APPLICATION CASES IN MIS

FIFTH EDITION | JAMES MORGAN

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PREFACE

Application Cases in MIS was written to support any MIS textbook that is used for courses with a substantial hands-on component. This casebook is designed to assist students in learning to design and develop hands-on computer applications to solve managerial problems. It is written for students who are prospective managerial users of computer systems, and not for potential information systems professionals. The cases presented in this casebook are business oriented. However, the methods and skills covered here should be useful to anyone working in a managerial level professional capacity in any type of organization.

The primary goal of this casebook is to help students learn to design and develop computer applications, which use common end user software packages to solve real world managerial problems. The cases presented here are centered on combinations of Internet skills, spreadsheet skills, and database management skills.

There are no cases in this book centered on work with word processing or presentation software packages, however the assigned work for nearly all of the cases requires students to "incorporate" selected results of, their application in a memorandum or report or into a "set of slides" for a business presentation. In those instances, students are expected to use a word processing package or use Power Point or a similar presentation package to complete the assignment. Many of the cases include assignments requiring the student to prepare a set of business presentation materials, e.g., Power Point slides. To build presentation skills, instructors may combine these assignments with a requirement to present the results of a case one or more times over the semester.

This casebook is designed for use in classes where incoming students are expected to have some prior experience with the use of spreadsheet and database packages and with the word processing and presentation software needed to complete the case assignments. Thus, the mechanics of using software packages are not covered in this casebook. However, only a minimal level of knowledge of these packages is required to complete the cases presented here. Similarly, it is assumed that students have had some

experience with information retrieval through the Internet or that they can learn these skills through on-line help.

Students without previous experience in the use of these common business application packages, and students who feel that they need to refresh their skills in the use of these packages may need to use supplemental materials such as reference manuals or tutorial workbooks to develop the fundamental skills needed to complete these cases. One such resource is the Simnet MIS tutorial CD, available from McGraw-Hill, which provides interactive tutorials covering a variety of spreadsheet and database skills.

To help instructors and students identify the business and computer application skills needed to complete each case, a Case Skills Matrix is provided immediately following this preface. This Case Skills Matrix describes the business topic skills covered by the case (listed in italics) and then summarizes the software skills needed to complete each case.

Students enter MIS courses with widely varied levels of experience in the other functional areas of business. The cases presented in this casebook have been designed to present real world business situations without requiring the use of advanced functional area skills that some students may not have. Brief explanations are provided when basic terminology or calculations requiring on functional area knowledge are used.

Building end user applications requires more than simply having a technical knowledge of spreadsheet and database packages. The end user developer must be able to identify situations calling for the development of an end user computer application and must be able to design and develop an application that will provide the appropriate information in as effective a manner as possible. These skills in identifying problem situations requiring computer applications and designing solutions are key to successful use of computer technology, and form the main thrust of this casebook.

Three sets of cases are presented: a set of applications using the Internet, a set of spreadsheet applications, and a set of database applications. Some of the database cases require the integrated use of both database and spreadsheet software and several of the

spreadsheet and database cases involve incorporating information gathered from the Internet into spreadsheets or database tables.

A chapter of material describing applicable design and development tools and methods and applying them to a sample case is presented before each set of cases. The chapter materials describing development tools and methods assume the use of a windows environment with integrated application packages and an available Internet browser. The cases present real world problem situations in a narrative form. Application designs are presented for the first four cases in the spreadsheet and database chapters to help give students a better feel for the design process. However, the remaining cases in each set require the student to design and develop an appropriate application based only upon the narrative problem description.

The windows based "suites" of application development software packages have simplified the process of building applications that use multiple tools (e.g. spreadsheet, database, word processing, and presentation software) in an integrated fashion. The ability to use these packages effectively in an integrated fashion is an important skill and is emphasized in the cases of this edition.

