

Accounting and Information Systems

second edition

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preface

The application of information systems concepts to the accounting process and accounting models is a relatively recent phenomenon. Indeed, the study of information systems is itself new. However, because of the increasing importance of information systems, these areas now are firmly entrenched as an important part of a university curriculum in business.

Courses in accounting information systems now exist in virtually every business school, and to service this market a substantial number of textbooks of varying focus and depth have been written. This book is significantly different in design and emphasis.

Textbooks in the business/management/accounting information systems area have historically been of two types. Those that purport to give an introduction and overview of the field are usually so general in content as to make impossible the operationalization of the ideas presented. Others, which claim a comprehensive coverage, have tended toward technical sophistication beyond the background and interests of the major groups of potential users. In addition, these texts have almost universally made no attempt to ground the study of information systems in basic accounting concepts, resulting in an isolation of the field from other accounting study. We have attempted to correct these deficiencies in the literature of accounting systems with this book.

The most important feature of our approach is the integration of information systems concepts into the basic accounting process and the extension of traditional accounting models to include the systems approach. This integration and extension seems to be the link that students search for in relating their work in this area to other accounting study. Without this link it is difficult to appreciate where accounting systems fit into the "big picture." Additionally, this approach is designed not only for accounting students, but also those interested in systems work and management consulting (including engineers, computer scientists, and business majors) who have had only an introductory exposure to accounting.

It should be noted that the concepts of information systems are introduced only after the student is firmly grounded in the components and procedures of manual accounting systems. Importantly, manual accounting systems are introduced and discussed to give the student an overview of how the accounting cycle flows from the beginning to end, not simply to teach mechanical facility and

bookkeeping. Such a background (Part One) is fundamental to understanding and applying the ideas which follow in the text. Part Two then introduces the basic tools of system analysis. Part Three illustrates the application of these system analysis tools in the development of computer-based information systems. Finally, Part Four synthesizes the concepts of accounting systems and information systems in a computer context. Of special use to the beginning student throughout these sections is the development and subsequent use of a sample company with comprehensive supporting documents and illustrative transactions to demonstrate the application of the principles being explained.

NEW FEATURES OF THE SECOND EDITION

The second edition continues the basic approach and structure of the first edition. However, several new features have been added, all of which contribute to the teaching pedagogy of the book. These new features include:

1. concept summaries, which bring together on one page the major points in each chapter section.
2. extensive new end-of-chapter material, consisting of key terms, ten review questions, and a decision case for each chapter. The decision cases emphasize the application of chapter materials and extend student's work in the area. Additionally, new exercises have been added in some chapters. A complete Solutions Manual to all end-of-chapter material is available.
3. complete updating of all photographs, diagrams, reports, and discussions to reflect the most current computer technology.
4. discussions of business documents, the voucher system, and computer auditing in Chapters 2, 3, and 16 respectively.
5. presentation of internal control in computer-based systems in Chapter 10 to enhance the logical flow of system development.
6. a User Dictionary of definitions of key terms as an appendix.
7. a completely revised Practice Case, which includes extensive narration, business documents, and a comprehensive set of transactions. A complete solution to both the transaction processing and the system analysis of the Practice Case has been provided in the Solutions Manual.
8. an expanded Test Bank, which now includes multiple choice questions, matching questions, and problem material.

This book is better because of the time and efforts of Michael Dugan, Mary Jeanne Welsh, Kathy Centanni, Laura Bell, Robert Putney, James Fox, Archie Grefer, and James B. Thies. We would also like to thank the students at the University of New Orleans who used the book and made helpful comments.

Joyce Fowlkes typed the manuscript under often trying circumstances and always kept her good spirits. Special thanks go to Ron Thacker of the University of New Orleans for his advice and encouragement. Finally, the expertise and efforts of Frederick Easter, Executive Editor of Reston Publishing Company, were critically important to the making of this book.

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part I

manual accounting systems

- chapter 1** the accounting system
- chapter 2** processing accounting transactions
- chapter 3** internal control in manual accounting systems
- chapter 4** basic systems case

the accounting system

outline

- 1.1 Accounting System Measurements:** basic assumptions underlying accounting systems; assets and the fundamental accounting equation; the basic concept of liability; owners' equity.
- 1.2 Balance Sheet:** classification and valuation of assets, liabilities, and owners' equity.
- 1.3 Income Statement and Statement of Retained Earnings:** expanded accounting equation; basic concepts of revenue and expense; interaction of income statement and balance sheet.
- 1.4 Accounting Cycle and Double-Entry Bookkeeping:** introduction to the mechanics of the accounting process; the basic ideas behind a manual recording system (accounting logic); the role and functioning of general journals, ledgers, and the trial balance.
- 1.5 End-of-Period Procedures:** adjusting entries; adjusted trial balance; closing entries.

