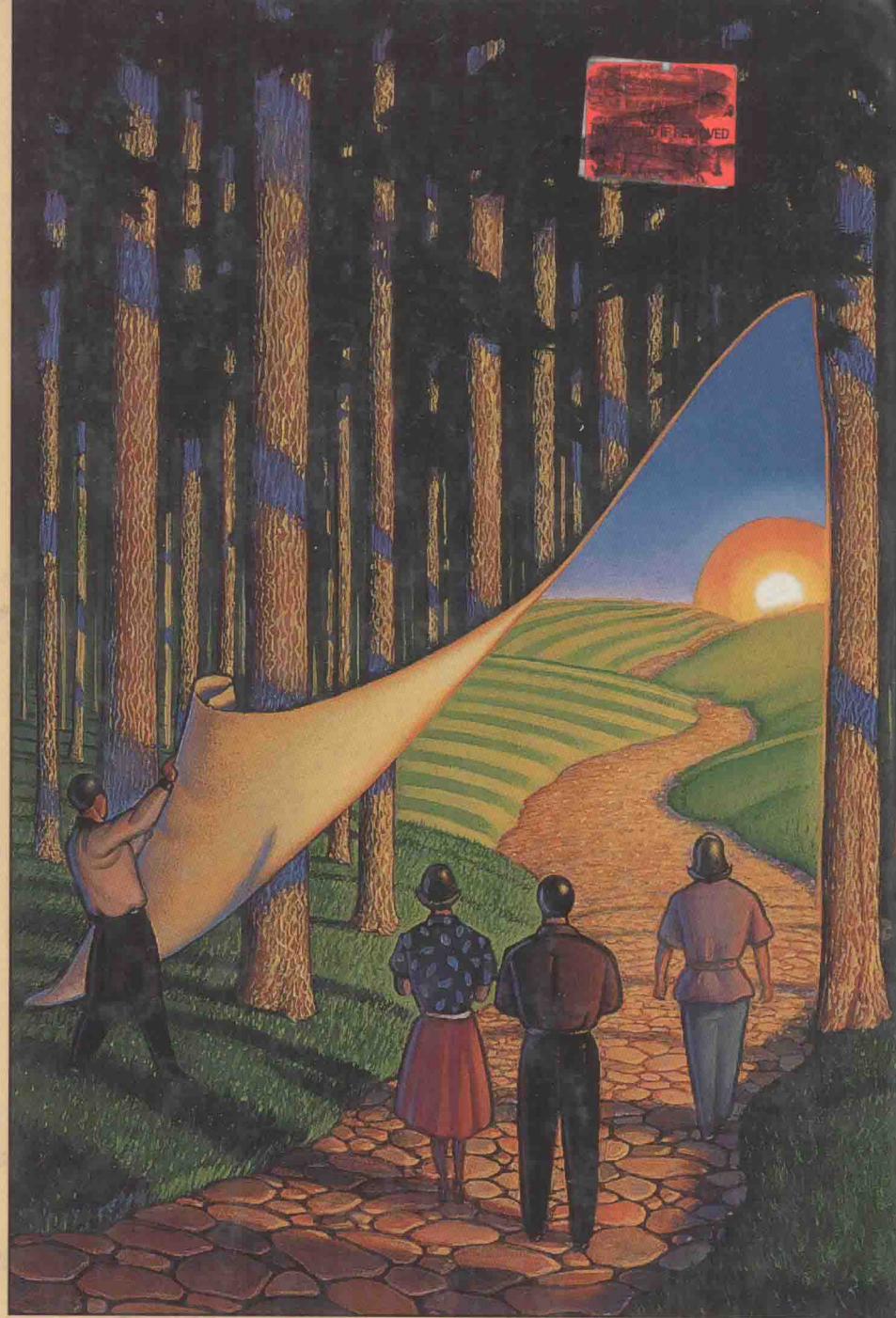


ACCOUNTING, INFORMATION TECHNOLOGY, AND BUSINESS SOLUTIONS

SECOND EDITION



Hollander

Denna

Cherrington

S e c o n d E d i t i o n

ACCOUNTING, INFORMATION TECHNOLOGY, AND BUSINESS SOLUTIONS

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P R E F A C E

THE APPROACH: A FOUNDATION FOR LIFELONG LEARNING

In this text, you are presented with nine main chapters that “tell our story” and seven supplemental chapters that complement this material. This text is not intended to be all encompassing, but lays a foundation for a philosophy of lifelong learning

Our intent is to lay a foundation for students as future business professionals to begin thinking about innovative methods for providing accounting user support, information technology, and problem solving. This text is not intended to serve as an exhaustive, all inclusive reference. In an ever-changing world, professionals must continue to learn and gather new information throughout their professional lives.

