Individual and Organisational Learning Issues Relevant to Knowledge Management in Organisations

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Abstract

Within the last few years, the topic of knowledge management has generated a lot of interest in the corporate sectors. Although there is no commonly agreed upon definition of knowledge or knowledge management, all kinds of organizations are implementing knowledge management. The literature on knowledge management can broadly be categorized into three parts, one focusing in the strategic imperatives of knowledge management, the second focusing on the use of IT to support knowledge management initiatives, and the third on the behavioral issues around implementing and operating knowledge management. This paper examines the third stream of literature to present the individual and organizational learning issues that have a bearing on the successful implementation of knowledge management.

What is Knowledge?

There is no simple definition of knowledge that captures all the nuances of knowledge and its management in the context of organizations. Researchers/management scholars have provided a variety of definitions based on the issues examined, and the focus of arguments developed. One definition of knowledge, although quite unwieldy, attempts to provide an all-inclusive definition:

> Knowledge is a fluid mix of framed experiences, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knowers. In organizations, it often becomes embedded not only in documents or repositories but also in organizational routines, processes, practices and norms. (Davenport and Prusak, 1998: 5)

In this section, we briefly survey the different ways in which knowledge has been defined and examine their implications for the development of a knowledge management diagnostic.

Tacit and Explicit Knowledge

The difference between tacit and explicit knowledge is the most clearly, and extensively acknowledged, aspect of knowledge in organizations[i]. Tacit knowledge refers to knowledge that is often used but cannot be articulated or externalized, and hence cannot be easily diffused to others. Explicit knowledge consists of knowledge that can be codified and presented in books etc, and as a consequence can be easily transferred to others. This understanding of knowledge can be further subdivided based on whether either type of knowledge is held by an individual or by a collective (group/department/organization).

Individual Explicit Knowledge. Individual explicit knowledge may also be referred to as the knowledge held by an individual, of which he/she is conscious, for example facts or concepts or frameworks that can easily be codified [ii]. This knowledge although possessed by an individual can become more widely held if proper knowledge manage systems/practices are in place. This type of knowledge is qualitatively different from the social explicit knowledge,

discussed later, even if it is with many individuals because its existence depends primarily on an individual and not on the interaction of that individual with others. However, if the knowledge is widely distributed, the organization is less dependent on the holders of that knowledge.

Individual Tacit Knowledge. Individual tacit knowledge has been referred to as automatic knowledge or personal knowledge. This knowledge may include theoretical or practical knowledge but is more idiosyncratic and relatively difficult to articulate[iii]. Under normal circumstances, this knowledge will continue to be part of an expert's repertoire unless others are co-present and jointly participate in the process of applying this knowledge to real situations. Others can acquire this knowledge by close observation of all the subtle application of the individual tacit knowledge by attempting to put themselves in the shoes of the knower/expert even as he/she goes through the process of using the knowledge possessed.

Social Explicit Knowledge. This is the type of knowledge, often called 'objectified knowledge', that has been the focus of traditional notions of knowledge, particularly in the Western world. It is amenable to codification in language or symbols that are widely accepted, and hence can easily be transferred to others[iv] (similar to public knowledge discussed later). Despite, the potential for this type of knowledge to be easily codifiable, and widely diffused, it may not be the case if adequate knowledge management systems are not in place. Such knowledge can also be acquired from outside the organization through publicly available codified sources, but its actual availability is dependent on the acquisitions systems adopted.

Social Tacit Knowledge. Social tacit knowledge, also called "collective knowledge" or 'cultural knowledge" is knowledge that is widely held but not easily codifiable and diffusable[v]. Like common sense, it is acquired gradually by personal experiences and interactions with other persons belonging to the social community (may be within an organization or even outside). Like in the case of individual tacit knowledge, social tacit

knowledge can be acquired by being an active member of a social group, and learning takes place through subtle absorption rather than explicit acquisition.

Knowledge as Stock

Traditionally the literature has focused on knowledge as something to be possessed or as a 'stock of expertise'. While in actual organizational activity, it is often difficult to isolate the role of existing knowledge on performance, there seems to be a relationship between stock of knowledge and performance that is similar to the relationship between assets and income[vi]. It can be asserted that the more knowledge an organization possesses, the better will be its performance.

Knowing (as process)

More recently there has been a focus on the act of knowing rather than the possession of knowledge. Knowledge is seen as an asset that facilitates the knowing process of an organization[vii]. Knowledge is not seen as something static but a dynamic entity that actively supports the acquisition of more knowledge and keeps the asset value of an organization's knowledge current. Inherent in this approach is the assumption that knowledge that is not used is depleted, and knowledge that is used increases in value because knowledge creation is a social activity involving constant interaction between existing knowledge and knowers, and the real world.

Private versus public knowledge

Somewhat related to the above discussions of tacit and explicit knowledge, but more relevant to the discussions of knowledge as a competitive advantage, is the differentiation between private and public knowledge. Private knowledge is possessed only by a firm, while pubic knowledge is in the public domain. Organizations can develop competitive advantage by

possessing relevant knowledge that is not in the public domain, and is also difficult to imitate i.e. not amenable to becoming public[viii]. Organizations should try not to routinize knowledge that provides competitive advantage, because routinization is the first step towards it becoming public knowledge. While public knowledge may not provide a competitive edge, the absence of public knowledge in a firm can be a disadvantage.

Architectural versus component knowledge

Architectural knowledge is related to routines and schemata about the whole organization, whereas component knowledge is knowledge related to sub-parts or subroutines of an organization. Architectural knowledge is often social and tacit, making it difficult for any one individual, in isolation, to possess, and hence is unlikely to be imitated by others. On the other hand component knowledge, which may be based on public as well as private knowledge, is more likely to be codifiable and may be imitated by others[ix]. If a person leaves an organization or a temporary worker works for a short duration, he/she is more likely to be able to take away component knowledge rather than architectural knowledge.

Who possesses knowledge?

