

清华管理学系列英文版教材

Managing
Information
Systems

信息系统的管理

David L. Anderson

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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。正如朱镕基总理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,朱镕基总理多次建议清华的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。挂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 and 对抗的能力。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。

赵纯钧 教授

清华大学经济管理学院院长
全国工商管理硕士教育指导委员会副主任

PREFACE TO THE STUDENT

A UNIQUE APPROACH TO STUDYING WITH CASES

Learning technology is easier than ever before. Microsoft Suite enjoys nearly universal acceptance, including almost 85 percent of the personal computer marketplace. Learning to use this powerful tool is relatively easy. Help documents and tutorials are readily available online. CD-roms and videotapes promise to teach even the novice user how to use word processing, spreadsheets, and databases in a short period of time. Books ranging from *Word for Dummies* to *The Power User's Guide to Excel* provide everything from the first steps with the application to advanced programming capabilities.

In the midst of all of these resources, many college and university students as well as businesses have asked themselves how they can move beyond a technical knowledge of the tool to an applications-driven implementation of the technology. In many situations, they have used examples and problems to learn the full range of the tool's abilities. However, they have not been able to fully develop an understanding of how the tools can help them strengthen their personal decision making, enhance their business analysis, or improve their career capabilities.

This textbook focuses on using the technical understanding that you may have obtained in an Introduction to Management Information Systems class. Your class may have been a traditional course in which you learned what a computer was, how to distinguish between micro-, mini-, and mainframe computers, and

how centralization and decentralization of technology are different. The textbook also seeks to build upon the knowledge you have developed in your efforts to learn to use Microsoft Word, Excel, Powerpoint, and Access. You may have obtained this knowledge through a course, in which you studied a textbook that taught these applications, or you may have obtained this knowledge on your own, through a book that you purchased in a bookstore.

With the base of your understanding of these tools, it is important to gain experience applying them to business decision making. That is the direction in which this case book is focused. By using real business cases and descriptions of actual situations, this book will help you apply your skills and understanding of the Microsoft Suite to actual business decision making.

The outline of the book is different from what you might be used to. However, it has a specific objective and focus. The chapters follow and reinforce the textual material in the Post and Anderson textbook, *Management Information Systems: Solving Business Problems with Information Technology*. The cases in each chapter will reinforce the concepts that you may have learned or may be learning in this textbook or another one like it. By stepping through each chapter, you should develop a progressive understanding of what is involved in the implementation of information systems in today's business environment.

An additional enhancement is the organization of the chapters by industry and by company within each industry. Many casebooks teach stand-alone cases; none has endeavored to develop a clear understanding

of how a company operates within the context of its industry and the companies with which it competes. Organizing the cases by industry will help you to better understand the role that competition plays in business strategy and the impact it can have on the decision to computerize your business.

This casebook, however, is not just a collection of cases. Each chapter contains a progressively difficult collection of case examples and problems to expand your knowledge and understanding of statistical and quantitative analysis, particularly as it relates to financial and data analysis. The application/analysis sections of each case will include the following components:

1. *Internet Exercises.* Vast amounts of information about companies and industries are now available on the Internet that were never available before. No matter where you are working, you can obtain extensive information about the company itself from its own web page. This often includes the annual report, advertising material, and catalogs. As a result, information about each company in the casebook includes a link to its web site along with specific questions to help you focus on the best sources of information. Equally important are the links to the industry-relevant web pages. No company operates in a vacuum, particularly today. As a result, it has become increasingly important to determine the business that the company is in, the industry in which it competes, and the best source for information about that industry. Since each chapter is organized by industry, web sites and questions are included to assist you in examining the role that industry analysis plays in your understanding of the business objectives of each company.
2. *Excel Exercises.* The implementation of technology is costly. It is particularly so if the technology is to be used to enhance the strategic direction of the company. To help you see this, the most recent balance sheets and exercises related to them are cited for each case. Viewed individually, these balance sheets and their related exercises will help you “zero in” on the problems and opportunities that each of the corporations is facing. The balance sheets and income statements come from the Edgar database on the Securities and Exchange Commission home page or from a CD-rom source for financial information. The important thing to remember is that this information is readily available for free for your analysis. If you follow the exercises and study the cited financial information, you will develop the skills to analyze financial information no matter the company. You will have a stronger basis to make an investment decision, analyze a potential supplier or buyer, or even evaluate the financial

strength of a potential employer. Since the financial information is so readily available, you can accomplish this analysis wherever you are located.

