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New Economy, New Theory – or New Practice?

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It is generally accepted that science and technology are progressing more and more rapidly, that new inventions and possibilities are reshaping our lives, and that various greater or smaller events influence our way of thinking and acting. And much of the development and many of the trends observed in recent years are comprised within the term 'knowledge society' or other similar expressions.

Information and knowledge are often emphasized here because these have become key elements and consequently belong to the group of essential raw materials of the so-called new economy. Some authors such as Stewart (1997) perceive knowledge as the most important product, while others like Drucker (1993) regard knowledge as the resource of greatest importance in the value creation process in the knowledge society. Similarly, Nonaka and Takeuchi, who wrote *The Knowledge Creating Company* (1995), one of the more influential books in the field of knowledge management, state that the only certainty in this type of economy is that everything is unpredictable, and thus the ability to constantly create new knowledge and convert it into value-creating innovation is a decisive ingredient in the success of every company.

Knowledge as a resource is, as is stated by Itami and Roehl (1987), rather unique since it is both the input to and the outcome of the production process – or as is pointed out by other authors (for example Allee 1999), it is probably the only resource which increases in value while being used. Moreover, the perception of knowledge is generally changing. Focus is now on 'doing' rather than 'being' (Drucker 1993, p. 17). 'Acting' is now in focus, which is also emphasized by another commentator of the knowledge society, Thomas A. Stewart, who in a recent book writes: 'Knowledge is what we do' (Stewart 2001, p. 9).

Knowledge is on the agenda of a new economy

Drucker (1993) traces the roots of the knowledge society back to the time after the Second World War; as early as the 1960s he mentioned 'knowledge work' and 'knowledge worker'. However, not until the beginning of the 1990s or even the mid-1990s was knowledge really brought up for discussion; see, for example Toffler (1990), Reich (1991), Quinn (1992) and Nonaka and Takeuchi (1995). One of the clearest statements here is Drucker's prediction that '[t]he basic economic resource . . . is and will be knowledge' (Drucker 1993, p. 7), where the uniqueness of the knowledge society is that knowledge 'has become *the* resource, rather than a resource' (Drucker 1993, p. 41).

Intellectual capital has often been used to describe the same kind of phenomena (for example Al-Ali 2003; Choo and Bontis 2002); the era of the knowledge society can also be said to have been signalled both by Thomas Stewart's articles in *Fortune* magazine on 'brainpower' (Stewart 1991) and 'intellectual capital' (Stewart 1994) and by developments such as Leif Edvinson's appointment as director of intellectual capital with the Swedish insurance company Skandia (Edvinson and Malone 1997; see Mouritsen *et al*. 2001b). In addition, intellectual capital and knowledge-based perspectives have been promoted by new ways of thinking on value creation (Peppard and Rylander 2001).

The 'new' terminology also comprises terms such as knowledge management, knowledge management strategy, intellectual capital statement, knowledge-intensive firm and knowledge worker. The extensive attention paid to these terms can for example be seen in that knowledge management has become a key term in many companies and consultancies as well as in research.

Even though knowledge is established as the new decisive factor in the success of each company, it is still worth remembering that the ideas may not be new – even though the wrapping is – and that almost forgotten or even well-known methods and techniques are launched in management literature under new names, thus mobilizing renewed interest and action. This is a common phenomenon which has been discussed in relation to many management concepts (for example Furusten 1995).

Knowledge as field of research and practice

It is only in recent years that knowledge management has crystallized as a special field of practice, even though researchers seem to have been struggling with such problems for much longer. An explanatory factor

could be that knowledge management comprises methods and techniques which have been applied in other contexts, but which have not until now been collected with a managerial focus. In the same way, Spender and Grant (1996) emphasized that a large part of the contemporary knowledge-oriented literature is rooted in many different theories, starting with authors like Barney (1991), Grant (1991), and Hamel and Prahalad (1994) discussing resource-based theory over Nelson and Winter's (1982) evolutionary theory and including Argyris and Schön's (1978, 1996) work with organizational learning. Likewise, methodologies and concepts related to IT systems have been incorporated in the knowledge management literature; see Bukh *et al.* (2005) and Vendelø (2005) for more details.

