Preface

Knowledge Management is fast becoming a hot topic of discussion and research. The capture, use, production and storage of knowledge is an issue of paramount importance for businesses, universities, public and private organizations. Because this is such an important topic, it is essential for researchers, academicians and managers to stay up-to-date on the current practices and techniques relating to knowledge mapping and management issues. The chapters in this book report on the latest efforts to improve and use knowledge management techniques. The authors offer may definitions of knowledge and offer concrete suggestions for organizations on how to better capture and use knowledge. The chapters also address the questions of who uses knowledge, how it can be better shared and how knowledge is currently being managed and how the management efforts can be improved.

Chapter 1 entitled, "Is Knowledge Management Really an Oxymoron? Unraveling the Role of Organizational Controls in Knowledge Management" by Yogesh Malhotra of @Brint.com (USA) fills the critical void of incomplete and incorrect interpretations of organizational controls by developing a better theoretical and conceptual understanding of organizational controls and their pragmatic implications. The chapter also proposes an organic model of organizational controls for design of knowledge management systems that can effectively enable the creation of new knowledge, the renewal of existing knowledge and knowledge sharing.

Chapter 2 entitled, "Strategically-Focused Enterprise Knowledge Management" by Robert Mockler of St. John's University and Dorothy Dologite of City University of New York (USA) describes the characteristics and types of strategically-focused knowledge management systems and the key conditions affecting their development and success. The discussion, based around company examples, focuses on various strategic management uses of these systems. The chapter describes a knowledge management process designed to increase profitability and competitive advantage in the marketplace.

Chapter 3 entitled, "Knowledge Mapping: An Essential Part of Knowledge Management" by Jay Liebowitz of the University of Maryland Baltimore County (USA) discusses the role of knowledge mapping for improving knowledge management projects and the specific tool Wisdom Builder to aid in the creation of knowledge maps. The chapter concludes that the basic purpose of knowledge management is

to capture and express expertise so that it can be used by others and that meticulous planning with higher level of IT inputs is one mechanism of reducing costs and making the knowledge management systems more efficient.

Chapter 4 entitled, "Knowledge Management System: A Case Study of RDCIS Laboratories" by R.K. Jha, K.K. Mallik and R.N. Mukherjee of Steel Authority of India, Ltd., discusses knowledge management systems and associated database capabilities, test methods, references and expertise of individuals in the Research and Development Centre for Iron and Steel (RDCIS) through existing widespread LAN on windows systems. The authors note significant improvement in effective utilization of equipment potential through systematic approaches of knowledge sharing.

Chapter 5 entitled, "Three Problems of Organizational Memory Information Systems Development" by Fons Wijnhoven and Kees van Slooten of the University of Twente (The Netherlands) discusses organizational memory information systems (OMIS) objectives and presents a conceptual OMIS model. The authors indicate that an OMIS needs clear role definitions of its stakeholders, an organization change scenario and a non-linear systems procurement scenario. Consequently, the OMIS development discussed has to cope with high levels of complexity, diversity and organizational and IT developments.

Chapter 6 entitled, "An Empirical Study of Knowledge and Organizations" by Andrew Doswell and Vivien Reid of Glasgow Caledonian University (UK) investigates perceptions about the handling of knowledge in organizations. The findings presented are based on replies to a non-random postal survey. The findings confirm both ideas from the current literature and from specific studies. Additionally, the authors report new information which shows support for the ideas of professional groups holding onto knowledge and for the existence of ambivalence towards the emphasis placed on the role of information technology in conducting knowledge mapping.

Chapter 7 entitled, "Facilitating Sensemaking in Knowledge Integration within Geographically Dispersed Cross-Functional Teams by Thekla Rura-Polley, Ellen Baker and Igor Hawryszkiewycz of the University of Technology (Australia) looks at knowledge management within geographically dispersed cross-functional teams. In particular, it describes an electronic knowledge management system, LiveNet, which combines support for rational innovation processes with collaborative support mechanism. The collaborative support mechanisms extend previously available group support systems by incorporating sense-making tools.

Chapter 8 entitled, "Evaluating Organizational Patterns for Supporting Business Knowledge Management" by Danny Brash of Stockholm University (Sweden), Nikos Prekas of the University of Manchester Institute of Science and Technology (U.K.), Georges Grosz and Farida Semmak of the University of Paris (France) applies a pattern framework adopted from software development in a project for managing business knowledge. The pattern development process includes the evaluation of the suitability of candidate patterns. The authors also present criteria for considering and measuring suitability of the knowledge for reuse.

Chapter 9 entitled, "ERP-Based Knowledge Transfer" by Zoonky Lee and Jinyoul Lee of the University of Nebraska-Lincoln (USA) and Tim Sieber, Lincoln, Nebraska (USA) investigates how organizational specific requirements and technology constraints inherent in software packages interact in this knowledge transfer process. The results are based on in-depth interviews, process analysis and documentation analysis. This chapter provides a new angle to adopting ERP in an organization and provides organizations with a better understanding of competitive advantage based on process knowledge.

