

影印

世界工商管理名典系列（影印版）

# Decision Support Systems and Intelligent Systems

Fifth Edition

## 决策支持系统与智能系统

（第五版）

Efraim Turban

Jay E. Aronson



清华大学出版社

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Efraim Turban

*California State University, Long Beach*

Jay E. Aronson

*The University of Georgia*

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Efraim Turban, Jay E. Aronson

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# Preface

## OVERVIEW

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The field of decision support is changing rapidly. From primarily a personal support tool, DSS is moving now to be a *shared commodity* across the organization. Organizations now can easily use intranets and the Internet to deliver high value performance analysis applications to decision makers around the world. Corporations are developing distributed systems, intranets and extranets, that enable easy access to data stored in multiple locations, and collaboration and communication worldwide. Various information systems are being integrated with each other and/or with other automated systems. Managers can make better decisions because they have more accurate information at their fingertips.

Today's DSS tools can also create a key interactive user interface that allows users to view and process data and models with standard Web browsers with great flexibility, efficiency, and ease. The easy to use and readily available capabilities of executive information and other advanced systems have migrated to the desktop. Data warehouses and their analytical tools (such as OLAP) are dramatically enhancing information access across organizational boundaries. Decision support for groups is improving with major new developments in group decision support systems for enhancing collaborative work, anytime and anywhere. Artificial intelligence methods are improving the quality of decision support, and are becoming embedded in many applications ranging from toasters to intelligent Web search engines. *Intelligent agents* are beginning to perform routine tasks, freeing up decision makers' time to devote to important work. Developments in *organizational learning* and *knowledge management* deliver the entire organization's expertise to bear on problems anytime and anywhere. The Internet and intranet information delivery systems are enhancing all of these decision support systems.

The purpose of this book is to introduce the reader to these technologies, which we call collectively, *management support systems* (MSS). This book presents the fundamentals of the techniques and the manner in which they are constructed and used.

The theme of this totally revised edition is "bringing the decision support to the Web." In addition to the traditional DSS applications, this edition introduces the reader to the world of the Web by providing examples, products, services, and exercises, and by discussing Web-related issues throughout the text. The book itself is supported by a Web site (<http://www.prenhall.com/turban>) which contains additional readings, relevant links, other supplements, as well as current DSS and AI news, topics, and materials. As can be seen in the specific changes of the fifth edition that follow, most of the improvements of the new edition are Web-related. Despite

the many changes, we preserved the comprehensiveness and user friendliness of this text that made it a market leader. Finally, as in all previous editions, we present accurate and updated material not available in any other text.

DSS and ES courses and portions of courses are recommended jointly by the Association for Computing Machinery (ACM), Association for Information Systems (AIS), and Association of Information Technology Professionals (AITP, formerly DPMA) (see *Data Base*, Vol. 28, No. 1, Winter 1997). This course is designed to cover the decision support and artificial intelligence components of the IS'97 Model Curriculum for information systems. It actually covers more than what is recommended. Another objective is to provide the practicing manager with the foundations and applications of DSS, GDSS, EIS, ES, neural computing, intelligent agents, and other intelligent systems.

## THE FIFTH EDITION

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The fifth edition of this book presents a major departure from the previous editions conducted for the purpose of improving the text.

The major improvements include the following:

- Adding a co-author. Dr. Jay E. Aronson's years of experience in research, consulting and teaching of DSS, intelligent systems, and advanced technologies are a major asset to the book. His overall contributions include
  - Section 4.11 "Intelligent Databases and Data Mining"
  - the reorganization and new modeling and analysis material of Chapter 5
  - Section 6.9 on intelligent decision support systems
  - Section 7.6 "Virtual Reality"
  - Section 7.7 "Geographic Information Systems"
  - the new material on group decision support systems in Chapters 9 and 10
  - the new executive information systems material in Chapter 11 including the description of the hardware and software platforms
  - the Appendix on object-oriented systems analysis, design, and programming (on the Web site)
  - new material on expert systems (such as the description of benefits, problems, limitations, and success factors of ES in Sections 12.10–12.12, of repertory grid analysis and the induction table material in Sections 13.10 and 13.19, of qualitative reasoning in Section 15.13)
  - new material on neural networks and hybrid intelligent systems in Chapters 17 and 18
  - group and term projects based on class projects (such as investigating new technology in DSS or AI), on consulting work (such as building a real-world DSS or expert system), and on research (some of the GDSS and EIS exercises)
- Advancing the book to the Internet and Web age. Throughout the book you will find many discussions and references to the Internet, intranets, Web, and other network computing.
- A Web site has been established to support this book: <http://www.prenhall.com/turban>. The Web site includes cases, software, software information, appendices, additional exercises, technology updates, errata, and more.
- Internet exercises for each chapter. A diversity of exercises that provide the students with extensive, up-to-date information and a better sense of reality.
- New hands-on exercises that provide opportunities to build decision support applications.

- Expanded group exercises and term projects. These enhance the learning experience by providing activities for small groups and longer term activities. Some term projects involve building systems for real organizations (we have used this approach very successfully for more than 10 years in our teaching).
- A new chapter on intelligent agents and their role in information systems, including the Internet and electronic commerce.
- Expanded material on data warehousing and online analytical processing as they relate to decision support.
- Updated research findings and references.
- More real world examples.

## THE INSTRUCTIONAL MATERIALS

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The instructional package consists of several components (check the Web site for updates).

- ***Instructor's Manual and Test Item File.*** The *Instructor's Manual* includes learning objectives for the entire course and for each chapter, answers to the questions and exercises at the end of the chapters, teaching suggestions (including instructions for projects), software guide (which covers such topics as how to use EXSYS, how to use IFPS, how to use Expert Choice for Windows, and includes references to software guides in Web pages), and transparency masters.

The test item file includes multiple-choice questions for each chapter with answers and many test exercises for both DSS and Intelligent Systems with solutions.

- **Prentice Hall Custom Test for Windows.** Prentice Hall Custom Test is a computerized test generator with an optional grade book and available online testing.
- **Web site:** <http://www.prenhall.com/turban>. The Web site includes additional materials such as downloadable development and demonstration software, pointers to available software, software documentation, data, appendices, cases, additional exercises, and so on.
- **Demonstration Student Project.** A sample student project is in an appendix to the book.

## ACKNOWLEDGMENTS

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Many individuals provided suggestions and criticisms since the initiation of the first edition. Dozens of students participated in class testing of various chapters and problems and assisted in collecting material. It is not possible to name all of the many who participated in this project; thanks go to all of them. However, certain individuals made significant contributions, and they deserve special recognition.

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E.T.  
J.E.A.

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