3. *Access Exercises.* Increasingly, the most valuable commodities that a corporation owns are its data resources. The information that a corporation maintains on its customers can be crucial to its continued successful operation. Its linkage to its suppliers through Electronic Data Interchange and other data-gathering devices further strengthens the need to collect and maintain data on those parts of the organization that supply it with the products and services that it ultimately assembles, manipulates, or repackages to sell to its customers. As a result, each case includes a database with sections and questions relating to the particular business and market segment in which the company is operating.
4. *Microsoft Project Exercises.* Work is increasingly project-driven. This means that funding proposals, special projects, and development efforts have a measurable beginning and end. They do not just continue. As a result, it is important to know and understand a project management tool. Microsoft Project is a readily available, fairly inexpensive tool that charts time, duration, cost, and human resources. A clear understanding of these variables is important to manage technology and other projects in the future. As a result, each case includes a Microsoft Project Plan with sections and questions relating to a specific business project in the industry in which the company is operating.

This book is unique in its application of this combination of tools to your study of companies and the industries in which they operate. While other casebooks may include a series of technology cases, the inclusion and arrangement of the cases in this book will assist you in your efforts to examine and understand the core competencies, critical success factors, and change drivers that may impact each of these industries and corporations. This will give you experience asking the important questions regarding what ultimately impacts business decision-making processes in each of these areas. It will also give you experience working with the financial, statistical, and analytical data that is readily available in the marketplace. The goal, of course, is that you will develop the self-confidence needed to address these questions on your own when you are in the marketplace without the benefit of a textbook or professor.

Equally important, these cases are focused and straightforward. Although couched in a standard business context, each case includes a readily apparent technology impact and decision. Unique to this casebook, the decision scenario is not presented in a vac-

uum, but within the business constraints identified by the financial and other information that is provided with the excel and access data.

An extensive bibliography is provided with a listing of the most up-to-date books to provide additional references and supporting material.

THE IMPORTANCE OF STUDYING CASES

The case method is based on the belief that students in management education can significantly improve their analytical ability through studying, analyzing, and discussing actual business scenarios. Cases develop the skills of logical thinking, searching for relevant information, analyzing and evaluating facts, and drawing conclusions, all of which are needed for business decision making. Making a point in front of your peers improves your ability to communicate clearly, evaluate the opinions of others, react wisely, and reach conclusions that gain collective support.

By definition, a *case* is a description, using words and numbers, of an actual management situation. The case paints a picture of the setting of a business decision and takes the student to the brink of the decision without revealing what happened. A *case study* is a written story that serves as the basis for a group discussion. It can foster a classroom program of role-playing, simulation, question-answering, and discussion. The actual case is a description of a company within a particular context in time. A written case attempts to provide a synopsis of past events in the life of an organization. It sets the stage for making a decision by describing the context from a number of different perspectives. These include financial data about the assets of the organization, statistical information about the employees and markets that the company addresses, organizational information about reporting structure and decision making, technological information about the decisions to implement technology, and managerial information about competitors, internal operations, and the personalities of the individuals involved.

A good case will place you in the position of facing a managerial challenge and preparing an action plan. It will force you to determine what decisions need to be made, justify them, and make recommendations to the class. The financial aspects of a case will enable you to develop skills in analyzing and making financial decisions. Cases with marketing or production information will lead to decisions made by marketing or production managers. Cases that combine all of these issues result in the development of skills in strategic analysis.

The founder of the case-teaching method and its chief advocates C. R. Christensen. In his book, *Teaching and the Case Method*, Professor Christensen asserts,

The active intellectual and emotional involvement of the student is a hallmark of case teaching. That

involvement offers the most dramatic visible contrast with a stereotypical lecture class.¹

Unlike case teaching in law school, which is bound by legal precedent, case teaching in business school is focused upon the stimulation of creative thinking. Business cases are “won” by the students who most accurately analyze the problems and opportunities facing an organization and make the most financially rewarding recommendations, given these constraints.