Many different researchers have introduced the concept of knowledge in academic discussions within varying fields. Choo and Bontis (2002) focus on the management of intellectual capital whereas Hamel and Prahalad (1994) describe the company's strategic work based on core competencies. In other parts of management literature, both Leonard (1995) and Nonaka (1994; see also Nonaka and Takeuchi 1995) are concerned with innovation whereas Castanias and Helfat (1992) regard knowledge as management efficiency and Wenger (1998) as organizational behaviour. A common characteristic of these theories is that knowledge is an important factor which is structured in ways that ensure the applicability of knowledge.

Why knowledge management?

Knowledge management literature is, as Baxter and Chua (1999) emphasizes, dominated by consultants and practitioners. This statement is further supported by the titles of books published within the area in recent years: *Intellectual Capital, The Proven Way to Establish Your Company's Real Value* by Leif Edvinsson and Michael S. Malone (1997), *The Knowledge Management Toolkit* by Amrit Tiwana (1999) or *Managing for Knowledge – HR's Strategic Role* by Christina Evans (2003). There might be lots of reasons for the interest in knowledge and knowledge management in practice, but certain general themes or trends seem to be found in the literature.

First, the difference between the market value and the book value of companies was increasing towards the end of the 1990s. Managers and possibly also investors began to take an interest in the reasons for this. In fact, the difference equalled the intangible assets and was often termed intellectual capital (Edvinsson and Malone 1997; Stewart 1997; Sveiby 1997). Intellectual capital is an accounting term but it also

referred to the management of these intangible or knowledge-based assets. Many companies in the Scandinavian countries have now developed intellectual capital statements (see Bukh *et al.* 2001; Mouritsen *et al.* 2002), both to visualize the company's knowledge resources and to develop them. The intellectual capital statement is here seen as a strategic tool which focuses on the development of the company's knowledge resources rather than just reporting the knowledge resources at a given time.

Second, in the wake of the reduction and rationalization waves of the 1980s, a tendency to focus on knowledge management arose as a reaction to a short-term cost consciousness. Organizations often needed knowledge in relation to strategically important tasks while at the same time retention of employees was becoming more difficult. Consequently, organizations began to focus on the type of knowledge management which attempts to store knowledge for later use (Hansen *et al.* 1999).

Third, another important factor was that many global companies tried to organize themselves according to the knowledge management concept by means of matrix structures which aimed at the promotion of knowledge flows and the integration of product groups and geographical regions. However, in practice this created small 'knowledge islands' (von Krogh *et al.* 2000a). Such problems created further problems as fast knowledge transfer became necessary to compensate for the structural problems. There is thus great interest in determining the forces that facilitate and inhibit these processes respectively.

The fourth and final factor deals with the set of strategic options to which firms must adhere. At a steadily increasing speed firms must be able to adapt to new consumer demands and other changes in their surroundings (Ilinitch *et al.* 1996). Consequently, heavy demands are put on companies' innovative ability, knowledge sharing and development of new products and services. This situation is a direct consequence of the increasing speed of change, technological breakthroughs and new values (Nonaka and Takeuchi 1995; Davenport and Prusak 1998).

Management and control of knowledge?

The term 'management' indicates that knowledge is manageable. In many companies, knowledge management is reduced to a question of applying information technology as this is obviously more manageable than knowledge as such (von Krogh *et al.* 2000b). However, as these authors emphasize, (p. 4), knowledge is often related to processes which are basically not manageable in the traditional sense or at least lose their efficiency and impact if management is too tight. In practice this

means that often knowledge management does not live up to company expectations when the advice of consultants is followed, or knowledge management literature is read. Thus for example a questionnaire-based survey by KPMG (2000) in the UK showed that 70 per cent of the companies asked saw IT as the driving force in the knowledge management process, but only 30 per cent found their expectations fulfilled.

Firms are tempted to regard their employees as the most important knowledge resource in the firm. Consequently, they basically apply novel techniques in combination with well-established management principles in the human resource area (for example Jackson *et al*. 2003; Lengnick-Hall and Lengnick-Hall 2003). However, if the firm focuses too narrowly on human resource practices as the key to well-functioning knowledge management, it is just as unlikely to succeed as if IT systems alone had constituted the solution.

