清华会计学系列英文版教材

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会计信息系统

Accounting Information Systems Tenth Edition

(美) 乔治·H. 博德纳 (George H. Bodnar)
威廉·S. 霍普伍德 (William S. Hopwood) 著

第10版

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PEARSON Education

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出 版 说 明

为了适应经济全球化的发展趋势，满足国内广大读者了解、学习和借鉴国外先进的管理经验和掌握经济理论前沿动态的需要，清华大学出版社与国外著名出版公司合作影印出版一系列英文版经济管理方面的图书。我们所选择的图书，基本上是已再版多次、在国外深受欢迎、并被广泛采用的优秀教材，绝大部分是该领域中较具权威性的经典之作。

由于原作者所处国家的政治、经济和文化背景等与我国不同，对书中所持观点，敬请广大读者在阅读过程中注意加以分析和鉴别。

我们期望这套影印书的出版对我国经济科学的发展能有所帮助，对我国经济管理专业的教学能有所促进。

欢迎广大读者给我们提出宝贵的意见和建议,同时也欢迎有关的专业人士向我们推荐您所接触到的国外优秀图书。

清华大学出版社
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总序

世纪之交，中国与世界的发展呈现最显著的两大趋势——以网络为代表的信息技术的突飞猛进，以及经济全球化的激烈挑战。无论是无远弗界的因特网，还是日益密切的政治、经济、文化等方面的国际合作，都标示着21世纪的中国是一个更加开放的中国，也面临着一个更加开放的世界。

教育，特别是管理教育总是扮演着学习与合作的先行者的角色。改革开放以来，尤其是20世纪90年代之后，为了探寻中国国情与国际上一切优秀的管理教育思想、方法和手段的完美结合，为了更好地培养高层次的“面向国际市场竞争、具备国际经营头脑”的管理者，我国的教育机构与美国、欧洲、澳洲以及亚洲一些国家和地区的大量的著名管理学院和顶尖跨国企业建立了长期密切的合作关系。以清华大学经济管理学院为例，2000年，学院顾问委员会成立，并于10月举行了第一次会议，2001年4月又举行了第二次会议。这个顾问委员会包括了世界上最大的一些跨国公司和中国几家顶尖企业的最高领导人，其阵容之大、层次之高，超过了世界上任何一所商学院。在这样高层次、多样化、重实效的管理教育国际合作中，教师和学生与国外的交流机会大幅度增加，越来越深刻地融入到全球性的教育、文化和思想观念的时代变革中，我们的管理教育工作者和经济管理学习者，更加真切地体验到这个世界正发生着深刻的变化，也更主动地探寻和把握着世界经济发展和跨国企业运作的脉搏。

我国管理教育的发展，闭关锁国、闭门造车是绝对不行的，必须同国际接轨，按照国际一流的水准来要求自己。正如朱镕基同志在清华大学经济管理学院成立十周年时所发的贺信中指出的那样：“建设有中国特色的社会主义，需要一大批掌握市场经济的一般规律，熟悉其运行规则，而又了解中国企业实情的经济管理人才。清华大学经济管理学院就要敢于借鉴、引进世界上一切优秀的经济管理学院的教学内容、方法和手段，结合中国的国情，办成世界第一流的经管学院。”作为达到世界一流的一个重要基础，朱镕基同志多次建议清华的MBA教育要加强英语教学。我体会，这不仅因为英语是当今世界交往中重要的语言工具，是连接中国与世界的重要桥梁和媒介，而且更是中国经济管理人才参与国际竞争，加强国际合作，实现中国企业的国际战略的基石。推动和实行英文教学并不是目的，真正的目的在于培养学生——这些未来的企业家——能够具备同国际竞争对手、合作伙伴沟通和对抗的

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能力。按照这一要求，清华大学经济管理学院正在不断推动英语教学的步伐，使得英语不仅是一门需要学习的核心课程，而且渗透到各门专业课程的学习当中。

课堂讲授之外，课前课后的大量英文原版著作、案例的阅读对于提高学生的英文水平也是非常关键的。这不仅是积累相当的专业词汇的重要手段，而且是对学习者思维方式的有效训练。

