Knowledge Enabling Strategies

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Abstract
Conceptions of 'knowledge management' abound. Although, they differ considerably and in some cases fundamentally –e.g., over the issue of knowledge vs. information- they all share the belief that management of knowledge is possible. Gelepithis and Parillon [2002] have argued that such a conception is mistaken and outlined some of the major consequences of this result.
In this brief position paper we take a different route. We introduce the idea of knowledge enablement and present a number of principles that should characterise organisations in the 21st century. These principles require the development of a new frame of mind based on the fundamental ideas of systems science and cybernetics.

Key Words:
Epistemology, Knowledge Management, Knowledge Enablement, Nature of Knowlede, Organisational Principles.

1. Introduction

Knowledge Management (KM) is perceived in two substantially different senses. First, as synonymous to information management [see, e.g., Dempsey, 1999; Vernon, 1999]. Second, as fundamentally distinct from it [see, e.g., Borghoff and Pareschi 1998; Davenport and Prusak 1998; Newing, 1999]. The synonimity assumption is widely held and practiced by the great majority of firms dealing with 'knowledge management'. In academic circles it has come to be known as the information-processing paradigm to knowledge management [Malhotra 2000b]. The "fundamentally distinct" view is taken for granted throughout the academic world and by some major pioneering organisations like Slumberger and Nucor Steel. What is interesting is that despite their fundamental differences the proponents of KM agree on one thing: knowledge management is possible. Gelepithis and Parillon [2002] have argued that such a conception is mistaken and outlined some of the major consequences of this result. In what follows we telegraphically summarise the gist of our argument and state those conclusions.

All theories of knowledge are based on the notion of belief and differ only on how they justify this presumably basic notion. Our theory differs fundamentally. Our basic building blocks are: a) the notion of meaning; and b) the process of understanding [Gelepithis 1989]. Specifically, we define:

Knowledge of entity E at time t is *the system* of understandings that E has reached by that time.

Where, an entity E is said to have understood S, if and only if, E can describe S in terms of a system of own primitives (i.e., self-explainable notions). It follows that since one's understanding depends on *one's* own primitives, it may well vary very significantly from person to person depending on the system of primitives reached by each person on a particular topic by a certain time. Also, since one's own primitives may change with time, one's understanding may change as well. It follows, as Gelepithis and Parillon [2002] remark and subsequently discuss, that:

> "The expression 'knowledge management', when it is not misleadingly used to refer to the management of information, is a misnomer since no-one can manage something that takes place inside another one's mind."

It is worth noting that those widely accepted as pioneers, in what is now called 'knowledge management', [e.g., Itani, 1987; Nonaka 1991] did not talk of knowledge management. Their emphasis was on human resources and how they could be best nurtured so that they can be mobilised and innovate. Nonaka, for instance, talked about the knowledge-creating company and how it could be managed, not about KM.

The business world needs to realise that the notions of 'knowledge' and 'information' are substantially different from each other and that knowledge is fundamentally individual in nature. It also needs to come to terms with the consequences of these facts. Some of these consequences concern:

a) *The limits of management for a certain class of activities involving knowledge.*
b) *The scope and limits of technology for the same class of activities.*
c) *The issue of knowledge market.*

See Gelepithis and Parillon [2002] for a discussion.

The next section draws upon our fundamental result on the nature of knowledge to introduce the notion of knowledge enablement and, subsequently, present a number of principles which jointly constitute a first approximation towards a knowledge enabling strategy for 21st century organisations.

2. Knowledge Enabling Principles for 21st Century Organisations

Innovation and social responsibility are widely held to be the two key factors for the development of our society. It is also undisputed that knowledge is the indispensable ingredient for the realisation and applicability of both of these factors.

Unfortunately, as we have seen, knowledge is still identified, mistakenly, with information by the vast majority of firms. In the era of globalisation, such an identification creates mis-perceptions in the wider public and apprehensions to the educated. Furthermore, it slows down innovation and the much needed spread of social responsibility. Realising the fundamental individuality of human knowledge will slowly but surely dispose of the above misconception and will provide the basis for increased innovation and social responsibility.