There is a significant amount of debate over the unit that creates and possesses knowledge. The Western literature has primarily viewed individuals as the agents that create and possess knowledge, whereas as the Japan based literature, and more recent Western literature have viewed knowledge as located in a social context. A third stream, which is more realistic from our perspective, views knowledge being essentially created and possessed by individuals, but with the context of social interactions that allow them to use and renew knowledge. In this section, we examine the implication of these discussions for the knowledge management diagnostic.

Knowledge embedded in the Social Context of an Organization

Knowledge has been seen as embodied in the language used in organizations, artifacts, machines and decorative items in the organization's building, and in the formal and informal organizing principles of the organization. It is seen as having little meaning or relevance outside the social context within which it is embedded[x]. There is little scope for the knowledge to be diffused or lost to others outside the context, because it will be incomplete without the softer aspects of the context that supports and reinforces the meaning of the knowledge. We believe that such a notion of knowledge may be more relevant to some types of organizations, particularly market related information in low technology industries.

Knowledge is in the minds of knowers

Most persons (even if they acknowledge the role of social context) have the opinion that ultimately the individual is the real repository of knowledge. All organizational learning or application of knowledge to real situations is done by individuals, and the social context at most plays a facilitative role. This may be more relevant in situations in which large organizations operating in changing environments, where the individual is one with current knowledge. The knowledge is obsolete before it can become part of the social context. In such cases, the organizations knowledge management system consists of a knowledge map that will inform others about who possesses the relevant knowledge[xi]. When an organization's knowledge is predominantly held by individuals, then the organization has to be concerned about whether it will be able to exploit that knowledge when needed, or will loose that knowledge when the individual(s) leave the organization.

Interplay between Individual and Organization

A third stream of scholars suggest that the individual and the context are both integral to the process of knowing and knowledge possession. Certain types of knowledge can only be

created and possessed by individual while others can only be created and possessed by collectivities. For example, in highly knowledge intensive industries such as health care, it is impossible for individuals to possess all the knowledge that is required nor is it possible for others to substitute for the knowledge of missing individuals[xii]. In such situations, utilizable knowledge is possessed jointly and severally by the individuals and the context.

How do individuals learn/create?

Learning Capabilities

Individual learning involves five types of capabilities (i) Verbal or declarative knowledge that may consist of isolated facts to organized information. (ii) Intellectual or procedural knowledge that enables an individuals to apply concepts to specific situations, (iii) Cognitive capabilities related to the ability to perceive, encode, retrieve and think about relevant information, (iv) Attitudes about learning that encourages pursuit of knowledge, and (v) motor skills that may be relevant to execute some physical activity[xiii]. While all these capabilities may not always be required, individuals need to have the requisite qualities based on the context of their work or responsibilities.

Participative Learning

Individual learning is rooted in the need to maintain a consistent self-perception. An individual's current knowledge, values and beliefs play an active role in learning from future experiences. In this sense, past knowledge participates in the individual learning process. Sensemaking is retrospective exercise that selects plausible meaning in order to make sense of current events in terms of the existing knowledge. The exercise is driven by the need to arrive at an interpretation that is consistent with self-perception, and not to seek truth[xiv]. Values and priorities play a major role in determining the events to focus and the meaning to accept. This is true even in the case of highly innovative learning. Intuition is seen as an

ability to very quickly recognize patterns in current events based on the existing knowledge, which is not necessarily well articulated[xv]. In order to enhance learning, the individual needs to have a wide variety of prior knowledge so that he/she can recognize patterns that require knowledge outside narrow discipline[xvi]

Conservative Learning

As a consequence of participative learning, and the need to maintain a consistent self-perception, individual learning is very conservative[xvii]. Observations that are sympathetic to current knowledge are more likely to be recognized and assimilated than knowledge that contradicts existing knowledge, which is normally rejected[xviii]. This suggests that even if an individual observes events that may or should result in the rejection of prior knowledge and acquisition of new knowledge, this is unlikely to happen. This has implications for knowledge dissemination processes. They should not totally reject existing knowledge, but present new knowledge as an extension of existing knowledge. Significant learning happens when the existing frames used by an individual are discarded in favor of schemata that provide a better explanation for current observation[xix].

Prior Training/Knowledge

As a result of participative learning and the fact that individuals are conservative in their learning patterns, the prior training of individuals has a major impact on subsequent learning[xx]. By providing a stock of knowledge prior learning facilitates learning if the observations are in the same domain[xxi]. However because individuals are conservative learners, individuals are unable to grasp with the same ease observations that require a different knowledge background[xxii].

Experiential Learning

The body experiences of an individual have an impact on his/her knowledge acquisition. Unlike Western notions of knowledge, which emphasizes the mind, there is a greater emphasis on the body or physical experience as a source of learning in the Japanese literature[xxiii]. With the recognition that there is much tacit knowledge that cannot be easily codified and transferred, there is a need to see whether individuals are allowed to assimilate their physical experience into their knowledge.

Path Dependence

Another consequence of the fact that individual learning is participative learning is that knowledge acquisition is path dependent. Since individual knowledge develops over time from the multiple sources of learning, books, mentors, personal experience, each individual develops a perspective that is unique[xxiv]. It is unlikely that someone new to an organization, although with similar qualification, will have the same perspective on issues as someone who has been with the organization for long. Depending on the context of the organization, a historical perspective may be relevant or not relevant. There is a need the see whether an organization has the right mix of perspectives.

Experts avoid learning

While on the one hand experts are people who possess highly specialized knowledge, and are capable of acquiring new knowledge very efficiently, their expertise prevents them from learning. The reasons are varied. Firstly, expertise provides perceptual filters that do not allow experts to notice changes that may be observable to others. The filters limit the range of knowledge that an expert can fruitfully acquire. Secondly, there are issues such as issues of self-interest. It may be difficult for an expert to admit deficiency of knowledge making it

difficult for him/her to engage in learning activity. Also time spent learning new knowledge takes away from time that can be used to make income. And finally, if an expert is in a position of partial monopoly there is little incentive for him/her to acquire new knowledge[xxv].