The web site for this casebook provides startup files for use on those cases requiring the use of substantial amounts of data. These files are provided in order to reduce the amount of repetitive data entry required to complete these cases. Completed files for the sample cases presented in Chapters 1, 3, and 5 are also available for download. The files for spreadsheet cases are in EXCEL format and those for database case in ACCESS format, but they should be readable by most common commercial spreadsheet and database packages. The requirements for your computer system to be able to support the cases in this book are quite minimal.

These files will have the names indicated in this casebook and can be found at the Internet site:

http:/www.mhhe.com/business/mis/morgan/5ed.

System Requirements

In order to use this casebook effectively, students must have access to:

1. Spreadsheet software that can read files created by EXCEL.
2. Database software that can read or convert files created by ACCESS.
3. Word processing software and (ideally) business presentation software.
4. Internet browser software.
5. A computer system with enough memory to operate the software listed above.

Assessing Skills Required

To help instructors and students identify the business and computer application skills needed to complete each case, a Case Skills Matrix is provided immediately following this preface. This Case Skills Matrix describes the business topic skills covered by the case (listed in italics) and then summarizes the software skills needed to complete each case. Also included, for those who have purchased the Simnet MIS CD, is a table suggesting tutorials that might be used to review many of the needed spreadsheet and database skills.

CASE SKILLS MATRIX

Chapter 2: Internet Cases

Case	Skills Required
All	Basic Word Processing (to write up reports and memoranda)
1.	*Internet information retrieval*
	Basic PowerPoint skills (or similar presentation software) Assignment 1
	Basic Spreadsheet skills (optional)
2.	*Internet information retrieval*
	Basic PowerPoint skills (or similar presentation software) Assignment 1
3.	*Internet information retrieval*
	Basic PowerPoint skills (or similar presentation software) Assignment 2
	Basic Spreadsheet skills
4.	*Internet information retrieval and analysis*
	Basic PowerPoint skills (or similar presentation software) Assignment 2
5.	*Internet information retrieval and analysis*
	Basic Spreadsheet skills
6.	*Internet information retrieval and analysis*
	Basic PowerPoint skills (or similar presentation software) Assignment 2
7.	Basic Web Page creation skills
8.	Basic Web Page creation skills
9.	Basic Web Page creation skills

Chapter 4: Spreadsheet Cases

Case	Skills Required
All	Basic Spreadsheet skills
	Basic Word Processing (to write up reports and memoranda)
1.	*Actual versus Budgeted Expenditures*
	Basic PowerPoint skills (or similar presentation software) Assignment 3
2.	*Income statement Trend Analysis*
	Graph/chart creation skills
	Internet information retrieval skills Assignment 3
	Basic PowerPoint skills (or similar presentation software) Assignment 4
3.	*Sales Performance Analysis – Exception Reporting*
	Graph/chart creation skills
	Basic PowerPoint skills (or similar presentation software) Assignment 3
4.	*Business startup profitability analysis*
	Basic PowerPoint skills (or similar presentation software) Assignment 3
5.	*Personnel Expense Trend Analysis*
	Graph/chart creation skills
	Basic Web Page creation skills Assignment 3
	Export of Spreadsheet to a web page Assignment 3
6.	*Sales Performance Bonus Analysis*
7.	*Income and Balance Sheet Common Size Analysis*
	Internet information retrieval skills Assignment 3
8.	*Costing and Analysis of Alternatives to provide an Employee Benefit*
9.	*Analysis of Accounts Receivable Trends*
	Basic PowerPoint skills (or similar presentation software) Assignment 2

