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# Why organisations should consider how they conceive knowledge

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## Abstract

*The paper considers the proposition that recognising the mental model that is held of knowledge by the individuals of an organisation may help us to understand whether or not knowledge building potential can be effectively developed. It is argued that the potential for effective knowledge utilisation will be dependent upon the epistemological perspective held by organisational members. Processual and structural perspectives of knowledge are described and utilised here to discuss two identifiable mental models that exist in organisations. The notion that a perspective of knowledge will affect its management is not new, but the idea that organisations need to actively identify the epistemological foundations they are working with and may need to change them, is.*

## Keywords

*knowledge management*

## Synopsis

*This paper outlines why an organisation needs to recognise and consider ways to change the perspective that individuals within it hold of knowledge. It argues that this perspective will impact upon the potential for the effective creation, utilisation, and capture of knowledge.*

## Introduction

As long ago as 1891, Marshall wrote that ‘capital consists in a great part of knowledge and organisation. Knowledge is our most powerful engine of production’ (in Nonaka and Takeuchi, 1995, p.33). Key texts about knowledge appeared in the 1960s and 70s; Machlup (1962), Drucker (1964) and Bell (1973) were particularly influential. Now it is accepted that organisations whose people have superior knowledge and who are able to harness that knowledge, will develop a fundamental source of competitive advantage (De Geus, 1997; Teece, Pisano and Shuen, 1997). In recent years, organisations have placed an extremely high value on knowledge: ‘knowledge has become the most important factor in economic life. It is the chief ingredient of what we buy and sell, the raw material with which we work. Intellectual capital ... has become the one indispensable asset of corporations’ (Stewart, 1997 in Little, Quintas and Ray, 2002, p.2).

Whilst there are many authors who write on the generation, dissemination, management and meaning of knowledge, we find that the method by which organisations enable knowledge creation, dissemination and management in each member, as an individually located process, is not well described. One aspect that may be affecting the success or failure of knowledge capacity building is the way that knowledge is actually conceived by the organisation and the individuals within it. According to Blackman ‘when considering that there must be new knowledge for change to take place, it should be clear that the organisation’s choice of perspective will have a serious effect upon the potential for success’ (2005, p.251). This paper will initially consider the nature of mental models and why the conception of

knowledge might affect the way that they impact upon organisational outcomes. The importance of the epistemological foundation of knowledge within the organisation will then be discussed. Qualitative survey data will be used to demonstrate that, even in organisations which are actively focused upon knowledge creation, there is a predominant mental model of knowledge as a structural commodity. This view leads to a particular way of setting up systems and processes that may not maximise knowledge building potential. The paper concludes by identifying potential alternatives and recommendations for further research.

### Mental models and knowledge creation

Mental models are a means by which organisations and individuals create and share meaning, thereby enabling a common understanding and the development of knowledge (Hill and Levenhagen, 1995; Flood, 1999; Pruzan, 2001; Nadkarni, 2003). They are cited as providing the link between collectives and individuals as they proffer a context for the interpretation and understanding of new information. It is argued that all new knowledge develops from the basis of the mental models that exist (Kim, 1993; Dixon, 1997; Swaab et al., 2002). Shared mental models provide frameworks of value and belief systems which act as the basis for analysis of any new ideas, concepts, policies and cultural developments being considered by organisational groups (Caldwell et al., 2002; Swaab et al., 2002). It is argued that shared mental models have an advantage as they provide both an element of predictability which facilitates communication (Wetzel and Buch, 2000; Dickson et al., 2001) and a link between collectives and individuals, thus acting as a context for the interpretation and understanding of new information (Doyle Conner et al., 1994; Dixon, 1997). Such shared understandings support learning and act as a framework for all new knowledge development. Shared mental models will, therefore, be of great importance as they provide the structure which will affect the scope, type and acceptance of information that can be assimilated and interpreted by individuals, thereby acting as the delimiters of new knowledge within and between groups. This is illustrated in Figure 1 below.

