This special section of the *International Journal of E-Business Research* contains a selection of the best papers published in the E-Commerce Technologies track (ECT) of the 20th Symposium on Applied Computing (SAC 2005) held in Santa Fe, New Mexico on March 17, 2005. The ECT track has been held as part of SAC since 2003.

The last years have seen an exponential growth and dramatic changes in the field of e-commerce technologies. The focus of the ECT track is on novel applications for e-commerce, that is, applications that hold new promises for rapidly evolving electronic markets. Some years ago, e-commerce applications primarily dealt with handling transactions and managing catalogs. Business requirements, however, are evolving beyond transaction support to include content management, mobile and pervasive computing, privacy and personalization, interoperability, and integration. In this line, the ECT track focuses on technologies to create offerings, the latest developments in electronic marketplaces, computational and deployment issues, architectural support, policies, and advanced solutions and practices. The ECT track also aims at bringing together academic and industrial researchers from various fields to discuss the current challenges to e-commerce.

In 2005, the ECT track attracted 20 high-quality submissions from 11 different countries. The program committee, comprised of experts from several disciplines, selected eight papers after a rigorous review process in which at least three reviewers reviewed every paper. To ensure the highest quality of accepted papers, the review process was double-blind, that is, neither the authors knew the name of the reviewers nor did the reviewers know the authors of the papers that they were reviewing. At the end, these selected papers present a well-balanced view of e-commerce technologies combining both theoretical issues and system development.

Out of the eight accepted papers, the authors of three papers were selected to submit a revised and extended version of their papers to this special section of IJEBR. In addition to being the papers with the highest marks, these papers represent very different domains inside the broad field of e-commerce technologies. Thus, this special section gives a good selection of the current lines of research in the field. The papers contained in this volume are:

- **Scalable Security and Accounting Services for Content-Based Publish/Subscribe Systems**, by Himanshu Khurana and Radostina K. Koleva, affiliated with NCSA, University of Illinois, USA.
- **Analyzing the Privacy of a Vickrey Auction Mechanism**, by Ismael Rodriguez and Natalia López, affiliated with Universidad Complutense de Madrid, Spain.

Content-based publish/subscribe systems offer an interaction scheme that is appropriate for
a variety of large-scale dynamic applications. However, widespread use of these systems is hindered by a lack of suitable security services. In the first of the papers included in this section, Scalable Security and Accounting Services for Content-Based Publish/Subscribe Systems, the authors present scalable solutions for confidentiality, integrity, and authentication for these kind of systems. They also provide verifiable, usage-based accounting services, which are required for e-commerce and e-business applications that use publish/subscribe systems. In particular, their solutions are applicable in settings where publishers and subscribers may not trust the publish/subscribe infrastructure.

The second of the papers contained in this special section studies the properties of a distributed mechanism to perform Vickrey auctions. This mechanism keeps most of the information concerning bids private without the necessity of any trusted third party. In particular, after the auction is finished, only the value of the second-highest bid and the identity of the highest bidder are publicly revealed. In addition to introducing this novel mechanism, the authors deal with several questions regarding the applicability of the protocol.

In particular, they present and analyze a simple implementation of the protocol, and consider its practical application.

The last of the selected papers deals with different issues related to consumer decision support systems (CDSSs). These are systems whose main purpose is to help online users in the process of performing purchase operations in e-commerce Web sites. To more effectively compare the usefulness of the various functionalities and interface features of such systems, the authors developed a simulation environment. They considered three criteria for assessing the quality of such CDSSs: users’ cognitive effort, preference expression effort, and decision accuracy. The experiments carried out by the authors showed that most CDSSs employed in current e-commerce Web sites are suboptimal. In contrast, a hybrid decision strategy based on four of such systems was more effective.

Dr. Sviatoslav Braynov is an assistant professor in the Department of Computer Science, University of Illinois at Springfield (USA). He obtained his PhD in computer science from the Computer Center of Russian Academy of Sciences, Moscow, Russia in 1998. In 1996 Dr. Braynov specialized in the AI Lab, Vrije Universiteit, Brussels. In 1996 he finished a two-year graduate program in economics at the University of Delaware. From 1998 to 2000 he was a post-doctoral research associate at Washington University, St. Louis. Dr. Braynov has published more than 30 papers in refereed conferences and journals, including the American National Conference on Artificial Intelligence (AAAI), the European Conference on AI (ECAI), the First ACM Conference on Electronic Commerce, the International Conference on Multiagent Systems (ICMAS), among others. His research interests include multiagent systems, e-commerce, artificial intelligence and game theory.

Dr. Manuel Núñez is an associate professor in the Department of Computer Science, Universidad Complutense de Madrid (Spain). He obtained his MS in mathematics in 1992 and his PhD in computer science in 1996. Afterward, he also studied economics, obtaining his MS in economics in 2002. Dr. Núñez has published more than 50 papers in refereed conferences and journals. In the last years, in addition to co-chairing the ECT track, he has been co-chair of the Forte 2004 conference, of the 1st ITM workshop, and of FATES 2006. His research interests cover both theoretical and applied issues, including testing techniques, e-learning environments, and e-commerce.

Dr. Fernando Rubio is an associate professor in the Department of Computer Science, Universidad Complutense de Madrid (Spain). When he obtained his degree in computer engineering in 1997, he was awarded by the Spanish Ministry of Education for obtaining the best overall marks of all the
In addition to the three special section papers, two additional papers are published in this issue. In the fourth article, entitled *An Exploratory Study of the Design Preferences of U.S. and Chinese Virtual Communities*, professors Felix B. Tan of Auckland University of Technology and Helen J. Lin and Cathy Urquhart of the University of Auckland examine the design preferences of virtual communities in two cultural groups. They employ content analysis to study 20 of the most popular Chinese and U.S. virtual communities. The study found that there are differences in the preference for the type of virtual communities and the tool used by Chinese and U.S. communities. The findings challenge aspects of Web site design across these cultural groups thought to be dissimilar based on prior research, indicating that designers of virtual communities must treat cultural differences with caution.

Our fifth article, written by professors Carol Pollard of Appalachian State University and Amanda Diggles of the Tasmanian State Government, Department of Health and Human Services, is entitled *The Role of Trust in Business-to-Business E-Commerce Collaboration in a Unique Environment in Australia*. They explore inter-organizational collaboration in business-to-business e-commerce and the factors that influence its development in a unique Australian environment. Their study confirms that trust is an important prerequisite for the establishment and development of both electronic and traditional inter-organizational relationships. Their results enhance organizational awareness of similarities and differences between traditional and electronic business-to-business trading relationships, and contribute to the growing body of knowledge on inter-organizational trust and business-to-business e-commerce. They also discuss the influence of the unique Tasmanian environment as a mediating variable in considering the findings.

The five articles presented in this issue of the *International Journal of E-Business Research* highlight the diverse aspects of e-business ranging from theoretical and empirical research to practical applications of e-business technologies. These articles provide researchers and practitioners with valuable information on recent advances and developments in the emerging e-business models and technologies from multiple perspectives. I would like to express my gratitude to the special section guest editors, authors, and reviewers for their invaluable contribution and collaboration.

*In Lee*
*Editor-in-Chief*