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 emergency of the knowledge-based economy (OECD, 1996), characterized by a highly competitive and turbulent business environment. One consequence is the increase in organization's 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, 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 and 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 and 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 systems (IS) support (Vat, 2000; 2002; 2002a) 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 re-incarnation 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, which continuously transform themselves by developing the skills of all their people and by achieving what Chris Argyris has called *double-loop learning* (Argyris 1992), which helps transfer learning from individuals to a group, provide for organizational renewal, keep an open attitude to 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 as a process of development to organizational memory. By organizational memory (Walsh and 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, and 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 (Orlinkowski 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; 2002), 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 about 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 are we to organize and index the OM to enhance its diffusion? How to retrieve relevant elements of the OM to answer a user request or proactively push relevant elements towards users? How to adapt the answer to users, in particular to their tasks, according to the knowledge contexts? These problems are largely related to information retrieval, and they are bound to the OM framework for knowledge distribution, whose goal is to improve organizational learning, with the aid of the OMIS support.

C O N C L U S I O N

Much of today's literature (Badaracco 1991; Hamel & Prahalad 1994; Quinn 1992; Pinchot & Pinchot 1994) supports the supposition that intellectual material in the form of information, knowledge, and any other form of intellectual property, is a valued organizational asset and organizations are increasingly dependent on information technology (IT) for the transfer of knowledge and information. Conspicuously missing, however, is often a discussion of collaboration (Schrage 1990) as a regenerative source of ideas that will advance organizations to learn, change, and excel (Menon 1993; Stewart 1994). In other words, simply transferring information at accelerated (IT) speeds, contribute little added value to knowledge. Organizations must go beyond simple information transfer processes to survive and prosper. Garvin (1993) characterizes organizational learning as a continual search for new ideas. To collaborate is to work in a joint intellectual effort, to partition problem solving to produce a synergy such that the performance of the whole exceeds that of any individual contributor. The central issue in organizational learning is how individual learning is transferred to the organizational level. Here, we are assuming an organization of learners who take ownership for their own development and learning on a self-directed basis. Yet, only with a clear understanding of the transfer process can we manage learning processes consistent with organizational goals, issues and values. If this transfer process is indeed actualized in the design of the OMIS, we could well have a learning organization which has the capability of capturing learning in its different paths and incorporating that learning into the running of its daily operations.

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Terms and Definitions

Learning Organization: An organization which focuses on developing and using its information and knowledge capabilities in order to create higher-value information and knowledge, to modify behaviors to reflect new knowledge and insights, and to improve bottom-line results.

Organizational Learning: A process of leveraging the collective individual learning of an organization to produce a higher-level organization-wide intellectual asset. It is a continuous process of creating, acquiring, and transferring knowledge accompanied by a modification of behavior to: reflect new knowledge and insight, and produce a higher-level asset.

Collaboration: To facilitate the process of shared creation involving two or more individuals interacting to create shared understanding where none had existed or could have existed on its own.

Organizational Memory: A learning history that tells an organization its own story, which should help generate reflective conversations among organizational members. Operationally, an organizational memory has come to be a close partner of knowledge management, denoting the actual content that a knowledge management system purports to manage.

Knowledge Management: The broad process of locating, organizing, transferring, and using the information and expertise within the organization, typically by using advanced information technologies.

OMIS: An information system supporting the development of organizational memory, whose design philosophy is often organization-specific. An example philosophy is to consider the OMIS as a meaning attribution system in which people select certain resource items out of the mass potentially available and get them processed to make them meaningful in a particular context in order to support their purposeful actions.

Double-Loop Learning: Together with single-loop learning, they describe the way in which organizations may learn to respond appropriately to change. Single-loop learning requires adjustments to procedures and operations within the framework of customary, accepted assumptions, but fails to recognize or deal effectively with problems that may challenge fundamental aspects of organizational culture, norms, or objectives. Double-loop learning questions those assumptions from the vantage point of higher order, shared views, in order to solve problems.