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INDIVIDUAL RESEARCH PAPER

**A REVIEW OF RESEARCH BY SOUMITRA DUTTA TITLED
“STRATEGIES FOR IMPLEMENTING KNOWLEDGE-
BASED SYSTEMS”**

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SUMMARY

The management of organizational knowledge, a relatively new and challenging concept for most organizations, is introduced and discussed in this paper. Around this general topic, the author, Dr. Dutta conducted a series of important concepts from knowledge, organizational knowledge or organizational knowledge assets, Knowledge-Based Systems (KBS's), to implementation strategies for KBS's. There is an increasing consensus that the effective management of knowledge is an important basis of competitive advantage for corporations, and that KBS's can have an important role in the management of organizational knowledge at all levels. Based on an understanding that with considerable progress in the underlying technologies, the major challenges in the implementation of KBS's have evolved from technical matters and to organizational and strategic issues, Dr. Dutta proposed four different strategies (guided, specialist, dispersed points, and dispersed clusters) and described them in relation to the different levels of organizational knowledge and the locus of responsibility for the development of KBS's. Then, the technical, managerial and strategic implications of each of the four strategies have been discussed.

RESEARCH BACKGROUND AND METHODOLOGY

BACKGROUND

Dr. Dutta reviewed previous research on knowledge management and knowledge processing. He concluded that while expert systems represent the first (since the early 1980's) and probably the most widely publicized application of advanced IT for knowledge management, it is becoming more common for researchers to include a larger variety of IT systems (including databases and groupware systems) as playing a role in knowledge management because first, the concept of knowledge within organizations is progressively

becoming more generalized and second, advances in IT are rapidly blurring the distinctions between different categories of IT systems.

He asserts that organizations are today witnessing a silent, but more widespread, permeation of KBS's. He noted that while technological issues in the development of traditional expert systems and KBS's have been described fairly extensively in the literature, there has been relatively little research on strategic and organizational concerns in the implementation of such systems. Thus, he placed the focus of this research on strategies for implementing KBS's in organizations. He adopted a perspective of knowledge asset management in analyzing the organizational impact of KBS's and formulating knowledge processing strategies for their implementation. However, he did not address the later phases of the process of managing the development of KBS's within organizations in this paper.

MEASURES

Starting from the establishment of the basic concept of knowledge and organizational knowledge and then progressing into a unity, Dr. Dutta develops his idea in a clear, well-organized context.

A number of other studies are cited to support the author's modeling and analyzing in this paper. Instead of conducting a unique series of concepts, Dr. Dutta adopted those extensively-accepted concepts as the basis of this research, such as knowledge, organizational knowledge and knowledge processing, as well as Knowledge-Based Systems.

Some models are established to demonstrate the essence of the core concepts such as the strategic management of knowledge, creation of a tangible knowledge asset using a KBS and knowledge management with each of the four implementation strategies.

To explain and support each knowledge management strategy, Dr. Dutta gives a number of real examples of strategies adopted by various corporations, which include American Express' Authorizer's Assistant, Digital's VAX-based knowledge network, and Xerox's KBS Circles Program, etc. Thus it make the readers have a very clear idea of the originally abstract concepts and increase the credibility of them.

In this research, Dr. Dutta considers only two levels of knowledge (individual and organizational) among four in the development of knowledge processing strategies, though the other two (group and knowledge links) are shown of importance by other research [1], [2]. This kind of simplification is acceptable due to the limited space.

CONCLUSIONS

Dr. Dutta has drawn the following conclusions in this research:

1. KBS's can have an important role in the management of organizational knowledge at all levels: individual, group, organizational, and knowledge links.
2. With considerable progress in the underlying technologies, the major challenges in the implementation of KBS's have evolved from technical matters to organizational and strategic issues.
3. Specifically, four different strategies (guided, specialist, dispersed points, and dispersed clusters) have been proposed and described in relation to the different levels of organizational knowledge and the locus of responsibility for the development of KBS's.

All of them are well stated explicitly. But I think conclusion 1 and 3 are well supported by the whole research in this paper and conclusion 2 need a little more strengthening by giving more description, maybe some examples, on it.

RESEARCH COMPARISON AND CONTRIBUTION

The hype and media attention of KBS's peaked about a decade ago. From then on there exists a bulk of literature in this area. First, within a large body of literature about strategic management focusing on the competitiveness of a firm as derived from a resource-based view of the firm, there is an emerging focus on the management of knowledge assets [3], [4], [5]. The research in this paper leverages prior work within this body and augments it with a specific focus on the role of IT systems in effectively supporting the management of knowledge assets, a theme which has not been addressed within this body of prior research. Second, there is a

significant literature within information systems on KBS's, but the majority of them focuses on technical concerns in the implementation of KBS's. Some prior research within this stream does emphasize the organization implications of implementing KBS's, but they do not adopt the perspective of knowledge-asset management. So, the adoption of the perspective of knowledge asset management in analyzing the organizational impact of KBS's and formulating knowledge processing strategies for their implementation distinguishes this work from prior related research.

In this research, Dr. Dutta follows the literature [6], [7] in the introduction of the basic concept of knowledge processing, and literature [3], [4], [8] in the introduction of another basic concept of organizational knowledge, ignoring the different, more unique insights about it.

Generally, the biggest contribution of this research lies in a point that it provides a very helpful guideline for the corporations to identify their own appropriate knowledge processing strategies and meanwhile makes a meaningful attempt at drawing the researchers' attention from technical matters to organizational and strategic issues in the implementation of KBS's..

STRENGTHS AND WEAKNESSES

This paper shows its strengths in a well-organized logic structure and abundant, reliable cases coming from the successful knowledge management practices of a few corporations, which make the main ideas of it tangible and acceptable.

A weakness in this paper as I see is its over-simplification on some obviously important issue such as the reasons why a KBS may not lead to enhanced organizational effectiveness even after the successful implementation of all phases of KBS development.

To pick a hole, I'd like to point out that there exists incompleteness of the volume location of some references of this paper. For example, it took me time to find two references (Pisano's work [32] and Hedlund's work [13]) because the specific "special issue number (winter and spring)" of these two papers do not appear in the text of references so that they are confused into the regular issues.

As to the references as a whole, I think they are adequate. A number of related research by many well-known experts in this field like Hayes, Hedlund, Nonaka, and Mumford, etc. are cited and discussed in this paper.

RECOMMENDATION OF FUTURE RESEARCH

At the ending part of this paper the factors affecting the choice of knowledge processing strategy are discussed, which are the knowledge profile of the organization, the company's experience in KBS, resources factors including people, capital and information systems architectures, and the strategic nature of the desired KBS applications. However, several other factors not included in the discussion, like cultural factors both organizational and national, can have important impacts in favoring certain types of knowledge networks. The relationship between culture and the desired knowledge processing strategy can serve as a fruitful avenue for further research.

Moreover, because the knowledge processing strategies described in this paper have considered only two levels of knowledge assets as individual and organizational level, the strategies presented in this paper could be honed further by including the group and knowledge link levels of knowledge assets.

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