OBJECTIVES AND CONTENT

In this book, you will see an integration of both “traditional” knowledge and “state of the art” knowledge. We have combined knowledge about business, the profession, information customers, information technology, information systems, and accounting to create a framework for the Accounting Information Systems course. The objective of this text is to instill a philosophy in the information age accounting professionals of today and tomorrow. The philosophy is based on teaching students how to learn, and how to adapt to or hopefully lead change. Understanding organizations (their activities, processes, and the information needs of organization stakeholders) is the focus of this book. Information technology is presented as an enabler of organization activities and objectives, rather than as the focus of study.

The book is comprised of a series of modules intended to make teaching these objectives easier.

Module 1 (Chapter 1) An Introduction.

Goal: This module introduces accounting; the objectives, calls for change, challenges and opportunities. It includes a discussion of information systems and explains the role and purpose of accounting information systems. The module also reviews the accounting and information system profession relationship (stressing the need to merge knowledge from the two professions to effectively use, design, and evaluation accounting information systems).

The accounting profession is presented as an organization support function. Accountants strive to support the planning, execution, and evaluation activities of organizations and organization stakeholders (both internal and external), thus they must truly understand the business world. Students are taught that accounting professionals should strive to add value to organizations, and this will require our profession to be associated

with less clerical, bookkeeping tasks, and to be associated with more real-time business and information support. Specifically, we suggest

- The need for accounting support, and thus AIS design, to be user driven;
- The need for a proactive, business support philosophy;
- The ability of accountants to impact (rather than simply report) the bottom line;
- The ability of accountants to facilitate reengineering efforts;
- The opportunity to move from a historical perspective, “bean counter” identity to a valuable, real time organization support function.

Students are taught that a change in the way accountants use technology can enable change in the profession and in the role accountants play within organizations.

Enhancement: Chapter 1 has been revised to describe the relationship between business, management, and information processes. This chapter includes additional coverage of why change and the changes occurring in information technology. It also contains a summary of CPA Vision Project. Discussion of history of information technology and explanation of traditional information technology system eliminated from this chapter.

Module 2 (Chapter 2, Supplements A and B) Modeling Business Processes

Goal: Chapter 2 helps students develop an understanding of business processes, which includes the ability to identify and model both business events and processes. These models serve as the basis for planning an IT architecture. Chapter 4 teaches students how to use their model (developed in Chapter 3) to plan an event-driven architecture and develop a prototype to test their process model. The objective is to build an IT application that supports business processes in Real-Time. The events-driven design is an integrated, data-oriented/business process design based on a semantic REAL model. This model was chosen because it is not relational data base specific; it is equally applicable to object oriented implementations.

We offer semantic modeling as a tool to communicate organization understanding. We highlight the need to learn important elements of organization understanding that will enable professionals to better design, use, and evaluate information systems designs, including:

- organization processes and the activities that comprise those processes,
- the sequence of activities in an organization process,
- relationships between organization activities and processes,
- complete documentation of organization activities and stakeholder,
- the activity that triggers business activities,
- business rules relating to activities and participants, and
- the roles of organization participants (authorization, custody, control/info support)

We feel this approach of developing a semantic mental model of an organization helps students establish a system standard which can be used to critique and analyze a variety of system designs. When the concepts are used to determine the requirements of an IT application, the result is an architecture where IT supports those managing the organization, rather than IT imposing a structure and an agenda on the organization.

Enhancement: The new Chapter 2 has been reorganized to contain revised material from the former Chapter 3 on Modeling Business Processes. In this chapter, students are asked to identify events that comprise a business model. Business Processes are covered earlier in the chapter. The discussion of different processes and business activities for different organizations based on an organizations' is also covered in this chapter. Students are shown a business process example. The discussion on Linking Processes has been moved closer toward the end of the chapter and the discussions of prioritizing business events, decomposing business processes, and essential characteristics of relevant business events have been eliminated. The following discussions have been moved to an Appendix for Chapter 2: further practice using real modeling, selling a service, providing public assistance, and making steel.

Enhancement: Supplement A has been completely revised and updated for this edition. Supplement B contains new coverage on General Ledger Software Packages. A list of ERP Software vendors available via the Internet is offered.

Module 3 (Chapters 3 and 4, Supplement C) The Traditional AIS Architecture

This module reviews the accounting information systems architecture (the traditional, file oriented, manual design; the traditional, file oriented, automated design; and the event-driven design), focusing on the general ledger and the accounting cycle. Understanding the general ledger design provides insights to some of the limitations accounting professionals have in producing the outputs desired by information customers. We objectively review the criticisms of traditional designs, and stress that these criticisms are feedback from an increasingly demanding, sophisticated user group whose expectations are grounded in the real-time information age. These users are concerned with organization efficiency, reengineering, restructuring, downsizing, streamlining, complex financial transactions and international markets. Their demands are broadening the transaction documentation and boundaries of the accounting system. This module presents a challenge to accounting information professionals. The challenge is to effectively use IT to build information system architectures that improve the ability of accounting to support organizations. To meet this challenge, accounting professionals need to develop a strategic, conceptual understanding of IT resources, and the ability to understand and model business activities and processes.

