

RESEARCH IN THE DECISION SCIENCES FOR Global Business

EDSI
European Decision Sciences Institute

Edited by Gyula Vastag



BEST PAPERS FROM THE
2013 ANNUAL CONFERENCE

Research in the Decision Sciences for Global Business

Best Papers from the 2013 Annual Conference

European Decision Sciences Institute

Edited by Gyula Vastag

National University of Public Service

(Budapest, Hungary)

and

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To my friends and colleagues in the Decision Sciences Institute; without their support and contributions, this book would have never been published.

—Gyula Vastag

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Foreword

It is indeed a pleasure to write the foreword for this volume of the Proceedings of the European Decision Sciences Institute (EDSI) 2013 Annual Conference. The meeting was a cultural, social, and academic feast of engaging presentations and stimulating discussions. The conference started with a tour of the magnificent Hungarian parliament building and a session in the Senate chambers. The audience for this opening session was seated in the seats of the Hungarian Senate arrayed around the dais from which the plenary papers were presented. Looking down from high upon the dais, it must have been as close to a royal experience as plenary speakers had ever had (see Figure 1). By providing a sense of history, majesty, and solemnity, the opening was indeed a marvelous way to start the conference.



Figure 1 The dais from which the speakers presented.

But just considering those impressive surroundings does not describe the diversity and import of the topics covered in the opening session, let alone in the conference in general. The plenary presentations spanned issues from public services to private companies, hierarchical to distributed organizations, and universities to pigeon flocks (though some would suggest that the latter two are the same). This breadth of inquiry set the stage for the diversity of the individual presentations that followed.

The 2013 EDSI conference embodied a key founding principle of the organization: that the art and practice of the decision sciences should not be limited to selected segments of the human endeavor but should be applied as broadly as possible. This is clearly seen in the diversity of topics covered in the various sections of the conference. In the “Innovation and Competitiveness” section, the authors consider both the efficiency and effectiveness roles of innovation among competitive firms. On the other hand, the authors in the “Healthcare Decisions” section focused on arising from collaboration to provide vital services. Among the topics addressed, they explored collaborative decisions, including multicultural collaboration, and hospital patient safety.

One of the sections explored “Public Sector Decisions.” Despite the importance of this sector on all our lives, it has been underserved by decision scientists. An underlying concern in this section was, “For whom and how is value created in the public sector? How can value creation be improved by better decision making?” The inclusion of military decision-making issues in these public sector considerations was an innovative and important addition to the conference, especially given their share of the budget. Other topics addressed in this section involved comparing value creation in public and business organizations and international public sector collaboration.

More traditional decision science topics were incorporated into the conference as well. For instance, the “Decision Analytics” section had papers on improving decision making for business process analysis, maintenance, project planning, and incorporating risk in quality control. Less traditional but very intriguing was a peek into the industry intelligence activities in China (as information for decision making) and determining the social structure of neighborhoods (for public service decisions). Another section that featured more traditional work was “Researching and Practicing the Science of Supply Chains.” It had papers on integrated decision making and planning, risk management, green procurement, inventory management, and technology adoption.

It’s clear that there is great diversity and many new perspectives in the papers included in this volume. It is a testament to the curiosity of the authors, the ubiquitousness of decision making, and the desire to improve the quality of both public and private decisions. It is also a product of the feedback from interactions among the participants during the conference. Representatives from four continents attended (Australia and Antarctica lost out), adding great richness to the informal discussions that occurred at every opportunity. From the opening at the parliament to the closing at the Herend Porcelain Manufactory, an intellectually stimulating time was had by all.

D. Clay Whybark

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Macon Patton Distinguished Professor Emeritus, Kenan-Flagler Business School, University of North Carolina at Chapel Hill

President, Decision Sciences Institute (1979-1981)

Acknowledgments

After my return to Hungary in 2006, I was dreaming about organizing an international conference in Budapest and, preferably, to get the best papers published in a book as well. In academia, if something is not written, it is not done, and, most certainly, I wanted to have something accomplished. A conference by the Decision Sciences Institute (which I have been affiliated with since 1989) was an obvious choice, but DSI did not have a European division. The first challenge was to establish the European Decision Sciences Institute (EDSI) as an organization, which happened in 2010. The next challenge was to figure out how to have the annual conference of EDSI in Budapest. The third challenge was to make EDSI's annual conferences a sustained success, making it easier to find a publisher for papers from these conferences.

In the long process of making this dream come true, I have accumulated debts to many people and organizations. To start at the beginning, the idea for this book originated with the 2010 establishment of EDSI based on the steadfast support of DSI presidents: Ram Narasimhan (2009-2010), G. Keong Leong (2010-2011), Krishna Dhir (2011-2012), E. Powell Robinson, Jr. (2012-2013), and Maling Ebrahimpour (2013-2014).

