12

Knowledge management

Knowledge management is concerned with storing and sharing the wisdom, understanding and expertise accumulated in an organization about its processes, techniques and operations. It treats knowledge as a key resource. As Ulrich (1998) comments, 'Knowledge has become a direct competitive advantage for companies selling ideas and relationships.' There is nothing new about knowledge management. Hansen *et al* (1999) remark that 'For hundreds of years, owners of family businesses have passed on their commercial wisdom to children, master craftsmen have painstakingly taught their trades to apprentices, and workers have exchanged ideas and know-how on the job.' But they also remark that, 'As the foundation of industrialized economies has shifted from natural resources to intellectual assets, executives have been compelled to examine the knowledge underlying their business and how that knowledge is used.'

Knowledge management deals as much with people and how they acquire, exchange and disseminate knowledge as with information technology. That is why it has become an important area for HR practitioners, who are in a strong position to exert influence in this aspect of people management. Scarborough *et al* (1999) believe that they should have 'the ability to analyse the different types of knowledge deployed by the organization… [and] to relate such knowledge to issues of organizational design, career patterns and employment security.'

The concept of knowledge management is closely associated with intellectual capital theory as described in Chapter 2 in that it refers to the notions of human, social

and organizational or structural capital. It is also linked to the concepts of organizational learning and the learning organization as discussed in Chapter 36. Knowledge management is considered in this chapter under the following headings:

● definition of the process of knowledge management;
● the concept of knowledge;
● types of knowledge;
● the purpose and significance of knowledge management;
● approaches to knowledge management;
● knowledge management issues;
● the contribution of HR to knowledge management.

KNOWLEDGE MANAGEMENT DEFINED

Knowledge management is 'any process or practice of creating, acquiring, capturing, sharing and using knowledge, wherever it resides, to enhance learning and performance in organizations' (Scarborough *et al*, 1999). They suggest that it focuses on the development of firm-specific knowledge and skills that are the result of organizational learning processes. Knowledge management is concerned with both stocks and flows of knowledge. Stocks included expertise and encoded knowledge in computer systems. Flows represent the ways in which knowledge is transferred from people to people or from people to a knowledge database. Knowledge management has also been defined by Tan (2000) as: 'The process of systematically and actively managing and leveraging the stores of knowledge in an organization'.

Knowledge management involves transforming knowledge resources by identifying relevant information and then disseminating it so that learning can take place. Knowledge management strategies promote the sharing of knowledge by linking people with people, and by linking them to information so that they learn from documented experiences.

Knowledge can be stored in databanks and found in presentations, reports, libraries, policy documents and manuals. It can be moved around the organization through information systems and by traditional methods such as meetings, workshops, courses, 'master classes', written publications, videos and tapes. The intranet provides an additional and very effective medium for communicating knowledge.

THE CONCEPT OF KNOWLEDGE

A distinction was made by Ryle (1949) between 'knowing how' and 'knowing that'. Knowing how is the ability of a person to perform tasks, and knowing that is holding pieces of knowledge in one's mind.

Blackler (1995) notes that 'Knowledge is multifaceted and complex, being both situated and abstract, implicit and explicit, distributed and individual, physical and mental, developing and static, verbal and encoded. He categorizes forms of knowledge as:

- *embedded* in technologies, rules and organizational procedures;
- *encultured* as collective understandings, stories, values and beliefs;
- *embodied* into the practical activity-based competencies and skills of key members of the organization (ie practical knowledge or 'know-how');
- *embraced* as the conceptual understanding and cognitive skills of key members (ie conceptual knowledge or 'know-how').

Nonaka (1991) suggests that knowledge is held either by individuals or collectively. In Blackler's terms, embodied or embraced knowledge is individual and embedded, and cultural knowledge is collective.

It can be argued (Scarborough and Carter, 2000) that knowledge emerges from the collective experience of work and is shared between members of a particular group or community.

It is useful to distinguish between data, information and knowledge:

- *data* consists of the basic facts – the building blocks for information and knowledge;
- *information* is data that have been processed in a way which is meaningful to individuals, it is available to anyone entitled to gain access to it; as Drucker (1988) wrote, 'information is data endowed with meaning and purpose';
- *knowledge* is information put to productive use; it is personal and often intangible and it can be elusive – the task of tying it down, encoding it and distributing it is tricky.