Case-based teaching is unique because it facilitates a dynamic interchange between the professor, the student, and the material. Rather than merely conveying facts or even ideas, the professor becomes an actor who uses descriptions to set the stage for the analysis of a company or its competition. Case-based teaching can be more effective than lecture teaching because it combines cognitive with motivational aims in the classroom.² The study of cases will provide you with hands-on practice in how to think inductively within the context of an actual situation. It combines theoretical concepts with real-life experience to provide practical decision-making experience. The cases in this book combine real-life experiences with those of companies to enhance your practical understanding of the real-life situation. By studying these cases, you will be able to develop rules that you can subsequently apply to business situations you currently face or will face in the future.

These management information systems cases have been written to merge substantive and procedural aspects of technology. Setting a technology decision within a case context helps to convey the complex aspects of these decisions. The successful application of technology to business involves not only the understanding of the substantive concepts, but also the ability to understand the procedures that often must be followed for technology to be implemented successfully.

A case class differs from a lecture situation since you, as the student, must shoulder more of the responsibility. In a lecture situation, you are primarily responsible for mastering the material that is presented to you. Cases present what is often the most difficult part of the learning process, the decision about what material on which to concentrate. As such, these decisions are more like real life choices.

In your class preparation, study your cases as a business practitioner, not as a student. By addressing case questions as a team before class, you can use the

¹ C. R. Christensen and A. J. Hansen, *Teaching and the Case Method*, Harvard Business School Publishing Division, Cambridge, MA, 1987.

² Frank Bocker, “Is Case Teaching More Effective than Lecture Teaching in Business Administration? An Exploratory Analysis,” *Interfaces* 17:5, September–October, 1987, pp. 64–71.

synergy of the group to develop better solutions than you could working alone. In doing so, you can use collective problem-solving and multiple role-playing to confront ineffective strategies and misconceptions.

Studying cases will assist you in your efforts to develop approaches or rules that you plan to apply to achieve success in business. Cases provide an easy, low-cost way to experiment with ideas and proposals. They give you experience in debugging incorrect hypotheses and making reasonable predictions in new situations. Your case preparation provides the opportunity to experiment with the best questions to ask, the best way to test a theory, and the best way to verbalize and defend rules or theories. Once these rules have been derived from the specific cases that you are studying, they can be extrapolated to other cases that you will study or situations in which you find yourself. You can use the progression of cases to refine and confirm the ideas that you are developing.

THE BEST WAY TO PREPARE A CASE

Cases are best addressed systematically, through a standard approach. Applying this standard framework will enable you to make sure that you have thoroughly researched the subject, examined the material, and are not missing any important issues. The standard framework frequently used in business cases is:

Student Case Analysis Outline

I. Issue

The issue is the essential question of the case. It is the single reason why the case was written. The answer to the issue is the main idea with which you should walk away from the case and the classroom discussion.

II. Environmental Analysis

The environmental analysis presents the events leading to the development of the issue. This includes the financial/stock/portfolio analysis as well as the governmental and other constraints in which the decision makers must operate. The environmental analysis includes the variables that the individual company cannot control.

III. Problems and Opportunities

The problems and opportunities section lists the strengths and weaknesses within which the business leaders must operate. While these factors are often received by the business managers, they are also the ones over which the manager has the most control.

IV. Alternatives

The alternatives are the three to four most likely next steps that the managers can take in their at-

tempt to address the original business issue. These must be succinct and clearly thought out. They must be the most comprehensive steps that the managers can take, given the environment in which they are working and the problems and opportunities that they are facing.

V. Recommendation

The recommendation is the choice of the best alternative and the decision to follow that path in future efforts.

The Competitor Analysis should be different and should incorporate the Case Analysis with a particular focus on the identified competitor(s).

Student Competitor Analysis/Outline

Competitor Company Name

- I. Description of the Competitor Company
- II. Financial Analysis/Portfolio Issue
- III. Stock/Investment Outlook
- IV. Potential/Prospective for Growth
- V. Competitive Structure
- VI. Role of Research and Development
- VII. Technological Investment and Analysis
- VIII. Recommendation for the Future

Similarly, the Student Industry Analysis/Outline focuses upon the industry in which the company is operating and competing. You should keep in mind that the key to this analysis is not to allow yourself to fill in the blanks by writing down everything that is available. You must constantly keep in mind that the goal is to collect and present only information that will lead to the successful evaluation of the case.

Remember that extensive and complex material such as this should be collected and analyzed in small steps. This will enable you to more easily decide which information is important. Collecting the information in small steps will also enable you to more thoroughly organize it.

