

# TACIT VS. EXPLICIT KNOWLEDGE – THE CURRENT APPROACHES TO KNOWLEDGE MANAGEMENT

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**Abstract:** The use of computers has over the last two decades led to the dominance of a database-centred view of organisational information resources. It is this school of thought that has become the focal point of many conceptualisations of knowledge management (KM). Many proponents of this school of thought propagate the development and implementation of KM databases. But knowledge is more organic than mechanical. Therefore, substituting database structures for the people who actually creates organisational knowledge will ultimately remove the intrinsic meaning of knowledge. This paper, based on an on-going doctoral work, takes a dichotomous view of knowledge as either explicit or tacit and argues that the management of tacit knowledge, so far neglected in the literature on KM, is very important in conferring competitive advantages on organisations. Using empirical results from the research, it reveals the advantages of managing tacit knowledge. These benefits range from better customer service to prevention of project period escalation and improved workmanship. This paper concludes that behavioural approach to KM ensures that employees, who are the source of organisational knowledge, are well motivated to ‘go the extra mile’ in pursuit of organisational goals.

**Key words:** Human Resource Management, Knowledge Management, Tacit, Explicit, Knowledge

## 1. INTRODUCTION

With the advent of knowledge management (KM), different approaches towards the management of organisational knowledge have surfaced. These approaches can be grouped into two major categories as either technocratic or behavioural (Earl, 1998). The technocratic approach to KM proposes a system solutions while the behavioural approach proposes an organisational development and training solutions. These approaches are based on the dichotomous view of knowledge as either tacit or explicit. The technocratic approach to KM views knowledge as explicit, whilst the behavioural approach views knowledge as tacit. But it has been observed that knowledge is one of the most perplexing notions in our vocabulary because the problems of understanding what knowledge is have been the subject of vigorous philosophical debate for many thousands of years (Spender, 2002). Much is understood but much is still under debate. Newell *et al* (2002) suggest that while knowledge can be actively shared through interaction between people or groups, it cannot be passively transferred. Therefore, any KM approach that is purely based on information and communication technology (ICT) is bound to be less successful because people issues, which are not readily solved by ICT systems, would need to be resolved (Kamara et al, 2002). This has led to calls, both within the academic and practitioner communities, for a more people-centric approach to knowledge management.

## 2. DATA, INFORMATION AND KNOWLEDGE

It is evident in the body of literature that a great importance is attached to the definition of knowledge (Chauvel and Despres, 2002). How knowledge is defined influences how it would be managed (Allee, 1997). In order to be able to grasp the meaning of knowledge, it is important to examine the meanings of data and information which are the foundations of knowledge.

According to Huseman and Goodman (1999) data are objective facts describing an event without any judgement, perspective or context. Data on its own lack any meaning except that data is the foundation for the creation of information. Information can be defined as data points, drawn together, put into context, added perspective and delivered to people's minds (Huseman and Goodman, 1999).

Uniquely, the human capability of making meaning out of information is deemed very important to knowledge (Miller, 1999). Knowledge is seen as highly context dependent (Nonaka, 1994). Knowledge has no meaning outside of a context, for example black has no meaning apart from white (Despres and Chauvel, 1999; Miller, 1999). The knowledge produced by an individual will vary from that which another person will produce if the context is not the same. There are different types of knowledge depending on the complexity of codification.

### 2.1 Types of Knowledge

There is, in fact, little agreement on a universal classification of the types of knowledge but wide consensus abound that they are multiple and consequential (Despres and Chauvel, 2002). Rennie (1999) sees knowledge from five different perspectives such as "know-why" (scientific knowledge of the principle and laws of nature), "know-how" (skills or capability), "know-where" (ability for finding the right information), "know-what" (accumulation of facts), "know-when" (sense of timing) and "know-who" (information about who knows what). Blacker (1995) also identifies five different categories of knowledge which are: "embrained" (conceptual skills and abilities), "embodied" (acquired by doing), "encultured" (acquired through socialisation), "embedded" (organisational routines) and "encoded" (signs and symbols). But the most widely accepted classification of knowledge is that of Polanyi (1958) who classifies knowledge as either tacit or explicit (see **Table 1**). This classification of knowledge is based on the level of its complexity on knowledge continuum (Koulopoulos and Frappaolo, 1999).

