From Organizational Learning to Knowledge Management

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Abstract

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From Organizational Learning to Knowledge Management

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Glossary  
Organizational learning - development of knowledge which affects the range of potential behaviors.  
Knowledge management - action that leads to the identification, acquisition, development, distribution, utilization and storage of knowledge which is meaningful to the organization.
Summary
This article spans the literature from organizational learning to knowledge management by indicating out the various contributions in the field. First, it provides an overview of the divergent debates in the field of organizational learning; focusing on the content, agents and process of learning. Then, the article moves from organizational learning to knowledge management taking an interventionist perspective which proposes the main building blocks of knowledge creation.
1. Introduction

Throughout the 80s and 90s, organizational learning achieved prominence amongst the ideas influencing management studies. The topic has attracted increasing attention, both in academic circles (Argyris and Schön, 1978; Shrivastava, 1983; Fiol and Lyles, 1985; Levitt and March, 1988; Huber, 1991) and in business practice (Hayes et al., 1988; Pedler et al., 1990; Senge, 1990; Argyris, 1993; Garvin, 1993). One of the main reasons for this is the increasing pressure of change on organizations. As the rate of change accelerates steadily, organizations must find their bearings in an increasingly complex environment. Organizations which fail to cultivate their potential to learn may soon find themselves amongst the losers. In future, according to Arie de Geus (1988), learning will be the only lasting competitive advantage.

2. Arenas of Organizational Learning

Unfortunately, both the definition and use of the term organizational learning are still associated with considerable confusion (Edmondson and Moingeon, 1998; Easterby-Smith et al., 1998). The organizational learning field has the problem of trying to unify different theoretical approaches while at the same time valuing the diversity that has evolved since its early start. In this article, various conceptual frameworks are analyzed based on the major divergences of opinion among the scholars in the field. Within the first part of the paper, the focus will be on different aspects of organizational learning while the second part centers around knowledge management, the facilitation of organizational learning with the learning organization (Easterby-Smith et al., 1998).

2.1 Content of Learning

The concept of learning originated in psychology and focused on learning at the individual level. Behavioral psychologists defined learning as the acquisition of chains of reactions which persist over time leading to behavioral change. Thus, changes in behavior are a result of repeated experience. This perspective of learning is concerned with observable behavior, and neglects the cognitive processes of individuals.

A second stream of learning theorists emphasized cognitive processes as key determinants of individual learning (Bandura, 1986). Instead of focusing on change in behavior, cognitive psychologists focused on change in the state of knowledge which creates the potential for changing behavior. In the course of cognitive interactions with the environment, the individual creates his or her own representations of the environment, based on experience, expectations and beliefs, and on previously developed cognitive patterns. This approach centers on changes in potential behaviors and in underlying cognitive structures. If this approach is adopted at the individual level, the learning potential is a function of individual insight and cognitive abilities, as well as intelligence and experience. Experiences are molded by socially transmitted skills, motivational history, interests, and value judgments. These factors exercise a strong influence on the learning ability and, together with the difficulty of the material to be learned, they determine progress in learning.

While most psychological definitions of learning relate to learning by the individual, systems theoreticians (Sterman, 1989; Senge, 1990) take a different approach. They are less concerned with individual learning processes as with the system or organization as a whole. The primary focus of attention is the organization as a framework for individual action. Most analysts who approach organizational learning from this angle give prominence in their theories to interactions between the individual and the organization (Argyris and Schön, 1978; Hedberg, 1981).
Organizational learning differs from learning by individuals in that it involves the needs, motives and values of various members of the organization (Kim, 1993). An organizational or collectively constructed view of reality can only develop if individuals are prepared to discuss and negotiate their individual views (Berger and Luckmann, 1966). According to Fiol (1994), there is another factor which is necessary for the development of a collective view of reality, and therefore necessary to learning. This factor is the performance of the apparently contradictory task of generating diversity while at the same time achieving consensus. It seems that members of the organization must agree and disagree at the same time. As Huber (1991: 102) argues “it seems reasonable to conclude that more learning has occurred when more and more varied interpretations have been developed, because such development changes the range of the organization’s potential behaviors, and this is congruent with the definition of learning.” Yet, at the same time Huber (1991) argues that there is a need for a common or shared understanding among the organization’s units that various interpretations exist, thus requiring consensus about interpretations. According to Cohen and Levinthal (1990), the challenge is to find a balance between diversity and consensus. The goal is to unify the diversity by reaching a multidimensional consensus. Learning thus implies the development of knowledge which leads to a new collective understanding. This collective understanding influences behavior since the acquisition and interpretation of knowledge brings about changes in cognitive maps; which in turn affects the range of potential behaviors. The behavioral and cognitive perspective on learning have thus been reconciled by pointing out that “change in behavior without a corresponding change in cognition, or change in cognition without a corresponding change in behavior, are transitional states since they create a tension between one’s beliefs and one’s action”. This tension can only be resolved by integrating a change in behavior with a change in cognition so beliefs and actions are in accordance with each other.

