



Business Driven Technology 7e

PAIGE BALTZAN

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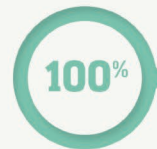
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Business Driven Technology

SEVENTH EDITION

Paige Baltzan

Daniels College of Business
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BUSINESS DRIVEN TECHNOLOGY, SEVENTH EDITION

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This book is printed on acid-free paper.

1 2 3 4 5 6 7 8 9 0 DOR/DOR 1 0 9 8 7 6 5 4

ISBN 978-1-259-56732-2

MHID 1-259-56732-X

Chief Product Office, SVP Products & Markets: *G. Scott Virkler*

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Compositor: *SPi Global*

Printer: *LSC Communications*

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Library of Congress Cataloging-in-Publication Data

Names: Baltzan, Paige, author.

Title: Business driven technology / Paige Baltzan, Daniels College of Business, University of Denver.

Description: Seventh edition. | New York, NY : McGraw-Hill Education, [2018]

Identifiers: LCCN 2016038028 | ISBN 9781259567322 (alk. paper)

Subjects: LCSH: Information technology—Management. | Management information systems. | Information resources management. | Industrial management—Technological innovations.

Classification: LCC HD30.2 .H32 2018 | DDC 658.4/038—dc23 LC record available at <https://lcn.loc.gov/2016038028>

The Internet addresses listed in the text were accurate at the time of publication. The inclusion of a website does not indicate an endorsement by the authors or McGraw-Hill Education, and McGraw-Hill Education does not guarantee the accuracy of the information presented at these sites.



DEDICATION

In memory of Allan R. Biggs, my father, my mentor,
and my inspiration.

Paige

To my mother Sophie, my father Thomas, my
brother Tom, and my wonderful husband Mel—
without whom I would not be who I am today.
Thank you all for your love, support, and undying
confidence in me.

Patricia

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Paige Baltzan

Paige Baltzan is an Assistant Teaching Professor in the department of Business Information and Analytics at the Daniels College of Business at the University of Denver. 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 Information Systems*, *Essentials of Business Driven Information Systems*, and *I-Series*, and is a contributor to *Management Information Systems for the Information Age*.

Before joining the Daniels College faculty in 1999, Paige spent several years working for a large telecommunications company and an international consulting firm where she participated in client engagements in the United States as well as South America and Europe. Paige lives in Lakewood, Colorado, with her husband, Tony, and daughters, Hannah and Sophie.

THE TECHNOLOGY PLUG-INS

The overall goal of the Technology Plug-Ins is to provide additional information not covered in the text such as personal productivity using information technology, problem solving using Excel, and decision making using Access. These plug-ins also offer an all-in-one text to faculty, avoiding their having to purchase an extra book to support Microsoft Office. These plug-ins offer integration with the core chapters and provide critical knowledge using essential business applications, such as Microsoft Excel, Microsoft Access, and Microsoft Project with hands-on tutorials for comprehension and mastery. Plug-Ins T1 to T12 are located in McGraw-Hill Connect at <http://connect.mheducation.com>.

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 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.
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 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.
T3. Problem Solving Using Excel	<p>This plug-in provides a comprehensive tutorial on how to use a variety of Microsoft Excel functions and features for problem solving. The areas covered in this plug-in are:</p> <ul style="list-style-type: none"> ■ Lists ■ Conditional Formatting ■ AutoFilter ■ Subtotals ■ PivotTables
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 ■ Lookup ■ Goal Seek ■ Solver ■ Scenario Manager
T5. Designing Database Applications	<p>This plug-in provides specific details on how to design relational database applications. One of the most efficient and powerful information management computer-based applications is the relational database. The topics covered in this plug-in are:</p> <ul style="list-style-type: none"> ■ Entities and data relationships. ■ Documenting logical data relationships. ■ The relational data model. ■ Normalization.