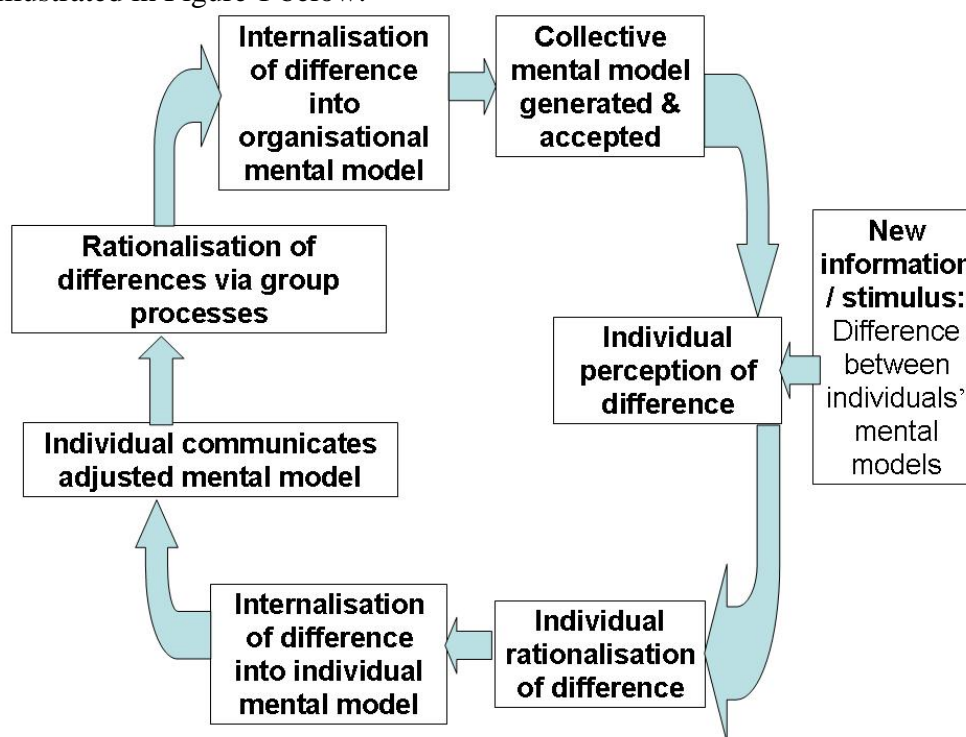


Figure 1: Organisational mental model development (Adapted from Lee-Kelley and Blackman, 2005)

For any new learning to occur, there needs to be a stimulus, generating a perception of difference between mental models (Klimecki and Lasseben, 1999). This process is demonstrated in Figure 1 and it can be seen that new information will only be addressed in any meaningful way if a difference between the currently held mental model and the newly perceived apparent reality occurs. Once an individual perceives a difference, he/she will rationalise it and, if accepted, this new stimulus will be internalised and the individual mental model will be adjusted, reflecting the new information and developing it into knowledge. At this stage the individual may share, through processes of group and/or organisational communication, his/her new understanding, leading to a construction of new knowledge. As a consequence of the communication, some of the differences can be rationalised and assimilated into the collective mental model. This adjusted organisational mental model now acts as the framework for mutual reference and new knowledge development.

What is of significance in this paper is that Figure 1 assumes an open process of information acquisition and knowledge development, whereby all new differences are both recognised and accepted by organisational members. However, this is very unlikely, since either the individuals or a group may reject certain ideas. This view of a mental model as a framework for new knowledge means that it could, potentially, act as a closing mechanism, dependent upon the moderating factors within the system. We argue that the view held of knowledge itself can become a moderating factor, as it will underpin expectations about the emergence of knowledge and, therefore, influence the processes put in place to create it. Deliberate knowledge creation is dependent upon a difference being recognised; this may depend upon what type of difference is being sought from within the organisation – if the type of knowledge emerging is not that sought by those within it, no difference may be perceived. If the types of knowledge are distinctively different, the processes chosen will reflect the knowledge expected and ignore alternatives that are present.

### **Perspectives on knowledge**

The recent growth in interest about knowledge has led to many authors considering the concept of knowledge in some depth. Most agree that a clear definition is difficult (Malhotra, 1997; McNery and LeFevre, 2000; Earl, 2001). The plethora of definitions derive from the different perspectives which underpin different ways of viewing knowledge and lead to different ways of attempting to harness it. Earl (2001) argues that there are seven different ‘schools’ of knowledge management within the literature and that, in his view the importance of this taxonomy is to demonstrate the variety of ways that organisations are attempting to develop knowledge creation and manage the use of it. Blackman and Henderson build upon Earl’s taxonomy, arguing that its other use is to enable the exploration of ‘the nature of knowledge created, held and shared within each of his schools’ (2005a, p.152). They argue that what Earl (2001) demonstrates is that each school defines and treats knowledge differently and that consequently, there are epistemological implications in the way that a knowledge management system is configured. Blackman and Henderson identify four dimensions of an organisation’s capability to recognise and transfer knowledge:

- (a) Ability to capture and cherish what is known – referred to as knowledge
- (b) Ability to develop organic relationships – referred to as community
- (c) Effective in the context of knowledge about organisational processes
- (d) Effective in the context of solutions or problem-solving routines

(Blackman and Henderson 2005a, p.155).