'Tacit' means 'hidden', tacit knowledge is knowledge hidden from the consciousness of the knower. Tacit knowledge resides in human brain and cannot be easily captured or codified (Wong and Radcliffe, 2000; Nonaka and Takeuchi, 1995). Sveiby (1997) asserts that all our knowledge rests in a tacit dimension. Tacit knowledge expresses itself in human actions in form of evaluations, attitudes, points of view, competences, experiences and skills stored so deep in the worldview of an individual that it is often taken for granted (Koskinen *et al*, 2003). It can be observed through action.

While tacit knowledge represent great value to the organisation, by its nature, it is far more difficult and sometimes impossible to capture and diffuse (Koulopoulos and Frappolo, 1999; Nonaka, 1994). Davenport and Prusak (1998) show the difficulty associated with 'capturing' tacit knowledge in their example of an attempt to transfer

the skill of the world best aerial photo analyst into an expert system by a computer scientist. The expert system failed. But the time the computer scientist spent with the expert trying to extract and understand the expert's knowledge served as an apprenticeship, to the extent that the computer scientist became the second best analyst of aerial photographs in the world.

Explicit knowledge, on the other hand, is that knowledge that can be articulated in formal language and easily transmitted amongst individual (Koulopoulos and Frappolo, 1999). Explicit knowledge implies factual statements about such matters as material properties, technical information and tool characteristics (Koskinen *et al*, 2003). Thus explicit knowledge can be compressed into a few summary symbols that can be encoded by language in written words and/or machine. By its very nature, explicit knowledge is capable of being capture and widely distributed throughout the organisation.

**Table 1:** Categories of Knowledge (Adapted from Stephens, 2002)

<b>Tacit knowledge</b>	<b>Explicit knowledge</b>
Personal knowledge embedded in individual	Fact based, publicly available and beyond dispute.
Experience and involving such intangible factors as personal belief, perspective and values.	Possibly recorded in documents, also includes scientific and technical knowledge, common understandings, the 'right way of doing things' and socially accepted norms.
Informal, action and discourse orientated	Easily verbalised, and stated in the form of rules or notes. Includes knowledge of organizational structures, business rules, etc
Acting with rather than acting on.	Easier to deal with in ICT developments as it is easily articulated, communicated and represented in formal languages.
Real key to getting things done	Formalised

### 3. ORGANISATIONAL APPROACH TO KM

The key findings of a longitudinal study by Hansen *et al* (1999) suggest that there are basically two strategies for managing knowledge (see **Table 2**). These strategies were termed 'codification' and 'personalisation'. The agenda of the codification strategy is ensuring that knowledge is carefully codified and stored in databases where it can be accessed and used readily by anyone in the company. But the personalisation strategy ensures that knowledge is closely tied to the person who developed it and is shared mainly through direct person-to-person contacts. The codification and personalisation strategies, as identified by Hansen *et al* (1999), are similar to 'technocratic' and 'behavioural' approaches to KM developed by Earl (1998). Most likely, the approach that any construction organisation will adopt towards KM, either technocratic or behavioural, will strongly depend on either the 'codification' or 'personalisation' strategy of the organisation.

Whilst there has been no claim that any particular organisation practices these approaches exclusively, research shows that organisations pursue one approach predominantly. It would seem that the technocratic approach to KM has enjoyed more prominence than the behavioural approach. One of the major limitations of the technocratic approach is the idea that the management of knowledge work is all about

creating massive databases (Newell *et al*, 2002). Empirical support has been provided showing KM to be more about people than technology (Scarbrough *et al*, 1999).

### 3.1 Technocratic Approach to KM

The technocratic approach to KM assumes that the fundamental problem of KM is concerned with the flow of knowledge within the organization. The focus is on increasing the flow of knowledge by capturing, codifying and transferring knowledge through technology components (Scarbrough *et al*, 1999). This is because technology has made it possible to treat knowledge as 'objective' (i.e. explicit) to the neglect of its more important 'subjective' (i.e. tacit) nature. This is based on the fact that every important process is information and communication technology (ICT) enabled. Some proponents of this approach to KM believe that technological inputs, rather than human resources, would play a predominant role in the field of KM. This is reflected in the views of Applegate *et al* (1988):

*"Information systems will maintain the corporate history, experience and expertise that long-term employees now hold. The information systems themselves -- not the people -- can become the stable structure of the organization. People will be free to come and go, but the value of their experience will be incorporated in the systems that help them and their successors run the business."*

