Preface

Organizations use KM (Knowledge Management), because it makes sense. KM, when done successfully, has an impact on the organization and its members. How do organizations define and measure success or its impact on the organization? Also, while knowing that KM improves an organization may be enough to encourage organizations to pursue a KM initiative, many organizations still need to quantitatively justify an investment in KM. Calculating Return on Investment (ROI), is a popular approach, but how is this done? There are some commonly accepted first steps:

- Find a need or an opportunity that KM satisfies, supports, or resolves.
- Identify the costs with the need or the benefits of the opportunity.
- Identify the savings or potential earnings that implementing KM will provide.
- Identify the costs of implementing KM.

Easily stated but not easily done and the resulting financial numbers are often questionable. Do the numbers present the full story for KM? Many think they do not, and that stories and anecdotes about KM need to be included to make KM real to management (Moore, 2008). However, is this enough measurement for an organization?

This book is about how to implement successful KM initiatives. What is required for KM to be successful? Jennex and Olfman (2005) summarized and synthesized the literature on KM/KMS’s critical success factors (CSF) into an ordered set of twelve KM CSFs identified from 17 studies of more than 200 KM projects. These CSFs were thereafter sequentially ordered according to the number of studies identifying them:

- A knowledge strategy that identifies users, sources, processes, storage strategy, knowledge, and links to knowledge for the KMS;
- Motivation and commitment of users, including incentives and training;
- Integrated technical infrastructure, including networks, databases/repositories, computers, software, and KMS experts;
- An organizational culture and structure that supports learning and the sharing and use of knowledge;
- A common enterprise-wide knowledge structure that is clearly articulated and easily understood;
- Senior management support, including allocation of resources, leadership, and training;
- Learning organization;
- The KMS has a clear goal and purpose;
- Measures are established to assess the impacts of the KMS and the use of knowledge, as well as verification that the right knowledge is being captured;
The search, retrieval, and visualization functions of the KMS support facilitated use of knowledge; work processes are designed that incorporate knowledge capture and use; and knowledge is secured/protected.

While the above CSFs are useful for determining if the antecedents for KM success exist in an organization, they do not state what success is or how to assess it. This book attempts to answer these questions. Three sections are provided: Section 1 discusses KM success. It defines what KM success is, provides a model of KM success, and discusses KM success in a variety of contexts. Section 2 addresses the issue of measuring KM. It is proposed that organizations cannot manage what they cannot measure. This section provides a variety of studies that provide KM measures based on various theoretical perspectives. Finally, knowing how to define KM success and how to measure KM is important, but without a strategy for implementing the KM initiative the organization is not likely to succeed. Section 3 presents several KM strategies as implemented in a variety of contexts. The following paragraphs provide further description of the chapters.

SECTION 1: KNOWLEDGE MANAGEMENT SUCCESS

Chapter 1: Towards a Consensus Knowledge Management Success Definition by Murray E. Jennex, Stefan Smolnik, David T. Croasdell, explores knowledge management, KM, and knowledge management system, KMS, success. Identifying the factors, constructs, and variables that define KM success is crucial to understanding how these initiatives and systems should be designed and implemented. This chapter presents results of a survey looking at how KM practitioners, researchers, KM students, and others interested in KM view what constitutes KM success. The chapter presents some background on KM success and then a series of perspectives on KM/KMS success. These perspectives were derived by looking at responses to questions asking academics and practitioners how they defined KM/KMS success. The chapter concludes by presenting the results of an exploratory survey on KM/KMS success beliefs and attitudes.

Chapter 2: A Model of Knowledge Management Success by Murray E. Jennex, Lorne Olfman, describes a knowledge management, KM, Success Model that is derived from observations generated through a longitudinal study of KM in an engineering organization, KM success factors found in the literature, and modified by the application of these observations and success factors in various projects. The DeLone and McLean (1992, 2003) IS Success Model was used as a framework for the model as it was found to fit the observed success criteria and it provided an accepted theoretical basis for the proposed model.

Chapter 3: Market Knowledge Management, Innovation and Product Performance: Survey in Medium and Large Brazilian Industrial Firms by Cid Gonçalves Filho, Rodrigo Baroni de Carvalho, George Leal Jamil. In a business environment characterized by a high level of competitiveness, the impact of new products on an organization’s revenue is an important factor. This research was developed with the objective of examining empirically the relationships between market knowledge management, innovation and the performance of new products in the market. This chapter analyzes KM (Knowledge Management) success through a market-oriented perspective because, at the end of the day, KM success must lead to better organizational performance. The research model was generated by the combination of market knowledge models and KM success and maturity models. By
means of a survey, based on 387 medium and large industrial firms, and the use of structural equation modeling, the supremacy of the competitor knowledge management process over other constructs was verified, as the most important antecedent of new product performance in the market. The results also revealed that innovation was strongly impacted from technology knowledge management and customer knowledge management.