They put forward the argument that these elements are needed if knowledge is going to have the strong epistemological foundations that will make it useful for the organisation. This reflects the view that:

Knowledge is constituted by the ways in which people categorize, code, process and impute meaning to their experiences ... Knowledge emerges out of a complex process involving social, situational, cultural and institutional factors. The process takes place on the basis of existing conceptual frameworks and procedures and is affected by various social contingencies, such as skills, orientations, experiences, interests, resources and patterns of social interaction characteristic of the particular group or interacting set of individuals, as well as those of the wider audience (Arce and Long, 1992, p.214).

In other words, it is the constant iteration of ideas and meanings that makes knowledge useful. Such dynamic relationships will need to be supported by any knowledge management system being developed.

Some would argue that although there are many definitions of knowledge, they can be divided into two fundamental perspectives regarding the nature of knowledge: structural and processual.

**Table 1: The structural and processual perspectives compared. (Source: adapted from Newell et al. 2002)**

<b>Structural</b>	<b>Processual</b>
Knowledge is a discrete cognitive entity that people and organisations possess	Knowledge is rooted in practice, action and social relationships
Knowledge is objective and static	Knowledge is dynamic – the process of knowing is as important as knowledge
Knowledge exists at the individual and collective level	Knowledge exists through the interplay between the individual and the collective level
Different types of knowledge dominate in particular types of organisation	Organisations will be characterised by different types of knowledge and practices of knowing
Knowledge is created via specific individual and social processes	Knowing occurs via social processes

Many knowledge systems are designed assuming a structural perspective, where knowledge is a commodity. For those who see knowledge as a form of commodity it becomes something that can be tracked down, acquired, assessed, codified and distributed across the organisation, becoming both a tangible and an intangible asset that can have unique competitive value. Such knowledge will enable the predictable, orderly management of the organisation of processes and people. In this perspective, the idea of knowledge is lodged in the view of the world as an objective external entity and acknowledged as a body of 'facts', i.e. truths that explain the world. Since knowledge can be acquired in a logical fashion by accurate information-processing, which makes possible the intelligent decision making that is necessary to keep organisations in equilibrium, many assume that knowledge management is about collecting such 'truths' and using them to make better decisions.

The evidence of such a perspective on knowledge management can be seen from the large number of companies wishing to collect and store knowledge in central databases, intranets and networks, in order to permit greater access by all; in Earl's taxonomy, the Systems and Cartographic Schools are predominantly based on such ideas of storage and retrieval. The

kinds of things that could be stored might include: solutions to problems found previously; where experts on certain topics are located; what the organisational processes are; knowledge about the organisation itself, including figures and trends. Such collections would only work effectively if it were actually possible to amass and access knowledge in such a way.

Blackman and Henderson (2005a) identify that if only the structural ideas are followed, the knowledge collected within the Systems and Cartographic Schools cannot enable effective organisational development. They argue that this is because there needs to be a processual aspect to the knowledge which reflects the current focus upon social learning and the construction of knowledge (Elkjaer, 2004; Easterby-Smith, 1997; Dodgeson, 1993; Sorensen, Rivkin, and Fleming, 2006). What is of interest for this paper is that all four dimensions of an organisation's capability to recognise and transfer knowledge can be seen to have strong links with the processual perspective of knowledge.

As the focus upon the 'soft' side of knowledge management increases (Sorenson, Rivken and Fleming, 2006; Bartol and Srivastava, 2002), the notion of knowledge as a commodity is considered to be potentially why many knowledge management initiatives are unsuccessful (Smith, Blackman and Good, 2003; Newell et al., 2002). Knowing is increasingly considered to be about relational, emotional and social as well as psychological processes. Nonaka and Konno (1998) describe socially based knowledge generation and note that participation in a social situation defines what is knowledge and what is information. Knowledge is described as useful only at a specific time and place if it is to be of value. Knowledge that is separated from its situation reverts to information. Once the information is communicated to others and becomes useful through interpretation, it then becomes knowledge again. It can be seen that this fits clearly with Blackman and Henderson's (2005a) dimension of knowledge needing to be effective within its context.

It is argued that in organisations, cognition occurs in a social context or through a social process and therefore meaning is socially created (Vygotsky, 1962; Daft and Weick, 1984; Crossan, Lane and Hildebrand, 1993). This type of learning, and the behaviours that accompany it, is described by a number of authors as situated cognition or situated learning (Brown, Collins and Duguid, 1989; Henning, 1998; Nonaka and Konno, 1998; Gieselman, Stark and Farrugia, 2000). Learning behaviours are described by these authors as formally and informally communicative, where new members of teams serve a type of cognitive apprenticeship. Here also, dialogue and storytelling play a crucial role in the communication of learning, knowledge and information as well as in the generation of meaning specific to the context. Storytelling, or narrative as it is also called, is a way of describing how work is actually done, as opposed to how it is said to be done (Brown and Duguid, 1991).