It seems unlikely that knowledge can be managed by means of information technology alone and that information technology is equivalent to knowledge management. However, most authors (for example Nonaka 1994; Fahey and Prusak 1998) acknowledge that it is not sufficient to collect, anchor and use information. New knowledge about customers and other internal and external stakeholders also needs to be created. Therefore customers often make up an essential source of information in the knowledge-creating process, since their needs and thus knowledge about new demands and product and service concepts may be very valuable. Thus companies should take such information very seriously and assess its potential.

When it comes to research, the trend is to put knowledge management into a broader and often strategic perspective rather than to focus exclusively on information technology. Many researchers from various fields explore and expand the role of knowledge in a variety of settings, as the following chapters indicate. Here it is important to point out that knowledge management should not be regarded as an isolated element. It is one of several management tools which together address the challenges the company faces in relation to its knowledge management and in general.

Background for this book and the structure of the chapters

The background of this book is that the competitive conditions of the companies and society in general, including management tasks and the management technologies applied, have changed. Social changes

are often summarized in concepts like knowledge society, whereas new management techniques are designated as knowledge management without first distinguishing between whether they are well-known management methods and techniques, IT systems or completely new management technologies.

However, knowledge is of course not a new concept. Ever since the ancient Greek philosophers in the fifth century B.C. postulated that an object is to be acknowledged by way of a mental copy of it, people have attempted to isolate and define the concept of knowledge. For example Mouritsen *et al.* (2001a) mention Socrates' dialogue with Theatetus (Plato 1996) where it is emphasized that knowledge only exists if seen in relation to something else. Nonaka and Takeuchi (1995) look at history from ancient Greece until today as a process which has attempted to answer the question, 'What is knowledge?' Based on this, they call for a better understanding of how new knowledge is actually created, since most literature has been occupied with either characterizing knowledge as such or the 'acquisition, accumulation, and utilization of *existing* knowledge' (Nonaka and Takeuchi 1995, p. 49).

The headings 'knowledge management' and 'intellectual capital' have been used to cover recent years' interest in knowledge in both management literature and companies. A distinctive feature of knowledge management as a field is the many different methods and techniques – and many different business economic theory fields – which in the light of the so-called knowledge society all get a new dimension from the increased focus on knowledge. Almost as distinctive a feature of the experiences one hears about in the media and at conferences is that the implementation of knowledge management is not problem-free and that it may be difficult for practical experience to live up to expectations.

Since knowledge can play a role in every situation, both practically and theoretically, it is tempting to conclude that 'knowledge' is so central that the relevance of the concept can be debated no longer. However, the more it becomes taken for granted that all management techniques and theories comprise elements of knowledge, the more it becomes essential to question the perception of knowledge which forms the basis of these practices and concepts. Or, in other words, the importance attached to knowledge in theory and practice is proportional to the importance of understanding the basis of knowledge management.

The structure of the book

In Chapter 2 Karina Skovvang Christensen and Per Nikolaj Bukh discuss two different views of knowledge that are often seen in the literature

and which also form the basis for several of the other chapters. Here the epistemological assumptions, about what constitutes 'knowledge', are central, as they determine how we perceive concepts such as 'data' and 'information' as well as what the domain for knowledge management is. First, the authors present knowledge management from the viewpoint of an artefact-oriented epistemology. From this perspective the purpose is to handle explicit knowledge, for example by means of information technology, so that it can support quick and effective decision-making in the organization. Intranets, document management systems, databases and so on here constitute a key element in connection with the collection and anchoring of data in an organization.

Second, a process-oriented epistemology with focus on the interaction between tacit and explicit knowledge is presented. In the description of the process-oriented view, Christensen and Bukh draw on the Japanese Ikujiro Nonaka's research which sees the individual as the key factor in knowledge creation. Finally, the two perceptions and their consequences are compared.

In Chapter 3 Morten Thanning Vendelø develops the above-mentioned perceptions further by focusing on the role of information technology in relation to knowledge management. First, the consequences of turning information technology into knowledge management are discussed, including what information technology can and cannot do for an organization. Different IT systems are then presented and their potential as knowledge management systems discussed. Vendelø also suggests how an organization can analyse its need for knowledge management and how this may result in knowledge projects. The suggestions also include ways an organization can include information technology in its knowledge management activities. Finally, alternative approaches to the initiation of organizational knowledge projects are presented.