我们知道，就阅读而言，学习和借鉴国外先进的管理经验和掌握经济理论动态，或是阅读翻译作品，或是阅读原著。前者属于间接阅读，后者属于直接阅读。直接阅读取决于读者的外文阅读能力，有较高外语水平的读者当然喜欢直接阅读原著，这样不仅可以避免因译者的疏忽或水平所限而造成的纰漏，同时也可以尽享原作者思想的真实表达。而对于那些有一定外语基础，但又不能完全独立阅读国外原著的读者来说，外文的阅读能力是需要加强培养和训练的，尤其是专业外语的阅读能力更是如此。如果一个人永远不接触专业外版图书，他在获得国外学术信息方面就永远会比别人差半年甚至一年的时间，他就会在无形中减弱自己的竞争能力。因此，我们认为，有一定外语基础的读者，都应该尝试一下阅读外文原版，只要努力并坚持，就一定能过了这道关，到那时就能体验到直接阅读的妙处了。

在掌握大量术语的同时，我们更看重读者在阅读英文原版著作时对于西方管理者或研究者的思维方式的学习和体会。我认为，原汁原味的世界级大师富有特色的表达方式背后，反映了思维习惯，反映了思想精髓，反映了文化特征，也反映了战略偏好。知己知彼，对于跨文化的管理思想、方法的学习，一定要熟悉这些思想、方法所孕育、成长的文化土壤，这样，有朝一日才能真正“具备国际战略头脑”。

以往，普通读者购买和阅读英文原版还有一个书价的障碍。一本外版书少则几十美元，多则上百美元，一般读者只能望书兴叹。随着全球经济合作步伐的加快，目前在出版行业有了一种新的合作出版的方式，即外文影印版，其价格几乎与国内同类图书持平。这样一来，读者可以不必再为书价发愁。清华大学出版社这些年在这方面一直以独特的优势领先于同行。早在1997年，清华大学出版社敢为人先，在国内最早推出一批优秀商学英文版教材，规模宏大，在企业界和管理教育界引起不小的轰动，更使国内莘莘学子受益良多。

为了配合清华大学经济管理学院推动英文授课的急需，也为了向全国更多的MBA试点院校和更多的经济管理学院的教师和学生提供学习上的支持，清华大学出版社再次隆重推出与世界著名出版集团合作的英文原版影印商学教科书，也使广大工商界人士、经济管理类学生享用到最新最好质优价廉的国际教材。

祝愿我国的管理教育事业在社会各界的大力支持和关心下不断发展、日进日新；祝愿我国的经济建设在不断涌现的大批高层次的面向国际市场竞争、具备国际经营头脑的管理者的勉力经营下早日中兴。

赵纯均 教授

清华大学经济管理学院

PREFACE

The tenth edition of *Accounting Information Systems* continues to stress electronic commerce applied within the context of business processes, transaction cycles, and internal control. Detailed material on business processes and internal control is central to the topical organization. The business process chapters are SAP™-oriented and rely on SAP concepts to illustrate contemporary ERP (enterprise resource planning) systems and EASs (enterprise application suites). However, these chapters do not require the instructor to possess technical expertise in SAP™. The detailed material on internal controls in these chapters is consistent with other, non-SAP, approaches to ERP, EASs, and service-oriented architecture (SOA). There is an extensive CPA examination problem set pertaining to business processes and internal controls, with complete answers and explanations in the Instructor's Manual.

The textbook's core coverage continues to include business processes, transaction cycles, and internal controls. These topics have been central to this textbook since its first edition. The passage of the Sarbanes–Oxley Act is a testament to the continuing importance of these topics. An understanding of business processes is fundamental to contemporary auditing, professional, and legal considerations relating to an organization's internal control processes. Each process is subject to loss exposures. Management should develop detailed control objectives for each process. Such control objectives provide a basis for analysis and the risk-based audit of an organization's internal control processes as well as a basis for managing the loss exposures that are associated with an organization's dependence on information systems.

Significant revisions relative to the ninth edition reflect trends in international standards, reference models, and standard frameworks relating to the structure, development, and security of accounting information systems (AISs). Along these lines, Chapter 1 (Accounting Information Systems: An Overview) contrasts and compares various information systems reference models, including the value chain model, the supply chain model, the ERP model, the transaction cycle model, and the operational process model.

