Preface

Success in an increasingly competitive market depends on the quality of knowledge which organisations apply to their major business processes. For example, a supply chain depends on knowledge of diverse areas, including raw materials, planning, manufacturing, and distribution. Likewise, product development requires knowledge of consumer requirements, new science, new technology, and marketing. Knowledge is broadly defined as credible information that is of potential value to an organisation. Knowledge management (KM) is a function of generation and dissemination of information, developing a shared understanding of information, filtering shared understandings into degrees of potential value, and storing valuable knowledge within the confines of an accessible organisational mechanism.

Since 1990, organisations are increasingly focusing on learning and knowledge creation. This indicates that an organisation should utilize its intellectual capacity and improve knowledge flows among its members to achieve a competitive advantage. The influence of global competitiveness and development in information technology has led to the recognition that knowledge and the capacity to develop knowledge are the resources that have tremendous impact on achieving a sustainable competitive advantage.

The learning culture is the integrated system of ideologies, values, and beliefs that provides behavioral norms for knowledge management in the organisation. The learning climate is the way that organisations operationalize knowledge management cultures. Thus, the learning climate is the behavioral manifestation of the learning culture. Essential to knowledge development is the understanding of the elements of an organisation's culture and climate that facilitate the development and maintenance of knowledge management initiatives. Critical to the flow of information and knowledge is knowing the 'how' (tacit knowledge) and knowing the 'about' (explicit knowledge) distinction of knowledge transferability.

Knowledge building involves generation and dissemination of information, followed by shared interpretation of processed information into "knowledge." Knowledge building depends not only on information processing but also on shared interpretation of information and filtering of knowledge into degrees of importance. Knowledge development includes mechanisms for evaluating the quality and usefulness of processed information, developing a shared understanding of the information, and filtering knowledge to be kept in accessible organisational memory.

Knowledge management initiatives are undertaken for the purpose of achieving better organisational efficiency and effectiveness, with the goal being able to

achieve superior performance. In this respect, spending resources on developing knowledge without a plan to use the knowledge to achieve success is of limited value to organisations. Knowledge management has performance implications at various levels of an organisation: individual process-level (such as supply chain cycle time, product development initiatives, and globalization efforts), functional level (such as performance of various organisational domestic and international units), and the overall performance of the organisation (such as ROI and sales growth).

Knowledge management helps an organisation to gain insight and understanding of its own experience. Specific knowledge management activities help focus an organisation on acquiring, problem solving, dynamic learning, strategic planning, and decision making. Computers and communications systems are good at capturing, transforming, and distributing highly structured knowledge that changes rapidly. The KM process involves four major steps: knowledge creation/acquisition, knowledge storage/organisation, knowledge distribution, and application. However, the socio-cultural factors and information technology resources available influence the way the knowledge management process is used for improving organisational competitiveness.

There are few books covering aspects of organisational knowledge and information technology management mainly from the viewpoint of technology. We did not come across any book that has included in-depth focus on human and social dimensions of knowledge and information technology management. The objective of this book is to discuss the human and social aspects of knowledge and information technology management. The book emphasizes the human and social aspects of IT-based knowledge creation and sharing, and management systems and techniques.

The book contains 18 chapters from professionals, researchers, and the business community that discuss many of the issues highlighted above in knowledge and information technology management. The chapters have been grouped into five interrelated sections.

- Introduction to knowledge and information technology management
- Integration of business and knowledge/information technology management
- Knowledge and information technology management in virtual enterprises
- Knowledge management in e-commerce environment
- Human and social aspects of knowledge and information technology management

The chapters in Section I discuss the importance of managing innovation, knowledge, and e-business, and possible sources of knowledge acquisition. Chapter 1 explains how leading innovators leverage e-business tools to harness knowledge residing in all areas of their value chain, including suppliers and customers. Also, a

case study of Cisco Systems, Inc. is used to illustrate this new operating model. Chapter 2 in this section presents a study that specifically examines the relationship among perceived accessibility, perceived task complexity, and the information-gathering behaviour of U.S. managers. One of the major conclusions resulting from this study is that the accessibility of an information source, and not the perceived complexity of the task at hand, influences the choice of source used.