Knowledge is an outcome of the learning process which is powerfully shaped by the social context and human relationships, so that the notion of knowledge becomes that of a process, ultimately shaped by our relations with others, changing as our understanding and interpretation of the world around us changes. If knowledge is socially constructed and its development, storage and acquisition is dependent upon the interactions between individuals, then it becomes clear that its effectiveness will depend upon the relationships between the individuals within the organisation, as well as the relationship between the individuals and their organisations.

The management of knowledge includes knowledge generation, capture, exploitation and dissemination. Managing and cultivating knowledge is described by Brown and Duguid (1998) as a method of building, changing, displaying and evidencing organisational

competence. Knowledge is described as information that has been contextually processed and enriched via analysis and interpretation; information as data that has been organised and interpreted (Duffy 2000). This view is supported by Davenport, De Long and Beers (1998), who describe knowledge as a contextual combination of experience, interpretation and reflection. Brown and Duguid (1998) also describe knowledge as a human property and note the difficulties and errors that can follow an attempt to equate information with knowledge, leading to the assumption that information technology can overcome knowledge deficiencies in organisations.

According to Cook and Brown (1999) and Spender (1996) the processes of knowing are as important as, if not more important than, the actual knowledge itself. In this case the attitudes and proclivities of the employees will affect knowledge outcomes enormously. This is because information and ideas need to be transferred and moved around the organisation in order for new knowledge to be created. Unless individuals feel safe and predisposed to share their knowledge and ideas, current understandings will not be shared and new ideas will not be created.

### **The potential impact of knowledge conception as a mental model**

The perceptions, status, nature and attitudes of those involved will affect outcome behaviours (Che-Fu, Hazard and Fenggang, 1994; McAdam and Reid, 2000), including those of knowledge creation, sharing and management (Blackman, 2005). Consequently it becomes clear that the ways that the meaning and nature of knowledge develop as an organisational mental model (Bassellier, Reich and Benbasat, 2001) affects how knowledge management will be developed. It was indicated earlier that a shared mental model will act as the framework that shapes the way individuals within an organisation approach the development of new processes or systems. Potentially then, the more commodified the view, the more formalised the processes of knowledge generation and distribution and, given the influence of the processual understandings of knowledge in the four dimensions described above, the less that knowledge will be created and shared.

This research is designed to establish whether, if an organisation's mental model of knowledge is at odds with its espoused learning and knowledge outcomes, this would act as a barrier to knowledge development. The argument is postulated that organisations might assume that, because they are developing processes specifically designed to encourage learning and knowledge, they will recognise the trigger required to develop a processual organisational mental model. We will argue that this may, in fact, be problematic.

### **Methodology**

We have argued that organisational knowledge development will be predicated upon the way that those within the organisation consider it to be created. Consequently, data was needed to demonstrate how the respondents viewed knowledge, in a way that would enable the analysis to split the perceptions into processual and structural perspectives. An open-ended questionnaire was designed, to explore differences in perceptions and understanding of knowledge and information in organisations. The questionnaire was developed and circulated in four companies.

The profiles of the four research companies were that there were two companies that considered themselves to be learning organisations and two that considered themselves not to have adopted learning organisation strategies. All four were Public Limited Companies of a similar size and all were based on single sites. The sample was seen to be of two pairs of

companies. One pair was production based, one a learning organisation (Company 4) and one not (Company 1). The other pair was service based, again one a learning organisation (Company 2) and one not (Company 3). All four are considered to be successful, measured in terms of profit and achieving company goals. The learning organisations were self-declared and their claims were based upon the models of Senge (Senge, 1990; Senge, Kleiner, Roberts, Ross, Roth and Smith, 1999) and Pedler, Burgoyne, and Boydell (1997), where new processes, systems and cultures were developed in order to enable and sustain new knowledge development.

The reason for using learning and non-learning organisations was to ascertain whether there were differences in organisations where there was a positive effort to develop new knowledge and where it was a focus for strategic development, as opposed to where it was not. We also sought to establish whether there were actually different knowledge outcomes between the different types of organisation. If there was little difference between them this might potentially be explained in terms of the mental models held about the nature of knowledge itself as opposed to the mental models about knowledge creation processes.

It was established that for the samples to be seen as a credible basis for the research it would be necessary to obtain at least 20 short answer question forms for each company. This would capture over 20% of the staff. Eighty-two questionnaires were completed, giving a return of between 20 and 34 per cent for each company. There were equal returns for learning and non-learning organisations.