Chapter 4 helps students develop an understanding of business processes, which includes the ability to identify and model both business events and processes. These models serve as the basis for planning an IT architecture. Chapter 4 teaches students how to use their model (developed in Chapter 3) to plan an event-driven architecture and develop a prototype to test their process model. The objective is to build an IT application that supports business processes in Real-Time. The events-driven design is an integrated, data-oriented/business process design based on a semantic REAL model. This model was chosen because it is not relational data base specific; it is equally applicable to object oriented implementations.

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Enhancements: Revised former Chapter 2 now makes up Chapter 3 on The Traditional Accounting Information System Architecture. Students will learn about the nature of the traditional accounting cycle and its' relationship to business events. They will also understand the impact of IT on the traditional accounting system and be able to describe the limitations of the traditional accounting system architecture. This chapter also discusses how the traditional architecture can limit accounting's ability to enhance its value and an alternative accounting system architecture.

The discussion of traditional accounting cycle and information systems is pretty consistent with previous edition. The discussion of an alternative information systems architecture has been added to this chapter.

Enhancements: Chapter 4 is entirely new to this edition. This chapter is designed to help students understand the key steps in analyzing and designing information technology applications. It also explains how to use the REAL business process model to analyze and design IT applications that support those responsible for defining and managing organization activities. This chapter is best learned by applying it. Therefore, you are encouraged to implement the concepts by using the software package of your choice.

Enhancements: Supplement C contains new coverage on File Versus Data Base Environments and Data Warehouses. The coverage of Flat Files has been eliminated.

Module 4 (Chapter 5 and Supplement D) Business and Information Process Rules, Risks, and Controls

This module includes a discussion of traditional efforts to identify and control business and information process risk and ways to improve control strategies. We emphasize the control component of organization understanding. Our approach includes training students to first

identify both business and information risk exposures, then develop control strategies. Control strategies lead to implementing specific control procedures. Due to the changing nature of organizations and systems, students learn that to implement control strategies, they may need to review existing control procedures and update or revise them. This helps students understand recent calls for reengineering traditional accounting controls, and the risks of applying traditional control procedures to transformed environments.

Increasingly, organizations are embedding information processes into business processes. This provides accountants with a strategic opportunity to help management use IT as a resource to effectively control the execution of business activities, while capturing accurate and complete data about business activities - in Real-Time. We emphasize the need (and ability using technology) to control organizations at each point in a business process, the ability to implement more proactive control, the ability to use technology as a control resource, and the opportunity to create more complete, per transaction audit trails, rather than separate process, batch audit trails

Enhancement: This chapter has been heavily revised. Students will understand the relationship between risks, opportunities, and controls and will be able to explain each of the components of an internal control system. In this chapter the weaknesses in the traditional control philosophy are discussed and an outline of control philosophy applicable to an informational technology environment is provided. This chapter also discusses the types of business and information process risks.

The discussions regarding timing the design and implementation of controls, size of business, and the process of developing a system of internal controls has been retained from the First Edition.

Enhancement: Supplement D includes new coverage of the control environment, risk assessment, information and communication and monitoring. The Coverage of Templates for Event Processes moved to Appendix D. 1.

Module 5 (Chapters 6-8 and Supplement E): Business processes and AIS designs for supporting these processes.

The most significant module (in terms of suggested class and project time) is the business process module. It incorporates systems analysis and design knowledge, and it builds on and applies the knowledge learned in Chapters 1 through 5. Using the framework established in the previous module, we discuss the processes from a business perspective. We try to refrain from focusing student attention on memorizing a series of process sequences, tasks, or a series of control procedures. We want to train students to be adaptable to a changing world by basing their evaluation of systems design or organization controls on a (system or control) objective, rather than whether a system uses a familiar design or familiar set of control procedures.

We first examine each process in business, rather than information terms. We discuss the objectives of each process, the relationships between processes, the roles of process

participants, and the decision and business information needs relating to each process activity. We examine the variations of processes (e.g., retailing, manufacturing, credit versus cash sales, etc.) and the effects of EDI and trading partner alliances on the processes. The input, processing, output, and risk exposure of each activity is examined from a business perspective (e.g., an order request from a customer leads to a need to review the order to see if the customer and business can complete a sales transaction - the customer is credit worthy and the business can provide the goods or services; if so, this results in an authorization from sales to continue the process). Finally, we discuss the management and information activities, including the recording, maintenance, and reporting (including queries, reports, and documents) activities relating to each process and process activity.

