

1

New Economy, New Theory – or New Practice?

Per Nikolaj Bukh, Karina Skovvang Christensen and Jan Mouritsen

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 (Ilinitich *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 Theaetetus (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 perspective 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 practiced, 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.

References

- Al-Ali, N. 2003. *Comprehensive Intellectual Capital Management: Step-by-Step*. Hoboken: Wiley.
- Allee, V. 1999. The Art and Practice of Being a Revolutionary. *Journal of Knowledge Management*, vol. 3, no. 2, pp. 121–31.
- Argyris, C. and D.A. Schön. 1978. *Organizational Learning: A Theory of Action Perspective*. Reading, MA: Addison-Wesley.
- Argyris, C. and D.A. Schön. 1996. *Organizational Learning II: Theory, Method, and Practice*. New York: Addison-Wesley.
- Barney, J.B. 1991. Firm Resources and Sustained Competitive Advantage. *Journal of Management*, vol. 17, no. 1, pp. 99–120.
- Baxter, J. and W.F. Chua. 1999. Knowledge Management: Now and the Future. *Australian Accounting Review*, vol. 9, no. 3, p. 3–14.
- Bukh, P.N., H.T. Larsen and J. Mouritsen. 2001. Constructing Intellectual Capital Statements. *Scandinavian Journal of Management*, vol. 17, no. 2, pp. 87–108.
- Bukh, P.N., J. Mouritsen and K.S. Christensen. 2005. Intellectual Capital: Managing and Reporting about Knowledge Resources. In P.N. Bukh, K.S. Christensen and J. Mouritsen (eds), *Knowledge Management: Establishing a Field of Practice*. Basingstoke: Palgrave Macmillan.
- Castanias, R.P. and C.E. Helfat. 1992. Managerial and Windfall Rents in the Market for Corporate Control. *Journal of Economics Behavior & Organization*, vol. 1, pp. 153–84.
- Choo, C.W. and N. Bontis (eds). 2002. *The Strategic Management of Intellectual Capital and Organizational Knowledge*. New York: Oxford University Press.
- Davenport, T.H. and L. Prusak. 1998. *Working Knowledge: How Organizations Manage What They Know*. Boston, MA: Harvard Business School Press.
- Drucker, P. 1993. *Post-Capitalist Society*. New York: HarperBusiness.
- Edvinsson, L. and M.S. Malone. 1997. *Intellectual Capital, The Proven Way to Establish Your Company's Real Value by Measuring Its Hidden Brainpower*. London: Piatkus.
- Evans, C. 2003. *Managing for Knowledge – HR's Strategic Role*. Burlington: Butterworth-Heinemann.
- Fahey, L. and L. Prusak 1998. The Eleven Deadliest Sins of Knowledge Management. *California Management Review*, vol. 40, no. 3, pp. 265–76.
- Furusten, S. 1995. *The Managerial Discourse: A Study of the Creation and Diffusion of Popular Management Knowledge*. Doctoral thesis no. 60, Department of Business Studies, Uppsala University.
- Grant, R.M. 1991. The Resource-Based Theory of Competitive Advantage: Implications for strategy formulation. *California Management Review*, vol. 33, no. 3, pp. 114–35.
- Hamel, G. and C.K. Prahalad. 1994. *Competing for the Future*. Boston, MA: Harvard Business School Press.
- Hansen, M.T., N. Nohria and T. Tierney. 1999. What's Your Strategy for Managing Knowledge? *Harvard Business Review*, vol. 78, no. 2, pp. 106–16.
- Ilinitch, A.Y., R.A. D'Aveni and A.Y. Lewin. 1996. New Organizational Forms and Strategies for Managing in Hypercompetitive Environments. *Organization Science*, vol. 7, no. 3, pp. 211–20.
- Itami, I. and T. Roehl. 1987. *Mobilizing Invisible Assets*. Boston, MA: Harvard University Press.