Especially in the Nordic countries, companies work with knowledge management within the framework of the intellectual capital statement. In Chapter 4, Per Nikolaj Bukh, Jan Mouritsen and Karina Skovvang Christensen present the basic principles of intellectual capital and compare various models of intellectual capital reporting. The chapter describes some of the experiences in Danish companies of working with intellectual capital statements based on the so-called Danish guidelines for measuring and reporting intellectual capital. Moreover, the authors demonstrate how a firm can work strategically with knowledge management and develop an intellectual capital statement.

As an example of how to use the Danish guidelines Chapter 4 briefly shows how the methodology is applied in the company Maxon Telecom A/S, which designs and develops cutting-edge mobile telephones for its Korean parent company, which then manufactures the phones. Finally, there is a brief discussion on how an intellectual capital statement can be perceived as a report in which figures, text and illustrations represent a company's knowledge management.

Chapter 5, by Per Nikolaj Bukh, Jan Mouritsen and Mette Rosenkrands Johansen, follows up upon the previous chapter. These authors deal primarily with the formulation of challenges concerning the development of knowledge resources and the determination of a knowledge management strategy. When companies work with knowledge management and develop a strategy for it, the management challenges – or more precisely the *knowledge* management challenges – highlight what needs to be done in relation to the knowledge resources to strengthen them and make them work. The translation of the knowledge narrative into management challenges demands that the company specifies what the strategic suggestions regarding use value really mean and how to act to get closer to a realization of the strategy.

Chapter 5 shows how one company will focus on recruiting employees who combine the right specialist qualifications with a culture-creating initiative and so create the basis for the company's future, while another for example may presume that systematic project and quality management improve the goods and services supplied and thus help fulfil its aims as regards use value. Often a company's strategy for knowledge management can be made explicit by between two and five management challenges. The chapter presents various examples of this and shows also how specific knowledge management initiatives are related to the management challenges. As an illustration of the methodology the chapter presents how Systematic Software Engineering has since 1998 been working with intellectual capital and knowledge management. Elements from Systematic's intellectual capital statement are presented and it is explained how the Danish guidelines have been used by the company.

In the process of making an intellectual capital statement, it is common for a company to prepare an internal version or report of its employees' competence development. In Chapter 6, Stefan Thorbjørnsen and Jan Mouritsen discuss the role of individuals in knowledge creation based on three such reports. In the analysis, the authors conclude that the individual is always linked to the organization. By making an individual competence statement, the individual becomes an organizational entity,

because individual competence relates to organizational bonus systems, corporate revenues or the organizational configuration of knowledge resources.

Chapter 7 makes a case analysis of the company Ericsson Telebit. With a starting-point in a reflexive perspective, Christian Nielsen shows how both horizontal and vertical borders of knowledge changed once the small Danish company Telebit was acquired by the L.M. Ericsson Group in 1999. The terms horizontal and vertical borders here denote how the organization's internal architecture is organized to facilitate knowledge sharing and the organization's place in the value chain respectively.

The author identifies the firm's actual knowledge management challenges using the models presented in Chapter 4 and 5. Having described the changes in Ericsson Telebit, an analysis is conducted of the consequences for the structure of the organization and the new borders to knowledge with regard to management, culture, identity and knowledge management. There follows a description of knowledge in Ericsson Telebit, including identification of where knowledge exists in Ericsson Telebit, and a more detailed description of individual and organizational knowledge. Furthermore, new knowledge management challenges are identified as a consequence of the redefined limits to knowledge in the Ericsson Telebit organization.

Most often knowledge management draws upon the idea that organizational knowledge can somehow be stored and retrieved. Thus, knowledge management presupposes the existence of some kind of organizational memory, a topic taken up by Dan Kärreman, Mats Alvesson and Martin Blom in Chapter 8. Drawing upon a review of influential texts and a case-study of a management consulting company, the authors attempt to critically examine and discuss the analytic value of the idea of organizational memory and its domain of application, value, limits and pitfalls.