Chapter 10 entitled, "Knowledge Management in U.S. Federal Government Organizations: Can it Work?" by J. Judah Buchwalter of the University of Maryland, Baltimore (USA) addresses government initiatives used to entice organizations into creating the culture needed for knowledge management. The authors propose a way to effect changes in the culture by implementing a specific social initiative that has proven successful in other organizations. The combination of the two proposed initiatives is expected to create a culture which allows knowledge management to flourish—even in the infamous governmental organizations.

Chapter 11 entitled, "A Conceptual Model of Collaborative Information Seeking" by Ric Jentzsch and Paul Prekop of the University of Canberra (Australia) examines collaborative information seeking and suggests a conceptual model for collaborative information seeking. The chapter relates this model to current information technology initiatives such as computer supported collaborative work, knowledge management and electronic commerce.

Chapter 12 entitled, "Information Manager/Librarian to Knowledge Manager: Change of Role" by K. Nageswara Rao and K.H. Babu of Defence Research and Development Laboratory (India) discusses the broad classification of knowledge and the mechanisms of its transmission and transformation. The authors discuss the human element in knowledge management systems for the benefit of information managers and librarians.

Chapter 13 entitled, "Social and Cultural Barriers for Knowledge Databases in Professional Service Firms" by Georg Disterer of the University of Applied Sciences (Germany) analyzes the discrepancy between the expectations and actual benefits of knowledge databases construed and maintained by the massive use of IT. This chapter analyzes the differences between professionals collecting paper documents manually and databases constructed. The chapter looks at the existing social barriers to creating knowledge databases.

Chapter 14 entitled, "Web-Based Knowledge Management" by Ruidong Zhang of the University of Wisconsin-Eau Claire (USA) looks at the current Web-based knowledge management as a medium to support the collective nature of knowledge management. The chapter concludes that the potential of Web technology based on knowledge management has just started to be realized. The chapter discusses four models that provide insights on leveled knowledge management, what should be contained in higher levels of knowledge management systems and how these support systems can be technically implemented.

Chapter 15 entitled, "The Innovation Link Between Organization Knowledge and Customer Knowledge" by Helen Mitchell of UNITEC Institute of Technology (New Zealand) presents the results of a survey, and concludes that a database provides good opportunities for analysis, and identifies a need for organizations to identify why they gather and hold information on the database. The chapter also suggests that the idea of analyzing the information from a perspective of gaining knowledge about how and where the organization will grow rather than simply storing the information will bring greater rewards.

Chapter 16 entitled, "Implementing Knowledge Management: Issues for Managers" by Charles Snyder of Auburn University and Larry Wilson of LearnerFirst, Inc. (USA) presents definitions of KM and raises important issues for managers to consider. The chapter discusses categories of knowledge and their relevance for managers. The authors provide the elements that every organization should consider in assessing their readiness for knowledge management and present the components of knowledge harvesting and reasons that knowledge management efforts fail.

Chapter 17 entitled, "Knowledge Sharing Across Organizational Boundaries with Application to Distributed Engineering Processes" by Gerd Frick, Eric Sax and Klaus Muller-Glaser of Forschungszentrum Informatik (Germany) discusses collaborative engineering processes with more than one company and the need for knowledge sharing across organizational boundaries. The chapter discusses this problem in general within the background of the real-world application domain of the automotive industry. The authors present a solution concept called virtual project database and explain deficits in the status quo of information technology.

Chapter 18 entitled, "Organizational Learning by 'Segmented Networks': Breeding Variations and Similarities Together–What is Optimum?" by Bishwajit Choudhary of Bankenes BetalingsSentral (Norway) develops specific factors that conceptualize an optimum distance in teams and later extends the factors to argue of a novel organizational form, i.e., the segmented network. The paper concludes by looking at the implications from past research, which indicates that segmented networks will be manageable, but leading such a team would demand greater managerial competence at result orientation.

Chapter 19 entitled, "Client/Server and the Knowledge Directory: A Natural Relationship" by Stuart Galup and Ronald Dattero of Florida Atlantic University (USA) discusses a client/server architecture that employs the knowledge directory to support the development and ongoing maintenance knowledge management systems. The chapter concludes that three-tier client/server architecture provides a seamless integration of the variety of technologies required for a knowledge management system.

Chapter 20 entitled, "An Informational Perspective Towards Knowledge Work: Implications for Knowledge Management Systems" by Brian Detlor of McMaster University (Canada) presents an informational orientation towards knowledge work and draws implications of such a perspective on the functionality offered by knowledge management technologies. The chapter then presents

discussion on the nature of organizational knowledge and its strong association with information. The authors present a discussion of knowledge work and draws implications based on this perspective.