Student Industry Analysis/Outline

Industry Name

- I. Description of the Industry
- II. Financial Analysis
- III. Stock/Investment Outlook
- IV. Potential/Prospective for Growth
- V. Competitive Structure
- VI. Role of Research and Development
- VII. Technological Investment and Analysis
- VIII. Recommendation for the Future

To complete the industry analysis, the following steps should be helpful.

1. Identify the industry.
2. Seek general industry information.
3. Identify and search the industry's trade and consumer magazines.
4. Learn about the consumers of the product or service.
5. Examine the patent and trademark situation in the industry.
6. Determine the legal issues in the industry.
7. Find information about specific companies in the industry.
8. Define the type of competition in the industry.
9. Examine the geography of the industry.
10. Determine the impact of weather and climate on the industry.
11. Examine the international market.
12. Interview people from the industry.
13. Fill in the gaps with information from information providers.

Whenever lists of items to identify, research, and present are made, the temptation always exists to focus on the lists, not on the issue at hand. The cases in this book were included to enable you to "put yourself in the shoes" of the manager and make decisions as a manager would. Taking this approach will make case-teaching intrinsically motivating, including the elements of challenge, fantasy, and fun. Satisfaction can come from applying a standard process of analysis to the case and then succinctly presenting the results to the class. The goal, of course, is to recognize a unique point that no one else has identified.

The cases include personal descriptions of the major players in the cases so that you can make decisions from the framework they bring to the case. Remember, if the manager or company is extremely conservative financially, he, she, or it will be less likely to adopt and implement a cutting-edge management information system. Although personal nuances are not included in the thorough financial and quantitative analysis discussed previously, it is often these nuances and perspectives that led to the difference between the successful and less-than-successful implementation of technology.

When you are putting yourself in the manager's shoes and making decisions from this perspective, it is also important to bring your own unique perspective to the decision making process. One danger in business, of

course, is the temptation to become myopic and focus only on those things that make sense from your perspective. Managers and companies that have adhered strictly to this approach often get into trouble, since they miss new market segments, changing environments, or ways in which they can further mine their current customer lists for new sales and product opportunities.

As a result, after you have thoroughly analyzed the information, it is extremely important to bring your perspective to the final mix of business recommendations. Perhaps you have worked in the industry, can identify with a particular untapped market segment or group, or just have a tangential interest in the subject. All of these perspectives give you a unique viewpoint to include in your analysis. Breadth of exposure to the conventions, points of view, and practices of many industries is important to provide the depth required to understand the complexities involved in conducting business within each case setting. Particularly in technology, simple formulas for success are not readily available for easy application. Cases provide contextual understanding from which to make business judgments in a protected environment. Even the most quantitatively-oriented manager will agree that the emotion, attitudes, aspirations, and values he or she brings to the task will play an important role in managerial decision making.

Examining cases within the context of an industry helps to guard against grasping for the first comparison opportunity that exists and attempting to force-fit it to the next business problem. The memorization of rules, even the correct ones, are of minimal worth unless the rules can be applied at the right time and in the proper situation. Breadth of exposure to the conventions, points of view, and practices of many industries provides the wisdom necessary to identify subtleties in the organization and respond accordingly. Knowledge of the business environment, economies, or problems of specific industries or companies may never be explicitly used. However, they will provide the perspective or influence the imagination to discover a new innovation or apply an old one to a new situation.

Several approaches can be important keys to developing this perspective. Your final analysis should incorporate aspects of all five.

1. *Generalist.* The generalist approach advocates breadth of perspective rather than specialization. Focus is placed upon addressing the issue from a broad business perspective. Often the most difficult part of the problem is to identify in which discipline the problem lies. Thus, it is important to rise above your individual perspective or discipline to first determine in which area the problem resides.

2. *Practitioner.* The practitioner approach focuses on the importance of acting and the willingness to act. Courses of action must be chosen and decisions must be made even when there is incomplete information or the risk is high that subsequent information will prove the decision maker wrong.
3. *Professional.* The professional approach insures that the role of the manager includes and goes beyond the entrepreneurial function. Quality and clarity of the final purpose are important. The goal is long-term return-on-investment, not just short-term profit.
4. *Innovative.* The innovative approach stresses the implementation of new ideas rather than the maintenance of the status quo. Focusing policy upon changing circumstances is as important as developing innovation through new inventions and advancing technology. Profits can be maximized through the application of the company's long-established strengths to unexplored segments of the market through price, service, distribution, or advertising innovations.
5. *Communication.* The communication approach involves the effective communication of the decision to the rest of the organization.