- Jackson, S.E., M. Hitt. and A. DeNisi (eds). 2003. *Managing Knowledge for Sustained Competitive Advantage: Designing Strategies for Effective Human Resource Management*. San Francisco, CA: Jossey-Bass.
- KPMG. 2000. *KPMG's Knowledge Management Survey*. London.
- Latour, B. 1999. *Pandora's Hope. Essays on the Reality of Science Studies*. Cambridge, MA: Harvard University Press.
- Lengnick-Hall, M.L. and C.A. Lengnick-Hall. 2003. *Human Resource Management in the Knowledge Economy: New Challenges, New Roles, New Capabilities*. San Francisco, CA: Berrett-Koehler.
- Lennon, A. and A. Wollin. 2001. Learning Organizations: Empirically Investigating Metaphors. *Journal of Intellectual Capital*, vol. 2, no. 4, pp. 410–22.
- Leonard, D. 1995. *Wellsprings of Knowledge, Building and Sustaining the Sources of Innovation*. Boston, MA: Harvard Business School Press.
- Mouritsen, J., H.T. Larsen and P.N. Bukh. 2001a. Intellectual Capital and the 'Capable Firm': Narrating, Visualising and Numbering for Managing Knowledge. *Accounting, Organizations and Society*, vol. 26, no. 7, pp. 735–62.
- Mouritsen, J., H.T. Larsen and P.N. Bukh. 2001b. Valuing the Future: Intellectual Capital accounts at Skandia. *Accounting, Auditing & Accountability Journal*, vol. 14, no. 4, p. 399–422.
- Mouritsen, J., P.N. Bukh, H.T. Larsen and M.R. Johansen. 2002. Developing and Managing Knowledge Through Intellectual Capital Statements. *Journal of Intellectual Capital*, vol. 3, no. 1, pp. 10–29.
- Nelson, R.R. and S. Winter. 1982. *An Evolutionary Theory of Economic Change*. Cambridge, MA:
- Nonaka, I. 1994. A Dynamic Theory of Organizational Knowledge Creation. *Organization Science*, vol. 5, no. 1, pp. 14–37.
- Nonaka, I. and H. Takeuchi. 1995. *The Knowledge-Creating Company*. Oxford University Press.
- Peppard, J. and A. Rylander. 2001. Using an Intellectual Capital Perspective to Design and Implement a Growth Strategy: The Case of APiON. *European Management Journal*, vol. 19, no. 5, pp. 510–25.
- Plato. 1996. *The Collected Dialogues*. Princeton, NJ: Bollingen.
- Quinn, J.B. 1992. *Intelligent Enterprise: A Knowledge & Service Based Paradigm for Industry*. New York: Free Press.
- Reich, R.B. 1991. *The Work of Nations Preparing Ourselves for 21st Century Capitalism*. New York: Knopf.
- Spender, J.C. and R.M. Grant. 1996. Knowledge and the Firm: Overview. *Strategic Management Journal*, vol. 17, special issue, pp. 5–10.
- Stewart, T.A. 1991. Brainpower: How Intellectual Capital Is Becoming America's Most Valuable Asset. *Fortune*, 3 June, pp. 44–60.
- Stewart, T.A. 1994. Your Company's Most Valuable Asset: Intellectual Capital. *Fortune*, 3 October, pp. 68–74.
- Stewart, T.A. 1997. *Intellectual Capital: The New Wealth of Organizations*. New York: Doubleday/Currency.
- Stewart, T.A. 2001. *The Wealth of Organizations: Intellectual Capital and the Twenty-First Century Organization*. London: Nicholas Brealey.
- Sveiby, K.-E. 1997. *The New Organizational Wealth, Managing & Measuring Knowledge-Based Assets*. San Francisco, CA: Berrett-Koehler.
- Tiwana, A. 1999. *The Knowledge Management Toolkit: Practical Techniques for Building a Knowledge Management System*. Upper Saddle River: Prentice-Hall.

- Toffler, A. 1990. *Powershift: Knowledge, Wealth and Violence at the Edge of the Twenty-First Century*. New York: Bantam.
- Vendelø, M.T. 2005. IT in Knowledge Processes: If the Solution Is the Problem, Is There Then a Solution to the Problem? In P.N. Bukh, K.S. Christensen and J. Mouritsen (eds), *Knowledge Management: Establishing a field of Practice*. Basingstoke: Palgrave Macmillan.
- von Krogh, G., J. Roos and D. Kleine. 1998. *Knowing in Firms, Understanding, Managing and Measuring Knowledge*. London: Sage.
- von Krogh, G., K. Ichijo and I. Nonaka. 2000a. *Enabling Knowledge Creation: How to Unlock the Mystery of Tacit Knowledge and Release Power of innovation*. New York: Oxford University Press.
- von Krogh, G., I. Nonaka and T. Nishiguchi. 2000b. *Knowledge Creation: A Source of Value*. London: Macmillan.
- Wenger, E. 1998. *Communities of Practice: Learning, Meaning, and Identity*. Cambridge University Press.