Chapter 4: Does KM Governance = KM Success? Insights from a Global KM Survey by Suzanne Zyngier, examines factors that contribute to KM success by differentiating between KM leadership through management and through governance. We look at governance as a structural mechanism that both embeds KM into organizational activity, and lifts it from a series of initiatives to a structured program of activities that are subject to authority, policy, risk management, financial fiduciary duty, and evaluation. Using evidence from 214 respondents to a global internet based KM survey; we find that having a recognized and defined authority for KM that is well-resourced leads to strategically aligned benefits realized from investment in KM. We demonstrate that governance through assigned authority strongly contributes to strategic KM success.

Chapter 5: An Evaluation of Factors that Influence the Success of Knowledge Management Practices in US Federal Agencies, by Elsa Rhoads, Kevin J. O’Sullivan, Michael Stankosky, investigates the status of knowledge management practices implemented across federal agencies of the U.S. government. It analyzes the extent to which this status is influenced by the size of the agency, whether or not the agency type is a Cabinet-level Department or Independent Agency, the longevity of KM Practices implemented in the agency, whether or not the agency has adopted a written KM policy or strategy, and whether the primary responsibility for KM Practices in the agency is directed by a CKO or KM unit versus other functional locations in the agency. The research also tests for possible KM practitioner bias, since the survey was directed to members of the Knowledge Management Working Group of the Federal CIO Council who are KM practitioners in federal agencies.

SECTION 2: KM MEASUREMENTS

Chapter 6: Process Model for Knowledge Potential Measurement in SMEs by Kerstin Fink, shows that knowledge measurement is developing into a new research field in the area of knowledge management. To ensure that a company is successful, business, technology, and human elements must be integrated and balanced into a knowledge measurement system. The introduction of a knowledge audit with the objective to uncovering the tacit knowledge in an organization and of identifying the existing management practices is needed. This chapter uses the quantum mechanical thinking as a reference model for the development of a knowledge potential measurement system. This system is influenced by three measurement components: (1) Person-dependent variables, (2) System-dependent variables and (3) knowledge velocity. Based on several case studies conducted in small and medium-sized enterprises, a process model for the implementation of the knowledge potential framework is discussed and introduced. Future research and limitations of the model are discussed in the final part.

Chapter 7: Developing Individual Level Outcome Measures in the Context of Knowledge Management Success by Shahnawaz Muhammed, William J. Doll, Xiaodong Deng, Show how success of organizational level knowledge management initiatives depends on how effectively individuals implementing these initiatives use their knowledge to bring about outcomes that add value in their work. To facilitate assessment of individual level outcomes in the knowledge management context,
this research provides a model of interrelationships among individual level knowledge management success measures which include conceptual knowledge, contextual knowledge, operational knowledge, innovation, and performance. The model was tested using structural equation modeling based on data collected from managerial and professional knowledge workers. The results suggest that conceptual knowledge enhances operational and contextual knowledge. Contextual knowledge improves operational knowledge and is also a key predictor of innovations. The innovativeness of an individual’s work along with operational knowledge enhances work performance. The results support the proposed model. This model can potentially be used for measuring knowledge management success at the individual level.

Chapter 8: Validating Distinct Knowledge Assets: A Capability Perspective, by Ron Freeze, Uday Kulkarni, explain how identification and measurement of organizational Knowledge Management capabilities is necessary to determine the extent to which an organization utilizes its knowledge assets. We developed and operationalized a set of constructs to measure capabilities associated with management of knowledge assets identified as distinct Knowledge Capabilities (KCs) comprising the overall Knowledge Management (KM) capability of an organizational unit. Each KC represents a distinct kind of knowledge that requires different organizational process and technological support. This delineation of knowledge allows targeted improvement to a specific KC. We present validation of these capability constructs with empirical evidence from two separate business units in a large semi-conductor manufacturing company, providing the basis of measurement standardization for KM Capability improvement. Confirmatory factor analysis affirmed four KCs, each identified as an overall factor influencing a set of latent descriptor variables. Second Order and General-Specific Structural Equation Models of each capability provide evidence as to the validity of measurement of these knowledge assets. A standardized instrument for measuring knowledge capabilities would not only allow benchmarking, but also allow tracking capabilities over time and linking them to those performance metrics that are deemed appropriate by the organization.

Chapter 9: Assessing Knowledge Management: Refining and Cross-Validating the Knowledge Management Index (KMI) using Structural Equation Modeling (SEM) Techniques, by Derek Ajesam Asoh, Salvatore Belardo, Jakov (Yasha) Crnkovic, show how with growing interest in KM-related assessments and calls for rigorous assessment tools, the objective of this study was to apply SEM techniques to refine and cross-validate the KMI, a metric to assess the degree to which organizations are engaged in knowledge management (KM). Unlike previous KM metrics research that has focused on scales, we modeled the KMI as a formative latent variable, thereby extending knowledge on formative measures and index creation from other fields into the KM field.

The refined KMI metric was tested in a nomological network and found to be robust and stable when cross-validated; thereby demonstrating consistent prediction results across independent data sets. The study also verified the hypothesis that the KMI is positively correlated with organizational performance (OP). Research contributions, managerial implications, limitations of the study, and direction for further research are discussed.

