

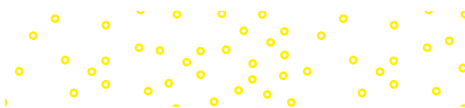
Paige Baltzan

Colorado School of Mines

Business Driven Information Systems

NINTH EDITION

**Mc
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BUSINESS DRIVEN INFORMATION SYSTEMS, NINTH EDITION

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DEDICATION

To Hannah, Sophie, and Lou:
What do you always remember?
That I Love You! That I'm Proud of You!

Paige



ABOUT THE AUTHOR

Paige Baltzan

Paige Baltzan teaches at the Colorado School of Mines. She holds a BSBA specializing in accounting/MIS from Bowling Green State University and an MBA specializing in MIS from the University of Denver. She is a coauthor of several books, including *Business Driven Technology*, *Essentials of Business Driven Information Systems*, and *I-Series*, and is a contributor to *Management Information Systems for the Information Age*.



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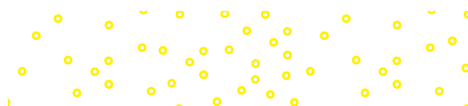
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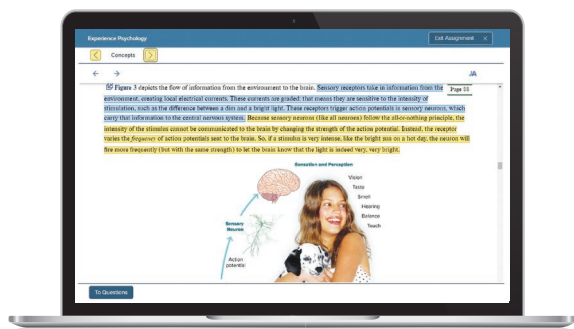


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Business Driven Information Systems discusses various business initiatives first and how technology supports those initiatives second. The premise for this unique approach is that business initiatives should drive technology choices. Every discussion first addresses the business needs and then addresses the technology that supports those needs. This text provides the foundation that will enable students to achieve excellence in business, whether they major in operations management, manufacturing, sales, marketing, finance, human resources, accounting, or virtually any other business discipline. *Business Driven Information Systems* is designed to give students the ability to understand how information technology can be a point of strength for an organization.

Common business goals associated with information technology projects include reducing costs, improving productivity, improving customer satisfaction and loyalty, creating competitive advantages, streamlining supply chains, supporting global expansion, and so on. Achieving these results is not easy. Implementing a new accounting system or marketing plan is not likely to generate long-term growth or reduce costs across an entire organization. Businesses must undertake enterprisewide initiatives to achieve broad general business goals such as reducing costs. Information technology plays a critical role in deploying such initiatives by facilitating communication and increasing business intelligence. Any individual anticipating a successful career in business, whether it is in accounting, finance, human resources, or operations management, must understand the basics of information technology that can be found in this text.

We have found tremendous success teaching MIS courses by demonstrating the correlation between business and IT. Students who understand the tight correlation between business and IT understand the power of this course. Students learn 10 percent of what they read, 80 percent of what they personally experience, and 90 percent of what they teach others. The business driven approach brings the difficult and often intangible MIS concepts to the student's level and applies them using a hands-on approach to reinforce the concepts. Teaching MIS with a business driven focus helps:

- Add credibility to IT.
- Open students' eyes to IT opportunities.
- Attract majors.
- Engage students.

FORMAT, FEATURES, AND HIGHLIGHTS

Business Driven Information Systems is state of the art in its discussions, presents concepts in an easy-to-understand format, and allows students to be active participants in learning. The dynamic nature of information technology requires all students—more specifically, business students—to be aware of both current and emerging technologies. Students are facing complex subjects and need a clear, concise explanation to be able to understand and use the concepts throughout their careers. By engaging students with numerous case studies, exercises, projects, and questions that enforce concepts, *Business Driven Information Systems* creates a unique learning experience for both faculty and students.

- **Audience.** *Business Driven Information Systems* is designed for use in undergraduate or introductory MBA courses in management information systems, which are required in many business administration or management programs as part of the common body of knowledge for all business majors.
- **Logical Layout.** Students and faculty will find the text well-organized, with the topics flowing logically from one chapter to the next. The definition of each term is provided before it is covered in the chapter, and an extensive glossary is included at the back of the text. Each chapter offers a comprehensive opening case study, learning outcomes, closing case studies, key terms, and critical business thinking questions.