Putting the approach of Applegate *et al* (1988) into the KM context implies that investing heavily in ICT and new technology would transform any organization into a knowledge-based organization (Yahya and Goh, 2002). But Wiig (2002) seems to oppose this view when he suggested that:

*"One key lesson to be learned is that we must adopt greater people-centric perspectives of knowledge. Technology can only provide a rudimentary reasoning devoid of innovation. People are the intelligent agent that create and act on new opportunities. It is those opportunities that will bring the world forward".*

Not surprisingly, many business and technology executives trained in similar reasoning as Applegate *et al* (1988) have been trying to push for adoption of computer technologies for 'storing' their employees' knowledge in computerized databases and programmed logic of the computing machinery with mixed results (Malhotra, 2003). This has led into some ICT vendors proposing software/groupware for KM, which in many cases have some virtues but, in most cases they represent neither management practices nor a valid definition of knowledge (Godbout, 1996). Such ICT tools that support different types of knowledge management processes as identified by Hlupic *et al* (2002) are: groupware, expert systems, intranets, neural networks, internet, etc.

Traditionally, the focus of the ICT industry has always been on the management of information. But nowadays ICT is being used to increase organisational "knowledge assets" and the creation of "knowledge bases", "knowledge webs" and knowledge exchanges" (Bank, 1996). The reason for the domination of the KM domain by the ICT industry is because of its facilitation of one-to-one, one-to-many, many-to-one and many-to-many communication distributed across time and space (Thuraisingham *et al*, 2002; Despres and Chauvel, 2002; Swan *et al*, 1999).

Not surprisingly, many KM practitioners and researchers who identify with this approach consider information and knowledge as synonymous constructs but

knowledge, unlike information, is about *beliefs* and *commitment* (Nonaka and Takeuchi, 1995). Thus, it is not appropriate to use the terms ‘knowledge’ and ‘information’ interchangeably. Swan *et al* (1999) illustrate three fundamental problems with ICT-driven approach to KM as:

- Firstly, they assume that all, or most, relevant knowledge in an organisation can be made explicit and codified.
- Secondly, they are founded on the partial view of KM, focusing more on processes of exploitation rather than on processes of exploration.
- Thirdly, they are supply driven and assume that the extensive availability of information will automatically be applied and used to develop innovative solutions.

But just because knowledge is encoded in some way in a database or system does not guarantee its usage, it may make its usage less likely as the system become increasingly more complex and integrated (Wensley, 2001). These limitations of the techno-centric approach to KM are rooted in its neglect of the critical social construct nature of knowledge (Ruddy, 2000; Nonaka and Takeuchi, 1995). Knowledge is more organic than mechanical (Allee, 1997). Therefore, substituting database structures for the people who actually creates organisational knowledge will ultimately remove the intrinsic meaning of knowledge (Miller, 1999). Thereby making it easy for competitors to ‘pilfer’ such knowledge and eliminate the competitive advantages enjoyed by the organisation. Moreover knowledge is the unique human capability of making meaning from information (Miller, 1999).

### **3.2 Behavioural Approach to KM**

Knowledge is viewed by this school of thought as embodied in people with an underlying believe that effective KM ensures people with needs can find people who can meet those needs within the organisation (Gourlay, 2001). This approach to KM is more concerned with the motivation and attitudes of users, and usually includes reward strategies and ways of encouraging knowledge sharing. Early KM literature paid little attention to people, both individually and collectively, until it was realised that the knowledge asset being considered cannot be totally separated from them (Spender, 2002). It is impossible to talk about knowledge without addressing the way people work together, learn together, and grow (Allee, 1997). According to this school, knowledge must continuously be re-created and given meaning through active networking processes which allow those involved to engage in negotiation and sense making (Swan *et al*, 1999). The behavioural school also endeavours to create a business culture which stimulates the production, sharing and (re)use of knowledge (Egbu *et al*, 2003).

This approach to KM sees the people aspect of knowledge as paramount to successful knowledge management. However, there has been insufficient attention given to the role of human resources in KM literature (Scarborough *et al.*, 1999). Also the implications of HR on KM have not been fully appreciated and investigated. Research in this area has the potential to contribute to an improved understanding of how to

manage those who create knowledge in organisations so as to improve the performance of KM.