Biased Learning

Much of the learning that happens in organizations is biased by past success that may or may not be related to the quality of knowledge possessed. Key decision-makers attribute success to their actions and failure to environmental factors, thus increasing confidence in their own wisdom and insight[xxvi]. They also have a tendency to arrive at causal explanations that are based on temporal and physical proximity, resulting in the knowledge that is acquired to be biased. While most would argue that this is harmful for organizational learning, some argue this provides a situation for managers to take actions that are not encumbered by existing true knowledge and creates scope for new discoveries[xxvii].

Role of Values and Beliefs

Like the point discussed above, it has to be emphasized that learning is not based on just capabilities and prior knowledge but also based on attitudes towards learning[xxviii]. Individuals need to have a positive attitude towards acquiring knowledge to be able to make use of all the learning opportunities available to him/her.

Dramatic Change

Although individuals normally make incremental changes to their knowledge because they have a tendency to reject contradictory evidence, sometime dramatic changes do take place. Over time, individuals develop an alternative theory that is compatible with the repeated contradictory evidence even as they continue to take actions based on the old framework of knowledge[xxix]. In order to get individuals to change their frameworks, they need repeated

observations that contradict their existing frameworks of reference. In other words, individuals should either on their own or by design be forced to examine their framework in the light of contradictory viewpoints.

Group Influence

Individual learning does not happen in isolation. Individuals in organizations are part of groups/departments whose other members directly and/or indirectly influence individual learning. Firstly, the information accessible to an individual will be dependent on what the group as whole thinks is useful and hence has formal systems to collect and disseminate it to the group. Even if information is accessible by other means, the individual will find it difficult to convince others or even accept oneself interpretations that conflict with accepted knowledge in the group[xxx]. For individual knowledge to be deemed as worthwhile there is a process of justification that is needed to make it acceptable to the larger group[xxxi]. In short, the knowledge considered legitimate by the group's influence the subsequent acquisition of knowledge.

Faddish Learning

Group pressure can also coerce individuals into particular type of learning. While more often than not the literature suggests that experts tend to stick to a groove and avoid learning, there are situations when group norms to keep current with new knowledge and a lack of job security encourage experts to clamor for new knowledge irrespective of its worth[xxxii]. There is a need to guard against knowledge acquisition for the sake of knowledge acquisition in organizations.

How can individual creative processes be supported and/or enhanced?

Encourage Improvisation

Individual learning occurs when an individual has to deal with observations/events that are not explained fully by existing frameworks, but are close enough to existing knowledge so that an individual deems it as worth an attempt to resolve the conflict. Improvisation in music consists of continual tinkering and exploring with a stream of well-structured music without any prior knowledge of the quality of resulting music[xxxiii]. Similarly improvisation in organizations should be encouraged so that individuals have opportunities to tinker around with possibilities- this provides opportunities to knowledge creating contexts, some of which may result in permanent changes to the individual's knowledge[xxxiv].

Bricolage

Bricolage is making do with whatever resources at hand[xxxv]. Since learning happens in novel situations when individuals have to creatively think of ways to deal with the changed situation, it is useful to create such situations in the work place[xxxvi]. In order to really benefit from these situations organizations need to create situations in which limited resources are available to encourage out of box thinking, without accepting excuses to return to the situation of abundant resources[xxxvii].

Encourage Humor

Once we accept that true learning happens in contexts that are non-routine, then one has to look for devices that create some non-routine situations. Humor is one such device. Since humor confuses sense with non-sense and order with disorder it throws new light on routine observations about events. Humor has the advantage of providing insights into instability without any loss of order in the system[xxxviii].

Learn from mistakes

In line with the discussions above, all unusual situations should be seen as opportunities for learning. Even if real mistakes happen, rather than treat them as occasions to punish the persons that are associated with the mistake (not necessarily committed it) it may be used as an occasion to create a better understanding of the situation and also create new knowledge while devising ways to prevent the repetition of the mistake. Jazz musicians actually use mistakes as cues to develop new patterns of music[xxxix].

Nature of information needs

Individuals go through several stages during their information search. The process starts with a visceral need when a person experiences a gap in knowledge that is not expressible in language. Once the need becomes a conscious need he/she is able to use some mental schema to understand it. This need is then modified when it is formalized so that it can be understood by a larger audience who participate in the pursuit of knowledge. Finally, the need is for information is expressed in compromised terms based on the ability to the information system to cater to the needs[xl].

Improve Access to Resources

Knowledge creation and/or acquisition may be done by an individual but he/she has to rely on the support of others or resources under the control of others. However, individuals choose to use the resources based on a comfort level. Resources that are easily accessible, physically close, and do not involve any obligations to others are more likely to be used than others[xli]. Hence, organizations should try to provide easy access to relevant resources to key decision-makers.

Appreciation of Key Human Resources

If organizations have to encourage individual learning in organization, they will have to establish career paths[xlii] that allow persons to invest in innovative behavior rather than take the mundane path to the top of the organization[xliii]. Since the individual is more likely to lose money than make money for the organization, but the potential for rewards are high if he/she is successful, organizations should provide safety-nets for people who choose the innovative path[xliv]. At the very least their contribution should be showcased to encourage similar behavior among others in the organization, and keep the motivation of innovators high[xlv].

Different kind of information support

Persons with differing backgrounds rely on different resources for information. Scientists and engineers rely on journals and books, doctors rely on their network of fellow professionals, where as managers prefer verbal forms of information in face-to-face meetings or telephone conversations[xlvi]. Some studies suggest that managers get two-thirds of the information and knowledge needs through verbal communication and only one-third in text or documents[xlvii]. If there is a need for rich information, then a dispersed work force or high turnover may hinder knowledge creation[xlviii]. Also there are variations in terms of information use based on national culture and organizational culture. Any information dissemination or support system needs to recognize the information needs of the individuals to whom they provide information[xlix].

How do organizations learn and/or create?

There are several perspectives related to how organizations learn or create knowledge. The most dominant approach in the recent past, which also informs the literature on computer support for decision support or knowledge management, is the cognitivist perspective. Organizations are seen a group of people making a variety of decisions based on information

that is supposed to represent the world. Accumulation and dissemination of data/information through the use of improved information systems is viewed as a way of improving the representation of the world and hence improving the quality of decisions and learning[l].