Plug-in	Description
T6. Basic Skills Using Access	<p>This plug-in focuses on creating a Microsoft Access database file. One of the most efficient information management computer-based applications is Microsoft Access. Access provides a powerful set of tools for creating and maintaining a relational database. The topics covered in this plug-in are:</p> <ul style="list-style-type: none"> ■ Create a new database file. ■ Create and modify tables.
T7. Problem Solving Using Access	<p>This plug-in provides a comprehensive tutorial on how to query a database in Microsoft Access. Queries are essential for problem solving, allowing a user to sort information, summarize data (display totals, averages, counts, and so on), display the results of calculations on data, and choose exactly which fields are shown. The topics in this plug-in are:</p> <ul style="list-style-type: none"> ■ Create simple queries using the simple query wizard. ■ Create advanced queries using calculated fields. ■ Format results displayed in calculated fields.
T8. Decision Making Using Access	<p>This plug-in provides a comprehensive tutorial on entering data in a well-designed form and creating functional reports using Microsoft Access. A form is essential to use for data entry and a report is an effective way to present data in a printed format. The topics in this plug-in are:</p> <ul style="list-style-type: none"> ■ Creating, modifying, and running forms. ■ Creating, modifying, and running reports.
T9. Designing Web Pages	<p>This plug-in provides a comprehensive assessment into the functional aspects of web design. Websites are beginning to look more alike and to employ the same metaphors and conventions. The web has now become an everyday thing whose design should not make users think. The topics in this plug-in are:</p> <ul style="list-style-type: none"> ■ The World Wide Web. ■ Designing for the unknown(s). ■ The process of web design. ■ HTML basics. ■ Web fonts. ■ Web graphics.
T10. Creating Web Pages Using HTML	<p>This plug-in provides an overview of creating web pages using the HTML language. HTML is a system of codes that you use to create interactive web pages. It provides a means to describe the structure of text-based information in a document—by denoting certain text as headings, paragraphs, lists, and so on. The topics in this plug-in are:</p> <ul style="list-style-type: none"> ■ An introduction to HTML. ■ HTML tools. ■ Creating, saving, and viewing HTML documents. ■ Apply style tags and attributes. ■ Using fancy formatting. ■ Creating hyperlinks. ■ Displaying graphics.
T11. Creating Gantt Charts with Excel and Microsoft Project	<p>This plug-in offers a quick and efficient way to manage projects. Excel and Microsoft Project are great for managing all phases of a project, creating templates, collaborating on planning processes, tracking project progress, and sharing information with all interested parties. The two topics in this plug-in are:</p> <ul style="list-style-type: none"> ■ Creating Gantt Charts with Excel. ■ Creating Gantt Charts with Microsoft Project.

PREFACE

Unlike any other MIS text, *Business Driven Technology, 7e*, 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 in the text first addresses the business needs and then addresses the technology that supports those needs.

Business Driven Technology offers you the flexibility to customize courses according to your needs and the needs of your students by covering only essential concepts and topics in the five core units, while providing additional in-depth coverage in the business and technology plug-ins.

Business Driven Technology contains 19 chapters (organized into five units), 12 business plug-ins, and 11 technology plug-ins offering you the ultimate flexibility in tailoring content to the exact needs of your MIS course. The unique construction of this text allows you to cover essential concepts and topics in the five core units while providing you with the ability to customize a course and explore certain topics in greater detail with the business and technology plug-ins.

Plug-ins are fully developed modules of text that include student learning outcomes, case studies, business vignettes, and end-of-chapter material such as key terms, individual and group questions and projects, and case study exercises.

We realize that instructors today require the ability to cover a blended mix of topics in their courses. While some instructors like to focus on networks and infrastructure throughout their course, others choose to focus on ethics and security. *Business Driven Technology* was developed to easily adapt to your needs. Each chapter and plug-in is independent so you can:

- Cover any or all of the *chapters* as they suit your purpose.
- Cover any or all of the *business plug-ins* as they suit your purpose.
- Cover any or all of the *technology plug-ins* as they suit your purpose.
- Cover the plug-ins in any order you wish.



connect
| MIS

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McGraw-Hill *Connect MIS* is an online assignment and assessment solution that connects students with the tools and resources they'll need to achieve success.

McGraw-Hill *Connect MIS* helps prepare students for their future by enabling faster learning, more efficient studying, and higher retention of knowledge.

MCGRAW-HILL CONNECT MIS FEATURES

Connect MIS offers a number of powerful tools and features to make managing assignments easier, so faculty can spend more time teaching. With *Connect MIS*, students can engage with their coursework anytime and anywhere, making the learning process more accessible and efficient. *Connect MIS* offers you the features described next.

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- Create and deliver assignments easily with selectable interactive exercises, scenario-based questions, and test bank items.
- Streamline lesson planning, student progress reporting, and assignment grading to make classroom management more efficient than ever.
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When it comes to studying, time is precious. *Connect MIS* helps students learn more efficiently by providing feedback and practice material when they need it, where they need it. When it comes to teaching, your time also is precious. The grading function enables you to:

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- Access and review each response; manually change grades or leave comments for students to review.
- Reinforce classroom concepts with practice tests and instant quizzes.

