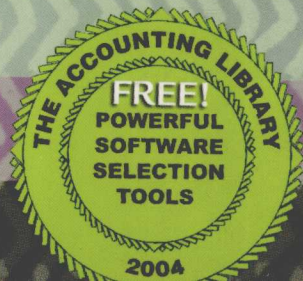


EDITION 6

Accounting Information Systems



GELINAS • SUTTON • HUNTON



Sixth Edition

Accounting Information Systems

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Accounting Information Systems, 6e
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Printed in the United States of
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3 4 5 07 06

Package ISBN: 0-324-22098-7
Book Only ISBN: 0-324-22099-5

Library of Congress Control
Number: 2004104304

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Preface

Welcome to the beginning of a journey through the exciting field of accounting information systems. We are very pleased that you have chosen to become another member of our international community of students, accounting professionals, and educators who make this book an integral part of their library as a text and reference. We promise to make the journey through this complex, challenging, and exciting topic as easy and pleasant as possible. While tackling these demanding topics, a conversational and relaxed tone was adopted, rather than stilted, technical language. At the same time, the text fully explores the integrated nature of the topic with all of its foundations in information technology, business processes, strategic management, security, and internal control. Thank you for the opportunity to serve as your guide on this journey.

Before beginning, let's discuss two key ideas that inspire the story in the text. First, the accountant is defined as an information management and business measurement professional. Second, information systems are in essence the wheels that drive an organization—wheels that allow the organization to progress and move forward. These two philosophies are briefly attended to before moving on to addressing the most frequently asked questions (FAQs) by users of this book.

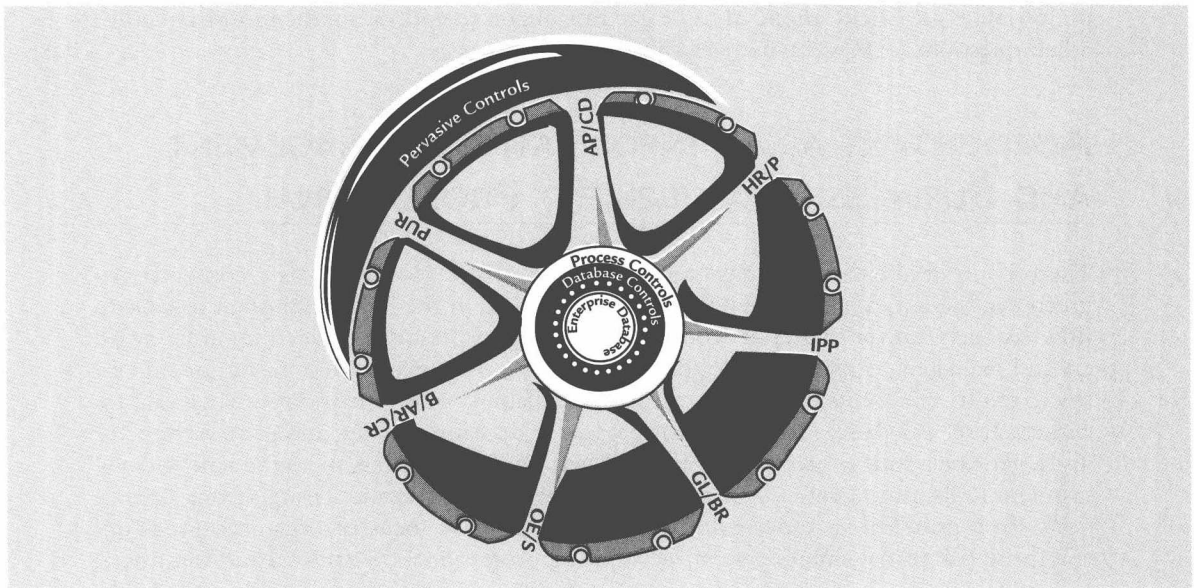
ACCOUNTANT AS AN INFORMATION MANAGEMENT AND BUSINESS MEASUREMENT PROFESSIONAL

There is no doubt that the long-standing image of the accountant as a conservative, green eye shaded, non-social employee who is tucked in the backroom of an organization has been forever shattered. Today's accounting professional is relied upon by owners and managers to identify and monitor enterprise risks (events that may cause an entity to fail to achieve its objectives); assure the reliability of information systems used to gather, store, and disseminate key information for decision making; and possess the requisite general business knowledge, coupled with business process measurement and assessment skills, to evaluate the state of the business enterprise and its supporting operations. In a post-Enron and WorldCom era, the primary focus of organizations is on enterprise risk management, and the accounting professional (as external auditor, internal auditor, corporate accountant or manager) is increasingly expected to take the leadership role in identifying and mitigating enterprise risks. Accordingly, the accounting professional must arrive on the job armed with a solid understanding of (1) key information qualities, (2) critical information technologies that drive the information systems, (3) core business processes that allow an organization to operate effectively and efficiently, (4) common documentation tools used to diagram and assess business processes, and (5) vital corporate governance/internal control concepts that can be applied to mitigate risks. Each of these fundamental knowledge requirements is addressed throughout this book.