Index

- Aarhus 120
Ackoff, R.L. 18
acquisition of knowledge 170
action-oriented aspects 18
Africa 177
Al-Ali, N. 2
Alajoutsijärvi, K. 201, 204
Alavi, M. 189, 190
Allee, V. 1
Almeida, P. 114, 115, 120
altruism 116
Alvesson, M. 9, 124–46, 198
Amir, E. 53
Amundsen, O. 126
analogies 26
analysis of knowledge 45
analysis of knowledge culture 45
Anand, V. 127, 128
Andersen Management
 International A/S 90–1, 92,
 93, 94, 96, 98, 99
Anderson, J.C. 195, 208
Angle, H.A. 47
anthropomorphism 128–9
Argote, L. 186
Argyris, C. 3, 26
Armstrong, M. 85
artefact-oriented epistemology
 7, 19–23, 230–2, 239,
 243, 244
 data, information and
 knowledge 17–19
 perception of knowledge 16–17
 process-oriented
 epistemology 15–31
Asia 177
Asplund, J. 129
asset specificity 202
AT&T 183
Augier, M. 42
autopoietic epistemology 153–6,
 163, 165, 167, 169–70, 235–8,
 239, 243–4

ba 27
 cyber 44
 dialoguing 27
 exercising 27, 44
 interacting 44
 originating 27, 44
 systemizing 27
back-office processes
 198, 211
Backhaus, K. 199
Badaracco, J. 20, 22
Baden-Fuller, C. 174
Baird, L. 36
balanced scorecard
 approach 15
balancing mutuality 201
balancing particularity 201
Balasubramanian, P. 19
Bang, H.K. 11, 222–39
Bannon, L. 43
Barley, S.R. 46
Barney, J.B. 3
Baron, J.N. 191
Bartlett, C. 85, 174, 187
Bauer, B. 85
Baxter, J. 3, 15, 111, 232
Becker, G.S. 85
Belgium 177
Berger, P. 129
Bettis, R.A. 19, 154
Bhaskar, R. 154
Birkenshaw, J. 21
Birkett, B. 106
Birkinshaw, J. 120
Blom, M. 9, 124–46
Boisot, M. 151, 181
Bontis, N. 2, 3, 196
book value 3, 54
borders of knowledge, new 101–22
 Ericsson Telebit 102–4
 Ericsson Telebit and
 characterization of
 knowledge 109–14

- horizontal borders of
 - knowledge 115–18
 - methodology 104–5
 - organizational development and changes 105–9
 - vertical borders of
 - knowledge 118–19
- Boston Consulting Group 181
- bottleneck 211
- bottom-up 182, 200
- BP-Amoco 39
- Bradley, S. 140–1
- Bramming, P. 86
- broad co-operators 204–5
- Brown, J. 26, 28, 43, 124, 125, 185
- Brown, R. 158
- Bukh, P.N. 1–11, 15–31, 53–68, 70–84, 101, 121, 223, 226, 242–7
- Burgelman, R.A. 36, 49
- Burton-Jones, A. 222, 232

- Cannon, J.P. 200, 201
- Capability Maturity Model (CMM) 81, 82, 111, 117
- Carlson, E.D. 18, 21
- Cartwright, C. 166
- Castanias, R.P. 3
- Castells, M. 204
- centralized knowledge
 - creation 182–6
- centre of excellence 183
- Cervantes, M. de 47
- Chandler, A.D. 114
- Chang, L. 106
- characterization of
 - knowledge 109–14
- Child, J. 158
- Chomsky, N. 230
- Choo, C.W. 2, 3, 235
- Christensen, K.S. 1–11, 15–31, 53–68, 222–39, 242–7
- Christensen, P.H. 222
- Chua, W.F. 3, 15, 111, 232
- Ciborra, C.U. 37, 40, 46, 47
- cloudmakers.org 41
- Clouse, D.A.A. 111n
- co-developers 204–5
- codification strategy 22, 28, 29, 30, 180–2, 244
 - epistemological cultures and knowledge transfer 169
 - FKI Logistex Crisplant 226, 232
 - information technology 42
 - multinational corporations 191
 - organizational memory 125, 126, 127
- cogeneration of net supplier value
 - in relationships 212–16
- cognitivist epistemology 124, 153–6, 163, 165, 167, 169–70, 243
- Cohen, M.D. 37, 39
- Cohen, S. 185
- cohesive corporate
 - epistemology 157
- collective memory 144–5
- combination 25–6, 27, 30, 125, 232, 235
- communication 238
 - systems 43
- communities of practice 43, 185
- community networking
 - model 124
- Compaq Work Expedito 43
- competencies 72, 92–5
 - catalogue 89, 93
 - core 106, 125
 - development 95–7, 115–16
 - employees 86–7
 - FKI Logistex Crisplant 225
 - gap 89
 - human capital statements 86–7, 88, 98
 - individual 8–9, 72–3
 - intra-organizational 94
 - new borders of knowledge 109–10, 112, 114
 - operative 94
 - operative standard 93, 99
 - organization 87
 - organizational memory 126
 - profiles 77, 78, 91–2
 - statement 99
 - team 87
 - unique 94
 - see also* meta-competencies