Instructor Library

The *Connect MIS* Instructor Library is your repository for additional resources to improve student engagement in and out of class. You can select and use any asset that enhances your lecture. The *Connect MIS* Instructor Library includes:

- Instructor's Manual with
 - Classroom openers and exercises for each chapter.
 - Case discussion points and solutions.
 - Answers to all chapter questions and cases.
 - Video guides—discussion points, questions and answers.
- PowerPoint Presentations with detail lecture notes.
- Solution files to all Apply Your Knowledge problems.

Student Study Center

- The *Connect MIS* Student Study Center is the place for students to access additional data files, student versions of the PowerPoint slides and more.

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Connect MIS keeps instructors informed about how each student, section, and class is performing, allowing for more productive use of lecture and office hours. The progress-tracking function enables you to:

- View scored work immediately and track individual or group performance with assignment and grade reports.
- Access an instant view of student or class performance relative to learning objectives.
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Lecture Capture

Increase the attention paid to lecture discussion by decreasing the attention paid to note taking. For an additional charge Lecture Capture offers new ways for students to focus on the in-class discussion, knowing they can revisit important topics later. Lecture Capture enables you to:

- Record and distribute your lecture with a click of a button.
- Record and index PowerPoint presentations and anything shown on your computer so it is easily searchable, frame by frame.

- Offer access to lectures anytime and anywhere by computer, iPod, or mobile device.
- Increase intent listening and class participation by easing students' concerns about note taking. Lecture Capture will make it more likely you will see students' faces, not the tops of their heads.

McGraw-Hill Connect Plus MIS

McGraw-Hill reinvents the textbook learning experience for the modern student with *Connect Plus MIS*. A seamless integration of an eBook and *Connect MIS*, *Connect Plus MIS* provides all of the *Connect MIS* features plus the following:

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Tegrity Campus: Lectures 24/7



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and-stop process, you capture all computer screens and corresponding audio. Students can replay any part of any class with easy-to-use browser-based viewing on a PC or Mac.

Educators know that the more students can see, hear, and experience class resources, the better they learn. In fact, studies prove it. With Tegrity Campus, students quickly recall key moments by using Tegrity Campus's unique search feature. This search helps students efficiently find what they need, when they need it, across an entire semester of class recordings. Help turn all your students' study time into learning moments immediately supported by your lecture.

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 Technology, 7e*, is designed specifically to support your assurance of learning initiatives with a simple yet powerful solution.

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

McGraw-Hill Customer Contact Information

At McGraw-Hill, we understand that getting the most from new technology can be challenging. That's why our services don't stop after you purchase our products. You can email our Product Specialists 24 hours a day to get product-training online. Or you can search our knowledge bank of Frequently Asked Questions on our support website. For Customer Support, you can call **800-331-5094** or visit www.mhhe.com/support. One of our Technical Support Analysts will be able to assist you in a timely fashion.

Walkthrough

This text is organized around the traditional sequence of topics and concepts in information technology; however, the presentation of this material is nontraditional. That is to say, the text is divided into four major sections: (1) units, (2) chapters, (3) business plug-ins, and (4) technology plug-ins. This represents a substantial departure from existing traditional texts. The goal is to provide both students and faculty with only the most essential concepts and topical coverage in the text, while allowing faculty to customize a course by choosing from among a set of plug-ins that explore topics in more detail. All of the topics that form the core of the discipline are covered, including CRM, SCM, Porter’s Five Forces Model, value chain analysis, competitive advantage, information security, and ethics.

Business Driven Technology

includes four major components:

- 5 Core Units
- 19 Chapters
- 12 Business Plug-Ins
- 11 Technology Plug-Ins

UNITS

1. Achieving Business Success

- Chapter 1: Business Driven Technology
- Chapter 2: Identifying Competitive Advantages
- Chapter 3: Strategic Initiatives for Implementing Competitive Advantages
- Chapter 4: Measuring the Success of Strategic Initiatives
- Chapter 5: Organizational Structures That Support Strategic Initiatives

2 Exploring Business Intelligence

- Chapter 6: Valuing and Storing Organizational Information—Databases
- Chapter 7: Accessing Organizational Information—Data Warehouses
- Chapter 8: Understanding Big Data and Its Impact on Business