To avoid using the misleading expression ‘knowledge management’, we follow Nonaka [1991], and Nonaka and Takeuchi [1995] and talk of knowledge-creating companies and their strategies. Such strategies should have two basic objectives:

The management of information; and
The enablement of knowledge.

These two objectives should be integrated with, not absorbed by, the organisation's overall business objectives. This is a difficult task that needs to be done. The former objective has been extensively discussed in the MIS literature. We focus our attention on the latter by presenting seven knowledge enabling principles.

Understand the fundamental individuality of human knowledge

This principle is a direct consequence of the previous section and we shall not elaborate on it.

Develop distinct, but related, approaches to deal with the differences between information and knowledge

As a crude but useful approximation of the key difference between information and knowledge one may say that information is knowledge without understanding. The following couple of paragraphs only scratch the surface of the problems faced by organisations in differentiating between knowledge and information.

For example, Nonaka’s spiral (1991) demonstrates that the various stages within the knowledge creating cycle are mutually dependent on each other. This highlights the importance of tacit knowledge within the business environment. Because it is difficult to be captured it does not mean that tacit knowledge can be ignored. What it means is that new conceptual models are needed. The organisation needs to provide the environment that allows the transitions between

explicit and tacit to occur. Also, the commitment should be a two-way, symbiotic, relationship between the individual and the organisation.

Of course, there are tensions which exist between the formal (explicit) and informal (tacit) states as the explicit knowledge state is less complex than the tacit one and so it can be relatively easily controlled or managed in contrast to tacit knowledge. The dynamic phases within the knowledge environment are complex, not amenable to the traditional business performance measures, have a high degree of unpredictability and are non-hierarchical in nature. To try to *manage* knowledge within these areas is impossible, to enable it is both feasible and desirable.

Finally, one should mention that while some tacit knowledge can be formalised (i.e. made explicit) and stored, this is done with considerable difficulty and, most importantly, incompletely. For example, codification does not capture all of the tacit knowledge that is intended to be formalised. In addition, tacit knowledge developed in a team situation is considerably more difficult to capture than the tacit knowledge of an individual. It has to be realized that the untapped tacit knowledge is just as crucial to the organisation's knowledge creation as the captured, measurable assets.

Understand the organisation and its environment as a dynamic entity shaped, primarily, *by humans*

Cybernetics and, recently, complexity theory have both argued that organisations should be seen as (complex) adaptive systems characterized by two-way communication channels. Humans, like the majority of adaptive systems, exhibit remarkable flexibility in a range of both internal and external behaviours. This characteristic, translated in business terms, means that companies should tolerate fluctuating circumstances and environmental parameters within a risk range rather than clearly defined boundaries. In other words create or develop permeable departmental boundaries that will facilitate cross-fertilization -in the sense of understanding each other and how other peoples work relate to their own.

Malhotra [2000a, 2000b] stresses the dynamic approach to business strategy as the driver of corporate information strategy. This dynamic feature is intimately linked with human involvement. Therefore, the business environment cannot only be seen in 'machine terms'. By that we mean fixed parameters and rules reflecting the linear model of 19/20th century organisation. This has implications for design and the use of technology, the role of senior management, organisational knowledge processes, economics of organisational assets and organisational design. He also points out that it is the dynamic characteristics of knowledge that business must address –direct consequence of our first principle.

Develop communication channels (even better networks)

Organisations are becoming aware of the importance of communication within and without their boundaries. Some forward thinking organisations, like KPMG, Ernst and Young, and PriceWaterhouseCoopers have already started developing communication networks.

In realizing these networks they make use of a range of technologies like, collaborative techniques that provide some tools for the support of a knowledge environment. However, having these in place is only a small part of the equation. These technologies are on their own inadequate for handling tacit knowledge. They have to be placed in the right context i.e., the appropriate knowledge environment. Such a knowledge environment needs to be supplemented by, for example, a working environment conducive to knowledge creation and appropriate company policies that support the formation of informal action units. In other words, knowledge sharing needs to be enhanced across the business units. This can be achieved by fostering collaborative networks for knowledge flows with some managers acting as pointers to the people who have expertise within their units.

