Knowledge Management (KM) has been growing in importance and popularity as a research topic since the mid 1990s. This is sufficient time for many organizations to implement KM initiatives and KM systems (KMS). This book presents twenty cases investigating the implementation of KM in a number of business and industry settings and a variety of global settings. The purpose of this book is to fill a deficiency that I’ve observed while teaching KM. KM is being taught in specialized courses and as a topic included in Decision Support Systems (DSS), Enterprise Information Systems (EIS), and Management Information Systems (MIS) issues courses. The deficiency I’ve observed is in moving discussions of KM from a focus on theory to the more practical focus of how to implement KM to help organizations improve their performance. Existing course materials do include some short cases and/or vignettes discussing KM in business settings, but I haven’t found any source that has multiple, detailed teaching cases. This book is meant to fill that void.

The cases contained in this book are presented as teaching cases. All have discussion questions and are written in a style that students can easily read and understand. Also, additional sources and support materials are included where appropriate. The book includes cases from many different countries in an attempt to appeal to as wide an audience as possible. Cases are included from Australia, Austria, Bahrain, China, Egypt, Germany, Great Britain, Hong Kong, India, New Zealand, and the United States. Additionally, a variety of business situations are presented including banking, consulting, engineering, government agencies, manufacturing, military, project management, software development, and public utilities. Also, several different related processes and technologies are discussed. Related processes include organizational learning (OL) and organizational memory (OM). Technologies include Customer Relationship Management (CRM), Enterprise Resource Planning (ERP), Data Warehousing, networking, and Intranets. Finally, several issues are addressed including knowledge capture, knowledge sharing, knowledge transfer, knowledge representation, organizational culture, management support, KM/KMS success, KM sustainability, retaining worker knowledge, creating learning organizations, and management support.
WHAT IS KM?

There are many definitions of KM but this book combines the KM and OM literature to define KM as the process of selectively applying knowledge from previous experiences of decision-making to current and future decision making activities with the express purpose of improving the organization’s effectiveness. This definition allows us to define the goals of KM as:

- Identify Critical Knowledge
- Acquire Critical Knowledge in a Knowledge Base or Organizational Memory
- Share the stored Knowledge
- Apply the Knowledge to appropriate situations
- Determine the effectiveness of using the applied knowledge
- Adjust Knowledge use to improve effectiveness

WHY OM AND OL?

Why is OM, and OL included in a book on knowledge management? Jennex and Olfman (2002) found that the three areas are related and have an impact on organizational effectiveness. KM and OM are observed to be manifestations of the same process in different organizations. User organizations ‘do’ knowledge management; they identify key knowledge artifacts for retention and establish processes for capturing it. OM is what IT support organizations ‘do’; they provide the infrastructure and support for storing, searching, and retrieving knowledge artifacts. OL results when users utilize captured knowledge. That OL may not always have a positive effect is examined by the monitoring of organizational effectiveness. Effectiveness can improve, get worse, or

Figure 1. The KM/OM/OL Model (Jennex & Olfman, 2002)
remain the same. How effectiveness changes influences the feedback provided to the organization using the knowledge.

WHAT IS A KMS?

The cases in this book address the implementation of Knowledge Management Systems (KMS). However, KMS is a term that does not have a consensus definition. Yes, we know what the initials KMS stand for and we have an understanding of what a system is. The IPO model: Inputs, Processes, Outputs, defines a basic system that when we add feedback, is a fair description of a KMS in a learning organization. We get further insight into what an information system is from Alter (1999) who defines an information system as humans or machines limited to processing information by performing six types of operations: capturing, transmitting, storing, retrieving, manipulating, and displaying. This is further refined by Churchman (1979, p. 29) who defines a system as “a set of parts coordinated to accomplish a set of goals;” and that there are five basic considerations for determining the meaning of a system:

- system objectives, including performance measures
- system environment
- system resources
- system components, their activities, goals and measures of performance
- system management.