3 Streamlining Business Operations

- Chapter 9: Enabling the Organization—Decision Making
- Chapter 10: Extending the Organization—Supply Chain Management
- Chapter 11: Building a Customer-Centric Organization—Customer Relationship Management
- Chapter 12: Integrating the Organization from End to End—Enterprise Resource Planning

4 Building Innovation

- Chapter 13: Creating Innovative Organizations
- Chapter 14: Ebusiness
- Chapter 15: Creating Collaborative Partnerships
- Chapter 16: Integrating Wireless Technology in Business

5 Transforming Organizations

- Chapter 17: Developing Software to Streamline Operations
- Chapter 18: Methodologies for Supporting Agile Organizations
- Chapter 19: Managing Organizational Projects

BUSINESS PLUG-INS

B1 Business Basics	B7 Ethics
B2 Business Process	B8 Operations Management
B3 Hardware and Software Basics	B9 Sustainable MIS Infrastructures
B4 MIS Infrastructures	B10 Business Intelligence
B5 Networks and Telecommunications	B11 Global Information Systems
B6 Information Security	B12 Global Trends

TECHNOLOGY PLUG-INS (CONNECT ONLY)

T1 Personal Productivity Using IT	T7 Problem Solving Using Access
T2 Basic Skills Using Excel	T8 Decision Making Using Access
T3 Problem Solving Using Excel	T9 Designing Web Pages
T4 Decision Making Using Excel	T10 Creating Web Pages Using HTML
T5 Designing Database Applications	T11 Creating Gantt Charts with Excel and Microsoft Project
T6 Basic Skills Using Access	
Apply Your Knowledge Projects	Notes
Glossary	Index

Format, Features, and Highlights

Business Driven Technology, 7e, 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 Technology* creates a unique learning experience for both faculty and students.

- **Logical Layout.** Students and faculty will find the text well organized with the topics flowing logically from one unit to the next and 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 core unit offers a comprehensive opening case study, introduction, learning outcomes, unit summary, closing case studies, key terms, and making business decision questions. The plug-ins follow the same pedagogical elements with the exception of the exclusion of opening case and closing case studies in the technology plug-ins.
- **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 presented in the core units and plug-ins.
- **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 and websites upon which the text is based are found in the References at the end of the book—a road map for additional, pertinent readings that can be the basis for learning beyond the scope of the unit, chapter, or plug-in.
- **Material to Encourage Discussion.** All units 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 unit reflect the concepts from the chapters. 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.** While most textbooks that are “text only” leave faculty on their own when it comes to choosing cases, *Business Driven Technology* 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 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 gaining a 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. These include brief examples in the text as well as more detail presented in the corresponding plug-in(s) (business or technical).

Visual Content Map

Located at the beginning of the text and serving as a logical outline, the visual content map illustrates the relationship between each unit and its associated plug-ins.

Visual Content Map

Introduction

Information is everywhere. Most organizations value information as a strategic asset. Organizational success depends heavily on the ability to gather and analyze information about operations, suppliers, customers, and markets. Information can answer such questions as who are your best and worst customers? How much inventory do you need to meet demand? Where can you source the cheapest raw materials? How can you increase sales or reduce costs? Answering these questions incorrectly can lead directly to business failure. Estimating too many buyers will lead to an excess of inventory; estimating too few buyers will potentially lead to lost sales due to lack of product (resulting in even more lost revenues).

Understanding the direct impact information has on an organization's bottom line is crucial to running a successful business. This text focuses on information, business, technology, and the integrated set of activities used to run most organizations. Many of these activities are the hallmarks of business today—supply chain management, customer relationship management, enterprise resource planning, outsourcing, integration, ebusiness, and others. The five core units of this text cover these important activities in detail. Each unit is divided into chapters that provide individual learning outcomes and case studies. In addition to the five core units, there are technology and business “plug-ins” (see Figure Unit 1.1) that further explore topics presented in the five core units.

The chapters in Unit 1 are:

- **Chapter One**—Business Driven Technology.
- **Chapter Two**—Identifying Competitive Advantages.
- **Chapter Three**—Strategic Initiatives for Implementing Competitive Advantages.
- **Chapter Four**—Measuring the Success of Strategic Initiatives.
- **Chapter Five**—Organizational Structures That Support Strategic Initiatives.

Introduction and Learning Outcomes

Introduction. Located after the Unit Opening Case, the introduction familiarizes students with the overall tone of the chapters. Thematic concepts are also broadly defined.