Explicit and tacit knowledge

Nonaka (1991) and Nonaka and Takeuchi (1995) stated that knowledge is either explicit or tacit. Explicit knowledge can be codified: it is recorded and available, and is held in databases, in corporate intranets and intellectual property portfolios.

Tacit knowledge exists in people's minds. It is difficult to articulate in writing and is acquired through personal experience. As suggested by Hansen *et al* (1999), it includes scientific or technological expertise, operational know-how, insights about an industry, and business judgement. The main challenge in knowledge management is how to turn tacit knowledge into explicit knowledge.

THE PURPOSE AND SIGNIFICANCE OF KNOWLEDGE MANAGEMENT

As explained by Blake (1998), the purpose of knowledge management is to capture a company's collective expertise and distribute it to 'wherever it can achieve the biggest payoff'. This is in accordance with the resource-based view of the firm which, as argued by Grant (1991), suggests that the source of competitive advantage lies within the firm (ie in its people and their knowledge), not in how it positions itself in the market. Trussler (1998) comments that 'the capability to gather, lever, and use knowledge effectively will become a major source of competitive advantage in many businesses over the next few years'. A successful company is a knowledge-creating company.

Knowledge management is about getting knowledge from those who have it to those who need it in order to improve organizational effectiveness. In the information age, knowledge rather than physical assets or financial resources is the key to competitiveness. In essence, as pointed out by Mecklenberg *et al* (1999), 'Knowledge management allows companies to capture, apply and generate value from their employees' creativity and expertise'.

APPROACHES TO KNOWLEDGE MANAGEMENT

The codification and personalization approaches

Two approaches to knowledge management have been identified by Hansen *et al* (1999):

1. *The codification strategy* – knowledge is carefully codified and stored in databases where it can be accessed and used easily by anyone in the organization. Knowledge is explicit and is codified using a 'people-to-document' approach. This strategy is therefore document driven. Knowledge is extracted from the person who developed it, made independent of that person and re-used for

various purposes. It will be stored in some form of electronic repository for people to use. This allows many people to search for and retrieve codified knowledge without having to contact the person who originally developed it. This strategy relies largely on information technology to manage databases and also on the use of the intranet.

2. *The personalization strategy* – knowledge is closely tied to the person who has developed it and is shared mainly through direct person-to-person contacts. This is a 'person-to-person' approach which involves sharing tacit knowledge. The exchange is achieved by creating networks and encouraging face-to-face communication between individuals and teams by means of informal conferences, workshops, brainstorming and one-to-one sessions.

Hansen *et al* state that the choice of strategy should be contingent on the organization; what it does, how it does it, and its culture. Thus consultancies such as Ernst & Young, using knowledge to deal with recurring problems, may rely mainly on codification so that recorded solutions to similar problems are easily retrievable. Strategy consultancy firms such as McKinsey or Bains, however, will rely mainly on a personalization strategy to help them to tackle the high-level strategic problems they are presented with, which demand the provision of creative, analytically rigorous advice. They need to channel individual expertise, and they find and develop people who are able to use a person-to-person knowledge-sharing approach effectively. In this sort of firm, directors or experts can be established who can be approached by consultants by telephone, e-mail or personal contact.

The research conducted by Hansen *et al* established that companies which use knowledge effectively pursue one strategy predominantly and use the second strategy to support the first. Those who try to excel at both strategies risk failing at both.

The knowledge-creating company

In the opinion of Nonaka and Takeuchi (1995), a core competitive activity of organizations is knowledge creation – 'an organic, fluid and socially constructed process in which different knowledges are blended to produce innovative outcomes that are predicted or predictable'. Fundamental to knowledge creation is the blending of tacit and explicit knowledge through processes of socialization (tacit to tacit), externalization (tacit to explicit), internalization (explicit to tacit) and combination (explicit to explicit).

The resource-based approach

Scarborough and Carter (2000) describe knowledge management as 'the attempt by management to actively create, communicate and exploit knowledge as a resource for the organization'. They suggest that this attempt has technical, social and economic components:

- In technical terms knowledge management involves centralizing knowledge that is currently scattered across the organization and codifying tacit forms of knowledge.
- In social and political terms, knowledge management involves collectivizing knowledge so that it is no longer the exclusive property of individuals or groups.
- In economic terms, knowledge management is a response by organizations to the need to intensify their creation and exploitation of knowledge.

