

Preface

We wrote this book for business school students who need an in-depth look at how today's business firms use information technologies and systems to achieve corporate objectives. Information systems are one of the major tools available to business managers for achieving operational excellence, developing new products and services, improving decision making, and achieving competitive advantage. Students will find here the most up-to-date and comprehensive overview of information systems used by business firms today.

When interviewing potential employees, business firms often look for new hires who know how to use information systems and technologies for achieving bottom-line business results. Regardless of whether you are an accounting, finance, management, operations management, marketing, or information systems major, the knowledge and information you find in this book will be valuable throughout your business career.

What's New in This Edition

Currency

The seventh Canadian edition features new and updated opening, closing, and “Window” cases. The text, figures, tables, and cases have been updated through February 2013 with the latest sources from industry and MIS research.

New features

- Chapter-opening cases have been expanded, and new questions have been added to case studies throughout.
- New Video collection: Approximately 30 videos covering key concepts and experiences in the MIS world are included on the Companion Website. [[TBC]]
- Learning Tracks: More than 40 Learning Tracks providing additional coverage of selected topics can be accessed on the Companion Website.

New topics

- **Social Business:** Extensive coverage of social business, introduced in Chapter 2 and discussed throughout the text. Detailed discussions of enterprise (internal corporate) social networking as well as social networking in e-commerce.
- **Big Data:** Chapter 6 on Databases and Information Management has been rewritten to provide in-depth coverage of Big Data and new data management technologies, including Hadoop, in-memory computing, non-relational databases, and analytic platforms.
- **Cloud Computing:** Expanded and updated coverage of cloud computing in Chapter 5 (IT Infrastructure), with more detail on types of cloud services, private and public clouds, hybrid clouds, managing cloud services, and a new chapter-ending case on Amazon's cloud services. Cloud computing also covered in Chapter 6 (databases in the cloud); Chapter 8 (cloud security); Chapter 9 (cloud-based CRM); and Chapter 13 (cloud-based systems development and component-based development).
- **Social, legal, and ethical issues:** Expanded and updated coverage in Chapter 4 (Social, Ethical, and Legal Issues in the Digital Firm) of the social, legal, and ethical issues that surround the rapid expansion of the mobile platform, including privacy, patent and copyright, behavioural and smartphone tracking, data quality, due process, and quality of life.
- Social graph

- Social marketing
- Social search
- Social CRM
- Consumerization of IT and BYOD
- Mobile device management
- Mobile application development
- Responsive Web design
- Cyberlockers
- Expanded coverage of business analytics
- Machine learning
- Windows 8, Android, iOS, and Chrome operating systems
- Apps
- HTML5
- IPv6
- Microblogging
- Multitouch interface
- Siri
- Software-defined networking
- Tablet computers
- 3-D printing

What's New in MIS

Plenty. In fact, there is a whole new world of doing business using new technologies for managing and organizing. What makes the MIS field the most exciting area of study in schools of business is the continuous change in technology, management, and business processes. (Chapter 1 describes these changes in more detail.)

A continuing stream of information technology innovations is transforming the traditional business world. Examples include the emergence of cloud computing, the growth of a mobile digital business platform based on smartphones, tablets, and ultrabooks, and not least, the use of social networks by managers to achieve business objectives. Most of these changes have occurred in the last few years. These innovations are enabling entrepreneurs and innovative traditional firms to create new products and services, develop new business models, and transform the day-to-day conduct of business. In the process, some old businesses, even industries, are being destroyed, while new businesses are springing up.

For instance, the rapid growth of online content stores such as iTunes and Amazon, based on cloud storage services and driven by millions of consumers who prefer smartphones and tablet computers as the centre of their media world, has forever changed the older business models of distributing books, music, television, and movies on physical discs, such as CDs and DVDs. Cloud-based content delivered on the Internet is beginning to challenge the dominance of cable television networks for the delivery of television shows.

E-commerce is growing rapidly again following a deep recession, generating more than \$368 billion in revenues in 2012, and is estimated to grow to over \$552 billion in 2016. With approximately 28 million Canadians accessing the Internet with their smartphones, mobile commerce is growing by double digits each year. Amazon's revenues grew 41 percent in 2011, despite the recession, while offline retail grew by 5 percent. E-commerce is changing how firms design, produce, and deliver their products and services. E-commerce has reinvented itself again, disrupting the traditional marketing and advertising industry and putting major media and content firms in jeopardy. Facebook and other social networking sites such as YouTube, Twitter, and Tumblr, and new graphical social sites such as Pinterest, exemplify the new face of e-commerce in the 21st century. They sell services. When we

think of e-commerce, we tend to think of an online store selling physical products. While this iconic vision of e-commerce is still very powerful and the fastest growing form of retail sales, growing up alongside is a whole new value stream based on selling services, not goods. It is a services model of e-commerce. Information systems and technologies are the foundation of this new services-based e-commerce.