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

Introduction

Decision making and problem solving in today's electronic world encompass large-scale, opportunity-oriented, strategically focused solutions. The traditional "cookbook" approach to decisions simply will not work in the ebusiness world. Decision-making and problem-solving abilities are now the most sought-after traits in up-and-coming executives. To put it mildly, decision makers and problem solvers have limitless career potential.

Ebusiness is the conducting of business on the Internet, not only buying and selling, but also serving customers and collaborating with business partners. (Unit Four discusses ebusiness in detail.) With the fast growth of information technology and the accelerated use of the Internet, ebusiness is quickly becoming standard. This unit focuses on technology to help make decisions, solve problems, and find new innovative opportunities. The unit highlights how to bring people together with the best IT processes and tools in complete, flexible solutions that can seize business opportunities (see Figure Unit 3.1). The chapters in Unit 3 are:

- **Chapter Nine**—Enabling the Organization—Decision Making.
- **Chapter Ten**—Extending the Organization—Supply Chain Management.
- **Chapter Eleven**—Building a Customer-centric Organization—Customer Relationship Management.
- **Chapter Twelve**—Integrating the Organization from End to End—Enterprise Resource Planning.

LEARNING OUTCOMES

- | | |
|---|--|
| <p>9.1. Explain the importance of decision making for managers at each of the three primary organization levels along with the associated decision characteristics.</p> <p>9.2. Classify the different operational support systems, managerial support systems, and strategic support</p> | <p>systems, and explain how managers can use these systems to make decisions and gain competitive advantages.</p> <p>9.3. Describe artificial intelligence, and identify its five main types.</p> |
|---|--|

Unit Opening Case and Opening Case Study Questions

Unit Opening Case. To enhance student interest, each unit 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 chapters in each unit.

Opening Case Study Questions. Located at the end of each chapter, pertinent questions connect the Unit Opening Case with important chapter concepts.

UNIT ONE OPENING CASE



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Buy Experiences, Not Things

Retail is one of the most competitive and stingiest industries in America boasting some of the most dissatisfied workers across the board. Walmart Stores employees began a week-long strike in Miami, Boston, and the San Francisco Bay Area to publicly display their immense dissatisfaction with the multinational corporation. Employees at Amazon.com fulfillment center in Leipzig, Germany went on strike demanding higher wages and better benefits. Just search retail strikes and you will find numerous examples of dissatisfied employees doing what they can to improve their situations. However, there is one company that will not appear on the list – Costco Wholesale!

Costco Wholesale, the second-largest retailer in the U.S. behind Walmart, is an anomaly in a world where retailers are closing their doors due to the inability to compete with online prices. Retail stores such as Aeropostale, Sears, and Macy's are all feeling the pressure of the online marketplaces of today's digital world. Costco requires a \$55-a-year membership fee for access to its massive warehouses supplied floor to ceiling with generous portions of everything from olive oil to paper towels. While many businesses are losing customers to the Internet Costco's sales have grown 40 percent and its stock price has doubled.

Treating employees exceptionally well is the secret to Costco's success. Costco employees make an average of \$20 an hour, not including overtime and eighty-eight percent of Costco

OPENING CASE STUDY QUESTIONS

1. What is the ebusiness model implemented by Slack?
2. What is the revenue model implemented by Slack?

Projects and Case Studies

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

APPLY YOUR KNOWLEDGE

Apply Your Knowledge Project Overview

Project Number	Project Name	Project Type	Plug-In	Focus Area	Project Level	Skill Set	Page Number
1	Financial Destiny	Excel	T2	Personal Budget	Introductory	Formulas	AYK.4
2	Cash Flow	Excel	T2	Cash Flow	Introductory	Formulas	AYK.4
3	Technology Budget	Excel	T1, T2	Hardware and Software	Introductory	Formulas	AYK.4
4	Tracking Donations	Excel	T2	Employee Relationships	Introductory	Formulas	AYK.4
5	Convert Currency	Excel	T2	Global Commerce	Introductory	Formulas	AYK.5
6	Cost Comparison	Excel	T2	Total Cost of Ownership	Introductory	Formulas	AYK.5
7	Time Management	Excel or Project	T12	Project Management	Introductory	Gantt Charts	AYK.6
8	Maximize Profit	Excel	T2, T4	Strategic Analysis	Intermediate	Formulas or Solver	AYK.6
9	Security Analysis	Excel	T3	Filtering Data	Intermediate	Conditional Formatting, Autofilter, Subtotal	AYK.7
10	Gathering Data	Excel	T3	Data Analysis	Intermediate	Conditional Formatting	AYK.8
11	Scanner System	Excel	T2	Strategic Analysis	Intermediate	Formulas	AYK.8

Chapter Three Case: Amazon Drone Knocking

Using drones to drop off packages could be great for buyers, who might want to get cert fast as humanly possible. Back in 2013, when Amazon revealed plans to begin deliveri via flying drones through Prime Air, some seemed skeptical about the reality of depic system. Recently, Amazon doubled down on those claims by releasing information on or drones in action, and it is seriously impressive.