- Competency Universe 91,
 92, 93
 Competition Council 87
 Conklin, E.J. 230, 232
 connectivist epistemology 153–6,
 163, 165, 169–70
 control of knowledge 4–5
 Cook, S.D.N. 125
 Cool, K. 198
 Cooper, C.L. 166
 Cooper, R.G. 228
 cooperation, inter-disciplinary
 76–8
 coordination 22–3
 support systems 43
 Core, J.E. 59
 corporate epistemology 155, 156
 Cova, B. 200, 209, 216, 217
 Coviello, N.E. 201
 creation of knowledge 170
 creative working model 226–8,
 233, 234
 creativity 97, 98, 225–6
 Cross, R. 36
 cultural knowledge 235
 customer 75, 78
 capital 55, 97–8
 -oriented organization 77
 satisfaction 84
 see also in-depth collaboration
 with customers
 Czech Republic 177

 Daft, R.L. 20, 49, 154
 data 7, 17–19, 20, 22
 Davenport, T.H. 4, 18,
 112, 116
 Davis, R. 21n
 Day, G.S. 206, 209
 decentralized knowledge
 creation 182–6
 declarative memory 127
 Deloitte & Touche 180
 Denmark 7–8, 42–3, 58–60, 67
 Competition Authority 87–9,
 92, 93, 94, 96, 98, 99
 Energy Regulatory
 Authority 87
 intellectual capital 54, 59
 Leadership Institute 91–2
 Ministry of Economic
 Affairs 87
 Society of Chemical, Civil,
 Electrical and Mechanical
 Engineers 91
 strategy development 80
 Denzau, A.T. 42
 DeSanctis, G. 38n
 Diederichs, M. 196
 Dierickx, I. 198
 DIEU 93, 94, 96, 98, 99
 direct knowledge bases 42
 directive transfer 190
 distribution of knowledge 45
 Dixon, N.M. 244
 double-loop learning 228
 Drucker, P. 1, 2, 222
 Duguid, P. 26, 28, 43, 124, 185
 Dybdal, P.J. 106, 108, 109–10,
 112–13, 115–17, 119

 e-mail systems 44
 Earl, M.J. 23, 232
 Eason, K.D. 21
 Edvinsson, L. 2, 3, 54, 56, 85
 Eglie, P. 198, 209, 211
 Eisenhardt, K.M. 159
 eksperter.dk 41
 elements of knowledge
 management 243–6
 embedded case-study design 224
 employees 72, 78
 development 75
 examination of 95–6
 Environmental Committee 184,
 190
 episode of interaction 212, 214
 epistemological cultures and
 knowledge transfer 149–71
 alignment of knowledge
 management 168–70
 case background 159–62
 epistemological cultures as
 varying notions of
 knowledge 152–7
 epistemological view 150–2
 findings and implications of the
 study 165–8

