) noted that learning (or knowledge) can be intra-organizational as well. Although ambiguity is this paradigm is present, research is also evolving. In the 21st century knowledge has taken on a new context due to the recognition of globalization as an economic force (Mirghani, 2007). In this relatively new context, knowledge intensive companies must depend upon each in order to create value effectively and efficiently. Thus, in the context of the new millennium, globalization, interdependency, technological progress and hyper competition gave rise to the ecosystems business model. The idea of "knowledge based ecosystems" (p. 151, van der Borgh *et al*, 2012) defines knowledge as a communication pathway between ecosystem participants. This slightly altered definition of knowledge opens up prospects for potential research opportunities in the realm of the interpretivist paradigm.

In summary, the idea of a dichotomy between the positivist and interpretivist understanding of knowledge is an important concept in KM. It provides a theoretical base for future research, but unfortunately also results in a "two-faced", black-boxed concept of knowledge (Day, 2005; Vo, 2012).

The Pluralistic Perspective

The logical stance of this perspective argues that 1) the dichotomy in the field is ineffective and 2) in practice organizations adopt combinations of perspectives, as the paradigms are not mutually exclusive (Tsirakas *et al*, 2012; Earl, 2001). Scholars in the pluralist paradigm attempt to strengthen KM research by uniting positivist and interpretivist ideas. Bridging the dichotomy between opposing views provides more balanced analysis. Knowledge is subjective and objective, it is integrated within organizational

culture and is waiting to be discovered and codified for other employees to re-use (Vo, 2012).

The proposition that organizations inherently possess different types of knowledge comes from research conducted by Nonaka (1994) and is based on Polanyi's idea (1960) of tacit and explicit knowledge (explicit knowledge is formal, whilst tacit knowledge has a social element). Explicit knowledge is public and can be documented, structured, internalized and shared through information technology. Tacit knowledge resides in the mind and can be based on behavior or perception. The chief difference between tacit and explicit knowledge is that tacit knowledge cannot be captured in systems (Martensson, 2000).

An important element in this pluralistic perspective is that tacit and explicit knowledge elements can be converted into one another and that it is the interaction of tacit and explicit elements that give information true value (Martensson, 2000; Nonaka & von Krogh, 2009). Thus knowledge can be conscious, objectified, automatic and collective. In the first three types it is viewed as a commodity and in the collective understanding of knowledge - as a socially constructed process, where knowledge is held by both the individual and the community (Vo, 2012).

KM in the context of the pluralistic paradigm aims to effectively transfer knowledge between employees, whilst building an encouraging climate for effective knowledge creation and diffusion. So knowledge management strategy is two-fold: 1) focus on the codification of information and use of ICT and 2) manage people and the environment. The ultimate goal of KM in this paradigm is the coherent synthesis of different strategies (Tsirakas *et al*, 2012; Vo, 2012). The pluralistic perspective itself is not without critique, Nonaka and von Krogh (2009) argue, that in reality the right balance of tacit and explicit knowledge in organizations is very hard to achieve.

Just like the positivist and interpretivist perspectives in KM, the research in the sphere of the pluralistic perspective is also evolving. An effort has been made to take the argument further by placing an emphasis on "action, society and a concern that matters" (p. 43, Blosch, 2001). This pragmatist approach calls organizations to adapt "reflective knowledge management", which urges organizations to focus on meaningful application of knowledge, rather than its simple codification or creation (p. 83, Vo, 2012).

Discussion and Conclusion

This literature review discussed past and present developments in KM research. Focusing on the positivist, interpretivist and pluralistic perspectives the paper also discussed economic rationale behind KM, epistemological issues in the field and potential future development in the research.

Unfortunately, due to widespread criticism of the disparities in all three perspectives, the field (KM) hasn't yet become a mainstream commercial practice and research efforts since the year 2000 have been in gradual, statistical decline (Iqbal & Mahmoud, 2009; Tuzhilin, 2011). However, with technological advancements, KM research seems to be attracting fresh interest. With a more social and user-centric approach, a recent resurgence of interest in the topic has also been observed. The rise of content management, user-generated content, Web 2.0, new KM platforms (such as C2.0) and general advancement in KM technologies has inspired a second wave of KM research (KM 2.0) (Kelman, 2008).

These new techniques for the processing of unstructured content and content collected from the Internet (blogs, social media posts, documents, emails) and other data sources is expected to bridge the gap between different perspectives in KM and transform KM systems to become more active through mass user-engagement (Tuzhilin, 2011). Nevertheless, the debate between the different perspectives continues, because a lot of the questions are still not fully answered (Nonaka & von Krogh, 2009). However, whilst scientists and philosophers might never reach an epistemological conclusion, it is evident that the growing complexity of the business environment and evolution of technology will ensure that KM will remain a popular research field for some time in the future.

Just as any research this article faced several challenges - breadth and complexity of the KM field goes far beyond the issues highlighted in this paper. Identifying and synthesizing philosophical perspectives with information systems literature was not always possible as a vast amount of research material was theoretically incompatible with the research objective. This issue was most likely experienced due to the limited academic research experience. Lack of previous socio-philosophical knowledge limited the ability to structure material coherently and provide an appropriate in-depth philosophical analysis of underlying issues in KM literature. It is recommended that future research in the field addresses fundamental discrepancies in the views, by reducing ambiguity of terminology and putting emphasis on the practical application of research concepts.

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