The second approach which is the connectionistic perspective sees organization learning as a social process that is controlled by the organizing principle by which relationships among individuals, groups and members of an industrial network are structured. Almost parallel to the idea of tacit and explicit knowledge at the level of the individual, the argument is that there is some knowledge (explicit) that may be transferred without loss of integrity, but know-how (tacit knowledge) can only be transferred through these networks[li].

The third perspective, which is currently gaining in acceptance, is the autopoeitic perspective. This perceptive has element of both the above perspectives[lii] where organizations are considered self-governing entities that are open to the environment for data but closed to information and knowledge. The internal knowledge creation and dissemination is heavily social[liii].

Organizational knowledge

Organizational knowledge consists of a combination of the knowledge of all members of the organization. The organization knowledge emerges out of a process of conscious and or unconscious negotiations among all members of the organization[liv]. However, the knowledge of the powerful persons in the organization will have the greatest impact on organizational knowledge[lv]. Organizational learning can take place if there is individual level learning, there is a change in membership with new knowledge coming in and old going out, and if there is a change in the power structure, i.e. when previously neglected knowledge comes into prominence as a result of increase in power[lvi].

Sensemaking

Just as individual learn based on retrospective sensemaking, organizations also learn based on retrospective sensemaking as a collective.[lvii] Sensemaking may be decomposed into intuiting and interpreting at the level of an individual, integration and institutionalization at the level of the organization[lviii].

Participative Learning

Like in individual learning, existing knowledge in an organization participates in the learning at the organizational level. As a result it is difficult for organizations to learn about new contexts[lix]. Not all the information available with the organization is actively used in learning contexts. The elements that are used are the ones that have been most frequently in the recent past, are current, have been found useful, are easily accessible and meet the preferences and interest of the person responsible for retrieval[lx]. As a consequence of participation of existing knowledge, learning at the organizational level is also conservative[lxi].

Absorptive Capacity

Since an organization's current knowledge base participates in the acquisition of knowledge, it is imperative that the organization has internal knowledge about the domain in which it wants to encourage learning[lxii]. Existing knowledge increases the ability of an organization to create new knowledge from its existing base[lxiii]. In addition to possessing the knowledge, the organizational systems and procedures that facilitate the retrieval of such information should be in place so that existing knowledge is used to the fullest in the process of learning[lxiv]. Efficient handing of information movement within an organization improves the absorption capacity of an organization[lxv]. An obvious way of improving absorptive capacity is to invest in R&D activity. This not only improves the ability of the organization to learn on its own[lxvi],

but improves its ability to absorb knowledge purchased[lxvii] or leased[lxviii] from the outside or from consultants[lxix].

Path Dependence

An extension of the above two points suggests that organizational learning is path dependent. Since prior knowledge is necessary for new learning, an organization is constrained by the choices it makes early in its existence[lxx]. It is difficult for an organization to absorb knowledge from an entirely different domain even if someone identifies that as a learning need.

Intensity of Effort

While it is true that an organization needs absorptive capacity that is based on prior learning, and is path dependent, some of the short comings can be overcome by shear intensity of effort[lxxi].

Irrational Learning

Learning in organization that is based on actual changes in the knowledge of individuals is often quite irrational. More often than not, individuals do not have the opportunity to conduct a deep analysis of cause and effect[lxxii]. They come to plausible conclusions based on temporal proximity, cognitive availability[lxxiii] and even political convenience[lxxiv], which become part of organizational knowledge. Since it is difficult to separate stochastic phenomena from casual phenomena, learning often has a lot of noise[lxxv]. Organization often rely on hypothetical histories and created myths to create knowledge[lxxvi] that may have little to do with stimuli and response they receive from their environment[lxxvii].

Politics of Information

Since there is an expectation that knowledge in organizations and subsequent decision making is based on rational principles, key players in organizations take actions that symbolically try to meet the social needs. This leads to excessive gathering and processing of information even if it is not really used or conspicuous over-consumption of information[lxxviii]. Such behavior is more common in contexts when there is ambiguity about the nature of knowledge but there is a need to maintain the facade of rationality[lxxix].

Single-loop Learning /Exploitation

The most common form of learning is stable learning that is geared towards existing frameworks of knowledge and implementing it with greater efficiency. The focus is on operational efficiency rather than new knowledge[lxxx]. Single loop learning leads to an unconscious repetition of past practices without re-examination[lxxxi]. If the organization operates in a stable environment this mode of learning may be okay[lxxxii].

Double loop Learning/ Exploration

Organizations have to deal with the tension of utilizing existing knowledge efficiently and attempting to assimilate new knowledge[lxxxiii]. Double loop learning or new knowledge generation may required modification to existing embedded norms and procedures[lxxxiv] that are difficult to change. This paradox has prompted a prominent scholar to label the concept of learning organization an oxymoron[lxxxv]. Organizations need to achieve a balance between the need to seek rents from existing investments and invest in learning for future rents[lxxxvi]. If an organization exists in a turbulent environment, the balance should tilt towards exploring new knowledge rather than exploiting existing knowledge[lxxxvii].

Role of Market Dominance

It was suggested above that it is okay for organizations in stable market to rely on exploitation, and organizations in unstable environments to seek exploration. However, market dominance encourages exploitation beyond a point that is rationally justifiable. The ability of a dominant firm to change the environment rather than respond to it by learning new knowledge, make them reduce their absorptive capacity to levels below acceptable levels[lxxxviii].

Role of Language

Language plays a very significant role in the creation and dissemination of knowledge[lxxxix]. When persons from different perspective come together they need a common language[xc] to be able to understand each other[xci], the absence of which will hinder learning[xcii]. Absence of a common language has the potential to kill new learning because it cannot be articulated in the dominant language[xciii]. In addition to facilitating knowledge-related discussions, language also helps provide social contexts [xciv]within which relationships essential to cooperative learning develop[xcv]. The organization should make effort to develop an action-oriented language[xcvi] through education, discussion, publications and teamwork and job rotation[xcvii].