- inter-organizational transfer of
 - knowledge 158–9
 - method of study 162–5
- epistemological perspective 10, 17–18, 155
- Ericsson Telebit 9, 101, 102–4
 - and characterization of knowledge 109–14
- Ericsson University 103
- Ernst & Young 180
- Ernst, B. 126
- Europe 11, 58–9, 81, 155, 174
- European Commission 53
- Evans, C. 3
- executing mode 234
- expectations 233
- explicit knowledge 7, 20, 22, 24, 25, 27, 30, 110
 - epistemological cultures and knowledge transfer 156
 - FKI Logistex Crisplant 225, 226, 232, 235
 - multinational corporations 181, 189, 190
 - organizational memory 125
 - explicit rewards 187
- explicit tacit knowledge 26
- exploitation 45, 183–4, 204–5
- exploration 183–4
- external knowledge 71
- externalization 25–6, 27, 28, 30
 - FKI Logistex Crisplant 232, 233, 235
 - multinational corporations 181
 - organizational memory 125
- face-to-face contact 226
- Fahey, L. 5
- Faulkner, D. 158
- Feldman, M.S. 44
- Finland 11, 202, 203–4, 206, 217
- FKI Logistex Crisplant 11, 222–39
 - artefact-oriented epistemology 230–2
 - autopoietic epistemology 235–8
 - creative working process 226–8
 - creativity 225–6
 - method 224–5
 - process-oriented epistemology 232–5
 - project management model 228–30
- Flagstad, K. 85
- focused buyers 204–5
- Ford, D. 195, 217
- formalization 126
- Foss, N. 187
- Foucault, M. 96
- Francis, J. 59
- Frey, B. 187
- front office 211
- Fulk, J. 38n
- Furusten, S. 2
- Geertz, C. 144
- Gemünden, H.G. 200
- Generalist company 159–69
- generation of knowledge 45
- Germany 177, 200
- Ghoshal, S. 85, 174, 187
- global knowledge sharing 175–6
- Grant, R. 3, 174
- Gratton, L. 85
- Grayson, C.J. 189
- Greece, ancient 6
- Grönroos, C. 199, 208, 211, 212
- Gummesson, E. 196, 212
- Gupta, O. 150, 155, 157, 158
- Habermas, J. 153, 154
- Häkansson, H. 196, 197, 198n, 206, 210
- Halinen, A. 196
- Hamel, G. 3, 21, 23, 73, 166, 196, 200, 232
- Hansen, M.T. 4, 22, 28, 42, 180, 187, 226, 244–5
 - organizational memory 125–6, 130
- Hanseth, O. 37, 40, 46, 47
- Haspeslagh, P. 166
- Hatherley, D.J. 246
- Hawthorne studies 85
- HC Knowledge Management System 177
- Heidelberg Technology Centre (HTC) 176

- HeidelbergCement 173, 175–80
 Helfat, C.E. 3
 Herzberg, F. 85
 Hevert, K.T. 195, 208
 Himanen, P. 204
 Hoffmann-LaRoche 37, 47
 Holm, U. 183
 Holmström, B. 187, 191
 Holsappie, C.W. 21
 horizontal borders of
 knowledge 114–18, 120
 Huber, G. 20, 151
 human capital 55, 243
 human capital statements
 85–99
 Andersen Management
 International A/S 90–1
 competencies 92–5
 competencies development
 95–7
 Danish Competition
 Authority 87–9
 Danish Leadership
 Institute 91–2
 individual and management of
 knowledge 97–8
 human-relations-related
 resources 209
 Hunt, S.D. 201

 IBM 183
 Ichniowski, C. 191
 idea mode 227, 234
 Ilinitch, A.Y. 4
 illustrations 66
 in-depth collaboration with
 customers 195–218
 case study 202–6
 cogeneration of net supplier
 value in relationships
 212–16
 knowledge sharing 196–201
 multiple customer and societal
 effects 216–18
 relational exchange 206–12
 incentives 75, 186–9
 indicators 61–2, 63–4, 65, 66, 68,
 74, 78, 79–80
 indirect knowledge bases 42

 individual 24
 knowledge 9, 110,
 111–13, 235
 and management of
 knowledge 97–8
 -to-individual 111
 individual-to-document 111
 information 7, 17–19, 20,
 22, 77
 information and communication
 technology support 189–91
 information technology 5, 7,
 35–50, 74, 75
 and the organization 46
 organization knowledge
 projects 45–6
 play, technology and new
 knowledge processes 47–8
 systems with potential for
 knowledge management
 41–5
 initiation of knowledge
 management 81–3
 initiatives 61–2, 63–4, 65, 66,
 74–8
 Inkpen, A.C. 21, 244
 institutional support 176
 institutionalization 10
 intangible assets 3
 integrated knowledge
 management systems design
 in multinational
 corporations 173–93
 centralized versus decentralized
 knowledge creation 182–6
 codification versus
 personalization 180–2
 elements 191
 HeidelbergCement 175–80
 hype to disgrace 174–5
 incentives for knowledge
 sharing 186–9
 information and
 communication technology
 support 189–91
 managerial implications 192–3
 integration of knowledge 45
 intellectual capital 53–68, 167–8
 elements 54–60

- Danish firms and intellectual capital statement 58–60
 intellectual capital statement 55–8
 epistemological cultures and knowledge transfer 150, 154
 Maxon Telecom 62–5
 report 83–4, 121
 statement 60–2, 85, 96
 new borders of knowledge 109, 120
 as report 65–6
 strategy development 79–80, 81, 84
 interaction support systems 43–5
 interactive transfer 190
 inter-disciplinary cooperation 76–8
 internal knowledge 71
 internalization 25–7, 28, 30, 125
 FKI Logistex Crisplant 232–3, 234, 235
 Internet Protocol 102, 103, 104, 105, 106
 interviews, semi-structured 105
 Itami, I. 1