With EDSI's official foundation as a DSI region, we had quite some success. Our annual conferences (2010: Barcelona, Spain; 2011: Wiesbaden, Germany; 2012: Istanbul, Turkey; 2013: Budapest, Hungary; 2014: Kolding, Denmark) not only contributed to DSI's becoming a more global organization, but they also helped local scholars join a global network. The difficult part was, as expected, publishing the papers from these conferences.

The breakthrough in the book deal—when I had almost given up hope—came during the DSI presidency of Marc Schniederjans (2014-2015), who connected me with Merrill Warkentin (DSI Vice President for Publications, 2014-2015). In hindsight, it was funny because Merrill and I had been DSI board members together for quite some time, but we had never had a chance to discuss this particular issue. Merrill provided the contact information for Pearson Executive Editor Jeanne Levine, and from that point on, it was an easy ride. Jeanne has been fantastic, helpful, and ready to explore new opportunities to extend the horizon for our cooperation by adding the best papers from the 2013, 2014, and 2015 (Taormina, Italy) EDSI conferences to a series of books. I am grateful to her, to Senior Project Editor Betsy Gratner, and to their team for their professionalism and “we-make-it-easy-for-you” attitude.

The 2013 EDSI conference—the basis for this book—would not have been possible, or as successful as it was, without the strong support of Rector András Patyi and Vice-Rector Norbert Kis (National University of Public Service), Rector Éva Sándor-Kriszt (Budapest Business School), Professor Zoltán Gaál (University of Pannonia and Chairman of the Board, Herend Porcelain Manufactory), Dean Lajos Szabó (University of Pannonia), Dr. Attila Simon (CEO, Herend Porcelain Manufactory), Dr. István Blazsek (General Director, Nitrogénművek), Dr. Volker

Kraft (SAS Institute GmbH, Germany), and Erzsébet Csibi and Malgorzata Jaroszevska (Pearson Central Europe).

I am indebted to Professors Wallace (Wally) J. Hopp (University of Michigan, Ann Arbor) and Tamás Vicsek (Eötvös University, Budapest) for sharing their ideas and research results with the conference attendees and the readers of this book. In the PhD Workshop, former DSI presidents G. Keong Leong and Krishna Dhir served as mentors to PhD students and early career faculty members; I am grateful to them.

In the long process of creating this book, I benefited tremendously from Ms. Réka Jinda's assistance.

The feedback from my fellow members on the DSI/EDSI boards is gratefully acknowledged. I am, of course, tremendously indebted to the authors themselves for their contributions.

Finally, I would like to thank and acknowledge the generous financial support of the National Excellence Program in the framework of TÁMOP 4.2.4. A/2-11-1-2012-0001, supported by the European Union and the State of Hungary, cofinanced by the European Social Fund.

About the Editor



Gyula Vastag is Professor and Magyary Chair at the National University of Public Service (Budapest, Hungary) and Professor at Széchenyi University (Győr, Hungary). Born in Hungary, he earned PhD and Doctor of Sciences degrees from the predecessor of Corvinus University of Budapest and from the Hungarian Academy of Sciences, and he finished habilitation at Corvinus University. From the late 1980s, he spent almost two decades in the United States on the faculties of the Kelley School of Business (Indiana University), the Eli Broad Graduate School of Management (Michigan State University), and the Kenan-Flagler Business School (University of North Carolina at Chapel Hill). Between 2005 and 2007, he was Visiting Professor (part-time) at the University of Groningen (The Netherlands). He spent the 2000-2001 academic year in Stuttgart, where he was Professor and Dean of Supply Chain Management Programs and held a visiting professorship afterward. Dr. Vastag coauthored

two books, wrote eight business cases, and has contributed chapters to 15 books. His papers (30+ refereed journal publications) were published in a variety of peer-reviewed academic and professional journals in the United States and in Europe and in numerous conference proceedings. Gyula received several research awards: New Central Europe Distinguished Senior Researcher Scholarship (2014), Best Applications Paper Award by Alpha Iota Delta–The International Honor Society in Decision Sciences and Information Systems (2012), and Award for Research Excellence from Corvinus University (2009). He was the Founding Editor of the *Pannon Management Review*, is the Associate Editor of the *Decision Sciences Journal*, and serves on the editorial boards of the *Central European Business Review*, *Business Research*, *Logistics Research*, *International Journal of Quality Innovation*, and *Vezetéstudomány*.

Dr. Vastag worked with a number of organizations including the Aluminum Company of America (Alcoa), Carlson School of Management (University of Minnesota), International Institute for Management Development (IMD) in Switzerland, Global TransPark Authority of North Carolina, Knorr-Bremse Hungary, the U.S. Federal Aviation Administration, North Carolina State University, International Institute of Applied Systems Analysis (Austria), ESSEC-Mannheim Business School (Germany), OTP Bank, and the University of St. Gallen (Switzerland).