2.2 Agents of Learning

In the past, organizational learning scholars have associated learning with different agents, most frequently learning by individuals or learning by the organization. Models which identify organizational learning with learning by individuals draw attention to the fact that organizations cannot have quasi-individual thought processes, and that only people are capable of learning by means of mental activity (Jelinek, 1979). Approaches which make individuals central to organizational learning focus on people and their motives, interests and values (Argyris and Schön, 1978; Hedberg, 1981). These motives form the basis of cognitive processes which result in learning. Models based on individual learning emphasize the personal component in behavioral change and neglect the collective aspect.

Another form of learning which may take place within organizations is learning by “elites”. “Organizational learning thus becomes that process in the organization through which members of the dominant coalition develop, over time, the ability to discover when organizational changes are required and what changes can be undertaken which they believe will succeed” (Duncan and Weiss, 1979: 78). Learning may take place through a representative “elite” or the dominating coalition. This may consist of leaders of the organization, or of powerful members of particular groups. From this perspective, organizations are regarded as oligarchic systems in which a dominating coalition emerges and rules the organization. Against this background, learning and power are perceived as being closely related. The assumption is that the knowledge of the powerful has the greatest chance of determining organizational decisions and changes. This is especially clear when charismatic leaders take over an organization and change existing structures, question values, or formulate new goals. A change of leadership often functions as a trigger of organizational learning, since basic changes are made which for years had not even been contemplated. In this way leaders, or the elite, can be agents of learning.
As organizations grow increasingly complex, it becomes more difficult for individual executives to be the agents of learning for an entire organization, and to guide the whole learning process. Although the literature mainly focuses on the distinction between individual and organizational learning (Kim, 1993), it has been recognized that groups exert a major influence on decision-making and learning (Schopler, 1987; Brooks, 1994). This means that the agents of learning may include not only a dominant coalition, but groups of all kinds. Different groups such as political alliances, innovation teams, or even whole functional areas can be vehicles for learning. Specific management levels or management areas can exert a decisive influence in both horizontal and vertical directions on the learning of an organization. Finally, the agents of learning need not be powerful; they can also be creative groups such as network teams within the firm. Innovation groups, for instance, produce ideas for modifying the rules of the game. Their suggestions are considered when critical decisions are made, and subsequently enter the collective knowledge base. A vital role is played by those members of the organization who are the first to act according to the new rules, thus paving the way for them to be institutionalized for the whole organization. According to Schein (1996) the specific cultures or rules of various groups within organizations eventually have to be aligned in order for organizational learning to occur.

There are other theories of organizational learning which do not focus on groups or individuals as agents of learning (Cyert and March, 1963; Fiol and Lyles, 1985; Levitt and March, 1988; Huber, 1991). Theories of this kind are mainly concerned with changes in the organization itself, i.e. with the collection and standardization of learning experiences in rules, standard operating procedures, artifacts or systems (Cohen and Bacdayan, 1994; Pentland and Rueter, 1994). Organizations are regarded as having storage systems containing hypotheses by means of which links can be established between the internal and external environments. These represent the organization's knowledge or memory (Walsh and Ungson, 1991), and enable it to store knowledge and continue to process it without the aid of individual members. As Chandler (1992: 86-87) mentions organizational capabilities permit the enterprise to be more than the sum of its parts by giving it a life of its own above and beyond those of the individuals involved. The individuals come and go, the organization remains. In this sense, they can be interpreted as part of a collective “organizational memory” (Walsh and Ungson, 1991). When information is stored in organizational "knowledge systems", operational patterns are preserved. The behaviors and actions of individuals are transformed into lasting knowledge possessed by the organization. Social complexity is an important element of the systemic properties attributed to learning by the organization as a whole. The different components of an organization - individuals, elites, groups - interact over an extended period of time resulting in complex relationships which can be characterized as ‘emergent’ properties of the organizational system. Learning thus occurs not only when parts combine, but also when a new total system develops, with its own laws.