Knowledge markets

Knowledge exchange across individuals and groups happens through formal channels as well as informal channels. The informal channels are normally more efficient than the formal channels[xcviii]. An organization's learning capacity can be enhanced by establishing efficient formal knowledge markets[xcix] and by sanctioning the use of informal markets[c]. Even when employees have been moved to 'virtual offices' they should be encouraged to participate in the informal market[ci].

Communities of Practice

Efficient specialized learning happens among a community of practitioners[cii], who may be located within the boundary of an organization or across it. In addition to learning the explicit knowledge they learn the tacit knowledge associated with being an expert[ciii]. The encouragement of such communities binds experts to the organization[civ] and make the organizations receive external information more efficiently that it would otherwise be available[cv]. While there is evidence that communities of practice enhance learning capabilities[cvi], organizations often view their activities as inefficient use of company time and try to control/discourage[cvii] them.

Interaction with outsiders

Important sources of learning for an organization are the opportunities to interact with people from other organizations: customers, suppliers, and even competitors[cviii]. Another important source of learning is also contingent workers with specific skills[cix]. They are more likely to offer public knowledge not yet available with the organization, although there is a potential for loss of private knowledge[cx]. Organizations working in dynamic markets are more likely to have a net gain than those working in stable environments[cxi].

Joint Ventures

Organizations establish joint ventures to acquire knowledge that is not available internally and is also difficult to develop because of lack of absorptive capacity and path dependence[cxii]. However, learning in joint ventures does not happen automatically, the organization has to a priori establish its learning needs and display its intent to the partner[cxiii]. Also prior efforts to build absorptive capacity result in higher pay-offs during the existence of the joint venture[cxiv].

How can organizational learning be supported and/or enhanced?

Group (not individual) Evaluation

For organizations to benefit from learning, which initially resides in individuals, the organization has to establish rewards systems that in addition to rewarding individual excellence also reward helping and sharing behavior[cxv]. Since information is a source of power, people are likely to want to hoard it and this results in dirty politics in the organization[cxvi]. To avoid destructive politics, organizations should hire persons with a willingness to share, punish non-cooperative behavior, assess cooperation and reward it[cxvii].

Facilitate Externalization

Not all persons with knowledge have a natural tendency to hoard knowledge, but do not share it because of the difficulty of doing so. Organizations should establish facilitative systems to make it easy to make tacit knowledge explicit and distribute among others[cxviii].

Vision

It is very important of an organization that wants to learn to have a vision that makes explicit the importance of knowledge acquisition, and the domain within which knowledge acquisition is important[cxix]. This may often be more important than hardcore technical knowledge in making knowledge creation successful[cxx]. The senior management is in the best position to provide the required direction to a learning organization[cxxi].

Organic Structures

Organizations that are geared towards exploitation have very rigid organizational structures, while organizations geared towards exploration have organic structure[cxxii]. Different organizational forms are different ability to support knowledge creation: the functional form

is suitable for exploitation, the divisions form suitable to exploitation in chosen domains, and matrix forms suitable for exploration[cxxiii]. It is widely accepted that organizations interested in creating new knowledge should have organic structures[cxxiv]. Organizations that have to exploit existing knowledge and explore new knowledge manage by separating the R&D activity from regular operations[cxxv].

Culture/ Shared Context

As with organizational structure, organizations have to adopt organizational cultures[cxxvi] to support the knowledge strategy adopted[cxxvii]. There is a need to develop a common language and shared context [cxxviii]of cooperation to create knowledge but also guard from the development of a closed culture leading to a not-invented-her mentality[cxxix]. Successful companies build a can-do attitude among their employees to encourage exploration[cxxx] but often slow the socialization process to learn from new entrants before they are swamped by the organizations culture[cxxxi], which may be trapped in past history[cxxxii].

Time

A significant resource in organization learning is time[cxxxiii]. Often organizations view time spent on activity that cannot be immediately exploited as waste, so they discourage informal activity[cxxxiv]. Managers need to recognize that within a proper culture, individuals need time for informal exchanges to create new knowledge[cxxxv].

Build Trust in Organizations

Since knowledge creation is all about venturing into new areas and learning by a trial and error process, the organization should build a level of trust that allows individuals to experiment[cxxxvi]. Also knowledge sharing requires a minimum level of trust[cxxxvii] among members of an organization[cxxxviii] for which face-to-face meetings are crucial[cxxxix].

Organizations need to have formal programs to develop trust among employees[cxl] and drive out the fear of failure[cxli].

Encourage Emotional Involvement

Knowledge creation is a highly emotional process[cxlii]. The organization should have support systems to encourage emotional attachment to knowledge creation to improve the motivation of the persons involved in the process[cxliii].

Job Rotation

Organizations should encourage job rotation[cxliv]. This permits individuals to learn form other groups and the groups have an opportunity to benefit from an outsider's perspective. Some experts even go on to suggest that individuals should be occasionally allowed to perform the functions of another person[cxlv].

Mentoring

Given the importance of tacit knowledge in the creation of new knowledge, organizations should have explicit program to disseminate tacit knowledge[cxlvi]. Mentoring is one way of ensuring a small community of practitioners [cxlvii]and also providing an opportunity for newcomers to pickup tacit knowledge that otherwise would not be available[cxlviii].

Gatekeepers

Gatekeepers play an important role in picking up new information form the outside or even facilitating the transfer of knowledge internally[cxlix]. It is typically the senior management that has the responsibility of bracketing external information and disseminating their interpretation to the rest of the organization[cl]. People in these positions should have a deep understanding of the industry.

Training Programs

While job rotation and mentoring and on the job learning[cl] support the transfer of tacit knowledge an efficient way to disseminating explicit knowledge is training programs[cli]. This may be essential even for older workers to keep them updated with latest developments[cliii].

Limit use of IT

Several key decision-makers rely extensively on secondary data, and more recently on data available through information systems. While information systems facilitate ease of processing and transfer, they often leads to situations where persons who do not have any first hand experience of the phenomena that the information represent, make flawed conclusions[cliv]. Excessive reliance on information technology encourages senseless behavior because individuals do not have any understanding of the real phenomena[clv].