- **Thorough Explanations.** Complete coverage is provided for each topic that is introduced. Explanations are written so that students can understand the ideas presented and relate them to other concepts.
- **Solid Theoretical Base.** The text relies on current theory and practice of information systems as they relate to the business environment. Current academic and professional journals cited throughout the text are found in the Notes at the end of the book—a roadmap for additional, pertinent readings that can be the basis for learning beyond the scope of the chapters or plug-ins.
- **Material to Encourage Discussion.** All chapters contain a diverse selection of case studies and individual and group problem-solving activities as they relate to the use of information technology in business. Two comprehensive cases at the end of each chapter reinforce content. These cases encourage students to consider what concepts have been presented and then apply those concepts to a situation they might find in an organization. Different people in an organization can view the same facts from different points of view, and the cases will force students to consider some of those views.
- **Flexibility in Teaching and Learning.** Although most textbooks that are text-only leave faculty on their own when it comes to choosing cases, *Business Driven Information Systems* goes much further. Several options are provided to faculty with case selections from a variety of sources, including *CIO*, *Harvard Business Journal*, *Wired*, *Forbes*, and *Time*, to name just a few. Therefore, faculty can use the text alone, the text and a complete selection of cases, or anything in between.
- **Integrative Themes.** Several integrative themes recur throughout the text, which adds integration to the material. Among these themes are value-added techniques and methodologies, ethics and social responsibility, globalization, and competitive advantage. Such topics are essential to gaining a full understanding of the strategies that a business must recognize, formulate, and in turn implement. In addition to addressing these in the chapter material, many illustrations are provided for their relevance to business practice.

WALKTHROUGH

Learning Outcomes

Learning Outcomes. These outcomes focus on what students should learn and be able to answer upon completion of the chapter.

section 3.1 | Web 1.0: Ebusiness

LEARNING OUTCOMES

- 3.1** Compare disruptive and sustaining technologies and explain how the Internet and WWW caused business disruption.
 - 3.2** Describe ebusiness and its associated advantages.
 - 3.3** Compare the four ebusiness models.
 - 3.4** Describe the five ebusiness tools for connecting and communicating.
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Chapter Opening Case Study

Chapter Opening Case Study. To enhance student interest, each chapter begins with an opening case study that highlights an organization that has been time-tested and value-proven in the business world. This feature serves to fortify concepts with relevant examples of outstanding companies. Discussion of the case is threaded throughout the chapter.



21 LAPS ENT/MONKEY MASSACRE/
Album/Alamy Stock Photo

opening case study

Stranger Things Happening at Netflix

If you have watched the TV show *Stranger Things*, you are already using Netflix. If you are watching additional movies and TV shows Netflix recommended based on the fact that you like *Stranger Things*, then you are already using Netflix's recommendation engine.

Have you ever wondered how Netflix recommends other movies based on what you have been watching? Netflix is constantly collecting data on how its users interact with its content. Netflix collects data on user behavior, such as the movies and TV shows they watch, the ratings they provide, and their interaction with the platform. This data is stored and analyzed in a database, which allows Netflix to build personalized recommendations for each user. Netflix uses predictive analytic algorithms to make recommendations on what content a user will enjoy based on their historical data. A Netflix database could include tables or collections that store information such as:

- **Users:** User-specific data, including fields such as unique user IDs, user names, email addresses, and other account details.
- **Content:** Movies, TV shows, and documentary data including fields such as the title, genre, description, release year, director, actors, and ratings for each piece of content.
- **Ratings:** User ratings and reviews data, including fields such as the user ID, content ID, and rating given by the user.
- **Viewing History:** Viewing history data, including fields such as content ID, user ID, timestamp, and progress (how much of the content has been watched).
- **Recommendations:** Personalized recommendation data including fields such as user ID, recommended content IDs, and the confidence or relevance score associated with each recommendation.
- **Billing and Subscriptions:** User subscription data, including fields such as billing details, payment methods, and subscription plans.
- **Devices:** Device data, including fields such as user's account, device ID, device type, and last login timestamp.