 Jackall, R. 126
 Jackson, S.E. 5
 Japan 154, 912
 Jemison, D. 166
 Jensen, M.C. 208
 Johansen, M.R. 8, 70–84
 Johanson, U. 59
 joint meetings 77
 Joshi, K.D. 21

 Kanter, R.M. 49
 Kaplan, R.S. 15, 53
 Kärreman, D. 9, 19, 21, 124–46
 Kawakita, J. 226
 Khanna, T. 196
 Kierkegaard, S. 47–8
 Kieser, A. 126
 Klammer, F. 46
 knowledge 20, 22

 Knowledge Management Board 177, 179, 184–5, 186, 190
 Knudsen, C. 196
 Kobayashi, S. 226
 Koenig, M. 125
 Kogut, B. 102, 114, 154
 Konno, N. 25, 27, 44, 234–6
 Korea 8, 62
 KPMG 5
 Kreiner, K. 145
 Kreps, D.M. 191

 Laine-Sveiby, K. 153
 Langeard, E. 198, 209, 211
 language 236
 Larsen, H.H. 86
 Latour 245
 Laursen, K. 187, 191
 Lave, J. 17, 26
 learning by earning 90
 Lee, V.C. 15
 legitimation 176
 Leidner, D.E. 189, 190
 Lengel, R.H. 20
 Lengnick-Hall, C.A. 5
 Lengnick-Hall, M.L. 5
 Lennon, A. 15
 Leonard, D. 3
 Lev, B. 53, 59
 Levitt, B. 36
 Lillrank, P. 158
 Lippman, S. 149
 L.M. Ericsson Group 9, 101, 103
 Lotus Notes 37, 43
 Löwendahl, B.R. 126, 198, 199, 203
 Lucier, C.E. 222
 Luckman, T. 129
 Lueg, C. 22
 Luhmann, N. 235
 Lyles, M. 19, 20, 151

 Macharzina, K. 158
 Mahnke, V. 10, 173–93
 Malone, M.S. 2, 3, 54, 56, 85
 Malone, T.W. 21
 management challenges 60–2, 63–4, 65, 66, 68, 71–4

- mapping of knowledge 170
 March, J.G. 36, 47–8,
 50, 183–4
 March, J.O. 154, 158
 market value 3, 54
 Marr, B. 17, 155, 157, 158,
 163, 169
 Maslow, A.H. 85
 Maturana, H. 235
 Maxon Telecom 8, 62–5, 66
 McCarthy, J. 230
 McDermott, R. 36–7, 43, 189
 McKinsey 181
 McNamara, C. 111
 memory support systems 42–3
 mentorship 226
 Meritum 53
 Merkantildata 90
 meta-competencies 93, 94, 99
 metaphors 26
 Metaxiotis, K. 18, 21
 Microsoft 183
 Exchange 43
 Netmeeting 44
 Outlook 43
 middle-up-down 29, 30
 Milgrom, P. 173, 187, 191
 Miner, A.S. 127, 128–9
 Minsky, M. 15, 230
 Möller, K. 196
 Moorman, C. 127, 128–9
 Morecroft, J. 195
 Morgan, G. 222
 Morgan, R.M. 201
 Morrison, J. 21
 Mouritsen, J. 1–11, 53–68, 70–84,
 85–99, 145, 242–7
 multinationals *see* integrated
 knowledge management
 systems design in
 multinational corporations
 multiple customer 216–18
 Munro, R.J.B. 246
 mutuality 204
- narrative of knowledge 60, 61–2,
 63–4, 66
 Narus, J.A. 195, 208
 Nelson, R.R. 3
- net supplier value in
 relationships 212–16
 Nielsen, C. 9, 101–22
 Nielsen, J. 44
 Nielson, C.C. 201
 Nonaka, I. 1–7, 16, 18, 23–7, 29,
 72, 110, 125, 127, 166
 FKI Logistex Crisplant 232–3,
 234–5
 human capital statements 85
 information technology in
 knowledge processes 36, 44
 integrated knowledge in
 management multinationals
 173, 181, 189
 intellectual capital 62
 Nordhaug, O. 86, 93
 Nordic countries 7
 North America 174
 North, D.C. 42
 Norton, D.P. 15, 53
 Norway 90
- Oakland, J.S. 96
 O'Dell, C. 189
 Ojasalo, J. 212, 216
 Olsen, J.P. 36
 online cooperation systems 44
 operative planning 166
 organization 75
 organization architecture
 177–8
 organization knowledge
 projects 45–6
 organizational capital 55,
 97–8
 organizational development and
 changes 105–9
 organizational knowledge 9, 10,
 110, 113–14
 FKI Logistex Crisplant 235
 organizational memory 9–10
 organizational memory:
 remembrance and recollection
 124–46
 collective memory as cultural
 rather than cognitive 144–5
 collective memory
 management 145