References

Abhoy K. Ojha, John L. Brown, and Nelson Phillips (1997) Change and Revolutionary Change: Formalizing and Extending the Punctuated Equilibrium paradigm, Computational and Mathematical Organizational Theory

Andrew C. Inkpen & Adva Dinur (1998) Knowledge Management Processes and International Joint Ventures. Organization Science/Vol.9.No.4, July-August

Barbara Levitt and James G. March (1988) Organizational Learning, Annual Review of Sociology, 14:319-40.

Bruce Kogut and Udo Zander (1997) Knowledge of the Firm: Combinative Capabilities, and the Replication of Technology. In Knowledge in Organizations, Butterworth-Heinemann

Christine Moorman & Anne S. Miner (1998) Organizational Improvisation and Organizational Memory; Academy of Management Review Vol 23, No.4,

Chun Wei Choo (1998) The Knowing Organization: How Organizations use information to construct meaning, create knowledge, and make decisions. Oxford University Press

D.A. Levinthal and J.G. March. (1993) The Myopia of Learning: Strategic Management Journal, Vol.14, 95-112

Daniel A. Levinthal, Organizational Adaptation and Environmental Selection—Interrelated Processes of Change, Organization Science, Vol 2. No. 1.

Dennis A. Gioa and Peter P. Poole (1984) Scripts in Organizational Behavior, Academy of Management Review, 9(3):449-459,

Dorothy Leonard and Sylvia Sensiper (1998) The Role of Tacit Knowledge in Group Innovation, California Management Review, 40(3): 112-131.

Frank J. Barrett (1988) Creativity and Improvisation in Jazz and Organizations: Implications for Organizational Learning. Organization Science, Vol.9, No.5, September--October.

Frank Mueller and Romano Dyerson (1999) Expert humans or expert organizations. Organization Studies

Frans A.J. Van den Bosch & Henk W. Volberda & Michiel de Boer (1999) Coevolution of Firm Absorptive Capacity and Knowledge Environment: Organizational Forms and Combinative Capabilities, Organization Science, 1999 Vol.10. No.5, September-October 1999 pp 551-568.

George P. Huber (1991) Organizational learning: The Contribution of Processes and the Literatures, Organization Science, Vol 2. No. 1.

George von Krogh (1998) Care in Knowledge Creation, California Management Review/ Vol. 40, No.3 Spring

Herbert A. Simon (1991) Bounded Rationality and Organizational Learning, Organization Science, Vol 2. No. 1.

Ikujiro Nonaka and Noburu Konno (1998) The Concept of "Ba", California Management Review, 40(3): 40-54.

James G. March (1991) Exploration and Exploitation in Organizational Learning, Organization Science, Vol 2. No. 1.

James G. March, Lee S. Sproul and Michal Tamuz (1991) Learning from Samples of One or Fewer. Organization Science, Vol 2, No 1

James P. Walsh and Gerardo Rivera Ungson (1997) Organizational Memory. In Knowledge in Organizations. Butterworth-Heinemann

Janine Nahapiet & Sumantra Ghoshal (1998) Social Capital Intellectual Capital and the Organizational Advantage Academy of Management Review Vol. 23, No.2

Jeff Papows (1999) Enterprise.com: Market leadership in the information age. Nicholas Brearley Publishing Limited

Jeffrey Pfeffer and Robert I. Sutton (1999) The Knowing-Doing Gap: How Smart Companies Turn Knowledge into Action Harvard Business School Press

John Seely Brown and Paul Duguid (1991) Organizational Learning and Communities-of-Practice: Toward a Unified View of Working, Learning, and Innovation. Organization Science, Vol 2, No 1

John Seely Brown and Paul Duguid (1998) Organizing Knowledge, California Management Review, 40(3): 90-111.

Karl E. Weick (1991) The Nontraditional Quality of Organizational Learning, Organization Science, Vol 2. No. 1.

Karl E. Weick and Frances Westley (1997) Organizational Learning: Affirming an oxymoron. Handbook of Organization Studies. Sage

Karl. E. Weick (1998) Cosmos vs. Chaos: Sense and Nonsense in Electronic Contexts. In Knowledge in Organizations. Butterworth-Heinemann

Kazuo Ichijo, Georg von Krogh and Ikujiro Nonaka (1998) Knowledge Enablers. In Knowing in Firms. Sage

Lars Huemer, Georg von Krogh and Johan Roos (1998) Knowledge and the concept of Trust . In Knowing in Firms, Sage

Liam Fahey& Laurence Prusak (1998) The Eleven Deadliest Sins of Knowledge Management, California Management Review, Vol.40, No.3, Spring

Linsu Kim (1998) Crisis Construction and Organizational Learning: Capability Building in Catching-up by Hyundai Motor, Organization Science/Vol.9, No.4, July-August

Marjorie A. Lyles and Charles R. Schwenk (1997), Top Management, Strategy and Organizational Knowledge Structures. In Knowledge in Organizations edited by Laurence Prusak, Butterworth- Heinemann

Mark Dodgson (1993) Organizational Learning: A Review of some Literatures. Organization Studies

Markus Venzin, Georg von Krogh and Johan Roos (1998) Future Research in Knowledge Management. In Knowing in Firms. Sage

Martha M. Feldman and James G. March (1981) Information in Organizations as Signal and Symbol. Administrative Science Quarterly, Vol 26

Mary M. Crossan, Henry W. Lane & Roderick E. White (1999) An Organizational Learning Framework: From Intuition to Institution. Academy of Management Review, Vol. 24, No.3.522-537.

Michael D. Cohen (1991) Individual Learning and Organizational Routine: Emerging Connections, Organization Science, Vol 2. No. 1.

Michael J. Earl (1997) Knowledge as Strategy: Reflections on Skandia International and Shorko Films. In Knowledge in Organizations. Butterworth-Heinemann

Michael Polanyi (1997) The Tacit Dimension. In Knowledge in Organizations Butterworth-Heinemann

Peter Gardenfors (1988) Knowledge in Flux. The MIT Press.