Churchman (1979) also noted that systems are always part of a larger system and that the environment surrounding the system is outside the system’s control, but influences how the system performs. These definitions are useful but don’t fully describe a KMS. Reviewing the literature provides definitions that range from purely technical to something that includes organizational issues. These definitions are summarized below.

Alavi and Leidner (2001, p. 114) defined a KMS as “IT-based systems developed to support and enhance the organizational processes of knowledge creation, storage/retrieval, transfer, and application.” They observed that not all KM initiatives will implement an IT solution, but they support IT as an enabler of KM. Maier (2002) expanded on the IT concept for the KMS by calling it an ICT (Information and Communication Technology) system that supported the functions of knowledge creation, construction, identification, capturing, acquisition, selection, valuation, organization, linking, structuring, formalization, visualization, distribution, retention, maintenance, refinement, evolution, accessing, search, and application. Stein and Zwass (1995) define an Organizational Memory Information System (OMIS) as the processes and IT components necessary to capture, store, and apply knowledge created in the past on decisions currently being made. Jennex and Olffman (2004) expanded this definition by incorporating the OMIS into the KMS and adding strategy and service components to the KMS.

Additionally, we have different ways of classifying the KMS and/or KMS technologies where KMS technologies are the specific IT/ICT tools being implemented in the KMS. Alavi and Leidner (2001) classify the KMS/KMS tools based on the Knowledge Life Cycle stage being predominantly supported. This model has 4 stages, knowl-
edge creation, knowledge storage/retrieval, knowledge transfer, and knowledge application and it is expected that the KMS will use technologies specific to supporting the stage for which the KMS was created to support. Marwick (2001) classifies the KMS/KMS tools by the mode of Nonaka’s (1994) SECI model (Socialization, Externalization, Combination, and Internalization) being implemented. Borghoff and Pareschi (1998) classify the KMS/KMS tools using their Knowledge Management Architecture. This architecture has 4 classes of components: repositories and libraries, knowledge worker communities, knowledge cartography/mapping, and knowledge flows; with classification being based on the predominant architecture component being supported. Hahn and Subramani (2001) classify the KMS/KMS tools by the source of the knowledge being supported: structured artifact, structured individual, unstructured artifact, or unstructured individual. Binney (2001) classifies the KMS/KMS tools using the Knowledge Spectrum. The Knowledge Spectrum represents the ranges of purposes a KMS can have and include: transactional KM, analytical KM, asset management KM, process-based KM, developmental KM, and innovation and creation KM. Binney (2001) does not limit a KMS/KMS tool to a single portion of the Knowledge Spectrum and allows for multi-purpose KMS/KMS tools. Zack (1999) classifies KMS/KMS tools as either Integrative or Interactive. Integrative KMS/KMS tools support the transfer of explicit knowledge using some form of repository and support. Interactive KMS/KMS tools support the transfer of tacit knowledge by facilitating communication between the knowledge source and the knowledge user. Jennex and Olfman (2004) classify the KMS/KMS tools by the type of users being supported. Users are separated into two groups based on the amount of common context of understanding they have with each other resulting in classifications of: process/task based KMS/KMS tools or generic/infrastructure KMS/KMS tools.

While I tend to favor a more holistic/Churchmanian view of systems and the KMS and like to classify the KMS by the amount of context needed by the users to effectively use knowledge, others are equally happy with these other KMS definitions and classification schemes. It is not the point of this book to settle the debate; in fact, many of the enclosed cases use definitions different than the holistic. KM is a young discipline and it will have multiple definitions of key terms for a while as we go through growing pains in establishing our definitions. That is okay, but for us to mature we need to settle on some of our fundamental definitions. Defining a KMS is one of those fundamental definitions we need to agree on. This is needed for our practitioners, and to some degree, our researchers. Practitioners need to speak a common language to each other and to their clients. The KMS is one of those concepts that clients expect us to understand. It is hoped that the cases in this book, when taken as a whole, provide support for the holistic definition as the KMS discussed are varied in their components and purpose.

ORGANIZATION OF SECTIONS

This book is organized into seven sections, each dedicated to an area of KM research. The following paragraphs describe these sections.