Chapter 10: A Relational Based-View of Intellectual Capital in High-Tech Firms by G. Martín De Castro, P. López Sáez, J.E. Navas López, M. Delgado-Verde. The Resource-Based Theory (RBT) has tried to test the role of strategic resources on sustained competitive advantage and superior performance. Although this theory has found several flaws in order to reach its objective effectively (Priem & Butler, 2001; Foss & Knudsen), recent proposals have suggested that these problems can be overcome (Peteraf & Barney, 2003). This solution requires paying a greater attention to the analysis of knowledge stocks,
developing a mid-range theory: the Intellectual Capital-Based View (Reed, Lubatkin & Srinivasan, 2006). This mid-range and pragmatic theory allows the hypotheses development and empirical testing in a more effective way than the Resource Based View (RBV). There is a certain degree of general agreement about the presence of human capital and organizational capital as the main components of intellectual capital, as well as about the fact that the configuration of knowledge stocks will vary from one industry and firm to another one. Taking these assumptions as a starting point, this paper explores the configuration of intellectual capital that can be empirically found on a sample of high-technology firms. Our findings highlight the importance of relational capital, which must be divided in business and alliance capital, so the strategic alliances play a relevance role in the type of firms that have been included in our research.

SECTION 3: KM STRATEGIES IN PRACTICE

Chapter 11: The Effect of Organizational Trust on the Success of Codification and Personalization KM approaches by Vincent M. Ribière, explains how Knowledge Management (KM) initiatives are expanding across all types of organizations worldwide. However, not all of them are necessarily successful mainly due to an unfriendly organizational culture. Organizational trust is often mentioned as a critical factor facilitating knowledge sharing. For this research we took an empirical approach to validate this assumption. The purpose of this research is to explore the relationships between organizational trust, a knowledge management strategy (codification vs. personalization) and its level of success. This study was conducted among 97 US companies involved in knowledge management. A survey tool was developed and validated to assess the level of trust, the level of success and the dominant KM strategy deployed by an organization. Six main research hypotheses and a conceptual model were tested. The findings show the impact of trust on the choice of the KM strategy as well as on the level of success.

Chapter 12: Advancing the Success of Collaboration Centered KM Strategy by Johanna Bragge, Hannu Kivijärvi, shows that Knowledge is the most critical resource of organizations. At the same time it is, however, also the least-accessible resource that is difficult to share, imitate, buy, sell, store, or evaluate. Organizations should thus have an explicit strategy for the management of their knowledge resources. In this chapter we pay special attention to a KM strategy called collaboration centered strategy. This strategy builds on the assumption that a significant part of personal knowledge can be captured and transferred, and new knowledge created through deep collaboration between the organization’s members. A critical element in the collaboration centered KM strategy is the facilitation process that involves managing relationships between people, tasks and technology. We describe how the Collaboration Engineering approach with packaged facilitation techniques called ThinkLets is able to contribute to this endeavour.

Chapter 13: The Relevance of Integration for Knowledge Management Success: Towards Conceptual and Empirical Evidence by Alexander Orth, Stefan Smolnik, Murray Jennex. Many organizations pursue knowledge management (KM) initiatives, with different degrees of success. One key aspect of KM often neglected in practice is following an integrated and holistic approach. Complementary, KM researchers have increasingly focused on factors that determine KM success and examined whether the metrics used to measure KM initiatives are reasonable. In this chapter, the importance of integration issues for successful KM is analyzed by means of a case study of a KM initiative at an international consulting company. The investigations demonstrate the importance of an integrated
KM approach – an integrated view of KM strategy, KM processes, KM technology, and company culture – to ensure KM success.

**Chapter 14: Strategies for Successful Implementation of KM in a University Setting** by Vittal S. Anantatmula, Shivraj Kanungo. Research has identified enabling factors and inhibitors for implementing knowledge management successfully and to accomplish its strategic objectives. However, it is important to understand how these factors interact with each other to improve or inhibit the performance. With this in mind, this chapter presents a model, based on a research study, to determine underlying relations among these factors and develop strategies implementing KM initiatives.

**Chapter 15: DYONIPOS: Proactive Knowledge Supply** by Josef Makolm, Silke Weiß, Doris Ipsmiller, Natalie Egger. Traditional knowledge management is often combined with extra work to recollect information which is already electronically available. Another obstacle is to make the content of the collected information easily accessible to enquiries, as conventional searching tools provide only documents and not the content meaning. They are often based on the search for character strings, usually resulting in many unnecessary hits and no or less context information. The research project DYONIPOS focuses on detecting the knowledge needs of knowledge users and automatically providing the required knowledge just in time, while avoiding additional work and violations of the knowledge worker’s privacy, proposing a new way of support. This knowledge is made available through semantic linkage of the relevant information out of existing artifacts. In addition, DYONIPOS creates an individual and an organizational knowledge base just in time.

These chapters come from several sources: some were submitted just to this book, some are expansions of conference/journal articles, and some are taken directly from the International Journal of Knowledge Management (IJKM). Taken together, we believe this book provides researchers, students, and practitioners with an excellent overview of how to implement and measure successful KM and/or knowledge initiatives.

We hope you enjoy the book.

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**REFERENCES**