KNOWLEDGE MANAGEMENT SYSTEMS

A survey of 431 US and European firms by Ruggles (1998) found that the following systems were used:

- Creating an intranet (47 per cent).
- Creating 'data warehouses', large physical databases that hold information from a wide variety of sources (33 per cent).
- Using decision support systems which combine data analysis and sophisticated models to support non-routine decision making (33 per cent).
- Using 'groupware', information communication technologies such as e-mail or Lotus Notes discussion bases, to encourage collaboration between people to share knowledge (33 per cent).
- Creating networks and communities of interest or practice of knowledge workers to share knowledge (24 per cent).
- Mapping sources of internal expertise by, for example, producing 'expert yellow pages' and directories of communities (18 per cent).

KNOWLEDGE MANAGEMENT ISSUES

The various approaches referred to above do not provide easy answers. The issues that need to be addressed in developing knowledge management processes are discussed below.

The pace of change

One of the main issues in knowledge management is how to keep up with the pace of change and identify what knowledge needs to be captured and shared.

Relating knowledge management strategy to business strategy

As Hansen *et al* (1999) show, it is not knowledge *per se* but the way it is applied to strategic objectives that is the critical ingredient in competitiveness. They point out that 'competitive strategy must drive knowledge management strategy', and that managements have to answer the question: 'How does knowledge that resides in the company add value for customers?' Mecklenberg *et al* (1999) argue that organizations should 'start with the business value of what they gather. If it doesn't generate value, drop it.'

Technology and people

Technology may be central to companies adopting a codification strategy but for those following a personalization strategy, IT is best used in a supportive role. As Hansen *et al* (1999) comment:

> In the codification model, managers need to implement a system that is much like a traditional library – it must contain a large cache of documents and include search engines that allow people to find and use the documents they need. In the personalization model, it's more important to have a system that allows people to find other people.

Scarborough *et al* (1999) suggest that 'technology should be viewed more as a means of communication and less as a means of storing knowledge'. Knowledge management is more about people than technology. As research by Davenport (1996) established, managers get two-thirds of their information from face-to-face or telephone conversations.

There is a limit to how much tacit knowledge can be codified. In organizations relying more on tacit than explicit knowledge, a person-to-person approach works best, and IT can only support this process; it cannot replace it.

The significance of process and social capital and culture

A preoccupation with technology may mean that too little attention is paid to the processes (social, technological and organizational) through which knowledge combines and interacts in different ways (Blackler, 1995). The key process is the interactions between people. This constitutes the social capital of an organization, ie the

'network of relationships [that] constitute a valuable resource for the conduct of social affairs' (Nahpiet and Ghoshal, 1998). Social networks can be particularly important in ensuring that knowledge is shared. What is also required is another aspect of social capital: trust. People will not be willing to share knowledge with those whom they do not trust.

The culture of the company may inhibit knowledge sharing. The norm may be for people to keep knowledge to themselves as much as they can because 'knowledge is power'. An open culture will encourage people to share their ideas and knowledge.

Knowledge workers

Knowledge workers as defined by Drucker (1993) are individuals who have high levels of education and specialist skills combined with the ability to apply these skills to identify and solve problems. As Argyris (1991) points out: 'The nuts and bolts of management… increasingly consists of guiding and integrating the autonomous but interconnected work of highly skilled people.' Knowledge management is about the management and motivation of knowledge workers who create knowledge and will be the key players in sharing it.

THE CONTRIBUTION OF HR TO KNOWLEDGE MANAGEMENT

HR can make an important contribution to knowledge management simply because knowledge is shared between people; it is not just a matter of capturing explicit knowledge through the use of information technology. The role of HR is to ensure that the organization has the intellectual capital it needs. The resource-based view of the firm emphasizes, in the words of Cappelli and Crocker-Hefter (1996), that 'distinctive human resource practices help to create unique competencies that differentiate products and services and, in turn, drive competitiveness'.

Ten ways in which HR can contribute

The main ways in which HR can contribute to knowledge management are summarized below and described in more detail in the rest of this section.

1. Help to develop an open culture in which the values and norms emphasize the importance of sharing knowledge.
2. Promote a climate of commitment and trust.

3. Advise on the design and development of organizations which facilitate knowledge sharing through networks and communities of practice (groups of people who share common concerns about aspects of their work), and teamwork.

4. Advise on resourcing policies and provide resourcing services which ensure that valued employees who can contribute to knowledge creation and sharing are attracted and retained.