Projects and Case Studies

Case Studies. This text is packed with 27 case studies illustrating how a variety of prominent organizations and businesses have successfully implemented many of this text's concepts. All cases are timely and promote critical thinking. Company profiles are especially appealing and relevant to your students, helping to stir classroom discussion and interest.

Business Driven Projects. In Connect, you will find projects that challenge students to bring the skills they have learned from the chapter to real business problems. These projects ask students to use IT tools such as Excel and Access to solve business problems. These projects help to develop the application and problem-solving skills of your students through challenging and creative business-driven scenarios.

BUSINESS DRIVEN PROJECTS

If you are looking for Excel projects to incorporate into your class, try any of the following after reading this chapter.

Project Number	Project Name	Project Type	Project Level	Skill Set	Page Number
1	Financial Destiny	Excel	Personal Budget	Introductory Formulas	BDP.3
2	Cash Flow	Excel	Cash Flow	Introductory Formulas	BDP.3
3	Technology Budget	Excel	Hardware and Software	Introductory Formulas	BDP.3
4	Tracking Donations	Excel	Employee Relationships	Introductory Formulas	BDP.3
5	Convert Currency	Excel	Global Commerce	Introductory Formulas	BDP.4
6	Cost Comparison	Excel	Total Cost of Ownership	Introductory Formulas	BDP.4
7	Time Management	Excel or Project	Introductory	Gantt Charts	BDP.5

End-of-Chapter Elements

Each chapter contains complete pedagogical support in the form of:

Key Terms. With page numbers referencing where they are discussed in the text.

KEY TERMS

Algorithm 13	Diversity, Equity, and Inclusion (DEI) 22	Predictive analytics 15
Analytics 12	Dynamic report 12	Prescriptive analytics 15
Big data 8	Entry barrier 31	Product differentiation 31
Business analytics 13	Environmental data 11	Production 20
Business department 17	Fact 6	Productivity 21
Business intelligence (BI) 12	Feedback 21	Report 12
Business model 26	First-mover advantage 27	Rivalry among existing competitors 31
Business process 26	Fourth Industrial Revolution 6	Services 20
Business strategy 25		

Business Driven Case Studies. Reinforcing important concepts with prominent examples from businesses and organizations. Discussion questions follow each case study.

BUSINESS DRIVEN CASE ONE

Data Analytics Careers: Top Skills for Your Future

Data analytics combines theory and practice to identify and communicate data driven insights that allow managers, stakeholders, and other organizational executives to make more informed decisions. Data is transforming and powering business everywhere—from intelligent homes and sustainable cities to online retail and green corporations. Business today is simple—it's data driven. Data in all forms and shapes provides insights into making strategic business decisions, including opening new markets, staffing hospitals and warehouses, and creating vaccines. Organizations in all industries increasingly rely on data to identify opportunities and solve business problems.

Making Business Decisions. The best way to learn MIS is to apply it to scenarios and real-world business dilemmas. These projects require students to apply critical thinking skills and chapter concepts to analyze the problems and make recommended business decisions.

BUSINESS DRIVEN DECISIONS

1. Working for the Best

Each year, *Fortune* magazine lists the top 100 companies to work for. Find the most recent list. What data types do you think *Fortune* analyzed to determine the company's ranking? What issues could occur if the data analysis needed to be more accurate? What kinds of information can you gain by analyzing the list? Create five questions a student performing a job search could answer by analyzing this list.

2. View from a Flat World

Bill Gates, the founder of Microsoft, stated that 20 years ago, most people would rather have been a B student in New York City than a genius in China because the opportunities available to students in developed countries were limitless. Today, many argue that the opposite is now true due to technological advances making it easier to succeed as a genius in China than as a B student in New York. Discuss whether you agree or disagree with Gates's statement as a group.

3. Do You Trust Your Data?

As has been said, "Data is the new oil." Data drive fact-based decisions. As a manager, you rely on data to drive your business decisions. Can you imagine making a critical business decision on bad data? Have you ever stopped to ask yourself if you trust your data? What will happen if you make a business decision on incorrect, inaccurate, or low-quality data? Chances are high that you will make the wrong decision, which is the primary risk when using data to drive your decisions. Here are a few examples of organizations that fell into the trap of making essential decisions on incorrect data.