2.3 Levels of Learning

When members of an organization interact with the internal and external environment, their perceptions of reality change continually as new information is gained. During this process, stimulus-response chains (Hedberg, 1981) are broken and may be re-formed. When this happens, the organization has learned to adapt, by changing its behavior to align with existing goals. Cyert and March (1963) describe this process in terms of adjustments in search rules and attention rules, and changes in levels of expectations. This emphasizes the behavioral and instrumental character of the change. The stimulus for this kind of learning is the gap between objectives and outcomes. Deviations from given norms are corrected by a process of adaptation, so as to redirect behavior towards existing goals. The old theories of action are changed (Argyris and Schön, 1978). This first level of learning has often been referred to as adaptive learning or single-loop learning (Cyert and March, 1963; Duncan and Weiss, 1979; Levitt and March, 1988).
The next level of organizational learning involves not only behavioral adaptation, but also changes in deeper cognitive structures. Significant changes occur in the relationship between the organization and its environment, necessitating more than a simple process of adaptation (Argyris and Schön, 1978; Fiol and Lyles, 1985; Hedberg, 1981). Reconstructive learning or double-loop learning involves questioning organizational norms and values which seem unchangeable; setting new priorities, and conducting evaluations of these norms. As a result of learning, the internal value systems may have to be restructured. The organization's frame of reference can only continue to develop if existing structures are changed and the behavioral repertoire is modified. New theories of action emerge; this leads to a critical examination of values and norms, which in turn changes the underlying knowledge structure of the organization. Argyris and Schön (1978) regard transparency of knowledge as the most important condition for double-loop learning. Hedberg (1981) considers the unlearning of learning cycles to be vital. Neither of these points is easy to achieve. Pictures or "thought maps" which members form of an organization tend towards rigidity, because people's collectively constructed views of reality and the logical interconnections between them confirm existing perceptions and norms. Signals are then ignored for as long as possible, until there is sufficient counter-evidence to justify changing the organizational frame of reference.

According to Bateson (1981), learning at the highest level, process learning, embraces all phenomena which fall under the heading of changes in the stream of action and experience. In other words, process learning is learning to understand adaptive and reconstructive learning (Argyris and Schön, 1978; Hedberg, 1981). The central element in process learning is the improvement of the ability to learn; the subject of learning is learning itself. The recognition of patterns which have enabled learning to take place in similar situations can lead to a comprehensive restructuring of behavioral rules and norms.

Most authors agree that the process of restructuring behavioral rules, cognitive maps, or "reframing" (Hedberg, 1981; Watzlawick, 1988; Argyris, 1990) is a difficult one. In most cases, "defensive routines" have been built up. Individuals, groups and organizations are unlikely to become aware either of their routines or of their errors, and they are thus protected from the threat of change (Argyris, 1990). "Fundamental rules" develop; these ensure that errors are ignored, or not discussed, and that their non-discussability is also not discussed. In order to initiate learning at this higher level of learning, changes in the frame of reference are of great importance.

Problems can serve as a basis for removing old knowledge structures, the process of unlearning. Hedberg (1981) describes this process as a series of "little deaths" at the micro-level, since old structures and ways of thinking must be removed from the repertoire in order to make room for new structures. Unlearning makes it possible for new knowledge to be accepted, and for old structures to be changed or removed. However, since success tends to preserve existing knowledge structures and behaviors, organizational memebers including the leaders typically lack the means and the opportunity to free themselves from their immediate environment and promote change. Larger organizations fritter away their resources in internal power struggles, instead of using them to bring about fundamental changes in behavior. Decision-makers and advisers repeatedly find that organizations resist learning because they do not want to change old knowledge structures.

