

INFORMATION

IT

TECHNOLOGY

MORROW'S ADVANTAGE TODAY

STEPHEN HAAG / PETER KEEN

Information Technology

Tomorrow's Advantage Today

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*For Pam and Indy. They are my family, my life,
and my truest and dearest friends.*

—Stephen Haag

*For all my friends in St. John, U.S. Virgin Islands—
two hurricanes this year . . . still paradise,*

With love and thanks,

—Peter Keen

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**Information Technology:
Tomorrow's Advantage Today**

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As authors, our goal is to reflect our passion for and philosophy of teaching Information Technology (IT), and our belief that the student is at the center of the educational process. We believe that good teachers make a personal difference in students' lives and careers, and that the pace of change, jargon, and complexity of the IT field too often lose students and lose personal relevance to them. Every page of our book is aimed at bringing student, teacher, and Information Technology together.

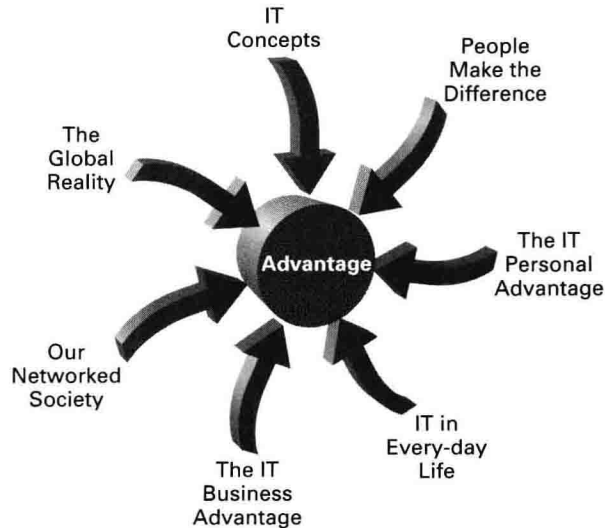
Objective of the Book *Information Technology: Tomorrow's Advantage Today* is designed for a one-semester introductory course in which the goal is to give students a foundation in the concepts of information technology and their applications to business and other disciplines. There is no technology prerequisite.

We have made every effort to create a concise text that is independent of any particular hardware or software platform, giving the instructor the flexibility to combine the book with any available software tutorials, or to use it as a stand-alone text in a conceptual course.

A more subjective goal is to stimulate the interest of students in the dynamic and exciting field of information technology and to encourage their sense of discovery about it throughout their academic careers and beyond.

Themes of the Book The main theme of this book is *The IT Advantage*. Throughout the text we emphasize the advantages of information technology to students—in their personal lives, their careers, and to organizations they may become a part of. As we help students understand the advantages of IT, we approach the material from several points of view:

- We introduce students to information technology, *how it works*, and *issues relating to the use and development of IT*.
- We emphasize *people* as the primary component of any IT system.
- We show students the many examples of *information technology in their every-day lives*, and we encourage them to discover more of it; to experience as much as they can.
- We look at the *personal advantage* that IT can provide.
- We look at the *business advantage* that IT can provide.



- ▶ We emphasize that we live in a *networked society* and that, within that society, knowledge and use of IT are essential to future success.
- ▶ We emphasize that the networked society is a *global society*.

The last two points of view are given special attention:

Today's students are the most diverse group ever to enter college. It is more important than ever for them to understand the power of modern IT tools to break down barriers to culture, business, and language. We live in a networked society. We believe the Internet is an especially useful vehicle for illustrating this point. For this reason, we introduce the Internet in Chapter 1, discuss it in some depth there and in other parts of the text, and provide content-related Internet assignments at the end of every chapter's exercise set.

We believe it is critical that students understand that the networked society is a global proposition. To underscore this point, we have chronicled the success of many foreign, domestic, and transnational firms and their use of IT as an instrument of success and as a competitive weapon. We have devoted an entire chapter (Chapter 9) to what it means to be a "global citizen." After reading Chapter 9, students will understand the nature of today's global economy, how businesses are using IT to operate worldwide, and how IT can work to their personal advantage in an increasingly international landscape.