5. Advise on methods of motivating people to share knowledge and rewarding those who do so.

6. Help in the development of performance management processes which focus on the development and sharing of knowledge.

7. Develop processes of organizational and individual learning which will generate and assist in disseminating knowledge.

8. Set up and organize workshops, conferences, seminars and symposia which enable knowledge to be shared on a person-to-person basis.

9. In conjunction with IT, develop systems for capturing and, as far as possible, codifying explicit and tacit knowledge.

10. Generally, promote the cause of knowledge management with senior managers to encourage them to exert leadership and support knowledge management initiatives.

Culture development

An open culture is one in which as Schein (1985) suggests, people contribute out of a sense of commitment and solidarity. Relationships are characterized by mutuality and trust. In such a culture, organizations place a high priority on mutual support, collaboration and creativity, and on constructive relationships. There is no 'quick fix' way in which a closed culture where these priorities do not exist can be converted into an open culture. Long-established cultures are difficult to change. HR can encourage management to develop purpose and value statements which spell out that an important aim of the organization is to achieve competitive advantage by developing and effectively using unique resources of knowledge and expertise, and that to achieve the aim, sharing knowledge is core value. Such statements may be rhetoric but they can be converted into reality through the various processes described below.

Promote a climate of commitment and trust

Gaining commitment is a matter of trying to get everyone to identify with the purpose and values of the organization, which will include processes for developing and sharing knowledge. Commitment can be enhanced by developing a strategy

which will include the implementation of communication, education and training programmes, initiatives to increase involvement and 'ownership', and the introduction of performance and reward processes.

Developing a high-trust organization means creating trust between management and employees as a basis for encouraging trust between individual employees or groups of employees. People are more likely to trust management if its actions are fair, equitable, consistent and transparent, and if it keeps its word.

It is difficult although not impossible to develop trust between management and employees. But it is not possible to make individual employees trust one another, and such trust is important if knowledge is to be shared. Developing a climate of trust in the organization helps, otherwise it is a matter of developing social capital in the sense of putting people into positions where they have to work together, and encouraging interaction and networking so that individuals recognize the value of sharing knowledge because it helps achieve common and accepted aims. This process can be helped by team-building activities. Trust may also be enhanced if knowledge is exchanged as a matter of course in forums, conferences etc. Dialogue occurs between people who want to connect and are given opportunities to do so in a collaborative, creative and adaptive culture.

Organization design and development

HR can contribute to effective knowledge management by advising on the design of process-based organizations in which the focus is on horizontal processes that cut across organizational boundaries. Such organizations rely largely on networking and cross-functional or inter-disciplinary project teams or task forces, and knowledge-sharing is an essential part of the operation. Attention is paid to identifying and encouraging 'communities of practice' which, as defined by Wenger and Snyder (2000), are 'groups of people informally bound together by shared expertise and a passion for joint enterprise'. They are seen as important because it is within such communities that much of the organization's tacit knowledge is created and shared.

The role definitions that emerge from organization design activities should emphasize knowledge-sharing as both an accountability (a key result area) and a competency (an expected mode of behaviour). Thus it can become an accepted part of the fabric and therefore the culture of the organization.

Organizational development activities can focus on team-building in communities with an emphasis on processes of interaction, communication and participation. The aims would be to develop a 'sharing' culture.

Resourcing

HR contributes to enhancing knowledge management processes by advising on how to attract and retain people with the required skills and abilities, including those who are likely to exhibit the behaviours needed in a knowledge-sharing culture. This means devising competency frameworks for recruitment and development purposes which include knowledge-sharing as a key behaviour. Such a competency could be defined as 'The disposition to share knowledge fully and willingly with other members of the community'. Questions would be asked at the interview stage on the approach adopted by candidates to sharing knowledge in their present organization. Other questions along the lines of the one given below could be put to test candidates on their views:

> This organization relies to a considerable extent on achieving success through the development of new products and techniques. We believe that it is important to ensure that the knowledge generated by such developments is spread around the business as widely as possible to those who might put it to good use. What part do you think you could play as an individual in this process?

Posing this sort of question at the interview stage helps to define expectations as part of the psychological contract.

Assessment centres can also include exercises and tests designed to test the disposition and ability of individuals to share knowledge.

Retaining knowledge workers is a matter of providing a supportive workplace environment and motivating them through both tangible and intangible rewards as discussed below.

