Preface

Knowledge Management (KM) is about capturing knowledge created in an organization and making it available to those who need it to make decisions. Knowledge management achieves this by helping organizations leverage what they know and by improving connectivity between knowledge sources and/or knowledge users. The emphasis in knowledge management research is focused on knowledge management impacts on organizational performance and competitive enhancement. KM views an organization as any group with a purpose. This means that an organization can be a formal business organization, a governmental organization, a multinational organization, or even an informal organization such as a community of practice. Also, an organization may have a formal command structure, an informal command structure, or be leaderless. This is a purposefully broad definition because KM is being applied in all sorts of organizations as organizations are evolving into a variety of structures with various governance approaches and with various knowledge needs. Finally, the focus on organizations is a reflection that KM tends to use the resource-based view of the organization with knowledge as the resource and KM as the process used to manage this resource.

This definition of KM focuses on the key elements of KM: using knowledge for decision making and selective knowledge capture. This is important as the selective focus on knowledge capture separates KM from library science, which attempts to organize all knowledge and information; and the effectiveness/decision making focus that emphasizes that KM is an action discipline focused on transferring knowledge to where it can be applied. KM can be viewed as a knowledge cycle of acquisition, storing, evaluating, dissemination, and application. This is consistent with a corporatist view of KM in that it is mission focused on using knowledge as an asset to improve processes. Ultimately, there are two major missions for KM:

- Leveraging what the organization “knows” so that it can better utilize its knowledge assets.
- Connecting knowledge generators, holders, and users to facilitate the flow of knowledge through the organization.

This book presents the research, advancements, and novel ideas presented in Volume 7 of the *International Journal of Knowledge Management*, from the impact of KM on learning outcomes in education, to its implementation in small and medium-sized enterprises (SMEs), to the necessity of efficacious methods of team-building and organization. As a whole, the following chapters will present readers with important ideas and developments in the KM field, many of which they will find great benefit in implementing in their own organizations.
The book begins with “Valuing Knowledge-Based Initiatives: What We Know and What We Don’t Know” by Hind Benbya. The objective of this chapter is to provide an overview of the current state of theory and practice on valuing Knowledge-Based Initiatives (KBI). Drawing on the literature concerning IT and business value, the chapter summarizes what is known about valuing IT-based initiatives, discusses the specificity of KBI, and outlines the main challenges that continue to limit research in this area. Benbya also examines how managers deal with these challenges and what metrics they use to assess knowledge value. These managerial insights are derived from interviews as well as empirical analysis of several Silicon Valley firms. This chapter gives an emerging approach for valuing KBI and illustrates its implementation with a case study from IBM.

In the second chapter, “The Effects of a KM Strategy on KM Performance in Professional Services Firms” by Reimar Palte et al., Knowledge Management (KM) is exemplified as a critical issue in professional services firms (PSFs). Many researchers define a KM strategy as a crucial driver of KM success in corporations. Research demonstrates that there is a positive relationship between KM strategy and the performance of KM processes, which are both closely related to KM success. In the longitudinal benchmark survey presented in this chapter, based on an integrated KM framework and focusing on PSFs, the authors found evidence of such an effect, that is, KM strategy’s impact on KM success.

Suzanne Zyngier follows this with her chapter on “Knowledge Management: Realizing Value through Governance.” Knowledge Management (KM) governance is the implementation of authority through a framework to ensure the delivery of anticipated or predicted benefits of KM strategy development and implementation in an authorized and regulated manner. KM governance also relies on measurement and evaluation of the effectiveness and efficiency of all aspects of KM, particularly the outcomes of strategy implementation to ensure that strategic benefits are realized. This chapter examines the results of a global survey of people involved in the development and implementation of KM strategies. Responses came from 34 countries across every continent. Using descriptive and inferential statistics, the author found clear evidence of the measurability of KM outcomes through KM governance. These research findings strengthen the proposition that KM governance supports the capacity of KM governance to realize and reveal the value from, or the return on investment (ROI) of, KM strategy development and implementation; the selection of KM tools and techniques is less of a consideration in this regard.