THE BENEFITS OF USING CASES

Cases focus on the problems of strategy formulation, building the organization, and accomplishing assigned tasks. Utilized effectively, the case approach will maximize the benefit you will receive in the development of additional knowledge and skills. The increasing complexity, both financially and conceptually, of the cases in this book should lead to a deeper understanding and perspective of the business issues involved in management information systems.

Concentration on these cases will enable you to learn about the functions, roles, and skills of senior management from the perspective of the general manager. They help you develop techniques in setting goals, outlining the functions and activities that must be per-

formed to achieve the goals, and determining the strategies needed to accomplish these objectives. They clearly demonstrate the role that risk plays in management. Cases will help you identify and deal successfully with uncertainty and rapidly learn to make decisions from limited information. Cases will provide experience in dividing the organization into logical, understandable assignments with limitations on authority and provisions for individual decision making. Cases provide practice with setting performance standards. These standards will assist you in the application of your skills to making leadership decisions through insight, self-confidence, and imagination. Finally, the cases will assist you with the anticipation and acceptance of responsibility for your actions and those of the organization as you someday relate to the organization's stakeholders, investors, employees, suppliers, communities, countries, and environment.

Learning from cases will also change the way you interact with your professor. By emphasizing student involvement and self-teaching, the use of case studies requires a substantial shift in the traditional roles played by you and your professor. Teaching with cases provides fundamental opportunities but also dilemmas and risks. For some professors, case-teaching can be an uncomfortable assignment³ since it introduces an element of the unknown into the classroom equation. Many variables can be controlled in a well-written and delivered lecture. Well-prepared students and the professor can direct a case in many different directions, some of which were neither planned for nor even foreseen. The crafting of questions, careful listening, and constructive response are the key skill requirements for effective case interactions.

As a student, you can use cases to gain expertise in responding quickly to new situations and environments. The best decisions are made with perfect information. Unfortunately, few decisions have the luxury of being made with this background. Cases provide practice in "landing on one's feet" and responding quickly to a problem or opportunity given a limited amount of information and the time constraints under which you must operate.

³ C. R. Christensen and A. J. Hansen, op. cit.

PREFACE TO THE INSTRUCTOR

TEACHING WITH CASES

Today's students enter college focused on timeliness, and with a great deal of impatience. They have a much clearer focus than previous generations on using their education to achieve their personal and professional goals. Computer games flash images and rapid change continuously before their eyes. Television has become a constant channel-surf with the remote control and picture-in-picture available to jump to whatever is most interesting or dynamic at the moment. The World Wide Web sends students surfing across the Internet driven by their own desire to find knowledge or action on a particular web site. When they become bored with a site or a topic, it is easy to move toward the next site or idea. All this is done without apology or consideration of what such rapid action may do for discipline or direction.

It is within this context that today's college professor must present and attempt to motivate. Television, including Mind Extension University, presents one-hour choreographed presentations complete with pictorial examples from industry and tours from manufacturing plants. Videotaped presentations are available from publishers that include one-on-one interviews with leaders in the industry.

Given these opportunities for learning, today's college professor must find new and more effective ways to communicate increasingly complex and technical information. As a result, this book takes a three-pronged approach to teaching management information:

1. Textual material
2. Cases (actual)
3. Hands-on exercises

Students enroll in management information systems classes both with business experience and with no business experience. For those with business experience,

real business cases provide the spark that is often needed to enable the student to say, "I've experienced that," or "My company addresses that problem this way." For those without business experience, cases provide the first glimpse of business problems and the decision making structure that they require. For this reason, cases and examples have been included from companies that the students have experienced as customers and/or as employees and with which they would easily identify.

From a pedagogical perspective, teaching with cases provides a *framework* and serves as an *example*. The framework provides a structure upon which to build an approach to the analysis of a business problem. The example gives the student a context within which to place the business problem.