Chapter 21 entitled, "Argumentation and Knowledge-Sharing" by Mike Metcalfe and Samantha Grant of the University of South Australia discusses the conceptual basis for social-technical systems aimed at assisting geographically separate companies to use the Internet to achieve the economic benefits of clustering. The first section of the chapter looks at evidence for structured talk, which includes the role of argumentation systems on research, problem solving, communication and decision-making. The authors argue further that rural regions have the core competencies needed to cluster but not the interaction.

Chapter 22 entitled, "Supporting Knowledge Creation: Combining Place, Community and Process" by I.T. Hawryszkiewycz of the University of Technology (Australia) identifies three major components of knowledge sharing and creation within enterprises as a combination of place, community and process. The way these are combined will depend on the particular goal and enterprise structure. The chapter then claims that computer support systems must provide user driven methods to easily integrate these components to fit in with organizational culture and knowledge goal. The authors then present ways to create the optimal environment.

Chapter 23 entitled, "A Study of Knowledge Benefits Gained From Projects: The Electric Utility Industry Y2K Project Experience" by Murray Jennex of San Diego State University and the University of Phoenix, San Diego and Joseph Weiss of the Electric Power Research Institute (USA) reports on a survey of utility Y2K projects on knowledge generation, perceived knowledge benefits and methods used to capture knowledge benefits. The results of the survey were mixed. While project personnel were strong in their belief that there were knowledge benefits and could identify several, they were much less positive in their identification of methods for capturing knowledge-lending doubt to the amount of organizational learning that was achieved.

Chapter 24 entitled, "Designing Organizational Memory for Knowledge Management Support in Collaborative Learning" by Kam Hou VAT of the University of Macau investigates the design of organizational memory targeted for knowledge management support tailored for collaboration among academic staff and students in a university environment. Specifically, the chapter describes the author's knowledge management initiatives to support organizational learning and depicts new ideas on knowledge items regarding their meta-modeling, indexing and ontological aspects.

Chapter 25 entitled, "Getting over 'Knowledge is Power': Incentive Systems for Knowledge Management in Business Consulting Companies" by Harald F.O. VonKortzfleisch of the University of Kassel and the University of Cologne (Germany) and Ines Mergel of the University of St. Gallen (Switzerland) looks closely at the importance of incentive systems for knowledge management in the business consulting industry. The authors investigate 10 leading German business consulting companies. Their results indicate that information systems do play an important part

in the knowledge driven industry, but currently incentives do not focus on the issues of knowledge sharing. The chapter concludes that in order to implement a more efficient knowledge management systems among consultants, incentives need to be developed.

Chapter 26 entitled, "The Information Laws" by Andrew Targowski of the Western Michigan University (USA) discusses the concept of macro-information ecology. This concept is just emerging along with the development of Information Wave practice. The author indicates that researchers should turn their attention into the application of the information laws discussed in this chapter. By so doing, the further discoveries and corrections in application in the analysis and design of values and tools of the Information Wave and civilization will receive great benefit.

Chapter 27 entitled "Supporting Organizational Knowledge Management with Agents" by Prashant Pai, L.L. Miller, Vasant Honavar, Johnny Wong and Sree Nilakanta of Iowa State University (USA) focuses on making vast amount of unstructured text more useful to committees. The chapter discusses the design and implementation of an agent environment and looks at the desire of businesses to enhance the business process and take advantage of the explosion of data available to all organizations.

Chapter 28 entitled, "Knowledge Management and Virtual Communities" by W. Jansen, and H.P.M. Jägers of the Royal Netherlands Military Academy and G. C. A. Steenbakkers of Ordina Management Consulting (The Netherlands) attempts to illuminate the relationship between knowledge management and virtual communities. The paper presents a model, which comprises four types of knowledge management. One of the central themes is the suggestion that knowledge management is not an unequivocal concept, but rather knowledge management will different in focus and content depending on the environment of the organization.

Chapter 29 entitled, "A Research Model for Knowledge Management" by Pamila Dembla of the University of Memphis and En Mao of the University of Wisconsin-Milwaukee (USA) suggests a research model for knowledge management. The authors discuss the various components of knowledge management in detain to explain the process of knowledge management. They then present two case studies and analyze the process of knowledge management in the two organizations based upon their research model.

Chapter 30 entitled, "'Knowledge Management': A Telling Oxymoron?" by D.A. White and Y.M. Sutton of the University of Lincolnshire and Humberside (U.K.) seeks to develop a critique of knowledge management with a view supporting more informed theory and practice in the area. The critique is based upon recent empirical research, and the methods of this research are the subject of the chapter. The authors indicate that the current approach to knowledge management is simplistic and by broadening the approach businesses maybe better able to exploit and use knowledge management techniques.

Whether or not knowledge management is an oxymoron, how knowledge can be best captured, used and stored by organizations and how knowledge can be best

shared are just some of the topics addressed in this timely book. The information contained herein is useful to academics as they attempt to understand the theory of knowledge management and mapping, to researchers as they attempt to evaluate the efficacy of knowledge management systems, and to businessmen and practitioners as they strive to implement the most current, best practices in knowledge management and mapping. This book will prove to be useful to all those associated with this most timely and emerging field.

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