Systems in the Real World

THE BEST AND THE WORST

As U.S. businesses report on their financial activities and position, it becomes clear which companies performed well and thus rewarded their owners and which performed poorly to the chagrin and financial loss of the owners. Each year, as a part of its Fortune 500 Directory, *Fortune* magazine cites the stars and laggards from the 500 list. The star performers are those companies with the highest percentage return earned by its owners, and the laggards are those companies with the lowest percentage return.

Below are the best and the worst for 1980. Notice that the best performer offered its owners a whopping 220 percent return in one year, while the owners of the poorest performer suffered a negative 63 percent return.

The Ten Highest

	<i>Sales Rank</i>	<i>Rate of Return</i>
Mitchell Energy & Development	496	220.26%
ConAgra	340	171.78
Wang Laboratories	457	156.78
LTV	42	153.13
Cameron Iron Works	385	145.39
NL Industries	177	125.14
Union Pacific	75	121.87
Shell Oil	12	120.08
Dean Foods	429	117.19
Litton Industries	88	117.17

The Five Lowest

Commonwealth Oil Refining	258	-62.63%
Charter	84	-41.65
American Motors	155	-41.46
White Motor	350	-40.35
Monfort of Colorado	365	-40.28

Not to be ignored when discussing the worst performers of 1980 are the big money losers for that year. Below is a list of the largest dollar losses suffered by companies on the 500 list. By the way, the loss reported by Chrysler for 1980 was the largest ever reported by a U.S. Company.

The Money Losers

	<i>Sales Rank</i>	<i>Loss</i>
Chrysler	32	\$1,709,700,000
Ford Motor	6	1,543,300,000
General Motors	3	762,500,000
International Harvester	49	397,328,000
GAF	268	233,476,000
American Motors	155	197,525,000
Firestone Tire & Rubber	73	105,900,000

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INTRODUCTION

In this chapter we introduce the basic structure and reasoning behind the accounting system. This topic is considered first because we feel strongly that understanding the basic concepts of accounting is absolutely essential to grasping and using the subject matter that comprises most of this book. The ability to apply the principles of information systems to business situations requires a feel for manual recording systems based on fundamental accounting ideas. This chapter and the next three will present basic components of manual accounting systems to provide you with this background.

If the subject matter presented in these chapters is a review for you, we promise an approach you have probably not seen before, and one that should clarify this material in your mind. If you are a newcomer to this material, we feel that you will have sufficient background after Part One to understand what follows.

1.1 ACCOUNTING SYSTEM MEASUREMENTS

Many long, complex, and wholly uninformative definitions have been offered to define what accounting is and does. Let us offer a short, easy, and rather clear definition of accounting.

Accounting is a system for keeping track of the financial events in the life of any individual or organization in a manner that makes it possible for that individual or organization to report on its financial position and activities to anyone who may be interested.

You should remember some points about our definition if you are going to apply it properly:

1. Accounting is concerned with financial events only, which means you cannot rely on the accounting system for all of your information about a business. Information which is not financial in nature is ignored by accounting and, therefore, must be secured from some other source. Accounting systems, then, are a subset of information systems. Information systems provide more than financial information and are therefore made up of accounting systems plus other systems.
2. The accounting system is applicable not only to businesses, but also to individuals and to organizations which are not businesses in a profit-making sense, such as governments, hospitals, churches, and universities.
3. During the life of even the smallest business, there are many individuals or groups that may desire some information on the position and activities of that business. Accounting systems must be prepared to serve many different users of information, including at least owners, creditors, certain governmental

agencies (IRS, SEC), and management. As a business gets larger many other groups such as labor unions and other governmental regulatory agencies begin to call for financial information about its position and activities. The demands of company management are strongest on the accounting system since this group must direct the progress of the business. Accounting systems must provide information for the decision making, planning, and control of a business.

Basic Assumptions Underlying the Accounting System

Accounting systems are based on certain assumptions about the nature of business, and a logical structure is developed using these basic assumptions. There are six such basic givens on which accounting systems are based. You should study these carefully because they tell you something about the nature of accounting systems and will provide you with guidelines to follow in understanding these systems.

Entity

We assume that all businesses are separate units (entities) for accounting purposes, and therefore account for each business separately from all others and separately from the owners of the business. Each business is an accounting unit whose affairs should not be mixed with other units.

Going Concern

In the absence of strong evidence to the contrary, we always assume that a business will go on forever and account for it on that basis. This assumption has strong implications for the way accounting systems operate.

Accounting Period

Although the business is usually assumed to have a very long life, most people or groups would like to know how the business is doing at intermediate shorter intervals. Accounting systems break the very long life of the business into shorter, somewhat arbitrary time segments called accounting periods. These accounting periods become the basis for reporting on the position and activities of the business. These periods have, by custom, tradition, and to some extent law, become a year in the United States for most businesses. The year may be calendar (January 1 to December 31) or it may be fiscal (beginning and ending at any other time), but the reports that result are always tentative because the accounting period is short compared to the life of the business.

Monetary

We need a common denominator for expressing measurements of the different events in which a business engages. That common unit of measure in accounting