

Accounting Information Systems

Theorg and Practice

Frederick H. Wu

ACCOUNTING INFORMATION SYSTEMS

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Frederick H. Wu

Wichita State University

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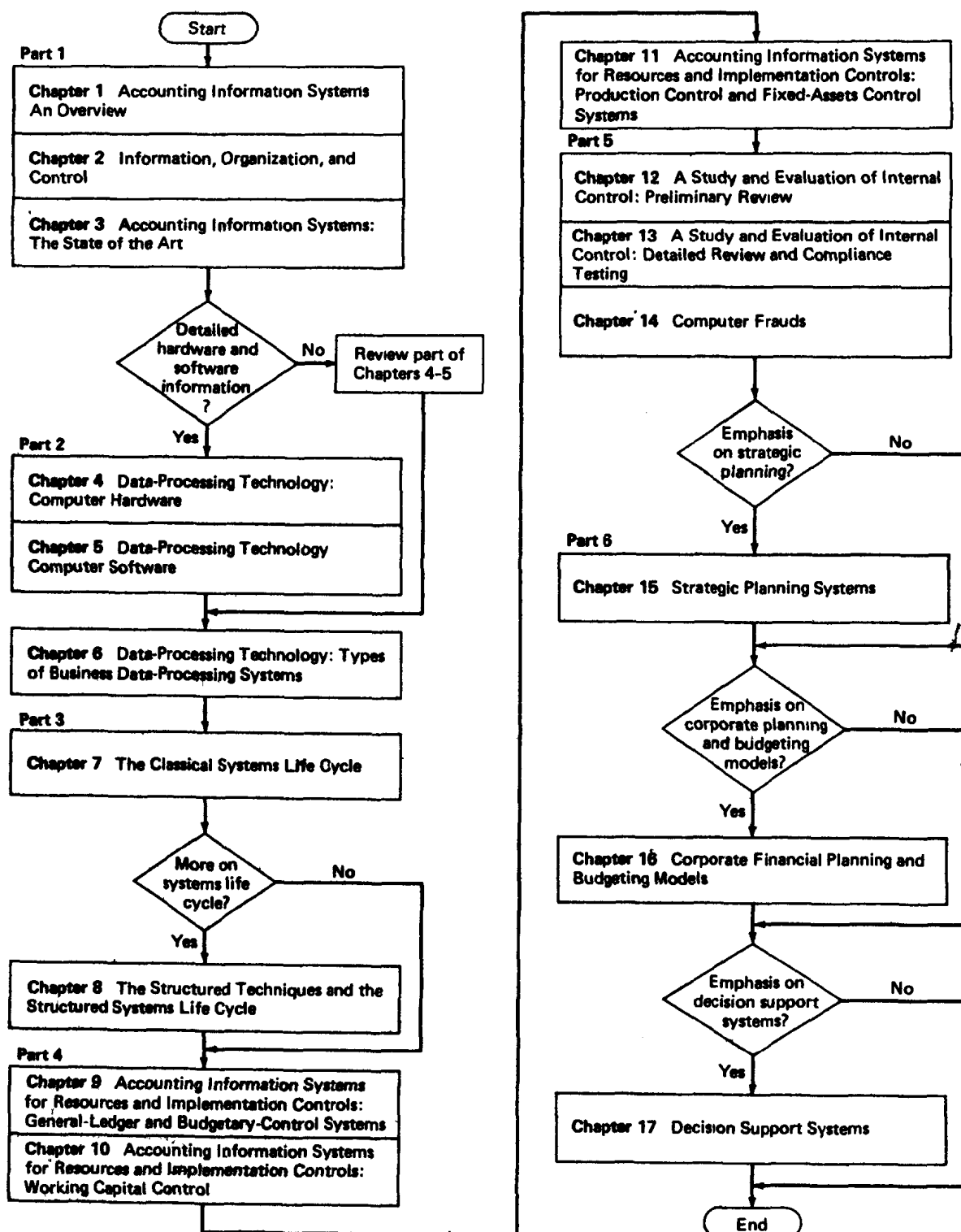
PREFACE

The rapid advancement of computer technology over the last 20 years has dramatically affected the business environment. Today, business organizations and governments rely heavily on computers to perform a variety of activities. Without computers, business firms would not function as effectively and efficiently as they do, and some businesses might not be able to survive. Indeed, the computer has become an integral part of modern business operations.

One area of business greatly affected by the computer is the operation of accounting systems. The traditional long-drawn-out accounting cycle or process (in financial accounting) can now be handled by the computer with speed and ease. The practice of responsibility accounting and other managerial accounting techniques can be greatly facilitated by the use of computers. Thus, although the objective of accounting to provide information remains intact, the nature of data processing in accounting has changed significantly. Although the auditing objective to render an opinion on the fairness of a client's financial statements still holds, the nature of evaluating computer-based accounting information systems (AISs) has also undergone considerable change. Accounting students of today must prepare themselves to cope with a continually changing business environment.