The process of unlearning is characterized by a change in cognitive patterns. The patterns may dissolve either when old events are seen as having new outcomes, or when the event itself is perceived differently, as something new or changed (Watzlawick et al., 1974). In the former situation, there is the perception that new information does not fit, so the connection between event and outcome is broken. This means that further links, e.g. the existing theory of action, the philosophy, or the norms, must also be sacrificed (Hedberg, 1981). In the latter case, i.e. when the
event itself is perceived differently, it is this changed perception which leads to a break in the connection between event and outcome. The event can then be "restructured" (Watzlawick et al., 1974).

Since organizations have difficulties in changing when in fact they are successful, the transition from unlearning to learning is especially difficult. This is why “failure” is often a trigger to learning. Triggers such as falling turnover, rising costs, financial deficit, public criticism, or changes of leadership fuel the unfreezing process in which old ways of thinking and behaving are discarded and new ways can be accommodated.

As the discussion of the content, agents and processes of learning suggests, the organizational learning literature is fragmented, with multiple constructs from various theoretical fields. The main differences between important contributions in the organizational learning field have been summarized in Table 1. There only seems to be general agreement on two points: first, that the phenomenon does exist, and second, that organizations which do not learn cannot make progress, because they keep on repeating existing behavior patterns.

### Insert Table 1

Essentially, organizational learning is the process perspective of developing organizational knowledge. The organizational knowledge base consists of individual and collective knowledge which the organization can use to perform its tasks. This knowledge base undergoes regular change. Collectively, these changes constitute organizational learning. The outcome of these collective changes improves the organization’s problem-solving potential (Probst and Büchel, 1996).

While organizational learning primarily focuses on the processes of changing the organizational knowledge base, it does not provide an explicit indication to which elements need to be influenced to bring about learning. Knowledge management, by contrast, provides an explicit framework for intervening into the knowledge base in order for learning to take place.

### 3. Facilitating Organizational Learning

The previous sections mainly focused on the description and explanation of organizational learning by academic scholars. Managers are, however, interested in learning processes which they can control. The main difference between organizational learning and knowledge management is that the later is an active and directive process. Organizational learning consists of changes in the organization’s knowledge base, the creation of collective frames of reference, and growth in the organization’s competence to act and to solve problems. As Tsang (1997) and Edmondson and Moingeon (1998) mention organizational learning has been studied both from a descriptive and prescriptive perspective. Whereas organizational learning is descriptive, knowledge management involves deliberate intervention (Senge, 1990; Swieringa and Wierdsma, 1992). Scholars particularly addressing knowledge management aim to develop an integrated set of interventions which take advantage of opportunities to shape the knowledge base.

### 3.1 Knowledge Management

When discussing knowledge management, one of the most important points is to distinguish between data, information and knowledge. Knowledge management is primarily concerned with the last. Data is the raw material, information is assembled raw material and knowledge is the interpretation of the assemblage. Only by associating information with meaning, can knowledge become useful to the
Managing knowledge thus requires to identify, acquire, develop, distribute, utilize and store knowledge which is meaningful to the organization (Probst et al., 1997).

Identifying knowledge means analyzing and describing the company's internal knowledge environment. A surprisingly large number of companies now find it difficult to maintain a general picture of internal data, information and knowledge. This lack of transparency leads to inefficiency, uninformed decisions and duplication. Effective knowledge management must therefore ensure sufficient transparency, and help individual employees to locate what they need.

Knowledge acquisition demands the incorporation of external knowledge into the organizational knowledge base. The organization learns when information is acquired outside the boundaries of the firm and integrated with existing knowledge base. “It must bring home this new information to be mixed with resident information to shape a novel pattern of knowledge into a package that can be used” (MacDonald, 1995: 562). Relationships with customers, suppliers, competitors, and partners in co-operative ventures have considerable potential to provide knowledge - a potential that is seldom fully utilized. Firms can also buy knowledge which they could not develop for themselves by recruiting experts or acquiring particularly innovative companies.