Rikard Larsson, Lars Bengtsson, Kristian Henriksson & Judith Sparks (1998) The Interorganizational Learning Dilemma: Collective Knowledge Development in Strategic Alliances: Organization Science/Vol.9, No.3, May-June

Scott D.N. Cook & John Seely Brown. (1999) Bridging Epistemologies: the Generative Dance Between Organizational Knowledge and Organizational Knowing: Organization Science, Vol 10, No 4

Sharon F. Matusik & Charles W.L. Hill. (1998) The Utilization of Contingent Work, Knowledge Creation, and Competitive Advantage; Academy of Management Review, /Vol.23, No. 4, 680-697.

Thomas Bertels and Charles M. Savage (1998) Tough Questions on Knowledge Management. In Knowing in Firms, Sage.

Thomas H. Davenport and Laurence Prusak (1998) Working Knowledge. Harvard Business School Press

Wesley M Cohen & Daniel A Levinthal (1990) Absorptive Capacity: A New Perspective on Learning and Innovation, Administrative Science Quarterly, 35 (1990):128-152

William H. Starbuck (1997) Learning By Knowledge-Intensive Firms. In Knowledge in Organizations. Butterworth- Heinemann

---

[i] (Kogut and Zander, 1997: 24)
[ii] (Nahapiet and Ghoshal, 1998: 247)
[iii] (Nahapiet and Ghoshal, 1998: 247)., (Choo, 1998: 111)
[iv] (Nahapiet and Ghoshal, 1998: 247), Choo, 1998: 112)
[v] (Nahapiet and Ghoshal, 1998: 247) (Choo, 1998: 111)
[vi] (Starbuck, 1997: 151), (Choo, 1998: 116)
[vii] (Cook and Brown, 1999: 383), (Cook and Brown, 1999: 388)
[viii] (Matusik, and Hill, 1998: 683), (Starbuck, 1997:149), (Choo, 1998:111)
[ix] Bosch, Volberda and Boer, 1999: 552)
[x]. (Weick and Westley, 1997: 442), (Nahapiet and Ghoshal, 1998: 253), (Walsh and Ungson, 1997: 183)
[xi] Organizati (Mueller and Dyson, 1999: 230), (Fahey and Prusak, 1998: 269),(Davenport and Prusak, 1988:36), (Fahey and Prusak, 1998: 267), (Bertels and Savage, 1998:18), (Davenport and Prusak, 1998: 71-73), (Mueller and Dyerson, 1999: 226)
[xii] (Orr 1996), (Cook and Brown, 1999: 386), (Dodgson, 1993: 382), (Inkpen and Dinur, 1998: 465), (Papows, 1999: 115), (Kim, 1999: 507), (Walsh and Ungson, 1997: 188)
[xiii] (Dodgson, 1993: 381)
[xiv] (Choo, 1998: 69), (Choo, 1998: 73)
[xv] (Crossman, Lane and White, 1998: 526)
[xvi] (Cohen and Levinthal, 1999:131)
[xvii] (Dodgson, 1998: 381)
[xviii] I (Ojha, Brown and Phillips, 1997: 99)
[xix] (Weick and Westley, 1997: 447)
[xx] (Choo, 1998:12)
[xxi] (Levinthal and March, 1993: 106)
[xxii] (Cohen and Levinthal, 1990:129)
[xxiii] (Venzin, Krogh and Roos, 1998: 42)
[xxiv] (Davenport and Prusak, 1998: 7)
[xxv] (Starbuck, 1997: 157-8)
[xxvi] (Levinthal and March, 1993: 109)
[xxvii]. (Levinthal and March, 1993: 110)
[xxviii] (Davenport and Prusak, 1998: 12)
[xxix] (Ojha, Brown and Phillips, 1997:100)
[xxx] (Dodgson, 1993:384), Choo, 1998: 69).

[xxxii] (Starbuck, 1997: 159)
[xxxiii] (Barrett, 1998: 607)
[xxxiv] (Barrett, 1998: 619), (Fahey and Prusak, 1998: 272)
[xxxv] (Moorman and Miner, 1998: 705)
[xxxvi] (Barrett, 1998:615)
[xxxvii] (Pfeffer and Sutton, 1999: 57)
[xxxviii] (Weick and Westley, 1997: 451)
[xxxix]. (Barrett, 1998: 610)
[xl] (Choo, 1998: 52)
[xli] (Choo, 1998: 49)
[xlii] (Pfeffer and Sutton, 1999:56)
[xliii] (Mueller and Dyerson, 1999: 232)
[xliv].(Levinthal and March, 1993: 107)
[xlv] (Ichijo, Krogh and Nonaka, 1998:197)
[xlvi] (Choo, 1998: 48)
[xlvii]. (Davenport and Prusak, 1998: 12)
[xlviii] **(Papows, 1999 112)**
[xlix] (Davenport and Prusak, 1998: 100)

[lii] (Venzin, Krogh and Roos, 1998: 36)