INFORMATION SYSTEMS: THE WHEELS DRIVING THE ORGANIZATION

In today's information-technology-centric world, organizations clearly can neither operate nor survive without information systems. The quality of the information systems and the reliability of the information available through such systems dictate, to a large degree, the effectiveness of decision making within the organization. Without good information, managers cannot make sound decisions. It is imperative that all pieces of the information system are in sync and operating effectively if the enterprise as a whole is to operate effectively and efficiently, and move forward in a positive direction. Figure P.1 shows the integrated nature of information systems components like a wheel on a race car.¹ The wheels and tires must be in good shape across all dimensions for the race car to safely, yet quickly, move forward and win the trophy. Any weakness in the wheel or tire puts the driver, vehicle, and outcome at risk. In an analogous fashion, the enterprise is similar to the race car in its level of dependence on safe and secure information systems that allow the organization to move forward at a controlled yet competitive pace.

Figure P.1 Information Systems—"The Wheels Driving the Organization"



The wheel representing an information system consists of six integral components. Those six components include:

- An *enterprise database* that stores the data related to an enterprise's business activities and resources.
- *Database controls* that safeguard the data in the enterprise database from illicit access, destruction, and corruption.

¹ Even though a car has four wheels, we are talking about one integrated information system.

- Database *views* that allow decision makers to aggregate related data from the enterprise database in a form that supports effective decision making and allows the enterprise to conduct its business activities.
- *Business processes* that reflect the core activities completed by an organization in achieving its business objectives. These processes include such activities as selling goods or services, collecting payment, purchasing materials or inventory, paying for those items, hiring and retaining a quality set of employees, and producing goods or services for sale. All of these processes both use and generate data that is stored in the enterprise database.
- *Process controls* are the procedures put in place within each business process to identify specific business risks, prevent identified risks from disrupting operations or corrupting data, detect failures that get past preventive measures, and correct for detected errors and irregularities that slip past the control boundary.
- *Pervasive controls* represent the overall corporate governance structure and related control procedures that are designed to create a regulated organization that can face the challenges of the external business environment, keep the enterprise on track and moving forward in a controlled manner, and beat its competitors to ultimately win the race!

Each of these components is explored in detail while progressing through the book. After completing the study of the concepts presented in this text, you should have a strong grounding in the critical knowledge necessary to help an organization create and manage effective information systems that minimize related enterprise risks.

FREQUENTLY ASKED QUESTIONS (FAQs)

When examining a book and considering how to most effectively acquire the information with which you are particularly interested, several questions may arise that need answered to help make the journey more efficient. In the remainder of this preface, the focus will be on the most frequently asked questions by previous adopters and readers of this book. Hopefully, the answers to your most pressing questions can be found in the following sections.

FAQ #1: What Are the Core Themes of This Book?

The book's focus is on providing the skills necessary for a foundation in enterprise risk management—particularly as these risks pertain to business processes and their information systems components. Fundamental to an enterprise risk management orientation, from an information systems perspective, are the underlying *enterprise systems*, *e-Business systems*, and *controls* for maintaining these systems. The emphasis on these core themes is apparent even by reviewing the table of contents. Chapters 2 and 3 immediately focus on *enterprise systems* and *e-Business* in the introductory section of the text. *Controls* are the focus of three chapters (Chapters 7, 8, and 9). More importantly, however, these themes are carried out throughout the remainder of the text in the integrative fashion for which the previous five editions of this book have been known. Icons have been added in the margins throughout the book to help emphasize the coverage of these core themes in their integrated state and to facilitate absorption of the material by the reader. Given the critical nature of these three themes, the following paragraphs provide brief explanations for each.