- collective memory and
 - recollection as social process 144
- knowledge management as recycling 141–4
- knowledge management systems as facilitators of communication 140–1
- method 130–1
- Orlikowski, W.A. 37, 40
- Osterloh, M. 187
- Ouchi, W.G. 187

- particularity 204
- partnership with customer 73
- patron–client relationship 96–7
- Pedersen, T. 173, 183
- people-to-document method 22
- people-to-people method 28
- Peppard, J. 2
- perception of knowledge 16–17
- Perreault, W.D. 201
- Perrow, C. 158
- personal competence
 - statement 90
- personalization strategy 22, 28, 30, 180–2, 244
 - FKI Logistex Crisplant 226, 234, 237, 238
 - organizational memory 125, 126
- Personnel Aspect Management group 116
- Peters, T. 85
- Peyrefitte, J. 118
- Pfeffer, J. 129, 151
- physical resources 75
- Pitelis, C.N. 114
- planning mode 227, 234
- planning systems 75
- Plato 6, 109
- playfulness 47–9
- Polanyi, M. 20, 110, 198, 210
- Pold, M. 111
- Porter, M.E. 198n
- Prahalad, C.K. 3, 19, 23, 73, 154, 196, 232
- Prennushi, G. 191
- procedural memory 127
- process development 75
- process management 117–18
- process-oriented epistemology 7, 234, 239
 - see also* artefact-oriented epistemology and process-oriented epistemology
- processes 72, 78
 - improvement 73
- product development 75
- production rules 21
- production-related activities 209
- production-related resources 209
- products 103–4
- profile-based information systems 42
- project descriptions 78
- Project Einstein 176, 177, 179, 182
- project intranet 77–8
- project management 117–18
- project management education 77, 78
- project management model 228–30, 231, 234, 238
- project organization 77
- projects, new 77
- Prusak, L. 4, 5, 18, 112, 116

- Quélin, B. 196
- question–answer dialogues 21, 22
- Quinn, J.B. 2
- Quintas, P. 124
- Quixote, D. 48

- reciprocity 116
- recollection *see* organizational memory: remembrance and recollection
- recruitment 72, 79
- recycling 141–4
- reductionism 40–1
- Reich, R.B. 2
- Reinholdt, E. 110, 112, 113–14, 117–19
- relational exchange 196–201, 204–12
- remembrance *see* organizational memory: remembrance and recollection

- reputation 116
- retainment 72, 79
- Rigby, D. 174
- Roberts, J. 173, 191
- Roehl, T. 1
- Roos, G. 10
- Roos, J. 15, 16–17, 149–71, 222, 235
- Rose, C. 196
- Ruggles, R. 124, 143
- Rumelt, R.P. 149
- Rust, R.T. 212
- Rylander, A. 2

- Salancik, G.R. 129
- Sanchez, R. 195, 200, 201, 206, 207, 208, 209–11, 212
- Sanderlands, L. 127
- Sarvary, M. 182, 183
- Sayles, L.R. 36, 49
- Scandinavia 4, 53, 58–9
- Schein, E.H. 46
- Schipper, K. 59
- Schiurma, G. 169
- Schön, D.A. 3, 26
- Schultz, M. 108
- Schwenk, C. 19, 20
- SECI model 232, 233, 234
- seeing again mode 227–8
- seeing mode 227, 233, 234
- self-organized networks 243
- semantic information 18
- Seppänen, V. 195, 202, 205
- Service Quality Model 215
- Shannon, C.E. 18
- sharing of knowledge 20–1, 74, 115–16, 170
- Sharma, D.D. 199
- Shaw, K. 191
- Sher, P.J. 15
- Simon, H.A. 15, 18, 20, 39, 40, 42, 153, 154, 158, 230
- Simonin, B.L. 187, 196
- Simons, R. 151
- Sivula, P. 195, 196–7, 199, 209
- Skaates, M.A. 10–11, 195–218
- Skandia 2, 54