A new video presented by former Top Gear host Jeremy Clarkson (who is working or Amazon), takes us through the entire process, from ordering, to warehouse launch, to deliv drone looks a lot different from the one Amazon showed us a couple of years ago. This on commercial and streamlined look, and instead of showing the package hanging in open drone hides the item in a square compartment. Just Google Amazon Prime Air Drone video Clarkson to see for yourself this amazing new drone that will dramatically impact the supply

According to Amazon, the drone reaches a height of about 400 feet in vertical mo switches to horizontal mode to travel up to 15 miles away from the warehouse. During th drone uses what Amazon calls “sense and avoid technology” to avoid collisions with oth its flight path.

Toward the end of the video, the drone alights atop an Amazon logo in the yard of and spits out the package (in this case, shoes) and then takes off in a matter of seconds. process, which Amazon is careful to note is real and not a simulation, comes off seamle the prospect of drone deliveries seem like something that will be viable just a few month

However, despite the encouraging footage, Amazon is still holding off on announ when its drones will take to the skies. On the updated Prime Air page featuring the new fil a message reads, “Putting Prime Air into service will take some time, but we will depl have the regulatory support needed to realize our vision.”

The FAA’s Unmanned Aircraft Systems (UAS) Registration Task Force Aviation Rulemak tee is still hammering out rules for private and commercial drone use in U.S. air space, lack of a specific launch timeline for Prime Air is understandable. But based on the video ing increasingly clear that Prime Air might not be a mere marketing stunt but a real look of Amazon deliveries.

Retailers Racing to the Drone Games

Wal-Mart recently applied to U.S. regulators for permission to test drones for home deliv pickup and checking warehouse inventories, a sign it plans to go head-to-head with Ama drones to fill and deliver online orders.

Wal-Mart wants to start using drones in an effort to create a more efficient supply chnect their network of stores, distribution centers, fulfillment centers and transportatio world’s largest retailer by revenue has for several months been conducting indoor te unmanned aircraft systems (drones) and is now seeking for the first time to test the m doors. In addition to having drones take inventory of trailers outside its warehouses other tasks aimed at making its distribution system more efficient, Wal-Mart is asking the F tion Administration for permission to research drone use in “deliveries to customers at W ties, as well as to consumer homes.” The move comes as Amazon, Google and other cor

Apply Your Knowledge. At the end of this text is a set of 33 projects aimed at reinforcing the business initiatives explored in the text. These projects help to develop the application and problem-solving skills of your students through challenging and creative business-driven scenarios.

Making Business Decisions

Making Business Decisions.

Small scenario-driven projects help students focus on decision making as they relate to the topical elements in the chapters and plug-ins.

* MAKING BUSINESS DECISIONS

1. Two Trillion Rows of Data Analyzed Daily—No Problem

eBay is the world's largest online marketplace, with 97 million global users selling anything to anyone at a yearly total of \$62 billion—more than \$2,000 every second. Of course with this many sales, eBay is collecting the equivalent of the Library of Congress worth of data every three days that must be analyzed to run the business successfully. Luckily, eBay discovered Tableau!

Tableau started at Stanford when Chris Stolte, a computer scientist; Pat Hanrahan, an Academy Award-winning professor; and Christian Chabot, a savvy business leader, decided to solve the problem of helping ordinary people understand big data. The three created Tableau, which bridged two computer science disciplines: computer graphics and databases. No more need to write code or understand the relational database keys and categories; users simply drag and drop pictures of what they want to analyze. Tableau has become one of the most successful data visualization tools on the market, winning multiple awards, international expansion, and millions in revenue and spawning multiple new inventions.

Tableau is revolutionizing business analytics, and this is only the beginning. Visit the Tableau website and become familiar with the tool by watching a few of the demos. Once you have a good understanding of the tool, create three questions eBay might be using Tableau to answer, including the analysis of its sales data to find patterns, business insights, and trends.