The objective of this text is to prepare students to deal with problems and issues related to computer-based AISs. For accountants, the text deals with the basic issue of how AISs perform the generally recognized financial and managerial accounting functions. For auditors, the text examines the issue of systems control. For both, the book presents some fundamental principles of computer sciences and systems development.

This book is intended for use in the AIS course for advanced undergraduate and graduate accounting majors and is also designed to be used by those students interested in the application of the computer to accounting. It is assumed that students using this book will have completed introductory financial accounting and introductory managerial accounting courses. An introductory course in data processing that covers computer programming would prove helpful. If students do not have a basic knowledge of data processing, the instructor may need to cover computer programming as well. In view of the fact that the contents and the teaching methods for the AISs course vary from school to school, a unified presentation of the course materials is difficult or impossible. Therefore, the author has prepared a topical sequence flowchart (Figure 1). It serves only as a suggestion.



*FIGURE 1 The sequence of studying the text materials.

ORGANIZATION

There are seventeen chapters in all, grouped into six parts, with each part serving to a great extent as the prerequisite to the succeeding section, except Parts 4 and 5; Part 5 can be studied before Part 4, depending on whether the student has been exposed to the subject of EDP control evaluation. To reinforce the conceptual understanding, cases are presented in almost every chapter after Part 1.

Part 1 is the necessary conceptual foundation for subsequent study of the technical aspects of AISs. Concepts are abstract in nature and may be difficult to understand, but it is necessary to understand them so that the theory and the practice that are founded on them can be understood. Chapter 1 lays the groundwork for the text. It introduces some basic concepts, describes the functional relationships between financial accounting and the organization and between managerial accounting and the organization, and points out the impact of the computer on AISs. Chapter 2 introduces various organization theories and examines their implications for the development of AISs. Chapter 3 expounds fully the functions of AISs in the organization and briefly covers the state of the art in AISs.

Part 2 covers the state of the art in computer technology as it has been applied to the data-processing cycle. Chapter 4 introduces the machine side of computer technology—generally referred to as “computer hardware.” Chapter 5 presents such topics as computer programming, computer languages, and flowcharts—generally referred to as “computer software.” Chapter 6 covers data-processing systems in use today.

Part 3 shows how AISs are developed and put into operation. The classical approach to designing and implementing AISs is presented in Chapter 7. An evolutionary approach—generally called the “structured approach”—is presented in Chapter 8.

The first three parts pave the path leading to the study of various applications of AISs. Part 4 concentrates on those AISs which produce score-keeping and feedback information. Although the main objective of this part is to show how AISs produce needed information for the purposes of score-keeping and feedback control, the subject of how internal control is built into AISs is emphasized. Chapter 9 covers the general-ledger system and the budgetary-control system. Chapter 10 analyzes AISs designed to cope with working capital management. Chapter 11 analyzes how a firm manages total assets with the aid of AISs to maximize the rate of return on investment (total assets); the chapter also includes a presentation of AISs designed to manage production planning, scheduling, and costing and fixed assets.

Part 5 covers some basic concepts related to internal control and the techniques of conducting internal control evaluation with electronic data processing (EDP). Those who have not studied auditing may assume that this is the only opportunity to fully expose themselves to the subject of internal control in EDP. The assumption is not unrealistic, because there is currently too much auditing material to be covered in one semester. Furthermore, the study of EDP controls in this systems course serves as preparation for a subsequent course in auditing. Those who have studied EDP controls in an auditing course should use this part for studying the subject in greater depth. Chapter 12 centers on the subject of conducting an EDP preliminary review, Chapter

13 on compliance testing and the related auditing techniques, and Chapter 14 on computer frauds.

Part 6 presents the role of AISs in planning and decision making. The materials presented in this part are relatively novel but should be exciting and valuable because they represent the highest level of the art and science of computer applications in the business world today. Corporate controllers and chief financial officers in many corporations today are heavily involved in strategic planning. These persons are also the ones who are in charge of coordinating the annual budget. Thus it is logical to examine computer applications to the area of corporate planning and decision making. Chapters 15 and 16 cover the planning process and the planning models, and Chapter 17 deals with decision support systems. These chapters also survey the implications of planning models and decision support systems in AISs.

FEATURES OF THE TEXT

This text uses several features to facilitate students' learning and instructors' teaching. These features are summarized below:

- 1 A logical integration of information systems with financial accounting and managerial accounting.
- 2 A comprehensive coverage of materials on AISs.
- 3 A liberal use of diagrams to facilitate the study of abstract concepts.
- 4 An extensive selection of discussion questions and cases for use in class participation and individual learning.
- 5 The adaptation of problems from the CPA and the CMA examinations for almost every chapter to prepare students for these professional examinations.
- 6 A bibliography at the end of each chapter and an abundance of references within the chapter for instructors who wish to cover materials more extensively and rigorously; additional references for each chapter are also provided in the *Instructor's Manual*.
- 7 Definitions of key terms at the end of each chapter for students' convenience when reviewing key concepts.
- 8 A set of overhead transparency masters of the important diagrams in the text and of diagrams prepared for the problems' solutions. These are available in the comprehensive *Instructor's Manual* which is available to adopters.

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Frederick H. Wu

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