About the Plug-Ins

The Plug-In materials are located on the Instructor Resource Center. The goal of the plug-ins is to provide an alternative for faculty who find themselves in the situation of having to purchase an extra book to support Microsoft Office. The plug-ins presented here offer integration with the core chapters and provide critical knowledge using essential business applications, such as Microsoft Excel, Microsoft Access, Dreamweaver, and Microsoft Project. Each plug-in uses hands-on tutorials for comprehension and mastery.

Plug-In	Description
T1. Personal Productivity Using IT	<p>This plug-in covers a number of things to do to keep a personal computer running effectively and efficiently. The 12 topics covered in this plug-in are:</p> <ul style="list-style-type: none">■ Creating strong passwords.■ Performing good file management.■ Implementing effective backup and recovery strategies.■ Using zip files.■ Writing professional emails.■ Stopping spam.■ Preventing phishing.■ Detecting spyware.■ Threads to instant messaging.■ Increasing PC performance.■ Using antivirus software.■ Installing a personal firewall.

End-of-Plug-In Elements

Each plug-in contains complete pedagogical support in the form of:

Plug-In Summary. Revisits the plug-in highlights in summary format.

Making Business Decisions. Small scenario-driven projects that help students focus individually on decision making as they relate to the topical elements in the chapters.

T2. Basic Skills Using Excel	<p>This plug-in introduces the basics of using Microsoft Excel, a spreadsheet program for data analysis, along with a few fancy features. The six topics covered in this plug-in are:</p> <ul style="list-style-type: none">■ Workbooks and worksheets.■ Working with cells and cell data.■ Printing worksheets.■ Formatting worksheets.■ Formulas.■ Working with charts and graphics.
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T4. Decision Making Using Excel	<p>This plug-in examines a few of the advanced business analysis tools used in Microsoft Excel that have the capability to identify patterns, trends, and rules, and create “what-if” models. The four topics covered in this plug-in are:</p> <ul style="list-style-type: none">■ IF■ Goal Seek■ Solver■ Scenario Manager
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Support and Supplemental Material

All of the supplemental material supporting *Business Driven Information Systems* was developed by the author to ensure you receive accurate, high-quality, and in-depth content. Included is a complete set of materials that will assist students and faculty in accomplishing course objectives.

Test Bank. This computerized package allows instructors to custom design, save, and generate tests. The test program permits instructors to edit, add, or delete questions from the test banks; analyze test results; and organize a database of tests and students' results.

Instructor's Manual (IM). The IM, written by the author, includes suggestions for designing the course and presenting the material. Each chapter is supported by answers to end-of-chapter questions and problems and suggestions concerning the discussion topics and cases.

PowerPoint Presentations. A set of PowerPoint slides, created by the author, accompanies each chapter and features bulleted items that provide a lecture outline, plus key figures and tables from the text, and detailed teaching notes on each slide.

Image Library. Text figures and tables, as permission allows, are provided in a format by which they can be imported into PowerPoint for class lectures.

Project Files. The author has provided files for all projects that need further support, such as data files.

Assurance of Learning Ready

Many educational institutions today are focused on the notion of *assurance of learning*, an important element of some accreditation standards. *Business Driven Information Systems* is designed specifically to support your assurance of learning initiatives with a simple, yet powerful solution.

Each test bank question for *Business Driven Information Systems* maps to a specific chapter learning outcome/objective listed in the text. You can use our test bank software or *Connect MIS* to query easily for learning outcomes/objectives that directly relate to the learning objectives for your course. You can then use the reporting features to aggregate student results in similar fashion, making the collection and presentation of assurance of learning data simple and easy.

AACSB Statement

The McGraw Hill Companies is a proud corporate member of AACSB International. Understanding the importance and value of AACSB accreditation, *Business Driven Information Systems* recognizes the curricula guidelines detailed in the AACSB standards for business accreditation by connecting selected questions in the test bank to the six general knowledge and skill guidelines in the AACSB standards.

The statements contained in *Business Driven Information Systems* are provided only as a guide for the users of this textbook. The AACSB leaves content coverage and assessment within the purview of individual schools, the mission of the school, and the faculty. Although *Business Driven Information Systems* and the teaching package make no claim of any specific AACSB qualification or evaluation, within *Business Driven Information Systems* we have labeled selected questions according to the six general knowledge and skills areas.

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