**Table 2:** Approaches to KM (adapted from Scarbrough et al, 1999 & Hansen et al, 1999)

	<b>Technocratic Approach</b>	<b>Behavioural Approach</b>
Purpose	Flow of knowledge and information within organisation	Users' perspective and their motivation, attitudes seen as important
Objective	To increase the flow of knowledge and information by capturing, codifying and transmitting knowledge	To work flexibly and adapt to changing business environments
Use of ICT	Invest heavily in ICT – connect people with reusable knowledge	Invest moderately in ICT to facilitate conversations and exchange of tacit knowledge
Recruitment & Selection	Hire new college graduates who are well-suited to the reuse of knowledge and the implementation of solutions	Hire MBAs who like problem-solving and can tolerate ambiguity
Training & Development	Train employees in groups and through computer-based distance learning	Train employees through one-on-one mentoring
Reward systems	Reward employees for using and contributing to document databases	Reward employees for directly sharing knowledge with others.

The function of experienced workers within this structure is seen as strongly associated with the motivational practices inside the organisation (Newell *et al*, 2002). This is because one of the aims of behavioural approach to KM is to allow newcomers to be able to learn best practices from old-timers through active participation. To successfully exploit the skills and retain workers who participate in KM, organisations must specially cater for their needs and operations (Scarbrough *et al*; 1999).

#### 4. RESEARCH METHODOLOGY

This paper is part of on-going PhD research on how construction organisations can capitalise on HR aspects of KM for performance improvements. The data collection employed the use of postal questionnaires to ascertain respondents' view on how HR aspects of KM could be capitalised upon for performance improvements in construction organisations. The target respondents are managerial-level employees of 580 UK construction organisations. The questionnaire together with a cover letter, an introductory page and self-addressed return envelopes were sent to these organisations. The questionnaire results provided only an indicative measure of the respondents' view. However, it was selected as an appropriate measure for the purposes of this research because questionnaires are quick and easy to administer. Simple, quick and easy tools often work best with busy construction personnel whose time is limited.

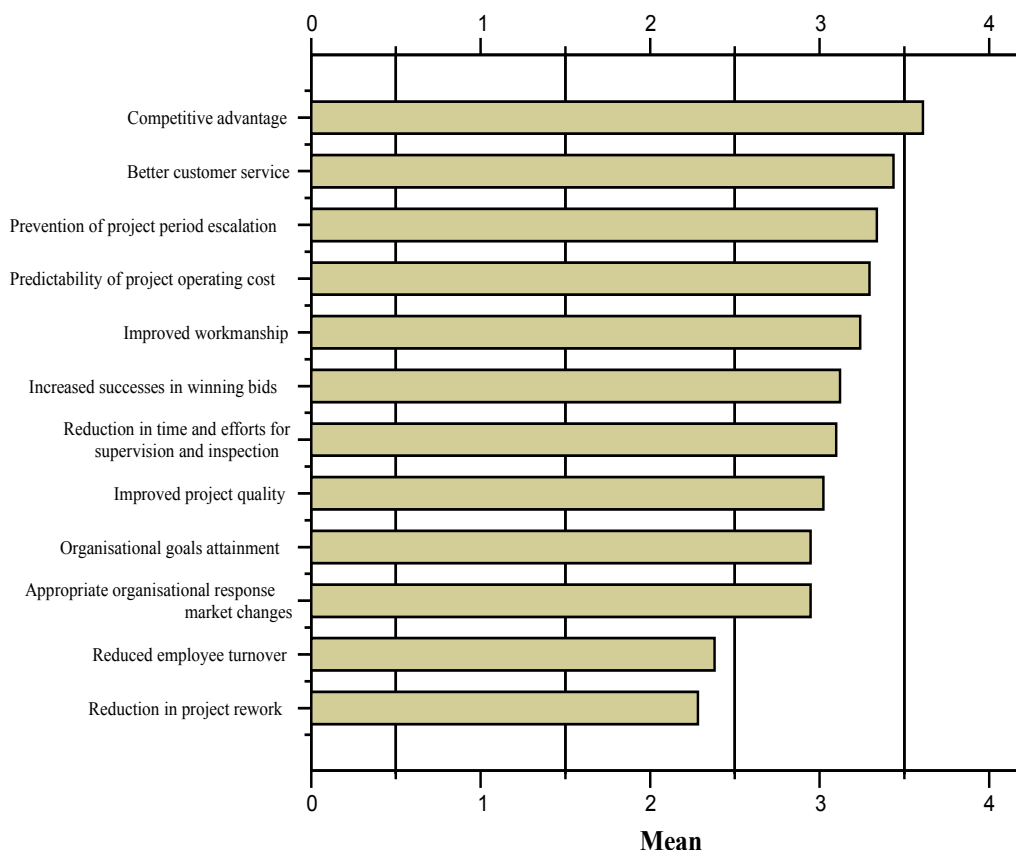
The questionnaire comprised eight different sections with one of the sections specifically measuring the benefits of focusing on people issues in KM. Respondents were asked to indicate their extent of agreement on the impact of people's issues in KM on organisational performance using a four-point Likert scale (with 4 = very high impact, to 1 = no impact). Keeping the number of response options as small as possible