**ENTERPRISE
SYSTEMS**

Enterprise systems integrate the business process functionality and information from all of an organization's functional areas, such as marketing and sales, cash receipts, purchasing, cash disbursements, human resources, production and logistics, and business reporting (including financial reporting). They make possible the coordinated operation of these functions and provide a central information resource for the organization. The concept of enterprise systems can be realized in various ways. For instance, an organization might develop its own separate business process systems and tie them together in an integrated manner. Or, an organization could purchase an enterprise system from a vendor. Such externally acquired systems are commonly called **enterprise resource planning (ERP) systems**—software packages that can be used for the core systems necessary to support enterprise systems. A number of ERP systems are commercially available with SAP R/3, Oracle Applications, PeopleSoft, and J.D. Edwards dominating the large- and medium-sized enterprise markets. Microsoft Business Solutions also has become a major player in the small- and medium-sized enterprise market with its relatively recent acquisitions of Great Plains and Navision. Many organizations use a combination of ERP systems, externally purchased sub-systems, and internally developed sub-systems to create their overall enterprise systems.

E-BUSINESS

E-Business (electronic business) is the application of electronic networks (including the Internet) to exchange information and link business processes among organizations and/or individuals. These processes include interaction between back-office (i.e., internal) processes, such as distribution, manufacturing, and accounting, and front-office (i.e., external) processes, such as those that connect an organization to its customers and suppliers. Traditionally, e-Business has been driven in business-to-business (B2B) environments through *electronic data interchange (EDI)*. The most familiar form of e-Business is the business-to-consumer (B2C) model where interactions are largely driven by browser-based applications on the Internet. This communication medium has spilled over into the (B2B) arena, replacing EDI in some cases, while also providing opportunities for new B2B interaction in this rapidly changing environment.

CONTROLS

Internal control is a system of integrated elements—people, structure, processes, and procedures—acting in concert to provide reasonable assurance that an organization achieves its business process goals. These goals include efficiency and effectiveness of operations, reliable financial reporting to stakeholders, compliance with applicable laws and regulations, and the safeguarding of valuable organizational resources. A strong system of internal controls is imperative to effective enterprise risk management, and is of great interest to top management, auditors, and external stakeholders.

FAQ #2: How Does This Book Present Accounting Information Systems?

This book is organized into four parts and a supplement. The core text has been reduced to 16 chapters. A supplement on the selection and development of accounting information systems includes the related chapters from the fifth edition of the text, updated for a contemporary environment where off-the-shelf software dominates (if one considers enterprise systems software as off-the-shelf equivalents for bigger organizations). The following paragraphs discuss briefly each of the components of this book.

Part I: Understanding Information Systems consists of three chapters. Chapter 1 provides an overview of basic information systems concepts that are of interest to the accounting professional and explores the critical characteristics of information that must be considered in systems design and evaluation. Chapter 2 introduces the concept of *en-*

terprise systems and the key role that these systems play in the successful and timely operation of contemporary enterprises. Chapter 3 addresses the extended enterprise environment, the *e-Business* relationships that an organization forms when linking its organization with the individuals or other organizations that represent their customers and vendors, and other stakeholders.

Part II: Organizing and Managing Information includes the following three chapters. Chapter 4 provides the basic tools necessary for diagrammatically documenting organizational data flows (*data flow diagrams—DFDs*) and business processes (*systems flowcharts*). This chapter is divided into sections focusing first on reading documentation and then on creating documentation to meet the varied needs of our readers and users. Chapter 5 provides a more comprehensive exploration of data storage methods, the role of databases in *data management*, and the various business intelligence tools that are available for making sense out of the vast enterprise databases in order to enhance strategic decision making. Chapter 5 also includes sections on reading and understanding *entity relationship (E-R) diagrams* (used to model database structures). Chapter 6 takes a deeper look at modeling information systems using the REA (Resources, Events, and Agents) method, creating E-R diagrams, mapping these diagrams to *relational databases*, and using *SQL query language* to manipulate and retrieve data from relational databases.

Part III: Enterprise Risk Management consists of three chapters exploring the various dimensions of corporate governance and associated effective internal control systems. Chapter 7 begins this section with an overview of internal control frameworks, general corporate governance guidelines, and the changes effected by the Sarbanes-Oxley Act of 2002. Chapter 8, designed around COBIT, an internationally recognized framework for IT control, then focuses in on the risks that specifically exude from information systems and can put an enterprise in a stage of acute risk if not properly monitored and controlled. Chapter 9 focuses on the control procedures applicable to minimizing such risk and presents a methodology for comprehensively evaluating the risks and controls within a defined business process. This framework is subsequently demonstrated and applied across the business processes presented in Chapters 10 through 14.