Next, each process is analyzed in the context of various AIS designs. We feel it is important to teach both traditional and nontraditional designs (the traditional, file oriented manual design; the traditional, file oriented, automated design; and the events-driven design). Each design is evaluated for its ability to meet user information needs and support organization objectives. We examine how controls are implemented in each design (and when controls are triggered); the audit trails of each design; the physical and logical data structures of each design; and the specific input, process, and output steps required for each design. We also compare the timing and flexibility of the reporting and document generation capabilities of each.

Surprisingly, we have found that the event-driven design perspective is a great tool for ensuring that accounting students understand and can explain concepts normally associated with only traditional designs (e.g., understanding and applying GAAP and explaining the meaning of financial statement outputs.) This alternative model also helps students understand duality and other economic concepts represented in the traditional accounting model.

Enhancements: Chapters 6, 7, 8, and Supplement E have been completely revised and updated from the First Edition.

Module 6 (Chapter 9)) Developing and Implementing Business Solutions: The Need for Lifelong Learning.

The final module includes discussion of application planning and development (the need for solutions - not just more software), reengineering efforts, managing change, and the opportunity for accounting and IT professionals to play a significant role in the development of business solutions. It reminds students that our text is not all inclusive, and encourages them to integrate concepts in this text with other business classes and topics. Our study concludes by discussing the types of skills needed to be a valuable member of a solution development team, and the need to continue learning and experimenting throughout ones professional life. We finish on the same note that we started. This is a time of great opportunity for the profession. All we need to do is *Seize the Day!*

Enhancement: Chapter 9 includes new coverage regarding the types of organizational change, deciding when to change, and managing change. In this chapter, students will also learn to create a common vision. The following discussions have been eliminated: from Chapter 9: information technology applications planning and development, planned and unplanned

application development project, existing system details and limitations, clarifying information technology application requirements, and event-driven solutions and reengineering.

Module 7 (Supplements F and G) Information Technology - Resources Available to Build AIS

This module examines the effects of technology. It includes an introduction to various types of IT components and their development as well as assessing their business value. The resource module examines hardware/software concepts and trends. The objective is a strategic, conceptual understanding of information technology as a resource to enable organization objectives. As these technologies change and become more user friendly and advanced, the opportunity to more effectively and efficiently support organizations is enhanced. Due to continual change, students are taught that it is their responsibility to improve their understanding of technology, and to remain informed over time. We do suggest references, sources, and techniques for obtaining additional information. Students are taught that an ill-prepared professional will quickly learn that improperly managed technology is a risk or problem, rather than a useful resource. The professional should control the technology, rather than vice-versa.

Students are challenged to consider how we, as accounting information support professionals, can effectively use today's more complete, timely documentation of business activities to support the decision making of organization stakeholders. However, technology is not presented as a panacea. Students are reminded that technology is only useful and effective if properly implemented and used. Before designing or implementing a system, a professional must understand the system domain and system objectives.

Enhancements: Supplement F has been completely revised and updated for this edition. Supplement G, newly titled *Information Technology: Software Applications*, includes new coverage regarding enterprise resource planning software and software used to enhance organization productivity

APPLIED LEARNING

To help students apply their knowledge, the end of chapter material includes review and discussion questions and problems; sample cases and vignettes; and suggestions for individual and group projects, presentations, written papers and other active learning exercises.

Like the business world and the field of systems, we are sure this approach requires maintenance, periodic review and upgrade to keep it applicable for preparing accounting information professionals. We hope that you enjoy reading this AIS text. We look forward to hearing your comments. With your suggestions we will be able to make improvements in this on-going project.

**Anita S. Hollander
Eric L. Denna
J. Owen Cherrington**

SUPPLEMENTS

New to this Edition! Solutions Manual with Instructor Supplement CD-ROM (0-07-561948-2)

This supplement packages the Solutions Manual with a CD containing an electronic version of the Solutions Manual, Test Bank questions, Ready Shows (or PowerPoint®), additional PowerPoint in the form of exhibits taken from the text, and data files needed to answer selected end-of-chapter material.

The Solutions Manual provides solutions to all the end-of-chapter material in the text. The Test bank, authored by Cheryl Dunn of Florida State University, is also available on this CD to allow you to customize testing material according to your needs. The Ready Shows (PowerPoint), authored by Bruce MacLean of Dalhousie University, offers in-depth coverage of each chapter in the text and additional PowerPoint taken from the exhibits in the text provide a variety of material for your class lecture.

New to this Edition! Test Bank (0-256-23595-3)

The printed Test Bank offers a variety of true/false, multiple choice, discussion questions, and mini cases. The complete test bank is also available in electronic form on the Instructor Supplement CD-ROM.

New to this Edition! On the Web

Be sure to visit the Hollander web site at www.mhhe.com/hollander to find links to related web sites of interest, online instructor supplements, sample syllabi, and additional projects and cases.

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