

# Preface

Advances in computer technology and information systems have created new opportunities as well as challenges to the management of information resources. In the past two decades or so, information management has become a key issue of interest to both researchers and practitioners since the advent of computers. The issue has become more of a concern and a challenge to both communities with the tremendous advances in computer technology and information systems in recent times. The heightened concern and challenge is, in part, due to the tremendous amount of information generated with the advancement of computer technology and information systems.

Information support systems are designed in a way to help solve some of the concerns and challenges of managing information resources. These systems provide the tools and means of managing information resources on persons, groups, and organizations. Without doubt, support systems are key topics for current and future research efforts aimed at maximizing the management of information resources.

Multimedia technology has drastically changed the way we view, interact with, and use computers. Multimedia technology succeeded in transforming computers to the real “second person.” Like never before, multimedia technology has made it possible for us to see, hear, read, feel, and talk to computers. Multimedia technology has transformed and further deepened our understanding and use of computers in a more meaningful way. Without doubt, multimedia technology is a key topic for current and future application of information technology.

John Waterworth, in an attempt to draw our attention to the significance of multimedia technology, states:

*The widespread application of technology that combines photographic images, graphics, text, motion video and audio material in a well-integrated way is bound to have a major impact on the development of information systems that are more than word processors, computational number crunchers, or a combination of the two. This impact will be seen in business, in science, in education, in the home, and in public places. It will reach people at almost all levels of society, and will have significant, but as yet unknown, societal impacts. This makes multimedia a uniquely exciting field to be working at the moment (1991, p. 20).*

Sheu and Ismail (1998) have further stated how multimedia technology has pervaded our lives and “has forever changed the way we live, work, entertain, and learn. With wide access to the Internet, kids can spend more time online experimenting with and learning from computers through the Information Superhighway than on the TV. Once the power of image, video, and graphic through high-speed fiber-optics transmission or wireless communication is enjoyed, the old-fashioned approach of using plain text as a main source of information will be a thing of the past” (p. xxi).

Multimedia technology has also offered the means and ways of managing information resources.

This book uniquely combines both issues of support systems and multimedia technology in information management today. The book has been arranged and organized having in mind both practitioners and researchers and is, therefore, suitable for both communities. The book is also suitable for graduates and undergraduates in support systems and multimedia technology.

## ORGANIZATION OF THIS BOOK

This book is organized into 15 chapters. The first chapter, by Li Yao and Weiming Zhang, presents a Basic Organization Structure (BOS) model for building a large and complex distributed cooperative information system in large mutual networks. The chapter argues that a large and complex cooperative information system and its subsystems in a LAN can be modeled by multi-agent organization and basic organization respectively; and that with the BOS model, such a cooperative information system can be developed easily and is more manageable, effectively supporting the complicated cooperative methods under certain conditions.

Chapter II presents a novel method for software personalization by which a set of mechanisms tailored to a particular end user and his or her task can be achieved. This chapter, by Tamara Babaian, used the proposed method in a collaborative system called Writer’s Aid. The method relies on a declarative speci-

fication of preconditions and effects of the system's actions and applies artificial intelligence, automated reasoning, and planning framework and techniques to dynamically recognize the lack or availability of the personal information at the precise time when it affects a system action and initiates an interaction with a user aimed at eliciting this information in case it has not yet been specified.

Chapter III, by Fiona Y. Chan and William K. Cheung, further deals with the concept of personalization, which edges improvement of stickiness of on-line stores. The chapter describes in detail how to implement a knowledge-based recommender system for supporting an adaptive store. The chapter proposed a conceptual framework, which is characterized by a user profiling and product characterization module, a matching engine, an intelligent gift finder, and a backend subsystem for content management.

Chapter IV presents a Compliance Flow Workflow for managing processes. This chapter, by Larry Y.C. Cheung, Paul W.H. Chung, and Ray J. Dawson, used model-based reasoning to identify the compliance errors of a process by matching it against the model of standards used. Some examples, drawn on a draft version of IEC61508, are used to illustrate the mechanism of modeling compliance checks.