- SKF 37
- Smircich, L. 144
- snowballing strategies 141
- Snyder, W. 183, 185, 187
- social networks 226
- social perspectives 156
- socialization 25–6, 27, 28, 30
 - FKI Logistex Crisplant 232, 233, 234, 235
 - multinational corporations 191
 - organizational memory 125
- societal effects 216–18
- Socrates 6
- software process
 - improvement 83
- Specialist company 159–69
- specification 79
- Spence, A.M. 187
- Spender, J.C. 3
- spinoff analysis 45, 46
- sponsors 104
- Sprague, R.H. 18, 21
- Stablein, R. 127
- stakeholder analysis 45
- standardized knowledge 226
- standardized working methods 77, 78
- Stewart, T.A. 1, 2, 3, 56
- Stewart, T.S. 85
- Storbacka, K. 212
- storing of knowledge 170
- strategic alignment 176–8
- strategic options perspective 208
- strategic planning 166
- strategy development for
 - knowledge management 66, 70–84
 - indicators 79–80
 - initiatives 74–8
 - management challenges 71–4
 - Systematic Software Engineering 80–4
- structural capital 243
- structural perspectives 156
- subjective aspects 18
- success, measurement of 179–80
- Sullivan, P.H. 23

- supervision 75
 Sutton, R.I. 151
 Sveiby, K.-E. 3, 15, 56, 85, 151, 208
 Swan, J. 124, 143
 Sweden 131, 177
 syntactic information 18
 Systematic Software
 Engineering 8, 80–4
 tacit knowledge 7, 24, 25, 27,
 28, 30
 epistemological cultures
 and knowledge
 transfer 156, 166
 FKI Logistex Crisplant 226,
 232, 235, 237, 238
 in-depth collaboration with
 customers 210
 multinational corporations 181,
 182, 190, 191
 new borders of knowledge 110
 organizational memory 125,
 127
 Takeuchi, H. 1, 2, 3, 4, 6, 16, 18,
 23, 29, 62, 85, 110, 154, 181,
 189
 team spirit 116–17
 technical or commercial
 requirements, new 217
 Technical Marketing
 Committee 184, 190
 technology 72, 78
 conversion 217
 diversion 217
 Teece, D.J. 181
 Telebit 101, 103
 teleconference systems 44
 text 66
 Theatetus 6
 Thomas, J.B. 20, 29
 Thorbjørnsen, S. 8, 85–99
 Tikkanen, H. 201, 204
 Tiwana, A. 3
 today's profits 217
 Toffler, A. 2, 18, 20, 174
 tomorrow's profits 217
 top-down 182, 200
 Torpe, H. 226
 Torsilieri, J.D. 222
 trained craziness 46–7, 48–9
 training 199
 transfer of knowledge 111, 170
 paradox 198, 203, 204
 see also epistemological cultures
 and knowledge transfer
 Trevino, L.K. 20, 29
 triple-loop learning 228
 Trojan horses 217
 trust 116
 Tsoukas, H. 125
 Turkey 177
 Turner, R. 111n
 Ungson, G.R. 19, 42, 127,
 128, 129
 United Kingdom 5, 81, 159
 United States 81, 111n,
 177, 200
 up-or-out principle 37
 Van de Ven, A.H. 47, 217
 Varela, F. 15, 19, 153,
 154, 235
 Vendelø, M.T. 3, 7, 35–50, 199
 Venzin, M. 10, 17, 150, 152,
 153, 154, 167, 173–93
 vertical borders of knowledge
 114–15, 118–19, 120
 Vicari, S. 235
 virtual competence centres 76–7
 visibility creation in the
 market 73
 Vladimirov, E. 125
 von Krogh, G. 4, 15, 16–17,
 24, 62, 73, 74, 124,
 222, 235
 epistemological cultures 150,
 152, 153, 154, 169
 integrated knowledge
 management
 multinationals 173,
 186, 187
 Vorstand (Executive Board of
 Directors) 175
 VTT Electronics 202
 Walsh, J.P. 19, 42, 127, 128, 129
 Walter, A. 200

Waterman, R.H. 85

Wathne, K. 21

Weaver, W. 18

Weber, M. 126, 154

Weick, K.E. 154

Weiser, M. 21

Wenger, E. 3, 17, 26, 183,
185, 187

Williamson, O. 114

Winter, S. 3

Wollin, A. 15

Yin, R.K. 105, 224

Zambon, S. 53

Zander, U. 102, 114, 154

Zarowin, P. 59

Zeithaml, V.A. 196, 212, 215