Part IV: Business Processes examines the various business processes that are necessary for an enterprise to successfully operate. These chapters focus on applications supported by ERP system implementations (including exhibits of screens from SAP R/3 and J.D. Edwards software), the key controls for maintaining successful business processes, and application of the methodology for evaluating risks and controls within the given business process. The order-to-cash (revenue) flows are captured in Chapter 10—The Order Entry/Sales (OE/S) Process and Chapter 11—The Billing/Accounts Receivable/Cash Receipts (B/AR/CR) Process. The purchase-to-pay (expense) flows are captured in Chapter 12—The Purchasing Process and Chapter 13—The Accounts Payable/Cash Disbursements (AP/CD) Process. Chapter 14—The Human Resources (HR) Management and Payroll Processes, Chapter 15—Integrated Production Processes (IPP), and Chapter 16—General Ledger and Business Reporting (GL/BR) Process round out coverage of the core business processes.

Accounting Information Systems Supplement: Acquiring, Developing, and Implementing Accounting Information Systems provides an extensive overview on the selection of accounting information systems—including the buy versus build decision. With the extensive use of off-the-shelf software, including ERP software, that can be modified to fit an enterprise's business needs, we take a look at the issues that should be considered in selecting the right software and knowing when to internally develop

software when the “right” solution is not available from external sources. The supplement includes a fully working version of *The Accounting Library*, a software system designed specifically to assist organizations in identifying externally available software with the best fit for their organization. The supplement then proceeds through steps that should be systematically taken to either modify purchased software, adjust business processes to mesh with the software, or to build information systems that support existing business processes. This includes the AIS acquisition cycle (Chapter S1), the analysis phase (Chapter S2), the selection and design phases (Chapter S3), and the implementation and operation phases (Chapter S4).

FAQ #3: What Are the Major Changes from the Fifth Edition?

An increase in emphasis on enterprise systems and e-Business, which is symbolized by their movement to the front of the text in Chapters 2 and 3. Chapter 2 provides extended coverage of enterprise systems and the software used to implement them, including a focused look at SAP R/3 ERP software as a case in point. Chapter 3 builds on the enterprise systems focus of Chapter 2 with a strengthening of the coverage for business-to-business (B2B) e-Business as a core component of exploring extended-enterprise systems relationships. At the same time, the strong business-to-consumer (B2C) orientation of the fifth edition is retained to provide a comprehensive view of contemporary e-Business. Placing these chapters at the front end of the text facilitates the depth of coverage that can be provided in subsequent chapters as enterprise systems and e-Business concepts and applications are integrated throughout the remaining chapters. Key enabling technologies and ERP functionality also are discussed within the context of enterprise risk management and effective business processes.

An extension of internal control focus to enhance coverage of enterprise risk management, a highly critical area as businesses struggle to meet the requirements of the Sarbanes-Oxley Act of 2002 in the United States and parallel pressures across the globe. Enterprise risk management has become a primary focus of CEOs, CFOs, and CIOs as they struggle to limit personal liability, calm external stakeholders, and ensure the continued growth of their enterprises. As in past editions, this text maintains a strong focus on corporate governance, IT controls, and the framework for assessing risk and controls across the business processes of an enterprise. Chapter 9 presents a simplified and more structured process for preparing the control matrix and for identifying present and missing controls.

Introduction to the Sarbanes-Oxley Act of 2002 including the overall implications for the accountant as an information management and business measurement professional (Chapter 1, Sections 404 and 409 of Sarbanes-Oxley), documenting business processes and key controls (Chapter 4, Section 404 of Sarbanes-Oxley), the effect on corporate governance and enterprise risk management (Chapter 7, Sections 210, 302, and 404 of Sarbanes-Oxley), and the effect on internal control reporting and financial reporting (Chapter 16, Sections 302, 401, 404, and 409 of Sarbanes-Oxley).

Use of enterprise systems-driven processes to discuss an extended set of business processes in recognition that such systems predominate at the large-, medium-, and small-enterprise levels. With the large ERP software players such as SAP, Oracle, PeopleSoft, and J.D. Edwards (now a subsidiary of PeopleSoft) pushing further down into the small- and medium-sized enterprise markets, coupled with Microsoft Business Solution’s relatively recent acquisitions of Great Plains and Navision, and a decision on their part to push upward into the large enterprise market, it seems clear that all market

segments are increasingly becoming saturated with enterprise systems implementations. Consistent with this market movement, all of the business processes discussed in the body of the text emphasize business processes in enterprise systems environments, the value of integrated business process information to management decision making, and business process risk and control analysis in enterprise systems environments. The business processes coverage has been extended to provide a more comprehensive examination of the primary business processes supported by enterprise systems:

- Order Entry/Sales Process (Chapter 10)
- Billing/Accounts Receivable/Cash Receipts Process (Chapter 11)
- Purchasing Process (Chapter 12)
- Accounts Payable/Cash Disbursements Process (Chapter 13)
- Human Resources Management and Payroll Processes (Chapter 14)
- Integrated Production Processes (Chapter 15)
- General Ledger and Business Reporting Process (Chapter 16)

Extended coverage of the REA (Resources, Events, and Agents) Model for developing REA models of accounting information systems. Chapter 5 introduces the REA model and Chapter 6 describes how to develop REA models. Chapters 10 through 13 contain E-R diagrams, based on the REA model, of the business processes depicted in those chapters.