The questionnaire asked the recipient to define certain words and then use those words in sentences. The words included: knowledge, learning, data, information, culture and organisation. The data was assessed against both the structural and processual perspectives. This was done by considering if there was evidence of a commodified or more static view of knowledge, as exemplified by quotes such as: *'the information/facts that an individual holds in his/her head and can recall at will'* or *'to hold information, to be able to perform a task without question'* and *'the retention of information be it fact or idea'*; or whether the views were more processual in their nature as identified by quotes such as: *'a consolidation of learnt information and skills with deeper understanding coming from experience'* or *'knowing how to apply what you have learnt to whatever area of work you have committed yourself to, and making it better in a way to suit you and your working environment'*. An analysis of the responses illustrated the existence of confusion between knowledge and information.

## Findings and discussion

The majority of the responses from both learning and non-learning organisations indicated a structural perception of knowledge (see Table 2). Even where the response was coded as processual, very few respondents discussed issues of developing knowledge through social interactions – although there was some recognition that there was a development of knowledge through some interactive process; at no stage was the notion of other people discussed. Examples include: *'knowledge is an individual's mental acumen on a particular issue acquired through learning or experience'*; or *'knowledge combined with experience leading to understanding'*. There was more discussion of understanding in these quotes, but little about dynamism.

**Table 2: Structural or processual responses as analysed by organisational type**

	<b>Structural</b>	<b>Processual</b>	<b>Total</b>
<b>Learning Organisation</b>	34 (37%)	10 (11%)	44 (48%)
<b>Non-Learning Organisation</b>	44 (48%)	4 (4%)	48 (52%)
Total	78 (85%)	14 (15%)	92 (100%)

The decision to code as processual came from an implication of knowledge being ever changing and so where processes or interactions were intimated, processual codes were allocated. However, no answers reflected the processual notion of interplay between ideas and agents and an argument could be made that the percentage of structural responses is actually higher than recorded above.

What can be seen here is that there was relatively little difference between conceptions in the two types of organisation. If organisations that had made real efforts to change their processes and systems in order to develop knowledge (Blackman and Henderson, 2005b) had failed to make a difference, the reasons for such lack of difference needed to be considered. We posit that it is the actual perspective held, largely structural in each case, that causes some of the lack of difference. We also claim that the structural perspective leads to the creation of a certain type of knowledge. By focusing upon knowledge from a structuralist point of view, the differences that may have emerged from the implementation of new structures, cultures and processes (Senge, 1990; Blackman and Henderson, 2005b) in support of a processual view are undermined in the organisation.

The type of knowledge encouraged by a structural perspective is that which is based upon information retention. Of the 92 coded entries, 64% responded using information as a way of defining knowledge (see table 3). Some used it as a basis which would be built on: *'information gained from many inputs and used to deliver outputs'*, but the majority were equating the two terms. Examples of knowledge definitions in informational terms include:

- *the information/facts that a person holds in his/her head and can recall at will*
- *retained information*
- *information that you have*
- *ability to retain information*
- *information retained as a consequence of learning.*

This focus upon information as knowledge has been highlighted in previous literature (Blackman, 2001; Kim, 1993). It is in itself a concern, as it leads to knowledge management strategies being more about acquiring data and information, than of innovation and new ideas. What is probably more important for this paper, however, is the apparent difference between those with a processual view and those with a structural perspective.

**Table 3: How knowledge is described: in terms of information or not**

	<b>Processual/ Information/ Data as a basis of knowledge definition</b>	<b>Processual/ Other form of definition of knowledge</b>	<b>Structural / Information/ Data as a basis of knowledge definition</b>	<b>Structural/ Other form of definition of knowledge</b>	<b>Total</b>
<b>LO</b>	2 (2%)	7 (8%)	25 (27%)	9 (10%)	43 (47%)
<b>Non-LO</b>	0 (0%)	4 (4%)	32 (35%)	13 (14%)	49 (53%)
	2 (2%)	11 (12%)	57 (62%)	22 (24%)	92 (100%)

There can be no definitive findings at this stage because of the numbers of responses. However, of the 14% of responses that came from the processual perspective, 12% were not based on an information perspective. This gives a non-information response of 86% for processual perspective individuals. This is compared to a 28% non-information response for the structural perspective. It appears, therefore, that there is a much higher predisposition towards viewing knowledge as some form of information if there is a predominantly structural perspective. The problems with an information view of knowledge are that instead of creating and supporting systems which encourage interactivity and connections (Davenport and Prusak, 1998), there is a focus upon sharing more information in the belief that this will lead to an increase in knowledge development. All this will do is enable more information to be shared, it will not enable actual change or transformation. Kim argued that ‘true knowledge is more than information; it includes the meaning or interpretation of the information, and a lot of intangibles such as the tacit knowledge of experienced people that is not well articulated but often determines the collective organisational competence’ (1993, p.75) and it is this need for more than pure information sharing that leads us to call for further research in this area.