Chapter 4, by Élise Lavoué, details “A Knowledge Management Tool for the Interconnection of Communities of Practice.” In their daily practice, practitioners belong to local communities of practice (CoPs) within their organization. This knowledge is rarely capitalized upon because discussions are mainly verbal. Practitioners can also belong to general CoPs online. Within these general CoPs, discussions are rarely linked to the context in which they appeared, since the members are from different companies or institutions. This chapter (1) connects these two levels of CoPs by contacting practitioners belonging to CoPs centered on the same general activity but who are geographically distributed and (2) capitalizes on the produced knowledge by contextualizing, allowing it to be accessible and reusable by all the members. The authors detail the main results of the research: (1) a model of the interconnection of CoPs (ICP) to support knowledge sharing and dissemination and (2) a specific knowledge management tool for the ICP knowledge base. The authors apply the model and platform to university tutors by (1) developing a use case, which links the model and the TE-Cap 2 platform and highlights the new possibilities offered by the knowledge management tool, and (2) conducting a descriptive investigation lasting for five months.

The benefits of Knowledge Management (KM) are recognized mainly for the large organization. Small and medium-sized enterprises (SMEs) can also achieve the real benefits of KM. Chapter 5, “Knowledge Management Process and Organizational Performance in SMEs” by Varintorn Supyuenyong and
Fredric William Swierczek, investigates the relationship between the KM process and the organizational performance of SMEs. The objective of this chapter is to assess the KM process and its relationship to different components of organizational performance in small and medium enterprise application service providers in Thailand. A survey approach was used with a sample of 81 respondents. The results show that knowledge organization, retention, and utilization improve individual performance, product performance, and overall organizational performance. Only knowledge organization and retention increase process performance. Knowledge dissemination influences customer satisfaction and reputation and cost reduction. These results demonstrate the benefits of the KM practices on the organizational performance in SMEs.

The following chapter, “Boundary Spanning Role of the IS Development Team in Consultant-Partnered Projects: Knowledge Management Perspective” by Sanghoon Lee et al., examines the effect an Information Systems (IS) development team has on end-users’ perceptions of system quality and system benefits by transferring relevant knowledge through inter- and intra-firm boundaries. The research context is the prevalent partnership in which an external consultant with relevant expertise leads a client team to undertake an IS project. A high-level research model that depicts dynamics among team competence (for knowledge transfer), consultant partnership (with the project team), knowledge transfer (through inter- and intra-firm boundaries), and project success is proposed grounded on the theory of boundary spanning. Key indicators of team competence and consultant partnership are derived from existing studies. With expected multiplicity in the conceptual dimensions of team competence and consultant partnership, they are designated as second-order constructs with first-order manifest variables. User perceptions of the post-implementation quality and benefits of an information system serve as project success variables. Relevant hypotheses propose dynamics among the studied constructs. Survey data are gathered from both system developers and end-users, and the integrity of the research model and corresponding hypotheses are empirically tested with structural equation modeling. Data analysis confirmed the importance of knowledge transfer for the post-implementation success of an IS project.

In the next chapter, “The Practice of Jordanian Business to Attain Customer Knowledge Acquisition,” Amine Nehari Talet et al. examine how Jordanian companies use the knowledge process to support Customer Knowledge Acquisition (CKA) and how they foster it. This empirical study is based on a sample of the data collected from 156 respondents, drawn randomly from three software business solution companies working in the Customer Relationship Management (CRM) area and four companies that are employing the CRM system. The results show that the three selected factors (need for Customer Knowledge, Verify Customer Source, and Capture Customer Knowledge) have a significant impact on customer acquisition. However, the source identification of knowledge is not significant in Jordanian business software environments. The empirical findings will help both researchers and practitioners in future Knowledge Management (KM) and Customer Acquisition research to gain a better understanding of the knowledge processes about customers on Customer Acquisition. This chapter provides a contribution to the literature about Customer Knowledge Acquisition in one of the developing countries as a framework to keep organizations competitive within the global business environment.