Revamping of systems analysis and design segment and division into a separate supplement to facilitate the many adopters who use this section of the text in a second AIS course either at the undergraduate or graduate level. The supplement maintains its seamless integration with the text presentation of concepts, but provides a separate and lighter text to carry when the entire AIS text is not needed for class and study. At the same time, the supplement is a stand-alone module that can be used in conjunction with software development or project-oriented courses. A major addition to the systems analysis and design module is the inclusion of *The Accounting Library* that is identical to the software used in practice to facilitate selection of off-the-shelf software. This wonderful tool helps in the understanding of key concepts underlying software selection all the way from big ERP software packages to smaller accounting packages for family businesses. While using the software, an understanding is gained of the key issues that should be considered during the systems survey and systems analysis stages of the systems development life cycle, for either the build or buy situation. In short, a user can learn about selecting pre-packaged software versus building a system, and then progress on through the life cycle to understand all of the steps in modifying pre-packaged systems and/or building systems tailored to the organization.

FAQ #4: How Can This Text Be Adapted to Meet a User's Desired Content Coverage?

Learning from an Enterprise Risk Management Approach,² a user would want to focus on three key components of the text: (1) documentation tools for diagramming and analyzing business processes, (2) enterprise risk management and component internal control concepts, and (3) core business processes enabling enterprises to successfully complete order-to-cash (revenue) and purchase-to-pay (expenditure) activities. An enterprise risk management focus also necessitates the consideration of enterprise systems

² This approach also might be called the *business process approach*, the *accounting applications approach*, or the *accounting cycles approach*.

and e-Business concepts. But, given that those are fundamental threads running throughout the text, those should be covered with any approach. Coverage of ancillary topics related to database management systems and other key business processes is recommended (e.g., human resources management and payroll processes, integrated production processes, and the general ledger and business reporting process). Depending on a specific user's interests, exploring relational databases in detail and/or covering the foundations of the systems development process may be necessary. Recommendations and options are graphically depicted in Figure P.2 to assist in the decision process.

Learning from a database and/or REA approach, a user would want to focus on two key components of the text: (1) documentation and modeling skills for relational databases and (2) core business processes that must be integrated in enterprise-level databases. Additionally, the user would want to confer with appropriate external support specifically focused on REA modeling techniques if extended coverage is desired. A database approach can be used with the text without these additional materials, if REA models are not necessarily a preference. Again, a database approach also would necessitate the consideration of enterprise systems concepts, which are a fundamental thread running throughout the text. A database approach may focus on only a limited core set of chapters combined with an outside database software text or may be supplemented with other key AIS topics, such as documentation development tools for systems flowcharts and data flow diagrams, additional business processes, corporate governance, and IT controls. Our recommendations and options are graphically depicted in Figure P.2 to assist you in your decision process.

