Designing OMIS–Based Collaboration for Learning Organizations

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INTRODUCTION

Today, the view that knowledge is a valuable organizational resource has become widely recognized and accepted in the business community. This is largely due to the emergence of the knowledge-based economy (OECD, 1996), characterized by a highly competitive and turbulent business environment. One consequence is the increase in organizations' efforts to deliberately manage knowledge. Organizations are realizing that their competitive edge is mostly the intellectual capital (brainpower) (Stewart, 1997) of their employees, and they are particularly interested in harnessing their human resources in order to stay ahead of the pack, through their soaring attention on specific aspects of knowledge management (De Hoog, van Heijst, van der Spek et al., 1999), which deals with the conceptualization, review, consolidation, and action phrases of creating, securing, combining, coordinating, and retrieving knowledge. Undeniably, with Web-based and intranet technologies (Dunn & Varano, 1999), the connectivity and possible sharing of organizational knowledge (bits and pieces of individual know-how scattered throughout the organization) are greatly enabled to cultivate the knowledge culture of the organization. In a knowledge-creating organization (Nonaka & Takeuchi, 1995), employees are expected to continually improvise and invent new methods to deal with unexpected difficulties, and to solve immediate problems and share these innovations with other employees through some effective communication channels or knowledge-transfer mechanisms. In fact, complete organizational knowledge is created only when individuals keep modifying their knowledge through interactions with other organizational members. The challenge that organizations now face is how to devise suitable information system (IS) support (Vat, 2000, 2002a, 2002b) to turn the scattered, diverse knowledge of their people into well-documented knowledge assets ready for deposit and reuse to benefit the whole organization. This article presents some learning organization perspectives of employee-based collaboration through the design of a specific IS support called the *organizational memory information system*—hence, the term OMIS.

THE BACKGROUND OF A LEARNING ORGANIZATION

The concept of the learning organization took seed several decades ago and gained major recognition with the incredible success of Peter Senge's 1990 book, *The Fifth Discipline*. Senge describes a learning organization as a place where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together. At the core of the learning organization are five essential learning disciplines—personal mastery, mental models, shared vision, team learning, and systems thinking—that may be briefly described as follows. Personal mastery has to do with individual learning and can be seen as the basic building block through the actualization of which the learning organization is typically constructed. Mental models are about how individuals reflect on their own knowledge, using such models to improve the internal understanding of an organization's functions and processes. Shared vision implies a sense of group commitment to a matrix of organizational goals, while team learning describes a sharing and utilization of knowledge involving collective thinking skills. The purpose of systems thinking is to understand relationships and interrelationships, as well as the context and the forces that affect the behavior of a system or organization. For the early half of the 1990s, the idea of learning organization had been criticized as the mere reincarnation of earlier ideologies, such as organization development and total quality management (Rasmussen, 1997). Nonetheless, as more entities adopt the practices underlying the learning organization, it appears that the learning organization concept is passing from buzzword status to a meaningful expression of best organizational practices. Nowadays, many organizations that are engaged in constantly revamping and retooling themselves may be seen as reaching for that ideal goal of learning organizations. In fact, in this modern age of information technology and swift change, learning has become an integral part of the work of an organization run along principles intended to encourage constant reshaping and

change. More importantly, learning organizations can be characterized as the organizations that continuously transform themselves by developing the skills of all their people and by achieving what Argyris (1992) has called *double-loop learning*, which helps transfer learning from individuals to a group, provide for organizational renewal, keep an open attitude towards the outside world, and support a commitment to knowledge. And this is often facilitated by the provision of some organizational knowledge transfer mechanisms, an example of which is the organizational memory information system (OMIS) to bring about the fundamental shifts in thinking and interacting, and the new capabilities needed in the learning organizations.

OMIS: AN ORGANIZATIONAL LEARNING EXPERIENCE

Lately, an organization's ability to learn is often considered a process of development to organizational memory. By organizational memory (Walsh & Ungson 1991), we are referring to various structures within an organization that hold knowledge in one form or another, such as databases and other information stores, work processes, procedures, and product or service architecture. As a result, an organizational memory (OM) must be nurtured to assimilate new ideas and transform those ideas into action and knowledge, which could benefit the rest of the organization (Ulrich, Von Glinlow & Jick 1993). Through understanding the important components of the OM (Vat, 2001), an organization can better appreciate how it is currently learning from its key experiences, to ensure that relevant knowledge becomes embedded within the future operations and practices of the organization. In practice, creating and using an OM is a cooperative activity necessarily involving many members of an organization. If those individuals are not adequately motivated in contributing to the OM initiative, and the organizational culture does not support knowledge sharing (Orlikowski, 1992), it is not likely to turn the scattered, diverse knowledge present in various forms, into well-structured knowledge assets ready for deposit and reuse in the OM. Consequently, it is important to distinguish between the organizational memory (OM encompassing people) and the OMIS that captures in a computational form only part of the knowledge of the organization. The OM captures the knowledge of the organization. The associated OMIS makes part of this knowledge available either by providing direct access to it (for example, codified knowledge assets such as experience reports), or indirectly by providing knowledge maps (for example, tacit knowledge assets such as personnel with specific expertise). Managing the OM deals first of all with the question of "Which knowledge should go into the OMIS?" Answering this question requires determining what knowledge is owned by the members of the organization, what knowledge is needed now, what is going to be needed in the future, and for what purposes. This helps the organization to define not only a strategy for acquiring the needed knowledge, but also to establish validation criteria in relation to the defined goals. Besides, we also need to deal with "who needs the knowledge, when, and why," as well as the policies for accessing and using the OMIS. This contextualization of the OMIS with respect to the organization's ability to learn is essential to implement the mechanisms of organizational knowledge transfer.

FUTURE TRENDS OF DESIGNING OMIS

When designing an OMIS to support an organization to learn (Vat, 2001, 2002a), we consider the following modes of learning: 1) individual, 2) group, and 3) repository. Individual learning is characterized by knowledge being developed, and possibly the result of combining an insight with know-how from other sources in the organization, but it is often not distributed and is not secured for reuse. Group learning is centered around the concept of communication in two possible modes: supply-driven or demand-driven. The former is characterized by an individual who has found a way to improve the work process and communicates this to one's co-workers. The latter refers to a worker who has recognized a problem in the current process and asks fellow workers whether they have a solution for this problem. In each case, knowledge is developed, distributed, and possibly combined with knowledge from other parts of the organization, but it is seldom secured. In repository learning, the communication element is replaced by collection, storage, and retrieval of knowledge items. Namely, it is typified by storing lessons learned in some information repository so that they can be retrieved and used when needed. Overall, in repository learning, knowledge is developed, secured, distributed, and is possibly the result of knowledge combination. It is convinced that the requirements of an OMIS design should be formulated in terms of the following usage scenarios. Namely, an OMIS should facilitate individual workers to access the knowledge required by combination, to submit a lesson learned, and to decide which of the co-workers would be interested in a lesson learned. Also, there should be criteria to determine if something is a lesson learned, how it should be formulated and where it should be stored, and how to distribute some newly asserted knowledge piece to the workers in need. The perceived technical issues, nevertheless, could include the following: How do we organize and index the