He is Founding Member and Member of the Executive Board of the European Decision Sciences Institute, Vice President for Global Activities, and Member of the Executive Board of the Decision Sciences Institute, where he has also served as Program Chair and Track Chair of DSI conferences. He is Founding Member and past Associate Director of the Global Manufacturing Research Group. He served on the Executive Committee of the International Society for Inventory Research (1998-2006); between 2006 and 2014 he was Member of the Auditing Committee.

About EDSI

The European Decision Sciences Institute (EDSI) is a professional organization of European researchers, managers, educators, students, and institutions interested in decision making in private and public organizations.

Members of EDSI are automatically members of DSI, the leading independent nonprofit educational multidisciplinary professional organization of academicians and practitioners applying quantitative and behavioral approaches to managerial decision making throughout business, government, and society.

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Introduction: Common Disciplines That Separate Us— Local Contexts in Global Networks

—Gyula Vastag, *National University of Public Service*
(*Budapest, Hungary*) and *Széchenyi University (Győr, Hungary)*

Paraphrasing George Bernard Shaw’s often repeated wisdom about context making a difference (“England and America are two countries, separated by the same language”) in its theme, the 4th Annual Conference of the European Decision Sciences Institute (EDSI) aimed to highlight the importance of local contexts in a globally connected, and as such, more and more standardized, world. Despite global trends, we view our professional worlds differently: We prefer different journals for publishing papers on the very same topics; we follow different value systems in judging quality; we join professional organizations of different local flavors. One of the goals of the conference was to show how global trends get embedded in local contexts and how the interactions between global and local forces take place. Decision Sciences Institute (of which EDSI is a regional chapter) is embracing the duality of living in globally determined local contexts in its mission: We are a globally integrated professional association with an inclusive and cross-disciplinary philosophy.

This collection of selected papers offers readers an opportunity to learn about the insights and burning issues of decision making from scholars representing about a dozen countries, and a wide range of disciplines and scientific paradigms. EDSI 2013, where the papers of this volume were presented, provided an extraordinary occasion for leading and budding scholars alike to meet and discuss new directions and trends in an inspiring environment of more than one millennium of history and culture, counting from the year 1000 when St. Stephen, the first King of Hungary, was crowned.

The selected papers of this book are grouped into six parts that, to some extent, reflect the Tracks of the conference: “Plenary Papers,” “Innovation and Competitiveness,” “Public Sector Decisions,” “Healthcare Decisions,” “Decision Analytics,” and “Researching and Practicing the Science of Supply Chains.”

The “Plenary Papers” part presents relevant issues of decision making from four very different paradigms reflecting the backgrounds of their distinguished authors: law as it pertains to good governance and good public administration, law in the context of public sector decisions related to higher education, physics through which advantages of hierarchical organizations could be represented and measured, and operations management for discussing the trade-offs of distributed product development. The last two papers are also perfect illustrations for coming up and testing more universal and generalizable messages from local contexts and information sources (like pigeon flocks or product development projects of a firm).

Papers in the “Innovation and Competitiveness” part discuss the role of R&D in international competitiveness and issues related to the use of the Innovation Union Scoreboard. “Public Sector Decisions” features papers on military decisions, ICT, a public higher education institution, and the service triad of providing visa services in a foreign country. The focus of the papers in the “Healthcare Decisions” section is on efficiency of multicultural teams, shared decision making, and the relationship between process quality and patient safety. Decision analytics and supply chain management have been among the fastest-growing areas of decision making; the papers presented in these parts of the book offer a good overview of current research interests in these areas.

The greatest contribution of this collection of papers, in my view, is the variety of approaches and topics presented. With my tongue firmly in cheek, I would even say that these papers may be interpreted as contextual customizations of globally standardized products where, depending on the author’s world, either the same well-known methodology is used in a new setting/environment or a new methodology was developed for the same well-known problem. As an illustration, the papers that got “Best Paper” awards at EDSI 2013 also show this variety:

- “Assessing the Role of R&D in International Competitiveness” by Ádám Török
- “Process Quality and Patient Safety Outcomes in Hospitals” by Kathleen L. McFadden, Gregory N. Stock, and Charles R. Gowen III
- “Detecting Community Structures Based on Neighborhood Relations” by Ágnes Vathy-Fogarassy, Csaba Pigler, Dániel Leitold, and Zoltán Süle
- “Information Processing in Emerging Markets: Industry Intelligence Activities in China” by Christian P. J.-W. Kuklinski, Roger Moser, and Thomas E. Callarman
- “ICT-Based Value Creation in Business and Public Administration: Review and Research Propositions” by András Nemeslaki
- “Supply Chain Integration and Performance” by Sukran N. Atadeniz and Yavuz Acar
- “Combined Sourcing and Inventory Management Using Capacity Reservation and Spot Market” by Rainer Kleber, Karls Inderfurth, and Peter Kelle

I hope that you as a reader will benefit from this variety, and, perhaps, you can even get new ideas and inspirations from this book for taking up new research projects.

Acknowledgments

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