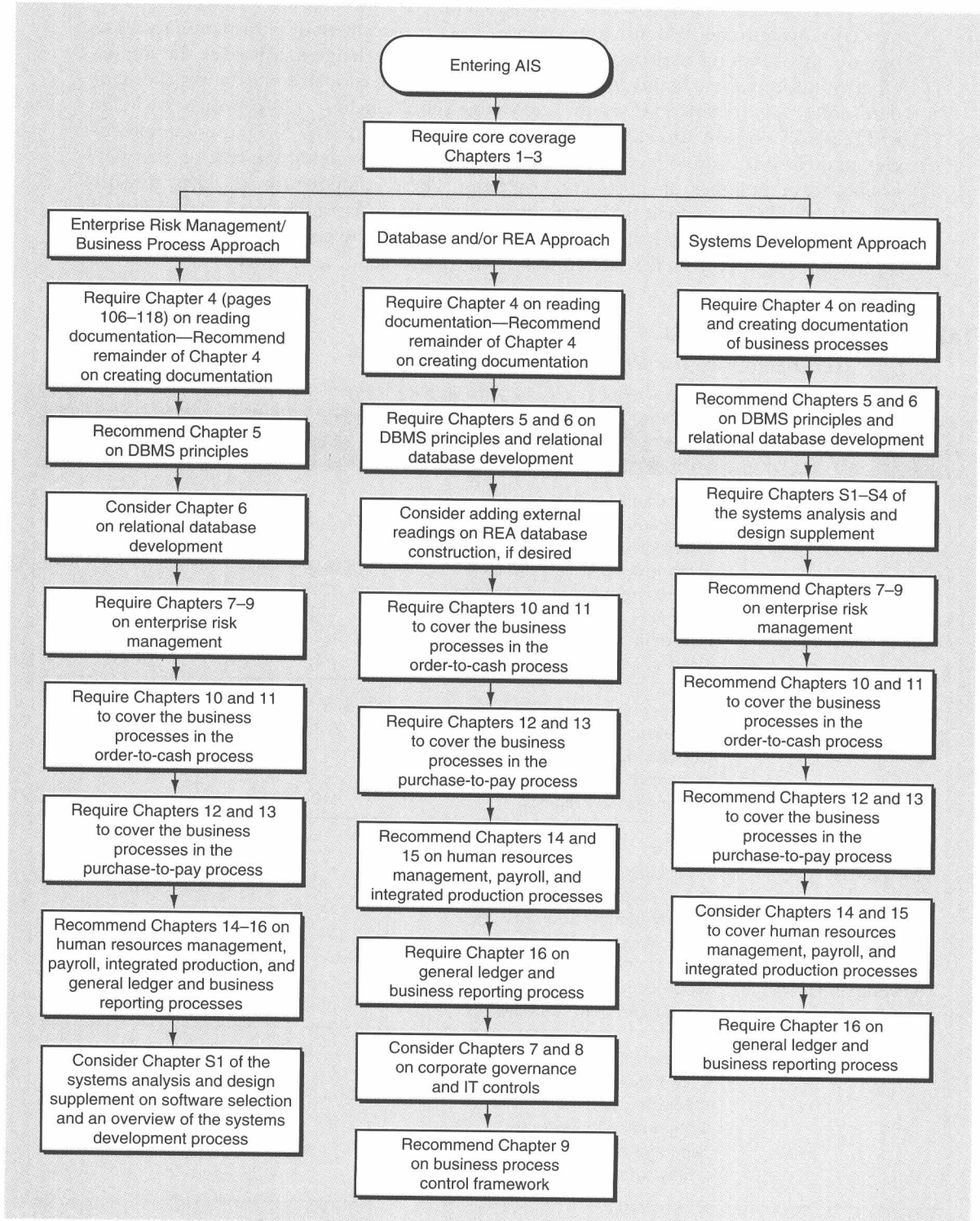
Learning from a systems development approach, a user would want to focus on three key components of the text: (1) documentation tools for diagramming and analyzing business processes, (2) structured systems analysis and design (text supplement), and (3) core business processes enabling enterprises to successfully complete order-to-cash (revenue) and purchase-to-pay (expenditure) activities. A systems development approach also necessitates the consideration of enterprise systems—a fundamental thread running throughout the text. Coverage is recommended of ancillary topics related to database management systems, enterprise risk management, and general ledger and business reporting. Depending on a specific user's interests, it may be necessary to explore relational databases in detail and to cover human resources management and payroll and integrated production processes. Recommendations and options for this approach also are depicted graphically in Figure P.2.

FAQ #5: How Does This Book Facilitate Coverage of IFAC International Education Guideline 11 on IT for Professional Accountants?

The International Federation of Accountants (IFAC) International Education Guideline 11 (IEG-11) on Information Technology for Professional Accountants was revised for a second time and re-released in January 2003.³ In October 2003, IFAC released International Education Standard for Professional Accountants, IES 1–6.⁴ One of those standards, IES 2, Content of Professional Education Programs, highlights three areas that upper-division university education should cover: (1) organizational and business

³ IFAC Education Committee, *International Education Guideline 11: Information Technology for Professional Accountants*, International Federation of Accountants, <http://www.ifac.org>, January 2003.

⁴ IFAC Education Committee, *International Education Standard for Professional IES 1–6*, International Federation of Accountants, <http://www.ifac.org>, October 2003.