Motivation

A study by Tampoe (1993) identified four key motivators for knowledge workers:

1. Personal growth – the opportunity for individuals to fully realize their potential.
2. Occupational autonomy – a work environment in which knowledge workers can achieve the task assigned to them.
3. Task achievement – a sense of accomplishment from producing work that is of high quality and relevance to the organization.
4. Money rewards – an income that is a just reward for their contribution to corporate success and that symbolizes their contribution to that success.

Hansen *et al* (1999) state that in their 'codification model', managers need to develop a system that encourages people to write down what they know and to get these

documents into the electronics depository. They believe that real incentives – not just enticements – are required to get people to take these steps. In companies following the personalization model, rewards for sharing knowledge directly with other people may have to be different. Direct financial rewards for contributing to the codification and sharing of knowledge may often be inappropriate, but this could be a subject for discussion in a performance review as part of a performance management process.

Performance management

The promotion and development of performance management processes by HR can make an important contribution to knowledge management, by providing for behavioural expectations which are related to knowledge-sharing to be defined, and ensuring that actual behaviours are reviewed and, where appropriate, rewarded by financial or non-financial means. Performance management reviews can identify weaknesses and development needs in this aspect and initiate personal development plans which are designed to meet these needs.

One starting point for the process could be the cascading of corporate core values for knowledge-sharing to individuals, so that they understand what they are expected to do to support those core values. As mentioned earlier, knowledge-sharing can be included as an element of a competency framework, and the desired behaviour would be spelt out and reviewed. For example, positive indicators such as those listed below could be used as a basis for agreeing competency requirements and assessing the extent to which they are met. The following are examples of positive behaviour in meeting competency expectations for knowledge-sharing:

- is eager to share knowledge with colleagues;
- takes positive steps to set up group meetings to exchange relevant information and knowledge;
- builds networks which provide for knowledge sharing;
- ensures as appropriate that knowledge is captured, codified, recorded and disseminated through the intranet and/or other means of communication.

Hansen *et al* mention that at Ernst & Young, consultants are evaluated at performance reviews along five dimensions, one of which is their 'contribution to and utilization of the knowledge asset of the firm'. At Bain, partners are evaluated each year on a variety of dimensions, including how much direct help they have given colleagues.

In a 360-degree feedback process (see Chapter 34), one of the dimensions for an assessment by colleagues and direct reports could be the extent to which an individual shares knowledge.

Organizational and individual learning

Organizational learning takes place when people learn collaboratively (Hoyle, 1995). It involves accumulating, analysing and utilizing knowledge resources which contribute to the achievement of business objectives. Knowledge management approaches as described in the chapter can make a major contribution to the enhancement of learning in an organization. Practices associated with creating the right environment for sharing knowledge will in particular promote organizational learning by creating a 'rich landscape of learning and development opportunities' (Kessels, 1996).

The concept of a learning organization (see Chapter 36) is also relevant. As defined by Miller and Stewart (1999), one of the characteristics of such an organization is that 'there are well-defined processes for defining, creating, capturing, sharing and acting on knowledge'. And Garvin (1993) postulates that learning organizations 'transfer knowledge quickly and efficiently throughout the organization by means of formal training programmes linked to implementation'.

Organizational learning, however, is based on individual learning, and the significance of knowledge management and the techniques available to support it can be learnt in formal training sessions or monitoring programmes designed and facilitated by the HR function.

Workshops and conferences etc

HR can play an important part in knowledge management by setting up and facilitating workshops, conferences, seminars and forums in which members exchange information and ideas, discuss what they have learnt and agree on what use can be made of the knowledge they have acquired. Apart from their value in disseminating knowledge, such gatherings can help to develop an environment in which knowledge-sharing is accepted as a natural and continuing activity.

Working with IT

Knowledge management is neither the preserve of the IT function nor that of HR. The two functions need to work together. IT ensures that knowledge is recorded and made acceptable through means such as the intranet. HR collaborates by providing means for tacit knowledge to be collected and, where feasible, codified.

Promoting the cause

Some organizations such as ICL have appointed a 'knowledge programme director' to develop corporate knowledge assets. Others have relied upon IT or business

teams. But HR can make a major contribution not only in the specific activities referred to above, but also in generally promoting the cause of knowledge management, emphasizing to senior management at every opportunity the importance of developing a culture in which the significance of knowledge management is recognized.