### **Implications**

We posit, therefore, that the perspective of knowledge an organisation holds matters. If there is a mismatch between the desired results of a knowledge management system and the actual outcomes, it is possible that this is because the processes in place do not enable complex knowledge development. Rather they assume a commodified, fairly simplistic set of approaches that will enable greater access to information by all, but with no guarantee of promoting novel ideas.

What can be seen from the findings is that the development of learning organisation processes alone is not enough to change the organisational mental model. If an organisation wishes to develop a more appropriate mental model for the knowledge management processes it wishes to develop, there will need to be consideration of the triggers that enable new learning. We argue that considering Blackman and Henderson’s (2005a) dimensions of learning might be a useful place to start.

#### *Ability to capture and cherish what is known – referred to as knowledge*

Generally, this is an area which receives attention in organisations, and in very commodified ways. Those involved with developing the new system for knowledge facilitation will need to actively discuss what they mean by knowledge, how it is recognised and how to capture all aspects of the knowledge they wish to cherish. The idea that organisations need to actively discuss what they mean by knowledge has previously been advocated by Fahey and Prusak

(1998) and we would argue that this is another reason to ensure that such a conversation takes place. Differences between perspectives can be flagged for discussion in order to make them a trigger for mental model development.

*Ability to develop organic relationships – referred to as community*

How knowledge is created and shared needs to be discussed and how interaction is to occur needs to be actively managed. Will it be enough to provide space for ideas to occur or should active examples be created of ways to develop the new processes needed? As an example, in one of the case companies a new learning centre had been created. However, the current organisational mental model was that if someone was not at their desk they were not working. New stories and examples of how the learning centre would add value and create knowledge had to be developed and pioneered by several high profile senior teams before the learning centre was accepted as a credible place to be. The existence of the learning centre and the publicity about it were not effective as triggers because the espoused theory and the theory-in-use (Argyris and Schon, 1996) were in conflict. Thus, not only must space, time and opportunity be provided, so must ways of incorporating them into organisational norms.

*Effective in the context of knowledge about organisational processes*

This dimension and the next may be the most critical in terms of shifting the current arrangements made for knowledge management systems in the study organisation. In order to determine effectiveness, there must be clear and regular discussion about what knowledge is being created, where it is being created and how it is being applied and used. Recognising that context impacts on knowledge use and incidental learning (Kennedy, 2006), we argue that there must be knowledge management routines that identify and discuss the specific aspects of the context that are affecting or being affected by the new knowledge being created.

*Effective in the context of solutions or problem-solving routines*

Where knowledge is being adopted the possibility of its extrapolation across other contexts needs to be realistically assessed. Blackman and Henderson (2005a) demonstrate that the effectiveness of the Systems School (where, for example, a problem-solving routine is stored in a database for access later) is dependent upon the accuracy of the fix itself and how it is assessed before being stored. Thus, the new knowledge needs to be (a) recognised and (b) assessed for its real usefulness before being stored, shared, built upon etc. This means that a learning trigger needs to be the presence of on-going assessment of the new ideas being created.

These are just a few of the ideas that a consideration of the four dimensions triggers about knowledge development. However, they hinge on the consideration of the way that mental models grow and change in organisations. Firstly, the current mental model of knowledge must be identified, secondly, the desired mental model needs to be determined and, thirdly, if they are different, the primary discussions must consider how to develop effective learning triggers.

## **Conclusions**

This research suggested that organisational mental models of knowledge affect the ways that knowledge management processes and systems are implemented. It also found that, where a structural perspective dominates, there will be little concentration upon sustaining systems that will enable more active knowledge creation.

We recommend that further research be undertaken which will enable the following: a much wider study to understand the prevalence of structural and processual viewpoints; a greater understanding of the links between perspectives and the propensity to confuse information and knowledge; and the impact of mental models on the relative success of knowledge initiatives in organisations.

The argument is made that, understanding the currently held mental models of knowledge held within an organisation enables a company to recognise why there may be limitations to the way knowledge is being shared and transferred and, consequently, make changes to their processes. These changes will enable a new shared, organisational mental model to be developed which will support creative knowledge development.