2. Track Your Life

With wearable technology, you can track your entire life. Nike's Fuelband and Jawbone's Up tracks all of your physical activity, caloric burn, and sleep patterns. You can track your driving patterns, tooth-brushing habits, and even laundry status. The question now becomes how to track all of your trackers.

A new company called Exist incorporates tracking devices with weather data, music choices, Netflix favorites, and Twitter activity all in one digital dashboard. Exist wants to understand every area of your life and provide correlation information between such things as your personal productivity and mood. As the different types of data expand, so will the breadth of correlations Exist can point out. For instance, do you tweet more when you are working at home? If so, does this increase productivity? Exist wants to track all of your trackers and analyze the information to help you become more efficient and more effective.

Create a digital dashboard for tracking your life. Choose four areas you want to track and determine three ways you would measure each area. For example, if you track eating habits, you might want to measure calories and place unacceptable levels in red and acceptable levels in green. Once completed, determine whether you can find any correlations among the areas in your life.

3. Butterfly Effects

End-of-Unit Elements

* UNIT CLOSING CASE TWO



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Informing Information

Since the beginning of time, r

* MAKING BUSINESS DECISIONS

1. Two Trillion Rows of Data Analyzed Daily—No Problem

eBay is the world's largest online marketplace, with 97 million global users selling anything anyone at a yearly total of \$62 billion—more than \$2,000 every second. Of course with this sales, eBay is collecting the equivalent of the Library of Congress worth of data every three that must be analyzed to run the business.

Tableau started at Stanford Award-winning professor; an of helping ordinary people un science disciplines: computer relational database keys and analyze. Tableau has become multiple awards, international

* KEY TERMS

Affinity grouping analysis, 137	Content editor, 110
Algorithms, 141	Cube, 140
Analysis paralysis, 143	Data-driven decision management, 126
Analytical information, 100	Data aggregation, 121
Analytics, 141	Data artist, 143
Anomaly detection, 141	Database, 104
Attribute, 105	Database management system (DBMS), 104
Backward integration, 112	Data broker, 124
Big data, 131	Data dictionary, 105
Business-critical integrity constraints, 109	Data-driven website, 110
Business intelligence dashboard, 144	Data element (or data field), 104
Business rule, 109	Data gap analysis, 103

Each unit contains complete pedagogical support in the form of:

- **Unit Summary.** Revisiting the unit highlights in summary format.
- **Key Terms.** With page numbers referencing where they are discussed in the text.
- **Two Closing Case Studies.** Reinforcing important concepts with prominent examples from businesses and organizations. Discussion questions follow each case study.
- **Apply Your Knowledge.** In-depth projects that help students focus on applying the skills and concepts they have learned throughout the unit.
- **Apply Your Knowledge Application Projects.** Highlights the different AYK projects available at the end of the text that takes the MIS concepts and challenges the students to apply them using Excel, Access, and other tools.

The plug-ins are designed to allow faculty to customize their course and cover selected topics in more detail. Students will read core material related to all of the plug-ins in the five units.

As an example, students will learn about various facets of customer relationship management (CRM) most notably in Chapter 11. However, customer relationship management has its own business plug-in. The CRM business plug-in gives both faculty and students the ability to cover CRM in more detail if desired. Likewise, students will receive an introduction to decision making in Unit 3. The Excel technology plug-ins allow coverage of decision-making tools such as PivotTables, Goal Seek, and Scenario Manager.

About the Plug-Ins

P L U G - I N

B1

Business Basics

LEARNING OUTCOMES

1. Define the three common business forms.
2. List and describe the seven departments commonly found in most organizations.

LO 1 Define the three common business forms.

Introduction

A sign posted beside a road in Colorado states, "Failing to plan is planning to fail." Playnix Toys posted the sign after successfully completing its 20th year in the toy business in Colorado. The company's mission is to provide a superior selection of high-end toys for children of all ages. When the company began, it generated interest by using unique marketing strategies and promotions. The toy business has a lot of tough competition. Large chain stores such as Walmart and Target offer toys at deep discount prices. Finding the right strategy to remain competitive is difficult in this industry, as FAO Schwarz discovered when it filed for bankruptcy after 143 years in the toy business.

Management Focus. By focusing on the business plug-ins, your course will take on a managerial approach to MIS.

P L U G - I N

T7

Problem Solving Using Access 2013

LEARNING OUTCOMES

1. Describe the process of using the Query Wizard using Access.
2. Describe the process of using the Design view for creating a query using Access.
3. Describe the process of adding a calculated field to a query using Access.
4. Describe the process of using aggregate functions to calculate totals in queries using Access.
5. Describe how to format results displayed in calculated fields using Access.

