

Suggested reading

The following are synopses of recent books and papers on various aspects of knowledge management (KM) that may be of interest to readers of the *IBM Systems Journal*. Inquiries should be directed to the publishers cited. The synopses were contributed by Robert Mack, Wendy Kellogg, and John C. Thomas, all at the IBM Thomas J. Watson Research Center in Hawthorne, New York.

Working Knowledge: How Organizations Manage What They Know, Thomas H. Davenport and Laurence Prusak, Harvard Business School Press, Boston, MA, 2000. 240 pp. (ISBN 1578513014). Thomas Davenport and Laurence Prusak are both well-known and respected experts in knowledge management. Both have authored a number of books, any of which would provide useful perspectives on knowledge management. *Working Knowledge* is an interesting overview of KM practices, based on an analysis of more than 30 “knowledge-intensive” corporations, where managing expertise is essential to the business. You will learn how companies like Andersen Consulting, Buckman Laboratories, Ernst & Young, and IBM, among many others, “do knowledge management.” The authors provide a framework that focuses on generating, codifying and coordinating, and transferring knowledge, and they discuss the roles and skills implied in these activities. The framework echoes schemes discussed in papers in this issue of the *IBM Systems Journal*. The book-length treatment, in addition to giving concrete corporate examples, is quite valuable. An early chapter provides a useful “knowledge market” model of the factors influencing how knowledge is valued, shared, and brokered, and how it flows within a community. Although the authors emphasize the social and organizational contexts of knowledge management, they do devote a chapter to surveying key technologies associated with KM practices. A final chapter, entitled “The Pragmatics of Knowledge Management,” reminds us that the goal of KM is not knowledge accumulation or chasing the latest technological silver bullet, but informed action in practical, business problem-solving contexts. The authors “talk to” the reader, summarizing lessons learned from corporations and their own considerable consulting experience.

Modern Information Retrieval, Ricardo Baeza-Yates and Berthier Ribeiro-Neto, Addison-Wesley Publishing Co., Read-

ing, MA, 1999. 513 pp. (ISBN 020139829X). This book is a collection of technical papers on the technology and research foundations of modern information retrieval. The book is definitely not for the casual reader, and should appeal to technically inclined and determined readers. If you have ever wondered what is a “full text search index,” how it is implemented, what “relevance ranking” means, and so on, this is the book to read. The book is a collection of chapters written by the authors and other prominent specialists in the computer science and information retrieval community. Topics covered emphasize how text is analyzed and indexed, methods of text query (free text, Boolean), and methods for evaluating search engines. Additional topics address Web and multimedia-related search issues, categorization and clustering, advanced user interfaces for search (including visualization techniques), formal indexing and bibliographic practices of librarians, and digital libraries. Although there is no mention of “portals” or “knowledge management,” the topics that are discussed (e.g., text search, Web search) are clearly relevant to portals. The reader who understands the material in this book should be in a good position to evaluate, and ask questions about, claims of vendors offering KM-related technologies.

“The Road Ahead for Knowledge Management,” Reid Smith and Adam Farquhar, *AI Magazine*, Winter 2000, pp. 17–40. The fortunes of artificial intelligence (AI) wax and wane in the software industry and in the research community, but AI provides an interesting perspective for thinking about the future of software technology. This article discusses the possibility that AI will radically impact knowledge management. However, the reader should not get too excited. This paper does not describe any serious new AI solutions, but gives us a “KM Technology Road Map” in the context of AI issues. The road map has familiar stopping places, and the authors are well-positioned to lead the tour, because they have senior management and research roles in the Schlumberger corporation and understand the key challenges of knowledge management. Interestingly enough, the article focuses on the human side of KM and on communities of practice. What kinds of knowledge do communities of practice deal with? How is this knowledge developed, expressed, and shared? How can we ensure that the right information gets to the right people when it is needed? The authors argue that the answers to these questions align with the goals of AI, that is, the goals are to represent

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knowledge in forms that can be manipulated and applied to problem solving, not replacing human mediation, but enhancing human problem solving.

In Good Company: How Social Capital Makes Organizations Work, Don Cohen and Laurence Prusak, Harvard Business School Press, Boston, MA, 2001. 224 pp. (ISBN 087584913X). Recently the concept of social capital—the “features of social organizations such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit” according to Robert Putnam in *Bowling Alone* (Touchstone Books, 2001)—and the possible role it may play in the networked organization, has come to the fore in discussions of knowledge management. In this book, Cohen and Prusak examine how organizations succeed or fail at investing in and building social capital through mechanisms such as networks, communities, an organizational culture that allows “space and time to connect,” social talk, and storytelling. The authors explain their view of how social capital plays in organizational behavior:

Social capital makes an organization, or any cooperative group, more than a collection of individuals intent on achieving their own private purposes. Social capital bridges the space between people. Its characteristic elements and indicators include high levels of trust, robust personal networks and vibrant communities, shared understandings, and a sense of equitable participation in a joint enterprise—all things that draw individuals together into a group. This kind of connection supports collaboration, commitment, ready access to knowledge and talent, and coherent organizational behavior (p. 4).