Section 1 looks at using KM in support of OL and contains two cases. The first case is from Lynne P. Cooper, Rebecca L. Nash, Tu-Anh T. Phan, and Teresa R. Bailey and describes a KMS used in the United States’ Jet Propulsion Laboratory to help new
employees learn about the organizational culture. The second case is from Brigette McGregor-MacDonald and describes the KMS used in Marsh, Inc. to help employees learn and pass on their knowledge to other employees. Both cases look at key issues and discuss the importance of management support in sustaining the KM effort.

Section 2 explores using KM to support the retention of organizational knowledge in organizations where the workforces are in transition. Hani Abdel-Aziz, and Khaled Wahba discuss the use of OM to capture knowledge in an Egyptian Professional Services company that had a high rate of employee turnover. Gail Corbitt discusses the issues affecting knowledge loss and the creation of two financial divisions when HP split into HP and Agilent. These papers find that the processes used to capture knowledge are critical. Additionally, issues such as corporate culture, technical infrastructure, and training are discussed.

Section 3 discusses the importance of a KM strategy in the implementation of a KM initiative. Afsoun Hatami and Robert D. Galliers look at the long-term impacts of strategy on the success of an OM system used to support decision making. Suzanne Zygier, Frada Burstein, and Judy McKay discuss the use of corporate governance as a method of implementing KM strategy in Australia’s Science and Technology Development Organization. Summer E. Bartczak and Ellen C. England discuss the issues involved in developing a KM strategy for the United States’ Air Force Material Command’s KM initiative. These cases also explore the impact of leadership and the use of a strategic framework in the development of a KM strategy.

Section 4 discusses the use of KM in the support of projects and project management. Elayne Coakes, Anton Bradburn, and Cathy Blake, discuss the use of KM to capture and use best practices in the British construction firm Taylor Woodrow to improve project performance. Jill Owen and Frada Burstein look at where knowledge resides in an Australian consulting firm and how the firm uses this knowledge to improve project performance. Both cases discuss the importance of understanding knowledge transfer dynamics to improve the flow of knowledge within a project team.

Section 5 discusses KM in support of knowledge transfer. Zhang Li, Tian Yezhuang, and Li Ping, discuss the dynamics of using a Enterprise Resource Planning system to capture and transfer knowledge in a Chinese manufacturing firm. Thomas Hahn, Bernhard Schmiedinger, and Elisabeth Stephan look at the use of communities of practice and other techniques to improve the transfer of knowledge in and between Austrian small and medium-sized manufacturing firms. Florian Bayer, Rafael Enparantza, Ronald Maier, Franz Obermaier, and Bernhard Schmiedinger discuss the use of KnowCom to facilitate the decentralized control of the flow of knowledge between small and medium-sized German die and mould makers.

Section 6 discusses a variety of issues associated with the implementation of KM and a KMS. Yogesh Anand, David J. Pauleen, and Sally Dexter discuss the development and sustainability of the KM initiative in the New Zealand Reserve Bank. Colin White and David Croasdell discuss issues in representing knowledge in Enterprise Resource Planning Systems at Nestle USA, Colgate-Palmolive, Xerox, and Chevron-Texaco. Minwir Al-Shammari discusses issues in using a Data Warehouse and a Customer Relationship Management system to capture and transfer knowledge in a Middle Eastern telecommunications company. Ivy Chan and Patrick Y. K. Chau explore why a KM initiative failed in a Hong Kong manufacturing and export firm. Nikhil Mehta and Anju Mehta discuss issues faced by India’s Infosys Technologies, Limited. Eliot Rich
and Peter Duchessi discuss the issues involved in sustaining the KM initiative at the United States’ System Management Solutions International.

Section 7 discusses how to determine KM outcomes. A.N. Dwivedi, Rajeev K. Bali, and R.N.G. Naguib discuss a general KM framework for the British healthcare industry and how to manage KM successfully. Murray E. Jennex discusses how the use of knowledge can impact individual and organizational productivity.

REFERENCES