Figure P.2 Selecting Chapters to Meet Selected Pedagogical Objectives

Note: Systems analysis and design supplement is *Acquiring, Developing, and Implementing Accounting Information Systems*.

knowledge; (2) information technology knowledge; and (3) accounting, finance, and related knowledge. The proposed standard emphasizes the broad education needs for new entrants into the accounting profession, and the placement of information technology on equal footing with accounting and finance knowledge emphasizes the importance of information systems to today's accounting professional. Importantly, the standard notes that information systems knowledge should include: (1) general knowledge of IT; (2) IT control knowledge; (3) IT control competencies; (4) IT user competencies; and (5) one, or a mixture, of the competencies for assuming the role of manager, evaluator, or designer of information systems. These components are taken directly from IFAC IEG-11, which is the reference source for interpreting the components of the knowledge requirements. Table P.1 outlines in detail the coverage of IFAC IEG-11 knowledge requirements that are addressed in this book.

Table P.1 Coverage of IFAC Prescribed Knowledge Requirements for Professional Accountants*

Broad Knowledge/ Skill Area	Main Topic Coverage	Chapters Directly Addressing Topic	Chapters Containing Related Information
General Systems Concepts	Nature and types of systems Information systems architectures Control and feedback in systems Systems development life cycle Nature and types of information Attributes of information Role of information within business Types of business systems	1, 5 3, 5, 6, 7, 8 8 SA&D(1-4) 5, 16 1, 8 10-16 1, 5	10-16 SA&D*(4) 1-3 10-16
Transaction Processing in Business Systems	Transaction processing phases Processing modes Business documents, accounting records, databases, control/ management reports	1, 5, 8, 9, 10-13 2, 3, 8, 9 10-16	4, 14-16 10-13
Physical and Hardware Components of a System	Facilities Processing units Input/output devices Data communication devices Physical storage devices	7, 8	3 10-13 3 8
Networks and Electronic Data Transfer	Network components, configurations, and designs		3, 8
Software	Components of a software configuration Operating systems Communication systems Security software Utility software	8	2, 8 3, 5 8 9 8

*SA&D refers to the systems analysis and design supplement, *Acquiring, Developing, and Implementing Accounting Information Systems*.

Table P.1 Coverage of IFAC Prescribed Knowledge Requirements for Professional Accountants (*continued*)

Broad Knowledge/ Skill Area	Main Topic Coverage	Chapters Directly Addressing Topic	Chapters Containing Related Information
	Programming languages/compilers Programming aids, interactive programming software Library management systems Data management systems General application software E-Business enabling software Software for profession use	 SA&D(1) 5, 6 2, 3, 16, SA&D(1) 2, 3, 10–16	8, 16 SA&D(2, 3) 8 10–13, SA&D(2–4) 5, 6, 16
Protocols, Standards, Enabling Technologies	Common standards Internet protocols Standard-setting organizations	3 3, 16	 SA&D(1)
Data Organization and Access Methods	Data structures and file organization Access methods Types of data files Database management systems Database administration Document management	5, 6 5 1, 5, 8, 9 5, 6, 8 2	10–13 16 4, 5 10–14
IT Professionals and Career Paths in IT Organizations	Job functions Recruiting/developing IT human resources Organization	8, SA&D(1) 8 8	
System Acquisition/ Development Life Cycle Phases, Tasks	Approaches Acquisition/development phases Standards, methods, and controls	SA&D(1) SA&D(1–4) 4, SA&D(1–4)	 7, 8
Investigation and Feasibility Study	Investigation Feasibility study	2, 10–15, SA&D(1, 2) SA&D(1, 2)	
Requirements Analysis and Initial Design	User requirements elicitation Systems analysis/design tools & techniques Process design, data organization, software requirements Control requirements	SA&D(1–4) 3, 5, SA&D(1–4) SA&D(1–3) 7, 8, 9	 10–14, SA&D(4)
System Design, Selection, Acquisition/ Development	Infrastructure and software services Developed software System design Documentation	SA&D(1–3) 2, SA&D(1–4) SA&D(3) SA&D(1–3)	

(continued)

Table P.1 Coverage of IFAC Prescribed Knowledge Requirements for Professional Accountants (continued)