[liv] (Lyles and Schwenk, 1997: 53)
[lv] (Ojha, Brown and Phillips, 1997: 97)
[lvi] (Ojha, Brown and Phillips, 1997: 103)
[lvii]. (Choo, 1998: 6)
[lviii] (Crossman, Lane and White, 1999: 525)
[lix] (Venzin, Krogh and Roos, 1998: 32)
[lx] (Lyles and Schwenk, 1997: 61)
[lxi] (March, Sproul and Tamuz , 1991: 7)
[lxii] (Bosch, Volberda and Boer, 1999: 552)
[lxiii] (Kogut and Zander, 1997: 27)
[lxiv] (Cohen and Levinthal, 1999:135)
[lxv] (Bosch, Volberda and Boer, 1999: 556)
[lxvi] (Dodgson, 1993: 379), (Cohen and Levinthal, 1990: 148)
[lxvii] (Davenport and Prusak, 1998: 53)
[lxviii] (Davenport and Prusak, 1998: 56)
[lxix] (Mueller and Dyson, 1999: 241)
[lxx] (Kogut and Zander, 1999: 28)
[lxxi] **(Kim, 1998: 506),** (Kim, 1999: 508)
[lxxii] (March, Sproul and Tamuz, 1991: 2)
[lxxiii] (Levinthal and March, 1993: 97)
[lxxiv] (Dodgson, 1998:385)
[lxxv] (March, Sproul and Tamuz, 1991:7)
[lxxvi] (March, Sproul and Tamuz, 1991:5)
[lxxvii] (Walsh and Ungson, 1997: 182)
[lxxviii] (Feldman and March, 1981: 182)
[lxxix] (Feldman and March, 1981: 183)
[lxxx] (Choo, 1998: 222)
[lxxxi] (Barrett, 1998: 608)
[lxxxii] (Cohen and Levinthal 1990).
[lxxxiii] (Crossman, Lane and White, 1999: 523)
[lxxxiv] (Dodgson, 1998: 381)
[lxxxv] (Weick and Westley, 1997: 440), (Kogut and Zander, 1997:25), (Cohen and Levinthal, 1990:134)

[lxxxvi] (Weick and Westley, 1997: 445), (Walsh and Ungson, 1997: 193)
[lxxxvii] (Bosch, Volberda and Boer, 1999: 552-553)
[lxxxviii] (Levinthal and Match, 1993: 102)
[lxxxix] (Crossman, Lane and White, 1999: 528).
[xc] (Davenport and Prusak, 1998: 61)
[xci] (Davenport and Prusak, 1998: 98)
[xcii] (Davenport and Prusak, 1998: 86)
[xciii] (Ichijo, Krogh and Nonaka, 1998:196)
[xciv] (Walsh and Ungson, 1997: 180)
[xcv] (Nahpiet and Ghoshal, 1998: 253) , (Nonaka & Takeuchi, 1995).
[xcvi] (Pfeffer and Sutton, 1999: 56)
[xcvii] (Davenport and Prusak, 1998: 99)
[xcviii] (Davenport and Prusak, 1998: 45)
[xcix] (Davenport and Prusak, 1998: 40)
[c] (Davenport and Prusak, 1998: 99)
[ci] (Davenport and Prusak, 1998: 91)
[cii] (Barrett, 1998: 616)
[ciii] (Brown and Duguid, 1991: 48), (Papows, 1999: 118)
[civ] Nahapeit and Ghoshal, 1998: 254), (Kogut and Zander, 1997: 18)
[cv] (Starbuck, 1997:164), (Kogut and Zander, 1997: 25)
[cvi] (Mueller and Dyerson, 1999: 230)
[cvii] (Davenport and Prusak, 1998: 39)
[cviii] (Papows, 1999: 112).

[cix] (Matusik and Hill, 1998: 681)
[cx] (Matusik and Hill: 687)
[cxi] (Matusik and Hill: 689)
[cxii] (Kogut and Zander, 1997: 32)
[cxiii]. (Larsson et al, 1998: 289)
[cxiv] (Inkpen and Dinur, 1998: 465)
[cxv].(Barrett, 1998: 617), (Davenport and Prusak, 1998:99)
[cxvi] Papows, 1999: page 111, (Lyles and Shwenk, 1997:55)
[cxvii] (Pfeffer and Sutton, 1999: 210)
[cxviii] (Papows, 1999: 109)
[cxix] (Choo, 1998:17)
[cxx] (Papows, 1999: 121)
[cxxi] (Ojha, Brown, and Phillips, 1997: 95)
[cxxii] (Levinthal and March, 1993: 98)
[cxxiii] (Bosch, Volberda and Boer, 555)
[cxxiv] (Dodgson, 1993:389), (Levinthal and March, 1993:107),(Starbuck, 1997:165),(Barrett, 1998: 609), (Barrett, 1998: 611), (Brown and Duguid, 1991: 49), (Choo, 1998: 13)
[cxxv] (Davenport and Pusak, 1998: 58)
[cxxvi] (Ichijo. Krogh and Nonaka, 1998:196)
[cxxvii] (Lyles and Schwenk, 1993: 63)
[cxxviii] (Fahey and Prusak, 1998: 268), (Dodgson, 1993:382), (Walsh and Ungson, 1997:189)
[cxxix] (Lyles and Schwenk, 1993: 60), (Bosch, Volberda and Boer, 1999: 557)
[cxxx] (Levinthal and March, 1993:108)
[cxxxi] (Levinthal and March, 1993: 108)
[cxxxii] (Pfeffer and Sutton, 1999: 91)
[cxxxiii] (Davenport and Prusak, 1998: 67)
[cxxxiv] (Davenport and Prusak, 1998:38)
[cxxxv] (Davenport and Prusak, 1998: 93)
[cxxxvi] (Huemer, Krogh and Roos, 1998: 140), (Barrett, 1998: 620), (Bertels and Savage, 1998:16)
[cxxxvii] (Davenport and Prusak, 1998: 36)
[cxxxviii] (Nahapiet and Ghoshal, 1998: 254), (Krogh, 1998: 136)
[cxxxix] (Davenport and Prusak, 1998: 99),

[cxli] (Pfeffer and Sutton, 1999: 133)
[cxlii] (Ichijo, Krogh and Nonaka, 1998: 196)
[cxliii] (Barrett, 1998: 615)
[cxliv] (Ichijo, Krogh, and Nonaka, 1998: 201)

[cxlv] *(Barrett, 1998: 618)*
[cxlvi] (Pfeffer and Sutton, 1999: 19)
[cxlvii] (Pfeffer and Sutton, 1999: 21)
[cxlviii] (Davenport and Prusak, 1998: 81)
[cxlix] (Cohen and Levinthal, 1990:132), (Dodgson, 1993:384)
[cl] (Lyles and Schwenk, 1997: 55)
[cli] (Pfeffer and Sutton: 1999: 27)
[clii] (Dodson, 1993: 377)
[cliii] (Papows, 1999: 117

[clv] (Weick, 1997: 218