Chapter 6: Database Cases

Case	Skills Required
All	Basic database Querying and Reporting Skills
	Basic Word Processing (to write up reports and memoranda)
1.	*Human Relations*
	Database table Modification
	Basic Web Page creation skills Assignment 4
2.	*Sales performance / sales commission analysis*
	Database table Creation
	Multiple tables and relationships
	Basic PowerPoint skills (or similar presentation software) Assignment 3
3.	*Small business product sales and servicing*
	Database table Creation
	Multiple tables and relationships
	Data entry form Creation
	Basic PowerPoint skills (or similar presentation software) Assignment 2
4.	*Production quality Assurance*
	Copying query results to a spreadsheet
	Basic Spreadsheet skills
	Basic PowerPoint skills (or similar presentation software) Assignment 3
5.	*Sales analysis – sell through*
	Basic PowerPoint skills (or similar presentation software) Assignment 2
6.	*Small business sales system*
	Database table Creation
	Multiple tables and relationships
	Data entry form Creation
7.	*Human Resources – Job assignment*
	Database table Creation
	Multiple tables and relationships
	Data entry form Creation
	Basic PowerPoint skills (or similar presentation software) Assignment 2
8.	*Sales Performance Bonus Analysis*
	Basic PowerPoint skills (or similar presentation software) Assignment 2
9.	*Production quality Assurance*
	Database table Creation

Spreadsheet and Database Skills Supported by the Simnet MIS CD

Skill	Simnet MIS Tutorial Section
Spreadsheet	
Basic Spreadsheet skills	Lessons 1, 2, 3, 4-1, 4-2, and 5
Graph/chart creation skills	Lesson 6
Export of a spreadsheet to a web page	Lesson 7-1
Database	
Basic database Querying and Reporting Skills	Lessons 1, 3-1,5-2, 5-3, 5-4, 7
Database table Creation / Modification	Lessons 2, 5-1
Multiple tables and relationships	Lesson 6
Data entry form Creation	Lesson 4

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CHAPTER 6: DATABASE CASES

Chapter 1: BUSINESS APPLICATIONS AND THE INTERNET

Today the Internet has a wide ranging impact on the way business is conducted and on the way we live. The volume of communications and commerce handled by the Internet is growing exponentially. The impact of the Internet on organizational communications and on organizational information systems is so broad that we can only provide a few brief examples in this case book.

Users can access the internet for information retrieval and can even produce simple World Wide Web sites without having a great deal of technical knowledge of the internet and its related technologies. These types of uses of the Internet are the ones that are most important to managerial end users, and will be the focus of the Internet cases presented here.

A number of web browsers and on-line services are available which provide easy access to the World Wide Web and the Internet for information retrieval. These products and services provide a graphical interface to interact with the Internet and have lots of help if you get lost. The coverage presented here assumes that you have already used the internet for information retrieval or that you can learn on your own using the help in the browser or information service that you are using to access the internet.

In order to provide a broad overview of ways in which the Internet can be used in business applications, three distinct types of cases will be described in this chapter and present for you to complete in Chapter 2. These are:

A. Retrieval Cases, which require retrieval of information from the internet to support a traditional application (spreadsheet or database),
B. Web Assessment Cases, where you are asked to examine the web sites of businesses and assess the effectiveness with which this medium is being used, and
C. Web Creation cases, which require you to create your own simple web pages.

RETRIEVAL CASES

The Internet is very commonly used as a research source in preparing business reports and presentations. Information gathered from the internet may become the input component of a spreadsheet or database application, or it may provide more qualitative information to be incorporated directly into a report or presentation. This is, perhaps, the simplest way to use the Internet in building an information systems application. We use the Internet to for information gathering to support our analysis. For example, we might gather pricing data from several companies to support a spreadsheet for a purchasing decision, corporate earning information for a stock purchase decision, or even reviews of market trends and corporate strategy to produce an assessment of a company's expected future performance. The internet information is either used directly in a report or presentation or, if appropriate, data gathered from the Internet becomes the input data for a spreadsheet or database application.

Because web technology allows anyone to express their ideas and opinions to a world-wide audience, it is particularly important that researchers evaluate their sources and seek out multiple and balanced sources when doing internet research. It is also critically important that you appropriately cite web resources that are used to support your research so that others can access those sites for further information. According to the American Psychological Association, citations of internet web page should always include the html address and the date when you accessed it, in addition to the standard citation information of the title of the item your are referencing, the author if an author is identified, and the name of the organization responsible for the web site where your reference was found.