Knowledge and knowledge driven learning determine the organizational ability to achieve sustainable competitive advantage. To excel in business, organizations need to develop processes that facilitate streamline information flow resulting in enhanced learning. Deepak Chawla and Himanshu Joshi, in “Impact of Knowledge Management Dimensions on Learning Organization: Comparison across Business Excellence Awarded and Non- Awarded Indian Organizations,” investigate the learning capabilities demonstrated by Indian organizations for the differences between business excellence awarded
and non-awarded organizations. This chapter examines the impact of Knowledge Management (KM) dimensions on Learning Organization (LO) and tests if the impact is significantly different for these groups. A convenience sample of 57 executives from 16 Indian organizations participated in the study. The results show that organizations awarded for business excellence fare better on all items of LO as compared to non-awarded ones. However, statistical difference is found only in vision and strategy and performance improvement process. The results show that most of the KM dimensions have a positive impact on LO dimensions.

Next, “A Dynamic Ability-Based View of the Organization” by Farley S. Nobre and David S. Walker investigates theoretical micro-foundations of core competencies in the organization that pursues sustainable competitive advantage. The authors advocate that there is a lack of literature perspectives that can explain the sources of core competencies of the firm. This research raises questions on: What are the main sources of creation and sustenance of core competencies? What are the abilities that nourish the development of operational and dynamic capabilities? What is the main source of collective knowledge in the organization? This chapter answers these questions by proposing a dynamic ability-based view of the organization, which contributes to explaining the dynamic behavior of the firm in the pursuit of sustainable competitive advantage. Cognition is the core ability that supports individuals, groups, and organizations with intelligence, autonomy, learning, and knowledge management. These concepts form the set of organizational abilities in this research.

In Chapter 10, “Assessing Knowledge Management Needs: A Strategic Approach to Developing Knowledge,” G. Scott Erickson and Helen N. Rothberg explore how most Knowledge Management work encourages practicing managers to pursue ever more knowledge development and sharing. There is an assumption that more knowledge always leads to greater competitive advantage and superior financial performance. Even though this may be the case, it is far from proven, and the application and use of knowledge management techniques may actually be more strategic, with optimal levels of effort and spending determined by differing circumstances. This chapter investigates these topics by assessing whether knowledge strategies might vary by industry, asset structure, and other potential variables.

The next chapter, “Learning a Lightweight Ontology for Semantic Retrieval in Patient-Centered Information Systems” by Ulrich Reimer et al., introduces a Web-based eHealth platform currently being developed that will assist patients with certain chronic diseases. The ultimate aim is behavioral change. This is supported by online assessment and feedback, which visualizes actual behavior in relation to target behavior. Disease-specific information is provided through an information portal that utilizes lightweight ontologies (associative networks) in combination with text mining. This chapter argues that classical word-based information retrieval is often not sufficient for providing patients with relevant information, but that their information needs are better addressed by concept-based retrieval. The focus of the chapter is on the semantic retrieval component and the learning of a lightweight ontology from text documents, which is achieved by using a biologically inspired neural network. The chapter concludes with preliminary results of the evaluation of the proposed approach in comparison with traditional approaches.

“KM Approach for Improving the Labor Productivity of Vietnamese Enterprise,” by Quoc Trung Pham and Yoshinori Hara, considers Knowledge Management (KM) the best strategy for improving the labor productivity of an enterprise. However, the effectiveness of KM on labor productivity is not known exactly, especially since it depends on the development level of a country. To find a solution based on a KM approach for improving the labor productivity of Vietnamese enterprise, the authors propose a new model, which includes knowledge capability, technology capability, KM, employee satisfaction, and labor productivity. By analyzing data from Vietnamese enterprises, the model is tested and suggestions
for improving the labor productivity of Vietnamese enterprises are made. Some results of data analysis are that employee satisfaction positively affects the labor productivity and that KM has a strong effect on employee satisfaction. Further, some suggestions for improving the labor productivity of Vietnamese enterprises include the following: organizing frequent meetings for shortening the cultural gap between managers and employees, replacing old machines combined with improving employees’ self learning skill, and improving innovation capability by creating an open culture for encouraging employees to voice their opinions.