## References

- Arce, A. and Long, N. (1992). 'The dynamics of knowledge: interfaces between bureaucrats and peasants'. In Arce, A. and Long, N. (eds) *Battlefields of Knowledge: the Interlocking of Theory and Practice in Social Research and Development*. London: Routledge, pp.211-247.
- Argyris, C. and Schon, D.A. (1996). *Organizational Learning II: Theory, Method and Practice*. Massachusetts, USA: Addison-Wesley.
- Bartol, K.M. and Srivastava, A. (2002). 'Encouraging knowledge sharing: the role of organisational reward systems'. *Journal of Leadership and Organizational Studies*, 9 (1): 64-76.
- Bassellier, G., Reich, B. and Benbasat, I. (2001). '[Information Technology Competence of Business Managers: A Definition and Research Model](#)'. *Journal of Management Information Systems*, 17 (4): 159-182.
- Bell, D. (1973). *The coming of post-industrial society*. New York, Heinemann.
- Blackman, D.A. (2001). 'Does a Learning Organisation Facilitate Knowledge Acquisition and Transfer?' *Electronic Journal of Radical Organization Theory*, February, 7, 2, .
- Blackman, D.A. (2005). 'Knowledge creation and the learning organisation'. In Murray, P., Poole, D. and Jones, G. (2005). *Contemporary Issues in Management and Organisational Behaviour*. Sydney: Thomson.
- Blackman, D.A and Henderson, S. (2005a). 'Know ways in knowledge management'. *The Learning Organization*, 12 (2): 152-168.
- Blackman, D.A. and Henderson, S. (2005b). 'Why learning organisations do not transform'. *The Learning Organization: An International Journal* 12 (1): 42-56.
- Brown, J.S., Collins, A. and Duguid, P. (1989). 'Situated Cognition and the Culture of Learning'. *Educational Researcher*, 18 (1): 32-42.
- Brown, J.S. and Duguid, P. (1991). 'Organizational learning and communities of practice: Toward a unified view of working, learning, and innovation'. *Organization Science*, 2 (1): 40-57.
- Brown, J.S. and Duguid, P. (1998). 'Organizing knowledge'. *California Management Review*, 40 (3): 90-111.
- Caldwell, C., Bischoff, S.J. and Karri, R. (2002). 'The four umpires: A paradigm for ethical leadership'. *Journal of Business Ethics*, March, 36 (1/2): 153-163.
- Che-Fu, L, Hazard, B. and Fenggang Y. (1994). *Journal of Social Psychology*, 134 (4): 511-527.
- Cook, S. and Brown, J. (1999). 'Bridging epistemologies: the generative dance between organisational knowledge and organizational learning'. *Organization Science*, 2: 40-57.

- Crossan, M., Lane, H.W. and Hildebrand, T. (1993). 'Organisation Learning: Theory to Practice'. In Hendry, J. and Johnson, G., (eds) *Strategic thinking: Leadership and the Management of Change*, John Wiley and Sons, pp. 229-265.
- Daft, R. and Weick, K.E. (1984). 'Toward a model of Organizations as Interpretation systems'. *Academy of Management Review*, 9 (2): 284-295.
- Davenport, T.H., De Long, D.W. and Beers, M.C. (1998). 'Successful knowledge management projects'. *Sloan Management Review*, 39(2): 43-57.
- Davenport, T.H. and Prusak, L. (1998). *Working Knowledge: How Organizations Manage What They Know*, Boston, Massachusetts: Harvard Business School Press.
- De Geus, A. (1997). 'The Living Company'. *Harvard Business Review* March/April 75 (2): 51-59.
- Dickson, P.R., Farris, P.W. and Verbeke, J.M.I. (2001). 'Dynamic Strategic Thinking'. *Academy of Marketing Science Journal*, Summer, 29 (3):216-237.
- Dixon, N.M. (1997). 'The Hallways of Learning'. *Organizational Dynamics*, Spring, 25 (4): 23-35.
- Dodgson, M. (1993). 'Organizational Learning: a review of some literatures'. *Organization Studies*, Summer, 14 (3): 375-394.
- Doyle Conner, P., Kinicki, A.J. and Keats, B.W. (1994). 'Integrating organizational and individual information processing perspectives on choice'. *Organizational Science*, 5 (3): 294-308.
- Drucker, P. (1964). *Managing For Results: a restatement of the relation of reflective thinking to the educative process*. London: Heinemann.
- Duffy, J. (2000). 'Knowledge management: What every information professional should know'. *Information Management Journal*, 34 (3): 10-16.
- Earl, M.J. (2001). 'Knowledge management strategies: Toward a taxonomy'. *Journal of Management Information Systems*, 18 (1): 215-33.
- Easterby-Smith, M. (1997). 'Disciplines of Organizational Learning: Contributions and Critiques'. *Human Relations*, 50 (9): 1085-1113.
- Elkjaer, B. (2004), 'Organizational Learning: The 'Third Way'', *Management Learning*, 35 (4): 419-434.
- Fahey, L. and Prusak, L. (1998) 'The eleven deadliest sins of knowledge management.' *California Management Review*, 40, (3): 265-276
- Flood, R.L. (1999). *Rethinking the Fifth Discipline*. London: Routledge.
- Gieselmann, N.S., Stark, N. and Farrugia, M.J. (2000). 'Implications of the situated learning model for teaching and learning nursing research'. *The Journal of Continuing Education in Nursing*, 31 (6): 263-268.
- Henning, P.J. (1998). 'Ways of learning: An ethnographic study of the work and situated learning of a group of refrigeration service technicians'. *Journal of Contemporary Ethnography*, 27 (1): 85-136.
- Hill, R. and Levenhagen, M. (1995). 'Metaphors and mental models: sensemaking and sensegiving in innovative and entrepreneurial activities'. *Journal of Management*, November-December, 21 (6): 1057-1075.
- Kennedy, M. (2006) 'Learning and knowing in organizations: Implications for practice from an exploration of public sector experience'. *ActKM Conference*, ACT, 25-26 October, 2006.
- Kim, D.H., (1993). 'The Link between Individual and Organizational Learning'. *Sloan Management Review*, Fall, 37-49.
- Klimecki, R. and Lassleben, H., (1999). 'What Causes Organizations to Learn?'. *3rd International Conference of Organizational Learning*, June, Lancaster University, (accessed 20/11/2007).