Discovering IT

These boxes are short assignments that encourage students to think critically about IT in every-day life. They focus on getting students out into the real world to see IT in use. Instructors will find these useful teaching tools for bringing home the practical applications of IT.

Personal Advantage

Personal Advantage boxes focus on using IT to become a more productive human being. Many contain success stories of individuals who have improved their quality

of life through the use of IT, while others encourage students to apply IT to their own situations.

Today's Business Advantage

In these sidebars, students will learn how IT is being used effectively in the workplace. The IT applications and strategies of such companies as Club Med, Avon Products, AT&T, Chrysler, American Airlines, Blockbuster Entertainment Corp., Dell Computer, and many more are profiled throughout the text. In all, students will read about more than 150 businesses and their use of IT.

Tomorrow's Business Advantage

For many students, the business world and full-time employment are several years away. Between now and then, the IT landscape will change dramatically. Technologies that seem futuristic today will be tomorrow's standard. *Tomorrow's Business Advantage* sidebars encourage students to develop an entrepreneurial sense of how they might use today's innovations to their advantage in tomorrow's business community. Students will find exciting such topics as DBMSs that can speak any language, virtual reality on the Internet, genetic software, and many more.

Current Business Examples

It has been said that any book on Information Technology is out of date before it comes off the press. While this may be true in the strictest sense, we have taken steps to provide students with the most up-to-date business technology possible. For example, this paragraph is being written three months before the book is due to be published. We added our most recent example to the text discussion this morning. For another, our World Wide Web site <http://mgh.willamette.edu/mgh/> will regularly provide technology updates to augment examples and discussions in the text. With well over 150 examples, many of them international in scope, this text is quite a resource for students.

Now You Can . . .

This section at the end of each chapter is tied to chapter objectives and summarizes the practical outcomes realized by students from what they've learned. This emphasizes what students are able to *do* as a result of learning the chapter material.

Cruising the Net

To encourage use of the Internet, we have included an overview of "Net" concepts in Chapter 1 and exercises requiring the use of the Internet at the end of each chapter. (These exercises occur at the end of extensive exercise sets, so they can be skipped if your school does not yet have an Internet connection.) These exercises will help students find more information about the chapter topics, learn about the Internet, and learn where to find relevant information on the Internet.

Working in a Group

At the end of each chapter we have included projects designed to be completed by groups or teams of students. Group projects are an excellent vehicle for motivating

students, fostering peer teaching, and gaining good experience for an increasingly team-oriented workplace. The *Instructor's Manual* includes tips for leading students through group projects and for evaluating their work.

Custom Binding Option. The book can be used comfortably in any computing environment. To give you additional flexibility to create the course of your choice, the book may be custom bound with any of the following McGraw-Hill software tutorials, giving you a complete concepts and applications course in one spiral-bound volume, at an affordable price:

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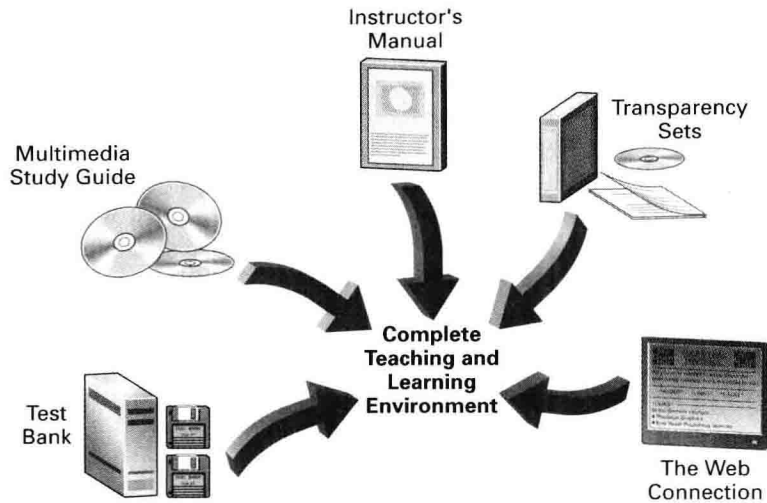
A state-of-the-art book requires a state-of-the-art support package. A World Wide Web site @ <http://mgh.willamette.edu/mgh/> provides regular technology updates to augment examples and discussion in the text. To help you create the best possible learning and teaching environment, we have provided an integrated package of teaching supplements, appropriate for any classroom environment:

Instructor's Manual

The *Instructor's Manual* offers a complete set of tools for developing the structure of your course. It includes suggested outlines for 10-week quarters, 15-week semesters, 8-week summer sessions, and 5-week summer sessions. You'll also find detailed outlines for each chapter with suggestions for how and when to use the transparencies and transparency masters, teaching strategies for getting students involved and excited, and tips for including the book's pedagogical aids into your teaching. We also include solutions to all questions in the text.

Test Bank/Computerized Testing System

Our Test Bank contains more than 1,200 true/false, multiple choice, fill-in and short answer questions. Two short, pre-formatted quizzes are also included for each



chapter. A computerized version is available, and may be administered over a network or may be used in more conventional disk or printed formats. The computerized version is available for DOS or Windows.

PowerPoint Presentation on CD-ROM

More than 200 four-color electronic transparencies have been created for this package and are contained on a CD-ROM that is packaged with the Instructor's Manual. They can be easily copied to disk format. Many of the transparencies are adapted from art in the book, while others offer students a new way of viewing IT concepts.

Multimedia Study Guide

Patricia Fox's *The IT Tutor* is an interactive multimedia CD-ROM available to students that allows them to actively explore state-of-the-art IT concepts by simply clicking a mouse. The CD includes interactive presentations of major topics in the book, animations and video clips that bring abstract concepts to life, self-tests with immediate feedback, and interactive games and exercises designed to give students an active and visually exciting way to learn. An additional benefit of *The IT Tutor* is that, by putting the learning control in the hands of the student, it stimulates a sense of discovery and feeds a growing interest in the exciting world of information technology.

Acknowledgments Many people contributed to the development of this book. Without all of these people working together, it would not have been possible.

We would like to thank the crew at McGraw-Hill. First, there's Frank Ruggirello, our editor, the man who brought the two of us together, and the man who really made it all happen. Frank's expertise in project management provided the real foundation for completing this project. Without his consistent prodding, critical eye for detail, and quest for quality, we would not be writing these acknowledgments today. Thanks, Frank, for giving us this opportunity and for seeing it through to the end.

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Patricia Fox, Trident Technical College, and Dr. Maeve Cummings, Pittsburg State University, helped us greatly. Pat developed the Multimedia CD-ROM Study Guide, and her expertise shows in the quality of that material. Maeve acted as our consultant on Chapter 9 and wrote much of the material.

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From Stephen Haag. . .

My work on this project has been supported literally by a cast of thousands. To Phyllis Crittenden and the many others at Elm Street Publishing Services, Inc., I extend my gratitude. I would also like to thank the faculty of the Department of Information Systems and Management Sciences at the University of Texas at Arlington, who guided me through my Ph.D. work and impressed upon me the seriousness of providing a quality education to those who seek it.

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S.H.

October 1995

From Peter Keen. . .

Over the years a number of people and groups have helped to shape my thoughts and experiences as an educator. I will always be thankful to Arthur Taylor, then Dean at Fordham University School of Business, who gave me the fullest freedom, encouragement, leadership, and scope for innovation I have found in any university. Also at Fordham, Linda Jo Calloway, a superb colleague and a leader in developing the highly innovative IS program at Fordham. I have much to thank her for. Eduardo Perez, my colleague at the University of Stockholm and a prodigious innovator in the fusion of technology into all areas of education. For the past year Eduardo has taught me much about teaching, and I thank him for it. Jim Gannon of the Royal Bank of Canada has been a creative and challenging friend, who has stimulated and applied much of the work of which I am most proud. Jim has been the bridge for me between the education of students and the new realities of careers in an ever-changing world.

This book was begun at a time of great personal turbulence for me and appears at a time of personal peace. I don't have space to thank the many people who helped me during that transition, but I will never forget them.

Finally, my love and thanks to Sherry for quite literally, everything.

P.K.

October 1995

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