Where a web site provides significant amounts of quantitative data that data is often provided in the form of downloadable files in a format that can be read directly by your spreadsheet or database software to provide the input data for an application. Downloading the initial data for the cases in this book is a simple example of this type of use. You can see how this works by going to the web site at **http:/www.mhhe.com/business/mis/morgan/5th**. Simply follow the instructions to download a file (the **witsdata** spreadsheet file, for instance), then retrieve the file into the appropriate software package and verify that you can use it.

The first three cases in the next chapter are primarily information retrieval cases involving no quantitative data or relatively limited amounts of quantitative data. They can be completed using only very small and basic spreadsheets and without any use of database software. Additional cases involving Internet information retrieval combined with more advanced spreadsheet or database work will be presented in later chapters. Spreadsheet and database cases that also use Internet skills will be designated by the following icon: 🌎

WEB ASSESSMENT CASES

Web assessment cases ask you to examine the use of the Internet, and particularly the World Wide Web, as a type of strategic information system. You are asked to examine web sites of existing firms to see how effectively they have used the Internet and to perform some comparative assessments. These cases may require you to create a small spreadsheet based on what you retrieve, but their focus is on the evaluation of the effectiveness of an organization's Web pages, and how they support the organization's strategic focus. Cases 4 through 6 in the next chapter have this assessment focus.

WEB PAGE CREATION CASES

The final type of case is one that requires you to actually create a web site. As with all information systems, it is important to focus first on creating an effective design and then proceed to the actual implementation of the web site.

Effective design will make other Internet users more interested in your web site and, in a business setting, may be used to provide a strategic advantage. Some broad guidelines for effective web site design will be presented in the next section. You should use these guidelines in completing the web site creation cases. You can also apply them in the cases that ask you to evaluate the web sites of existing businesses.

Transferring your design to actual web pages requires that you create one or more files in a special language called Hypertext Mark-up Language or HTML. The HTML language is not difficult, but it is at a technical level that makes it inappropriate for use by must managerial end-users. However, a number of end-user oriented software packages

have been developed or modified to allow you to build a web page without having to develop a mastery of HTML. These products allow you to enter data in a comfortable familiar form, such as a word processing file, and automatically convert what is entered into an HTML file that can be placed on the Internet. For example, Microsoft Word supports the development of web pages in its word processing environment. Users can work in their familiar word processing environment to build simple web-based applications. (For the benefit of students who have no experience with creation of web pages, a brief overview of the process required to build a simple web page using Microsoft Word is available for download at the web site for this textbook.)

It should be noted that organizational web pages often involve complex elements, such as, managing interaction with the user, security controls, and animation. Building a web site to include these elements requires knowledge of HTML, the JAVA programming language, and a number of other enabling technologies. Larger organizations have full time IS staff devoted to the development and maintenance of their web presence. However, simple but effective web pages can now be developed by end-users without great technical knowledge, as we will see. Cases 7 through 9 in the next chapter require you to create simple web pages.

BASIC PRINCIPLES OF WEB PAGE DESIGN

Web pages are much less highly structured than the spreadsheet and database applications that will be covered in later chapters. There are no hard and fast rules that, if followed, will guarantee that a web page is effective. A great deal of art is involved in the design of a web site that will be effective in appealing to the set of users who are the target for a particular site. Nevertheless, there are some important factors that should be followed when constructing a web site.

Five key elements: Content, Organization, Navigation, Economy, and Security should be considered in web design. The names chosen here are arbitrary; other texts and references may use somewhat different terms. However, this classification should be sufficient to organize your thinking about web design. Also its elements spell out an acronym (CONES) which may help you to remember them. The sequencing of these elements is designed to roughly capture the sequence in which the individual elements