Broad Knowledge/ Skill Area	Main Topic Coverage	Chapters Directly Addressing Topic	Chapters Containing Related Information
System Implementation	System implementation plan Install/deploy system Acceptance testing System conversion/changeover Post-implementation review Maintenance standards Change controls	SA&D(1, 3, 4) SA&D(3, 4) SA&D(4) SA&D(3, 4) SA&D(4) 7, SA&D(4) 7, 8, SA&D(4)	8
Systems Maintenance and Program Changes	Initiate the project Plan the project Risk management approach on the project Execute the project plan, ensuring (objectives achievement) Control the project Complete the project	SA&D(1) SA&D(1-4) SA&D(1) SA&D(3, 4) SA&D(1-4) SA&D(4)	
IT Organization	IT policies, procedures, and methodologies IT human resource (HR) policies	8 8	
Management of IT Operations, Effectiveness, and Efficiency	HR management for effectiveness Relationship of infrastructure to applications and user requirements Monitoring service provider activities	8 7, SA&D(1) 3, 8, SA&D(3)	14 8
Asset Management	Asset life cycle Asset management and control	8	SA&D(2, 3) SA&D(3)
Management of System Change and Problem Resolution	Change control techniques Problem management Management of end-user computing	8 7, 8	SA&D(1, 4) 7, 8
Performance Monitoring and Financial Control Over IT Resources	Performance metrics IT cost controls IT control objectives	 7-9	8 7, 8 10-14
Enterprise Strategy and Vision	Internal and external business issues Factors that impact IT	2, 10-13, 15 2, 3, 7, 8, 10-13, 15	3 SA&D(1)
Assess Current and Future IT Environment	Current status of entity's use of IT to support business processes IT risks and opportunities	2, 3, 8, 10-16 2, 3, 8, 10-16	

(continued)

Table P.1 Coverage of IFAC Prescribed Knowledge Requirements for Professional Accountants (*continued*)

Broad Knowledge/ Skill Area	Main Topic Coverage	Chapters Directly Addressing Topic	Chapters Containing Related Information
IT Strategic Planning	Envision future status of the entity's system	8	
	Align future IT strategy with business strategy	8	
Ongoing Governance and Outcome Monitoring Process	Framework for IT governance Outcome measurement	7, 8 7, 8	
Stakeholders and Their Requirements	Monitoring service-level performance against service-level agreements		8
The Entity's Business Models	Business models	2, 3, 7, 10-13, 15	
	Effectiveness of entity business processes	10-16	
Risk and Opportunities	Barriers and enablers	1, 7, 8, 10-15	SA&D(1)
Impact of IT on the Entity's Business Models, Processes, and Solutions	Applications of Internet-commerce Enterprise systems	3, 10-13, 15 2, 10-16	
Control Frameworks	Risks and exposures in computer-based information systems	7-9, 10-16	10-13
	IT control frameworks	7-9	
Control Objectives	Operations effectiveness/efficiency/economy	7-9, 10-14	15-16
	Reliability of financial reporting	1, 7, 9, 10-16	
	Effectiveness of controls	9, 10-13	
	IT asset safeguarding	7-9, 10-16	
	Compliance with applicable laws and regulations	7, 9, 10-16	
	System reliability	8, 9	
Layers of Control	Data integrity	1, 9, 10-14	
	Societal, organizational environment, technology infrastructure, business process	7-9	
Responsibility for Control	Roles and responsibilities of key parties	7-9	

(continued)

Table P.1 Coverage of IFAC Prescribed Knowledge Requirements for Professional Accountants (*continued*)

Broad Knowledge/ Skill Area	Main Topic Coverage	Chapters Directly Addressing Topic	Chapters Containing Related Information
Control Environment	External regulatory controls Board/audit committee governance Management philosophy & operating style Plan/structure of organization Methods to communicate the assignment of authority and responsibility Management control methods Human resource policies and practices Financial policies and practices	7, 8 7, 8 7, 8 7 7-9, 16 8, 14	7, 9, 14, 16 SA&D(1, 4) 8
Risk Assessment	Risk categories Probability of loss Consequences	7-9, 10-13, SA&D(1) 7 7-9, 10-16	8
Control Activities	Control design Control procedures Control over data integrity, privacy, and security Availability/continuity of processing, disaster recovery planning, and control IS processing/operations	7-9, 10-15 9, 10-15 3, 7-9, 10-14 7, 8 7, 8	
Information and Communications	Information processing system Communication of authority/responsibilities	10-14 4, 7, 8	
Monitoring of Control Compliance	Roles of management users/auditors Computer-assisted audit techniques	7, 8 4	SA&D(4)

FAQ #6: Does the Book Fit the Core Competencies Guidelines of the AICPA Vision Project?

Several professional bodies across the globe have undertaken projects to better understand how the environment of professional accounting is changing and how these changes impact the required competencies for skilled professionals. While responding to all of the reports being generated by accounting bodies around the globe is not possible in this preface, we will briefly review how the text facilitates the preparation of new professionals based on the results of one such report—the American Institute of Certified Public Accountants (AICPA) CPA Vision Project. Let's take a look at how this book