Preparing to bring cases to class includes the following four steps:

1. Individual analysis and preparation
2. Optional informal small-group discussion
3. Classroom discussion
4. End-of-class generalization about the learning process

The *individual analysis and preparation* step involves the student in the following activities before class begins:

1. Reading and analyzing the case to get a good understanding and contextual flavor for the facts of the case as they are presented
2. Researching the context in which the case was written. This could include the following factors:
 - Historical context for the case
 - Economic factors/indicators at the time of the case (inflation, employment rates, building, and expansion)

Technological impact for the case (state of technology and ability to implement change)

3. Analyzing the financial impact of the case. This could include:

Financial reports from the case company
 Financial evaluation from services (Moody's or Standard and Poor's)
 Financial evaluation from online sources (Disclosure Global Access)
 Financial evaluation from Internet sources (SEC Edgar Web page)

4. Evaluating the industry of the case company. This could include:

Choosing the industry in which the company operates (This step is often overlooked, but can be the most critical. For example, banks now compete with insurance companies and brokerage houses and vice versa.)
 Deciding what will be the change-drivers in the industry

Analyzing the cost of entering or remaining in this industry given the costs of these change-drivers
 Evaluating the barriers to entry that the competition is constructing

5. Evaluating the competition of the case company. This would include:

Determining who the competitors are, given the product line for the case company
 Identifying the strengths and weaknesses of the competitors
 Evaluating the financial ability of the competition to meet customer demand
 Analyzing brand and customer loyalty to the competitor's product
 Evaluating the research and development investment of the competitor
 Understanding the ability of the competition to use technology to identify and capture new market segments

6. Extending the conceptual framework of the case company. An extensive bibliography is included to provide additional sources of conceptual and industry information to research and incorporate into the class discussion.

The written component of the *individual analysis and preparation* includes the following:

1. *Issue*

The issue is a succinct question that asks why the case was written and what it is about. The issue is the single most important point that is to be examined in the case analysis.

2. *Environmental Analysis.*

The environmental analysis incorporates the context, financial, industry, and competitor in-

formation into an assessment of the environment in which the case company operates.

3. *Problems and Opportunities* (Strengths and weaknesses)

Problems include:

- a. Financial resources to maintain current product base or develop new or modified products.
- b. Engineering talent to develop new technological or machine-based innovations.
- c. Level of interest or ability in outsourcing functions or sections of the company.
- d. Age and depreciation status of the buildings, equipment, and property.

Opportunities include:

- a. Unactualized or unrealized assets such as property that has substantially increased in value or patents that have appreciated
- b. A new or reorganized management team
- c. Patents and trademarks
- d. Public trust and good will in names or trademarks
- e. Underutilized or undeveloped products

4. *Alternatives.* This is a list and explanation of two to three realistic and comprehensive alternatives that are available to the case company. These alternatives need to be complete in their ability to incorporate the issue identified at the beginning of the case analysis as well as to actualize the problems and opportunities of the issue within the context of the problems and opportunities of the company in the environment in which they operate.

5. *Recommendation.* At this stage, the student chooses the best of the three alternatives previously presented. The recommendation includes the rationale or reason that this recommended course of action is the best to solve the business issue presented.

The following sources of information should be helpful to the case analysis process:

Internet:

Web page for the company
 Web page for industry trade groups and associations
 SEC Edgar: 10K forms and annual reports

Online services:

Computer Select
 ABI Inform
 Lexis/Nexis

Online financial analysis sources:

Moody's
 Disclosure Global Access
 Morningstar (Mutual Fund Data)

Published sources:

Standard and Poor's Industry Analysis
 U.S. Department of Commerce Industry Analysis (dated)

Moody's Industry Analysis
Gartner Group Industry/Technology Analysis/
Assessment

Government regulations for particular industries:

Thomas: Legislative Information
Federal Regulatory Information
U.S. House of Representatives Law Library
U.S. Code
Code of Federal Regulations
Federal Register
Small Business Administration reports

Industry/Economic Analyses:

Predicasts, an index of forecasts
Predicasts F&S index, an index of business periodicals

Demographic information:

Lifestyle Market Analyst
Lifestyle Zipcode Analyst
Simmons Study of Media and Markets
Source Book of Zipcode Demographics
County and City Data Book
American Demographics magazine

Legal issues of the industry:

Index to Legal Periodicals
CD-Rom version of Index to Legal Periodicals
American Legal Reports