Mariano Angel Montoni and Ana Regina Cavalcanti da Rocha, authors of “Using Grounded Theory to Acquire Knowledge about Critical Success Factors for Conducting Software Process Improvement Implementation Initiatives,” explore how the successful implementation of Software Process Improvement (SPI) depends not only on the abilities of practitioners to identify process modifications that may help to increase organizations’ capabilities to develop software, but also the ability to overcome barriers that can jeopardize the organizational change process provoked by SPI initiatives. The literature reports show that SPI practitioners must have experienced skills to overcome common social-cultural factors that pose as critical barriers for successfully implementing SPI. Nevertheless, there is no consensus in the area about what the critical success factors are for conducting SPI implementation initiatives. This chapter presents a study based on Grounded Theory methodology to acquire knowledge about SPI critical success factors. The main product of this study is a theoretical knowledge framework consisting of a set of inter-related categories grounded on a set of propositions that explain the phenomenon associated to the success of SPI implementation initiatives.

In recent years, Knowledge Management (KM) studies have focused on the foundations of this “new managerial discipline.” Today, there is an increasing need to transform the theoretical speculations into managerial tools and to find solutions to practical questions concerning daily KM activity. A key issue that still requires investigation regards the management of human resources devoted to KM. “Managing Professions for Knowledge Management,” by Enrico Scarso and Ettore Bolisani analyzes this topic by means of an in-depth investigation of the relevant experience of some leading companies. In particular this chapter examines the problem of managing new roles and tasks for KM, the issue of developing structured KM units, and the question of evaluating KM activities. A discussion of the possible implications for research and management is carried out in the conclusion.

Chapter 15, “Merging Controlled Vocabularies for More Efficient Subject-Based IR Systems” by Ioannis Papadakis and Konstantinos Kyprianos, argues that one of the most important tasks of a librarian is the assignment of appropriate subject(s) to a resource within a library’s collection. The subjects usually belong to a controlled vocabulary that is specifically designed for such a task. The most widely adopted controlled vocabulary across libraries around the world is the Library of Congress Subject Headings (LCSH). However, there seems to be a shifting from traditional LCSH to modern thesauri. In this chapter, a methodology is proposed, capable of incorporating thesauri into existing LCSH-based Information Retrieval–IR systems. In order to achieve this, a mapping methodology is proposed capable of providing a common structure consisting of terms belonging to LCSH and/or a thesaurus. The structure is modeled as a Simple Knowledge Organization System (SKOS) ontology, which can be employed by appropriate subject-based IR systems. As a proof of concept, the proposed methodology is applied to the DSpace-based University of Piraeus digital library.

Zbigniew Mikolajuk describes in “Community-Based Development of Knowledge Products” how international organizations and government agencies have developed and collected a wealth of knowledge resources relevant to poor communities; however, the people who need these resources most often do not
know these materials exist or are unable to access or understand them. Electronic sources of knowledge materials and means of communication are rarely integrated with traditional methods of knowledge delivery. This chapter addresses the issue of knowledge sharing with poor communities and presents a software tool for developing multimedia knowledge materials suitable for people with little or no formal education. A multimedia editor uses a data structure composed of multimedia objects (texts, images, video, and audio clips) to generate the knowledge browser. Local specialists with a basic knowledge of computing can modify and customize how the knowledge is presented by adding new materials relevant to the local environment.