Chapter 2 (Systems Techniques and Documentation) furthers the use of generally accepted systems standards by introducing Business Process Modeling Notation (BPMN), an approach for graphically depicting business processes that has been endorsed and supported by the who's who of technology companies, including Adobe, Microsoft, IBM, and SAP. BPMN is immensely popular because it bridges the age-old communication gap between managers, analysts, programmers, and even auditors. It is simple enough to be clearly understood by all these parties, but because it is built on a rigorous mathematical foundation, it can be automatically converted into program code using a Business Process Execution Language (BPEL). The ability to convert graphs into program code is nothing short of a miraculous milestone in the development of AISs, and it is an essential aspect in the construction of modern systems built on SOA.

Chapter 3 (eBusiness and eCommerce) presents eCommerce and eBusiness within the general standard framework of enterprise architecture. The art and science of information systems development has evolved to the point that it is now conducted by specialists called *enterprise architects*, who build systems in standardized, layered domains. These domains provide a key roadmap to understanding the structures and processes relevant to AIS development, internal control, risk-based auditing, and information security.

Chapter 4 (Transaction Processing and the Internal Control Process) presents traditional internal control but amplified within the context of enterprise risk management (ERM). The major concepts are applied in light of the Sarbanes–Oxley Act, and to both large and small businesses, and also in the context of monitoring.

Chapter 5 (Information Security) presents information security within the context of internationally recognized standards for information security management systems (ISMSs). These standards especially include the ISO 27000 series and COBIT.

Chapter 6 (Electronic Data Processing Systems) presents the traditional approaches to electronic data processing, including on-line real-time versus batch, and manual versus electronic. These approaches are also considered in terms of the modern (but not universally applied) REA (Resources, Events, and Agents) model.

Chapters 7–9 (Revenue Cycle Processes, Procurement and Human Resource Business Process, The Production Business Process respectively) present the traditional transaction cycles using the easy-to-understand and widely popular BPMN. For each transaction cycle, fully electronic, real-time systems are presented first, followed by batch and manual systems.

Chapter 10 (Systems Planning Analysis and Design) presents systems development with a focus on new development methodologies, including agile and iterative development, object-oriented analysis and design, and business process modeling, all within the context of modern SOA.

Chapter 11 (Systems Project Management, Implementation, Operation, Control) presents systems implementation, operation, and control, and project management, within the context of ISO 15504. The focus is on using standard team-based development platforms and tools.

Chapter 12 (Data Management Concepts) presents basic database theory, with an emphasis on relational systems, but with significant discussion on nonrelational systems such as OLAP (OnLine Analytical Processing) and object-oriented databases.

Chapter 13 (Auditing Information Technology) culminates the text by presenting risk-based systems auditing. The usual full array of auditing tools and methods are presented. Finally, the traditional approaches are adapted for SOA.

LEARNING AIDS

Each chapter contains the following instructional aids:

- Learning Objectives
- Cases in Point in Text Boxes
- Glossary
- Chapter Quiz
- Review Questions
- Web Research Problems and Cases
- Webliography
- Crossword Puzzle

The Cases in Point, Web Research Assignments, Annotated Webliography, and Crossword Puzzle are significant additions relative to the previous edition.

NEW FEATURES

Chapter 1 (Accounting Information Systems: An Overview)

- Added a section on Customer Relationship Management (CRM) systems
- Added a section on Supply Chain Management (SCM) systems
- Added a major section on Accounting Information Systems and Application Architectures, including MRP, MRP II, CIM, FMS, ERP, ERP II, and EASs
- Added a section explaining models for AISs, including the ERP Functional Model, the Value Chain Model, the Supply Chain Model (SCM), and the Operations Process Model
- Added a section on RFID (radio frequency identification)
- Added a section on Lean Manufacturing
- Added a discussion of "Green Information Technology"

Chapter 2 (Systems Techniques and Documentation)

- Added a discussion of UML (Universal Modeling Language)

- Added a section on BPMN (Business Process Modeling Notation). This is now the de facto international standard for business processes modeling.