allows the respondents to make a useful choice from among the listed informative answers. It has also been suggested that questions about which nearly everyone has enough information to form some opinion should be stated without a no-opinion option (Scheaffer *et al*, 1996; Hoinville *et al*, 1978). A total of 100 sets of usable questionnaires were successfully collected and analysed using SPSS v13.0.

## 5. FINDINGS AND DISCUSSIONS

The real value of focusing on people's issues in KM is in the benefits it brings to the bottom-line of any organisation. Figure 1 shows the result of the analysis of respondents' view on the benefits that accrue to the organisation when behavioural approach to KM is adopted. The five most important benefits of behavioural approach to KM, according to the hierarchy of mean score, are competitive advantage (3.6), better customer service (3.42), prevention of project period escalation (3.32), predictability of project operating cost (3.30) and improved workmanship (3.22).

**Figure 1: Benefits of focusing on people issues in KM**



More than ninety percent (90%) of the respondents agreed that the major benefit of implementing a behavioural approach to KM is about conferring competitive advantage (mean = 3.60) on the organisation. Behavioural approach to KM has a very high impact on conferring competitive advantage on the organisation. Competitive advantage is the result of differences in the combinations of critical organisational resources and the characteristics of such resources are that they are hard to substitute, imitate and transfer (Venzin *et al*, 1998). Due to the nature of tacit knowledge which makes it difficult for

other organisations to imitate or import, it is an important organisational resource for securing competitive advantage. Behavioural approach to KM ensures that employees, who are the source of organisational knowledge, are well motivated to 'go the extra mile' in pursuit of organisational goals and facilitate improved communication within teams to provide informed and insightful advice to project managers and project teams.

The analysis of respondents' views also show that there are increasing possibilities of the organisation offering better services to customers (mean = 3.42) when behavioural approach to KM is adopted. Customer satisfaction touches many areas of the organisational performance including project duration (mean = 3.32), cost (mean = 3.30) and product quality (mean = 3.22) but one key area of customer satisfaction occurs when the organisation is able to respond quickly to customer's needs. Focusing on the people-issues in KM could increase organisational successes in winning bids (mean = 3.08) and improve efficiency gains since the behavioural approach to KM ensures that employees actively participate in processes that improves quality and reduces project time. Such approach to KM allows employees to exercise responsible autonomy/self-motivation and self-control; reducing the need for supervisory and inspection staff (mean = 3.11).

Respondents to the survey questionnaire perceives the behavioural approach to KM as been capable of breeding conducive working environment and encouraging employees to stay with the organisation, thereby ensuring a return on investment and low labour turn-over (mean = 2.36). Such workers are most likely to focus on improved sharing of best practices, lessons learned, project management systems, engineering methodologies and the rationale for strategic decision making. The motivational levels of employees working in an organisation that practices behavioural approach to KM are seen as very high and such atmosphere prevent the failure to capture and transfer project knowledge which might lead to an increased risk of 'reinventing the wheel', wasted activity, and impaired project performance. Also a learning and knowledge sharing environment could be instilled.

## **6. CONCLUSIONS**

While the debate surrounding the subject of knowledge is still raging, there has been a general consensus within the knowledge management community that knowledge can be either tacit or explicit. This has led to most organisations approaching KM from either the technocratic or behavioural perspectives. But by questioning the technocratic approach to KM, their current inadequacies have been revealed and the continuing importance of human interaction has been emphasized. This paper has endeavoured to illustrate that knowledge management is not a simple question of building knowledge databases rather it requires active participation of employees whose knowledge are critical to organisational development. ICT can be used to increase the efficiency of employees and increase information flow. But information is not synonymous to knowledge and for KM to be successful more attention must be paid to the people who use and create organisational knowledge. An impressive benefit from adopting behavioural approach to KM involves the conferment of sustainable competitive advantage on the organisation. Construction organisations whose senior managers understand this will be greatly rewarded – with knowledge, of course!



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