In the next chapter, “Impact of Knowledge Management Practices on Task Knowledge: An Individual Level Study,” Shahnawaz Muhammed et al. investigate organizational-level studies of knowledge management, which have been hampered by the lack of measures of individual level knowledge management practices and outcomes that can be used as success criteria to determine whether, or to what degree, specific organizational knowledge management practices enhance individual knowledge creation, sharing, and application at the individual level. This chapter explores how the knowledge management practices of individuals are related to the task knowledge they use to complete their work processes. The measures presented can be used as one way to evaluate the success of organizational knowledge management practices. Specifically, the authors explore the individual practices of knowledge creation, knowledge sharing, and knowledge application and how these practices are related to the task knowledge (conceptual, contextual, and operational knowledge) of individuals. A model of the relationships among knowledge management practices and task knowledge components is proposed and tested. Structural equation modeling is used. Results suggest that engaging in knowledge creation enhances an individual’s task knowledge through the practices of sharing and applying knowledge. Knowledge sharing and application enhance operational knowledge indirectly through changes in conceptual and contextual knowledge.

Next, “Team Learning and Reflexivity in Technology-Mediated Collaboration,” by Hayward P. Andres, examines technological, educational/learning, and social affordances associated with the facilitation of team learning during technology-mediated collaborative problem solving. An empirical interpretive research approach using direct observation is used to interpret, evaluate, and rate observable manifested behaviors and qualitative content (i.e., discussions) associated with team learning and team reflexivity. The theory of affordances and social impact theory are integrated to develop a conceptual model that asserts that collaboration mode (collocated vs. non-collocated and videoconferencing supported) will dictate the quality of information exchange, progressive elaboration of ideas, and the social processes that influence team learning. Team learning is then suggested to give rise to task and social reflexivity behaviors aimed at monitoring and evaluating acquired understanding, adaptation of task strategy, and maintenance of quality intra-team interactions. Results showed that collocated teams did engage in better quality team learning behaviors. Further, persistent reflection on task progress and solution accuracy yielded better team productivity, while maintenance of a mutually supportive and positive climate yielded higher perceived quality interpersonal interactions. Theoretical, methodological, and practical implications of the study are also discussed.

The purpose of the next chapter, “Measuring Knowledge Management/Knowledge Sharing (KM/KS) Efficiency and Effectiveness in Enterprise Networks” by Anirban Ganguly et al., is to enlist a set of generalized metrics that can be used to evaluate the efficiency and the effectiveness of knowledge sharing in an enterprise network. Knowledge Management (KM) is critical in ensuring process efficiency, outcome effectiveness, and improved organizational memory for the modern day business enterprises. Knowledge Sharing (KS) is fast becoming a rapidly growing area of interest in the domain of knowledge
management. The metrics proposed in this chapter are those that can be readily measured by various types of enterprise knowledge sharing systems and link usage information to organizational outputs. The authors use an illustrative case example of how an enterprise might make use of the metrics in measuring the efficiency and effectiveness of its knowledge sharing system.

David Smiderle and Patricia L. Weigel Green’s chapter, “How Should Students Prepare for Exams: A Knowledge Management Approach,” identifies the key best practices college students should utilize from a knowledge management perspective in order to best prepare for mid-term or final exams. This chapter also ascertains whether all stages of the knowledge cycle are required in order to achieve success. Data were collected from both subject matter experts and students in regards to exam preparation. The findings suggest that knowledge management may be a useful framework to identify both threshold and exceptional behaviors required to achieve knowledge-based goals or outcomes. The findings of this chapter also provide some validation regarding a methodology that can be used in organizations to identify key best practices related to knowledge management.

Finally, “An Ontological Approach to Enterprise Knowledge Modeling in a Shipping Company,” by Sung-Kwan Kim et al., explores modeling approaches gaining popularity in Knowledge Management (KM), especially in specifying knowledge contents. This chapter addresses the enterprise knowledge modeling. An enterprise knowledge model provides users with an integrated, holistic view of organizational knowledge resources. Employing a reliable methodology is critical to building successful enterprise knowledge models. A good methodology provides an effective and efficient mechanism for developing a model. The authors first review the enterprise knowledge modeling (EKM) and its methodologies. An ontology-based EKM (OBEKM) methodology is proposed. Its products, procedures, and modeling language are described. The methodology is then applied to the construction of a shipping company’s knowledge model for demonstration.