Chapter V analyzes the role of users in enacting Intelligent Transport Systems functions and services. In this chapter, Thomas A. Horan reviews preliminary evidence from recent demonstrations and market research studies with a focus on the role of travelers in producing and using information about traffic conditions and traveler options. The potential for systems development is then considered with specific regard to alternative modes of travel, flexible travel, and emergency and commercial services.

Chapter VI addresses the issue of multimedia in computer supported collaborative work (CSCW). In this chapter, Dirk Trossen and Erik Molenaar present the realization of an application sharing service based on the paradigm of application's evolving state, which is mostly suited for closed development or teaching scenarios.

In Chapter VII, Steven Walczak, Irena Yegorova, and Bruce H. Andrews present the effect of training set distributions for supervised learning artificial neural networks on classification accuracy. The chapter examines the effect of changing the population distribution within training sets for estimated distributed density functions, in particular for a credit risk assessment problem.

Chapter VIII presents research into users' behavior in using a support system in an organizational setting. This chapter, written by George Ditsa, used a model from organizational behavior to investigate factors that explain users' behavior towards using executive information systems (EIS) and identifies the relative importance of those factors that determine the use of EIS. The chapter discusses the results of the study and its implications for research and practice.

Chapter IX is on culture and anonymity in group support systems (GSS) meetings. In this chapter, Moez Limayem, Mohamed Khalifa, and John Coombes used social psychology and Hofstede's model of cultural differentiation to explain the different effects of anonymity on the behavior of Hong Kong and Canadian groups during GSS sessions. This chapter hopes that understanding the effects of anonymity in different cultural contexts will better inform the design and facilitation of GSS in the increasingly diverse global settings.

Chapter X presents a detailed model for designing a Web-based Multi-Criteria Group Support Systems (MCGSS). The model is based on AHP and uses the intensity of preferences of group members rather than simple voting procedures. This chapter, by Sajjad Zahir and Brian Dobing, points out the advantages offered by this approach.

Chapter XI presents the basic concepts of the Activity Theory and its potential as a theoretical foundation for information systems research. This chapter, written by George Ditsa, argues that the set of philosophical concepts presented by the Activity Theory makes it possible to marry the human and the technological aspects of information systems into a more holistic research approach in information systems.

Chapter XII, by Roberto Paiano, Leonardo Mangia, and Vito Perrone, defines a publishing model for Web applications starting from the analysis of the most well-known modeling methodology, such as hypermedia design models (HDM), OOHDM, WebML, Conallen's method and others. The analysis focuses on verifying the state of the art about the modeling of Web application pages; in particular, the different types of elements that compose the Web page in the models considered.

Chapter XIII presents LEZI, an experimental software tool oriented to the production of indexed videos enriched with hypertextual and multimedia elements for distance learning applications. Written by Mario A. Bochicchio and Nicola Fiore, this chapter shows how a traditional lesson or a conference can be effectively transformed into a powerful multimedia product based on a very simple and regular structure.

Chapter XIV, by Antonio Díaz-Andrade and Martín Santana, introduces electronic journalism as a new trend in the news services that have recently been boosted by Internet diffusion. Using the Peruvian information media, this chapter presents electronic media pioneers in the world and the challenges they faced to deliver news to their traditional and Internet-based customers.

Finally, Chapter XV, authored by Dongming Cui and Jairo A. Gutiérrez, looks at an integrated network management framework using CORBA, mobile agents, and Web-based technologies. This chapter proposes a new Web-based

network framework management, which combines the strengths of the above named technologies.

## REFERENCES

- Sheu, B.J. & Ismail, M. (Eds.)(1998). *Multimedia Technology for Application*. IEEE Press.
- Waterworth, J. (Ed.)(1991). *Multimedia: Technology and Application*. Ellis Horwood.