Chapter 3 (eBusiness and eCommerce)

- Nearly the entire chapter was rewritten. The chapter is now written in terms of eCommerce, eBusiness, and Enterprise Architecture.
- Discussed all the major current and emerging technologies relating to eBusiness. Examples include ebXML and SOA.

Chapter 4 (Transaction Processing and the Internal Control Process)

- Internal control rewritten so that it is now cast in an Enterprise Risk Management context
- Added a new section on Sarbanes–Oxley Compliance
- Added a discussion of Sarbanes–Oxley Compliance and Compliance in Small Public Companies
- Added a new section on Monitoring Internal Controls

Chapter 5 (Information Security)

- Nearly the entire chapter was rewritten. The new approach focuses on International Standards for Information Security.

Chapter 6 (Electronic Data Processing Systems)

- Added a new section on the REA Model, a model for AISs that is very popular in the accounting literature. The REA model records transactions in terms of Resources, Events, and Agents, instead of debits and credits.

Chapter 7 (Revenue Cycle Processes)

- Added a section relating to Sarbanes–Oxley Compliance
- Completely redid the flowcharts (and related explanations) associated with the basic revenue business processes. The new flowcharts are done using BPMN, which is now the de facto international standard for flowcharting business processes.

Chapter 8 (Procurement and Human Resource Business Processes)

- Completely redid the flowcharts (and related explanations) associated with the basic expenditure business processes. The new flowcharts are done using BPMN, which is now the de facto international standard for flowcharting business processes.

Chapter 9 (The Production Business Process)

- Completely redid the flowcharts (and related explanations) associated with the basic production business processes. The new flowcharts are done using BPMN, which is now the de facto international standard for flowcharting business processes.
- Added some discussion relating to production improvements methods, RFID, and ebXML

Chapter 10 (Systems Planning, Analysis, and Design)

- Added a major new section on Agile and Iterative Development and contrasted it with the traditional Waterfall Approach
- Added a section on the Rational Unified Process
- Added a new section on Object-Oriented Design and Analysis
- Added a new section on Visual Techniques

Chapter 11 (Systems Project Management, Implementation, Operation, Control)

- Added a new section on ISO 15504 (SPICE)
- Added a new major section on the Project Development Environment
- The Project Collaboration Platform
- The Software Application Framework
- The Integrated Development Environment

The Software Versioning System
The Application Solution Stack
All-in-One Platforms

Chapter 12 (Data Management Concepts)
Added a new introductory section on data management concepts
Added a new section on Database Architecture and Development
Added a new section on other Logical Data Structures
OLAP
Added a section on ACID
Added a section on High-Level Database Query Languages
QBE
Natural Language
Object Query Language
Added a section on Reporting Solutions

Chapter 13 (Auditing Information Technology)
Added a new section on Risk-Based Auditing
Added a new section on Auditing SOA Systems
Added a new section on COBIT

THE INSTRUCTOR'S RESOURCE AND SOLUTIONS MANUAL

This manual is a comprehensive resource, which includes chapter overviews that outline each chapter of the text and provide a strong base for planning lectures, teaching tips that introduce each chapter overview and provide helpful teaching hints, transparency masters derived from selected textbook figures, and solutions/suggested solutions for the textbook review questions, discussion questions, and problems. Available at www.pearsonhighered.com.

THE TEST ITEM FILE

The Test Item File includes approximately 1,600 test items that can be used as quiz and/or exam material. The Test Item File includes approximately 100 questions per chapter. Available at www.pearsonhighered.com.

SOFTWARE FOR TEST MANAGEMENT

TestGenEQ Testing Software is by Tamarack Software, Inc. This easy-to-use computerized testing program can create exams, evaluate, and track student results. Test items are drawn from the Test Item File.

POWERPOINT PRESENTATIONS

PowerPoint presentations are available for each chapter of the text. This resource allows instructors to offer a more interactive presentation using colorful graphics, outlines of chapter material, additional examples, and visual explanations of difficult topics. Instructors have the flexibility to add slides and/or modify the existing slides to meet the course needs. Available at www.pearsonhighered.com.

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