On the jacket we read, “this groundbreaking book argues that social capital is so integral to business life that without it, cooperative action—and consequently productive work—isn’t possible. The authors help today’s leaders understand the nature and value of social capital, suggest ways they can encourage and enhance it, and explore how they can protect this vital but increasingly vulnerable resource in a volatile, virtual world.” Like Davenport and Prusak’s *Working Knowledge*, *In Good Company* draws on the experience of real organizations to develop and elucidate its points. A timely topic and a good read.

Managing Interactively: Executing Business Strategy, Improving Communication, and Creating a Knowledge-Sharing Culture, Mary E. Boone, McGraw-Hill, New York, 2001. 322 pp. (ISBN 0071358668). Mary Boone, a leading authority on organizational communication and collaborative technologies, and an executive consultant on how organizations can improve their performance and strategy execution through better communication, says “Forget ‘buy-in’—What you need in today’s warp-speed environment is full ownership of strategies, ideas, projects, and results” (book jacket). In this engaging and highly readable book, Boone defines ten key management and communication competencies business leaders need to create profitable relationships in today’s networked world. The competencies include: making people (and their knowledge) accessible to others; engaging people across organizational boundaries; sharing power to transform an organization; designing physical and on-line environments; creating rituals and shared experiences; and using stories to capture and share knowledge. Boone nails the reasons that new approaches to communication in organizations are needed now, pointing to trends in increased organizational alliances and cross-department teamwork, greater employee autonomy, increased scarcity of attention, continuous adoption of communication technologies, the broadening and increased diversity of the people

we communicate with, and the increased significance of intellectual capital. In four major sections, Boone shares methods and technologies for breaking down the barriers between people in organizations, enhancing knowledge sharing, inspiring people to create, own, and act on ideas, and practical strategies for smart communication.

Communities of Practice: Learning, Meaning, and Identity, Etienne Wenger, Cambridge University Press, Cambridge, MA, 1998. (ISBN 0521430178). If you want to discover the roots of the currently popular notion of communities of practice, this is the book that was the first to explore it systematically. In the context of an extensive ethnography of a medical insurance claims processing office, Wenger develops a theory of learning that “starts with [the] assumption [that] engagement in social practice is the fundamental process by which we learn and so become who we are” (book jacket). The book is part of the “Learning in Doing: Social, Cognitive, and Computational Perspectives” series edited by Roy Pea, John Seely Brown, and Jan Hawkins. Readers of this book will get an in-depth view of topics such as the concept of practice, meaning (negotiation of meaning, participation, and reification of meaning), and community from a thoughtful author and a well-grounded perspective. Other sections of the book take up the topic of identity (what is identity, identity in practice, participation and nonparticipation, modes of belonging, identification, and negotiability) and design (design for learning, learning architectures, organizations, and education). Etienne Wenger “is an independent author, researcher, and consultant. *Communities of Practice* was written while he was Senior Research Scientist at the Institute for Research on Learning at Menlo Park. His previous books are *Situated Learning* (with Jean Lave) and *Artificial Intelligence and Tutoring Systems*” (book jacket). Definitely recommended, but Wenger’s academic approach will take more effort than the typical business strategy book.

The Walking People, Paula Underwood, Tribe of Two Press, San Anselmo, CA, 1995. 839 pp. (ISBN 1879678071). *The Walking People* by Paula Underwood is the transcribed oral history of her branch of the Iroquois. Paula Underwood, half Native American, was chosen by her family as the designated storyteller and trained in memory and interpretation skills from an early age in order to fulfill that role. She also became familiar with the mainstream American culture and worked for the U.S. government in Washington D.C. for many years. Her experience is fascinating on its own, and relevant to knowledge management issues today. *The Walking People* recounts the journey of a people over a millennium or so from Asia, across a land bridge to the northern coast of North America, down the Pacific coast, across the great plains, over to the Atlantic Ocean, and back to the Great Lakes, where the people eventually settled. During this journey, the people encountered and had to adapt to a wide variety of physical circumstances as well as a wide variety of other tribes with various mores, customs, and ways of looking at the world. The walking people did learn to deal with each new situation. They always asked themselves the question, “What did we learn from this?” in a broader sense; in other words, “how can we learn more effectively and efficiently next time?” The story begins in Asia where the people live in a tripartite society. The “First Among Us,” who are the keepers of the tribal songs, stories, and wisdom, live in the prime real estate on the beach. The older people and the children live in nearby caves. A third group lives in the hills. One day, an earthquake causes “rocks like rain,” which kill or injure many of the tribe. Then, a tidal wave sweeps away every

single one of the First Among Us, the people who are supposed to be the keepers of the wisdom. Fortunately for the walking people, one curious little girl had the habit of sneaking up to the night campfires of the First Among Us and listening to the stories. After the tragedy, she, now grown, becomes the leader of what remains of the tribe. When they come to the land bridge in order to cross into a new continent, they find that much of it has been swept away. Someone thinks back upon a much earlier story in which a teacher of hunters had the insight that the various colors of the earth (pigments) could be combined to make the “animal stay still” (cave paintings) so that learners could learn without danger. The lesson learned from this was that where one may fail, many working together may succeed. Using this as an analogy to apply to the current situation, the walking people build a giant rope braided from many strands used to hold the whole people together as they cross the treacherous, sea-swept land bridge. In the book as a whole, there are numerous descriptions of methods to balance individual and community interests, identifying and overcoming mental prejudices, dealing with competitors, cross-checking knowledge sources, and other activities applicable to issues of knowledge management in today’s world.

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