EVALUATION OF WELL-WRITTEN CASES

Well-written cases present problems and choices that have consequences depending upon the direction that is taken. The situations presented must be realistic and the alternatives believable. The case must be able to be evaluated systematically. The case should spur an evaluation process that would enable students to reach a conclusion, rather than present the best choice and ask students to justify it. Over time, the classroom should help develop a systematic approach to business problems and business decision making. As a result, the student should leave the class not with the answers, but with an approach he or she can use to address problems faced at work. Finally, the class should be careful to focus on both successes and failures. No company does everything right; likewise, no company always does everything wrong. As a result, cases should be chosen which require the student to analyze the subtleties between the two. The best case, although most difficult to write and to obtain permission to use, is the one that presents a realistic description of a company in a difficult situation that was not necessarily solved successfully.

CASE UPDATES

Some professors prefer to teach cases as they are written. That is, they maintain the case in its historical con-

text and present the case decision as if it were being made at the time. Other professors prefer to bring the case "up to date." This includes organizational information about the change in administrators or other persons in the company. It includes financial information about the resources, expenses, and profits that were incurred. It incorporates information about new technologies that are purchased, written, or implemented. Whatever approach is taken, it is important to remember that case analysis is accomplished under the following guidelines:

1. *Context.* Cases must fit into an historical context. Decisions are not made in isolation. They must be explained and incorporated in the context in which they actually occur and with the information available.
2. *Decision orientation.* Cases are about making a decision. Even if that decision is to do nothing, it is important to have decided to do that. Reaching a conclusion or taking a step by default is not a good response, particularly in the fast-moving world of technology.
3. *Dynamism.* Case analysis is dynamic. It is not possible to predict the outcome or to structure the class in a way that the same solution will always result. An important part of case-teaching is the ability to insert information from many different perspectives. The skill set is not the ability to come up with the right conclusion, but to incorporate a variety of ideas into the final conclusion.
4. *Process.* To a large extent, a case class teaches an approach or process to solving problems. The student can then take this process to the next case, or ultimately, business situation.
5. *Technology.* Technology is often the tool that is used to implement the dynamic change that organizations face. As a result, it is important to evaluate the company so that a reasonable technology solution can be presented to resolve the most important issues that are raised.

The interactive nature of the case class can be simulated by an expert system. Ultimately, however, technology cannot duplicate the dynamic interchange between the faculty and students and, it is hoped, between the students themselves. In a case class, there are just too many variables to track. The dynamics of the interaction are too complex.

This is what makes case-teaching exciting and dynamic. It enables a professor to interact directly with students, provide immediate feedback regarding performance, and simulate as closely as possible today's dynamic business environment.

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Technology, more than any other force, is changing the way we work, educate, and live. This book was written within the context of a rapidly changing environment. The textual and case materials were constantly updated, right to press time. The financial and economic information was constantly changing. The technology tips at the end of each chapter were always improving with software updates. Even the tools that were used to input and process the information were reaching new levels and versions throughout the process.

A casebook that relies on real cases and individuals is also constantly in development and change. This is particularly the situation in the rapidly expanding area of management information systems. As a result, I have worked to bring as much up-to-date information about the implementation of technology to the casebook as possible.

Given the complexity of the project, it would never have been completed without the committed assistance of a number of individuals. My research assistants worked with me writing, analyzing, and formatting information throughout the winter of 1998–99.

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Dr. David L. Anderson received his law degree from the George Washington University National Law Center in 1979. He is a member of the bars of the State of Ohio; District of Columbia; United States Court of Appeals, District of Columbia Circuit; United States District Court, Northern District of Ohio; and the United States Supreme Court. He received his Doctorate in Educational Administration from Harvard University in 1987. His doctoral thesis examined the innovative implementation of management information systems. His Master of Science in Computer Science and Electrical Engineering was from Northwestern University in 1992. His thesis examined computer security on the OS/2 workstation and LAN platform. His Master of Business Administration was from the University of Michigan in 1981.

Currently, Dr. Anderson is a technology executive at a major supplier of health insurance in the Chicago

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Dr. Anderson's textbook, written with Jerry Post, is entitled *Management Information Systems: Solving Business Problems with Information Technology*. Published by McGraw-Hill/Irwin, it became available in a second edition in September, 1999. In conjunction with his textbooks, Dr. Anderson serves as an adjunct professor of management information systems at the Charles H. Kellstadt Graduate School of Business at DePaul University in Chicago, Illinois.