Knowledge development complements knowledge acquisition by focusing on the generation of new skills and know-how, better ideas and more efficient processes. Knowledge development includes all management efforts consciously aimed at producing capabilities which are not yet present within the organization, or do not yet exist either inside or outside it. This involves finding ways of dealing with new ideas and utilizing the creativity of employees.

The distribution of knowledge within an organization is a vital precondition for turning isolated knowledge or experiences into an asset which the whole organization can use. It is not necessary for everybody to know everything: on the contrary, the economic principle of division of labor calls for a meaningful description and management of the scope of knowledge distribution. The most important step is to analyze the transition of knowledge from the individual to the group or organization. Knowledge distribution is the process of sharing and spreading knowledge already present within the organization.

The whole point of knowledge management is to make sure that the knowledge present in an organization is applied productively for the benefit of that organization. Unfortunately, successful identification and distribution of important knowledge does not guarantee that it will be utilized in the company's everyday activities. There are a number of barriers to the use of "outside" knowledge. Steps must therefore be taken to ensure that valuable skills and knowledge assets - such as patents or licenses - are fully utilized.

The selective retention of information, documents and experience requires management. Organizations commonly complain that a reorganization has cost them part of their memory. The processes for selecting, storing and regularly updating knowledge of potential future value must therefore be carefully structured. If this is not done, valuable expertise may be simply thrown away. Knowledge retention depends on the efficient use of a wide range of organizational storage media.

Knowledge goals give direction to knowledge management. They establish what skills are to be developed, and at what levels. Knowledge goals are aimed at creating a knowledge-aware organizational culture in which the skills of individuals are shared and developed. This sets the scene for effective knowledge management. Strategic knowledge goals define the core knowledge of the
organization and specify the skills that it will need in the future. Operational knowledge goals are concerned with implementation of knowledge management; they convert strategic goals into identifiable objectives. This should prevent knowledge management from drying up at staff or strategy levels, and should also avert a situation in which knowledge is sacrificed to business operations.

Knowledge control involves methods for measuring strategic and operational knowledge goals. The way in which the goals are formulated determines the ways in which they can be assessed. The quality of the goals therefore becomes apparent at the assessment stage, if not before. Unlike financial managers, knowledge managers cannot fall back on an established set of indices and measurement procedures. They must strike new paths. Since knowledge management demands organizational resources, it must be shown to be effective. For this purpose, the monitoring process is essential for adjusting long-term knowledge management procedures.

Within each of the core areas of knowledge management, enablers provide the context for changing the collective knowledge base. For each core area, different agents may serve the purpose of facilitation. As previously mentioned, the primary agents are individuals, groups and storage repositories of the organization. The following table summarizes various tools that can be employed for different agents to ensure that each core area of knowledge management is promoted.

| Insert Table 2 |

For illustration purposes, one enabler of knowledge management will be mentioned in more detail. Intranets or other means of electronic communication can facilitate knowledge distribution by reducing the coordination costs and obviating the need for physical proximity. By loosening the constraint of spatial proximity, electronic communication reduces the costs of signaling one’s interest so that people who otherwise would not know that they share interests can now discover one another and communicate (Feldman, 1987: 95). By communicating with groups of people distant to one’s close network, one has access to more ideas and information than would otherwise be true. Through distribution lists, electronic mail makes it easier for people to broadcast their problems and potential solutions to others with similar interests. Widely distributed information will, however, not necessarily produce shared beliefs, yet once common interest has been identified, the exchange of ideas is likely to increase, thereby leading to the development of a larger knowledge base.

**4. Conclusion**

Both the literature on organizational learning and knowledge management has been growing over the past years. While organizational learning primarily aims to identify the underlying processes of learning by clarifying critical issues like the content, agents and levels of learning, knowledge management takes a proactive role of explicitly providing guidelines for active intervention into the organization’s knowledge base. Both perspectives have their merits. Organizational learning provides a theoretical framework for analyzing changes in the organizational knowledge base. This framework can be used to hypothesize and explain cognitive and behavioral changes within organizations over time. Knowledge management serves as a manager’s framework for improving the organization’s learning potential. By guiding managerial intervention into the organization’s knowledge base, knowledge management serves as a management tool of one of the most critical resources of organizational success.

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