Introduction

A *query* is a tool for extracting, combining, and displaying data from one or more tables, according to criteria you specify. For example, in a book inventory database, you could create a query to view a list of all hardcover books with more than 500 pages that you purchased in the past five months. In a query, you can sort information, summarize data (display totals, averages, counts, and so on), display the results of calculations on data, and choose exactly which fields are shown. You can view the results of a query in a tabular format, or you can view the query's data through a form or on a report (which is covered in Plug-In T8, "Decision Making Using Access 2013"). In this plug-in, you will learn how to use the Query Wizard

Technical Focus. If hands-on, technical skills are more important, include technical plug-ins in your MIS course.

End-of-Plug-In Elements

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

- **Plug-in Summary.** Revisiting the plug-in highlights in summary format.
- **Key Terms.** With page numbers referencing where they are discussed in the text.
- **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.

*** PLUG-IN SUMMARY**

The study of business begins with understanding the different types of businesses including a sole proprietorship, partnership, or a corporation. Figure B1.15 highlights seven departments found in a typical business.

All of these departments must be able to execute activities specific to their business function and also be able to work with the other departments to create synergies throughout the entire business.

- **Accounting** provides quantitative information about the finances of the business including recording, measuring, and describing financial information.
- **Finance** deals with the strategic financial issues associated with increasing the value of the business, while observing applicable laws and social responsibilities.
- **Human resources** manages employees (human resources).
- **Sales** is the function that increases company revenue.
- **Marketing** is the department that develops and promotes products.
- **Operations management** oversees the processes that create the products and services.
- **Management information systems** collect, store, and analyze data to help managers make decisions.

*** KEY TERMS**

Accounting 367	For profit corporation 365	Operations management 375
Accounting department 367	Human resources (HR) 370	Owner's equity 368
Asset 368	Income statement 368	Partnership 365
Balance sheet 368	Liability 368	Partnership agreement 365
Bookkeeping 367	Limited liability 365	Product life cycle 375
Break-even point 370	Limited liability corporation (LLC) 366	Profit 364
Capital 365	Liability 368	
Corporation (also called, organization, enterprise, or business) 365	Liability 368	
Dividend 368	Liability 368	
Expense 368	Liability 368	
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*** MAKING BUSINESS DECISIONS**

1. **Setting Up a Business**

Your friend, Olivia Graves, is going to start her own chocolate shop, called Chocolate-By-Design. Olivia is an expert candy maker and one of the city's top pastry chefs. Olivia has come to you for advice on what type of business Chocolate-By-Design should be—a sole proprietorship, partnership, or corporation. Create a report comparing the three different types of businesses, along with your recommendation for Chocolate-By-Design's business structure.
2. **Guest Lecturing on Business**

As a recent college graduate, your favorite professor, Dr. Henning, has asked you to come back and guest lecture at his introduction to business course. Create a presentation defining the different departments in a typical business, what roles each play, and why it is important that they all work together.

Support and Supplemental Material

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

Video Exercises. Many of the videos that accompany the text are supported by detailed teaching notes on how to turn the videos into classroom exercises where your students can apply the knowledge they are learning after watching the videos.

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 student 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 that features bulleted items that provide a lecture outline, plus key figures and tables from the text, and detailed teaching notes on each slide.

■ **Classroom Exercises.** Choose from over 30 detailed classroom exercises that engage and challenge students. For example, if you are teaching systems development, start the class with the “Skyscraper Activity” where the students build a prototype that takes them through each phase of the systems development life cycle. All classroom exercises can be found in the IM.

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

■ **Cohesion Case.** Now assignable through Connect, The Broadway Cafe is a running case instructors can use to reinforce core material such as customer relationship management, supply chain management, business intelligence, and decision making. The case has 15 sections that challenge students to develop and expand their grandfather’s coffee shop. Students receive hands-on experience in business and learn technology’s true value of enabling business. Please note that the Cohesion Case is not a McGraw-Hill product but a Baltzan direct product.

■ **Video Content.** More than 20 videos accompany this text and cover topics from entrepreneurship to disaster recovery. Video IMs are also available so you can turn the videos into engaging classroom activities.

Supplements:

- Business Driven Teaching Notes
- Instructor Resource Library in McGraw-Hill Connect
- Instructor’s Manual and Video Case Guide
- PowerPoint Presentations
- Classroom Exercises
- Project Files

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