Section II focuses on the integration issues between business and knowledge/information technology management. Chapter 3 examines the importance attached to information systems for the formulation of corporate strategy. It discusses the integration between information and decision-making processes. Chapter 4 presents an integrated QFD and knowledge management system for the development of common product platform. Chapter 5 reviews the literature on knowledge management and organisational culture, and identifies 13 factors that are poised to affect the adoption of technological change, KM in particular. It integrates these factors into a two-layer model of the effects of organisational culture upon the knowledge workers in the organisation, and uses four case studies to test the efficacy of the model. Chapter 6 shows how the information resource can be used in integration issues by introducing the problem of information-based integration, proposing a solution, and illustrating the solution with an example. Chapter 7 deals with an experimental analysis of the effectiveness and efficiency of teams with partial problem domain knowledge. Teams that had partial problem domain knowledge did not perform better than teams that had no specific problem domain knowledge. Chapter 8 describes the role of videoconferencing in facilitating large-group collaboration. Both social and technical infrastructures are required to enable and empower collaboration.

Section III discusses issues related to knowledge management in the virtual enterprise. Chapter 9 contributes to the ongoing debate on the nature of knowledge creation and sharing in a distributed organisational environment, and current understanding of the sources of creative potential of virtual teams. The author adopts the view that an in-depth understanding of new knowledge creation depends on considering knowledge as socially constructed, or more simply stated as embedded in the organising practices of human activities. Chapter 10 proposes a decision support system based on neural network and data mining technologies, and uses a case example to illustrate the feasibility of incorporating inter-firm trust in real industrial situations. Chapter 11 presents the role of the Market of Resources as an enabler of the process of dynamic Agile/Virtual Enterprise Integration. The authors also specify the market resources' structure, creation, and operational framework.

Section IV is dedicated to knowledge management in e-commerce environments. Chapter 12 shows how the emerging knowledge management concepts can be used to create an appropriate framework for managing business-consumer relationships for understanding and retaining customers. Chapter 13 discusses the basic

requirements of electronic money as a medium of exchange in e-commerce transactions. The authors review the basic requirements of a transaction—atomicity, anonymity, durability, and non-reputability—and discuss a payment system that is needed in order to satisfy these requirements. Chapter 14 describes and discusses the issues of adoption and diffusion of e-commerce from a macro perspective, as well as the impact of cultural issues on e-commerce.

Section V addresses human and social perspectives of knowledge and information technology management. Chapter 15 of this section focuses on one aspect of this question, namely the existence and extent of fraud perpetuated through the Internet. The chapter further discusses whether fraud using the Internet constitutes a new category of fraud or just a classic form of fraud committed through other means. Chapter 16 presents an overview of the possible attacks against information systems, and introduces tools and technologies that are appropriate to increase the level of trust of the users. Chapter 17 addresses some interesting issues on inexperienced global software teams and virtual software teams. It presents a new managerial, technical, and social approach to develop an effective global virtual software team. The last chapter, Chapter 18, sheds light on important experiences with the knowledge management and social learning in military settings.

The book will be useful for professionals, researchers, and practitioners from the business community seeking an understanding of the current and emerging human resources and social issues in knowledge and IT management in the global knowledge economy. It will enable such business professionals to approach the increasingly adoptable and autonomous technologies with increased confidence. The book will also provide information technology researchers and professionals with a better understanding of how to apply information technologies to knowledge management in global e-marketing. It should also be useful to students as a text for courses in the areas of knowledge, information and IT management, as well as in human resource and social development in e-commerce environment. Readers should be able to understand the challenges arising from the new technologies and the growing demand for the development of human resources and social implications, and performance measurement in such an environment.

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