Communities of Practice are another example of fostering the knowledge ecology of the organisation. These bring together those who have common goals, ideas and/or beliefs in an informal environment, allowing individuals who do not necessarily work together on a day-to-day basis, to network and exchange ideas across department boundaries. Fairs, conferences and talk rooms are other avenues for people to meet informally and exchange ideas.

Develop a new *common language within the company incorporating the four previous principles*

Traditionally, organisations are split into distinct departmental units with the information stored and documented in terms of that department's role within the company. If the organisation seeks to foster the creation and flow of knowledge, irrespective of and unconstrained by departmental boundaries, then new primitives, common to the organisation as a whole, need to be found. Attention to the classification and taxonomy of the knowledge base will provide all company employees with a new common language unifying organizational knowledge.

Allow time for understanding and communication that will subsequently lead to learning and collaboration

Often workers are expected to liaise with colleagues during their spare time. Companies have to recognize these pursuits as legitimate work activities. Management consultancies like the ones mentioned above currently do so. However, this is far from the norm. Employees must be encouraged to think beyond the boundaries of their own job descriptions and understand how other activities are related to their own.

Accept that higher degrees of risk are a necessary prerequisite for growth

A more dynamic business environment means increased unpredictability. Instead of seeking to control such an environment, managers should develop risk tolerance levels which offer a range of acceptable outcomes. Knowledge initiatives could be divided into short term plans (quick wins) and long term plans that will be subject to change as understanding of the new environment increases.

New principles bring in new problems. Equally, change of principles requires change of mindset. There are, for example, problems like:

> How can intangible factors be measured by cost-benefit analysis? Or even more broadly, is the notion of performance measures for knowledge a viable, implementable concept?
>
> How would a company expect to develop a knowledge sharing culture when promition is based on having more knowledge than that of another colleague.

The old command and control paradigm, still practiced by the vast majority of firms, has to be changed. Treating humans like machines is, to say the least, eventually counterproductive for the company. Worse still is attempting to place machines at the centre of an organisation. Organisations need to be human-centred.

Most recently, the use of information and telecommunication technologies, and increasingly AI, is at the forefront of developments facilitating innovation and providing solutions to aspects of problems like knowledge creation, acquisition, and sharing. Books and edited collections describing models or technological tools for enhancing human interaction or a human's ability to deal with the exponential explosion in exploring one's semantic structure abound [e.g., Quinn et al, 1997; Borghoff and Pareschi 1998; Skyrme 1999]. What is common in all these developments is that despite the increasing use of artificial aids the human remains in the loop. Actually, we cannot do without her [see, for instance, Cross and Baird 2000; Senge and Carstedt 2001].

In principle, AI/ICT can provide solutions to the following three types of problems:

> Overall integration of information and knowledge sources and tools.
>
> Identification of appropriately specified information through the use of Search Engines.
>
> Formalisation of certain aspects of human knowledge through R&D in knowledge representation, and reasoning.

They cannot, nevertheless, on their own, either create or share knowledge. As Gelepithis and Parillon [2002, p. 76] put it:

> "*novel* human knowledge could only be created by humans; creative AI systems, even in principle, can only create *new consequences of existing* knowledge."

As Malhotra [2000a, 2000b] remarks technologies cannot communicate the meaning embedded in complex data as it is constructed by human minds. This point is very often overlooked with serious negative consequences. It is also part of the wider human-machine communication issue [see Gelepithis 1991 for a full discussion].

In summary, placing humans at the centre of organizations is a must for continuing innovation and social responsibility. Cybernetics, systems science and, in particular, the socio-technical approach provide a good starting point for the development of knowledge enabling strategies.

3. Conclusion

The key contribution of this paper is our proposal for a fundamentally different kind of organisation characterized by a radically new mindset derived from an enhanced understanding of human nature. Central to this conception is the realization of the individuality of human knowledge and of the pivotal significance of understanding and communication. Embodiment of these facts into the strategy of the knowledge-creating company of the 21st century will create the appropriate environment for the enablement of knowledge and the subsequent increase of innovation and social responsibility. The principles we introduced and briefly discussed provide the skeleton of a knowledge enablement strategy.

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