Typically, this interest in organizational memory is guided by framing organizational recollection in terms of organizational memory and remembrance. The authors argue, however, that the metaphor behind is not unproblematic. The metaphor can be questioned for both conceptual and empirical reasons. In the empirical part of the chapter the authors draw on a study of a large management consulting company. A detailed account of knowledge management work in a specific project is used to develop another concept, namely memory in organizations, that is better suited to deal with collective memory and recollection. This conceptualization emphasizes institutionally supported memory

work, for example activities that are organizationally bound and interactive in character, thus transcending dichotomies such as individual and organizational knowledge, personalization and codification strategies.

In Chapter 9 Göran Roos introduces the reader to a perspective on organizational knowledge that allows for the circumvention of the ambiguities associated with appropriately assessing knowledge management in the context of inter-organizational initiatives. By adapting the seminal work on corporate epistemological assumptions undertaken by Venzin *et al*. (1998) to a practical framework suitable for assessing the epistemological cultures, the author shows how understanding the assumptions behind epistemological cultures ensures effective knowledge management and knowledge transfer.

The framework is applied in a case involving the assessment of the fit of knowledge management perspectives between the functional groups of two professional service companies. This study attempts to analyse how the epistemological cultural heritages including partner- and knowledge-specific characteristics affect knowledge transfer and learning in an alliance context. Göran Roos here shows how failing to properly consider underlying epistemological cultures runs the serious and likely risk that the inter-organizational initiative will prevent knowledge transfer objectives from taking place from the outset.

In Chapter 10 Volker Mahnke and Markus Venzin address the dissatisfaction with knowledge management as a managerial tool that is found in many organizations. It is increasingly evident that knowledge management initiatives often do not survive the initial fascination – particularly when economic conditions are harsh and call for cost reductions. When key employees leave or knowledge management projects fail to live up to expectations, remaining knowledge management initiatives often fall prey to rationalization efforts. The chapter describes how a large multinational company managed to institutionalize a large-scale knowledge management initiative. The authors describe the institutionalization process as the transformation of the results of a knowledge management project into a set of coherent, organizationally and strategically aligned business practices. From the case evidence, design principles for effective institutionalization of knowledge management practices are derived.

In Chapter 11 Maria Anne Skaates discusses the challenges to be faced if the organization engages in in-depth knowledge-intensive collaboration with its customers. Concepts from services and business-to-business marketing as well as from the systems perceptive on resources and management processes are drawn upon to describe key issues in

knowledge management for suppliers involved in in-depth collaboration with specific customers. Furthermore, the chapter shows how to analyse stocks and flows of knowledge-related resources both internally and in customer relationships.

The theoretical part of the chapter is illustrated by a case-study of the customer-related activities of two software engineering units of a Finnish semi-public contract research organization. In the treatment of the data, Maria Anne Skaates categorizes the knowledge deployed and received by the supplying software engineering units in their relational exchange with customers using three types of resources.

In Chapter 12 Karina Skovvang Christensen and Heine Kaasgaard Bang draw on the framework presented in Chapter 2. Their analysis of knowledge management in the company Crisplant illustrates the importance of the various epistemological points of departure. At Crisplant, knowledge management is an integrated part of the company's way of working, as is emphasized by the firm's project management and a particularly creative work model. It will be shown how various epistemological points of departure may increase the consciousness about the opportunities and limitations of the sort of knowledge management practized, as well as how more epistemologies may create a more varied perception of knowledge management.

Finally, Chapter 13 presents our conclusions. By now, the previous chapters have presented knowledge management in a variety of European organizations. We have seen many successes but also examples of how knowledge management has struggled to survive and in a few situations has not been as successful as anticipated by management. Although the previous chapters together form a limited basis for drawing a general conclusion, we can at least say that knowledge tools and concepts are used under certain circumstances.

The chapters based on case-studies have provide insights into ways knowledge management problems are dealt with in practice and thereby also how practice relates to theory. Other chapters have discussed knowledge management concepts and have demonstrated the implications of adopting too narrow a view of knowledge management as well as pointing out some of the paradoxes and dilemmas involved in dealing with it. Most of the chapters have combined theoretical perspectives with illustrations of how the ideas have been used in different companies, thus demonstrating how knowledge management is evolving as a concept. We hope that the book has inspired practitioners, students and colleagues who are interested in the development of this relatively new area of research.

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