- Lee-Kelley, L. and Blackman, D. (2005). *'International Journal of Innovation and Learning, 2 (1): 11-25.*
- Little, S., Quintas, P. et Ray, T. (2002). *Managing Knowledge: an essential reader*. London, Sage.
- Machlup, F. (1962). *The production and distribution of knowledge in the United States*. Princetown, Princetown University Press.
- Malhotra, Y. (1997). 'Knowledge Management, Knowledge Organizations & Knowledge Workers: A View from the Front Lines'. *BRINT*.
- McAdam, R. and Reid, R. (2000). 'A comparison of public and private sector perceptions and use of knowledge management'. *Journal of European Industrial Training, 24 (6): 317-329.*
- McInery, C. and D. LeFevere (2000). 'Knowledge Managers: History and Challenges'. In Prichard, C. Hull, R. Chumer M. and Willmott, H., *Managing Knowledge: critical investigations of work and learning*'. New York, NY., Macmillan Business: 1-19.
- Nadkarni, S. (2003). 'Academy of Management Learning & Education, 2 (4): 335-351.
- Newell, S., Robertson, M., Scarborough, H. and Swan, J. (2002). *Managing Knowledge Work*. Basingstoke: Palgrave.
- Nonaka, I. and Konno, N. (1998). 'The concept of 'ba': Building a foundation for knowledge creation'. *California Management Review, 40 (3): 40-54.*
- Nonaka, S. and Takeuchi, N. (1995). *The Knowledge Creating Company*. Oxford, United Kingdom: Oxford University Press.
- Pedler, M., Burgoyne, J. and Boydell, T. (1997). *The Learning Company: a strategy for sustainable development*. 2<sup>nd</sup> edition. London: McGraw-Hill.
- Pruzan, P., (2001). 'The question of organizational consciousness: Can organizations have values, virtues and visions?' *Journal of Business Ethics, 29 (3): 271-284.*
- Senge P. (1990). *The Fifth Discipline*. New York, USA: Doubleday Dell.
- Senge, P., Kleiner, A., Roberts, C., Ross, R., Roth, G. and Smith, B. (1999). *The Dance of Change: the challenges of sustaining momentum in learning organisations*. London: Nicholas Brealey Publishing.
- Smith, G., Blackman D. and Good, B. (2003). 'Knowledge sharing and organisational learning facilitation through social architecture modelling'. *Journal of Knowledge Management Practice, 4: .*
- Sorensen, O., Rivkin, J.W. and Fleming, L. (2006). 'Complexity, networks and knowledge flow'. *Research Policy, 35: 994-1017.*
- Spender, J-C. (1996). 'Organisational knowledge, learning and memory: three concepts in search of a theory'. *Journal of Organisational Change and Management, 9 (1): 63-78.*
- Swaab, R.I., Postems, T., Neijens, P., Kiers, M.H. and Dumay, A.C.M. (2002). 'Multiparty Negotiation Support: The Role of Visualization's Influence on the Development of Shared Mental Models'. *Journal of Management Information Systems, Summer, 19 (1): 129-150.*
- Teece, D., G. Pisano and Shuen, A. (1997). 'Dynamic capabilities and strategic management. *Strategic Management Journal, 18(7): 509-533.*
- Vygotsky, L. (1962). *Thought and language*. Cambridge, Massachusettes, The M.I.T. Press.
- Wetzel, D.K. and Buch, K. (2000). 'Using a structural model to diagnose organizations and develop congruent interventions'. *Organization Development Journal, Winter, 18 (4) 9-19.*