Likewise, the management of business firms has changed. With new mobile smartphones, high-speed Wi-Fi networks, and wireless laptop and tablet computers, remote salespeople on the road are only seconds away from their managers' questions and oversight. Managers on the move are in direct, continuous contact with their employees. The growth of enterprise-wide information systems with extraordinarily rich data means that managers no longer operate in a fog of confusion but instead have online, nearly instant, access to the really important information they need for accurate and timely decisions. In addition to their public uses on the Web, private social networks, wikis, and blogs are becoming important corporate tools for communication, collaboration, and information sharing.

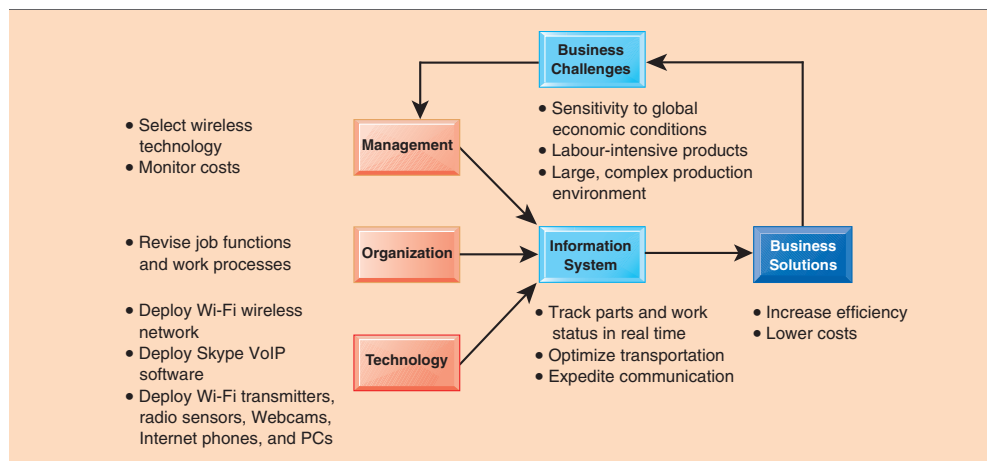
The Seventh Canadian Edition: The Comprehensive Solution for the MIS Curriculum

Since its inception, this text has helped to define the MIS course around the globe and, for the last 14 years, in Canada. This edition continues to be authoritative but is also more customizable, flexible, and geared to meeting the needs of different colleges, universities, and individual instructors. This book is now part of a complete learning package that includes the core text and an extensive offering of supplemental materials on the Web.

The core text consists of 15 chapters with Hands-on MIS Projects covering essential topics in MIS. The Companion Website provides more in-depth coverage of chapter topics, career resources, supplementary chapter material, as well the data files for the Hands-on Projects from the text. For students and instructors who want to go deeper into selected topics, there are more than 40 online Learning Tracks that cover a variety of MIS topics in greater depth. [[CONFIRM VIDEO CASES]]

The CORE Text

The core text provides an overview of fundamental MIS concepts using an integrated framework for describing and analyzing information systems. This framework shows information systems composed of management, organization, and technology elements; this is reinforced in student projects and case studies.



A diagram accompanying each chapter-opening case graphically illustrates how management, organization, and technology elements work together to create an information system solution to the business challenges discussed in the case.

Chapter Organization Each chapter contains the following elements:

- A chapter-opening case describing a real-world organization to establish the theme and importance of the chapter
- A diagram analyzing the opening case in terms of the management, organization, and technology model used throughout the text
- A series of learning objectives
- Two “Window on” features with case study questions
- A Learning Tracks Module with supplementary material on the Companion Website
- A Review Summary section keyed to the learning objectives
- A list of key terms that students can use to review concepts
- Review questions for students to test their comprehension of chapter material
- Discussion questions raised by the broader themes of the chapter
- A series of Hands-on MIS Projects consisting of two Management Decision Problems, a hands-on application software project, and a project to develop Internet skills
- A Collaboration and Teamwork project to develop teamwork and presentation skills, with options for using open source collaboration tools
- A chapter-ending case study for students to learn about how real business firms use information systems and to apply chapter concepts

Key features

We have enhanced the text to make it more interactive, cutting-edge, and appealing to both students and instructors. The features and learning tools are described in the following sections.

Business-Driven with Real-World Business Cases and Examples The text helps students see the direct connection between information systems and business performance. It describes the main business objectives driving the use of information systems and technologies in corporations all over the world: operational excellence; new products and services; customer and supplier intimacy; improved decision making; competitive advantage; and survival. In-text examples and case studies show students how specific companies use information systems to achieve these objectives.

We use current examples from business and public organizations throughout the text to illustrate the important concepts in each chapter. All the case studies describe companies or organizations that are familiar to students, such as Canadian Tire, Starbucks, Google, Groupon, Facebook, The Canadian Wheat Board, Amazon, Walmart, L’Oreal, and Procter & Gamble.

Interactivity There is no better way to learn about MIS than by doing MIS. We provide different kinds of hands-on projects where students can work with real-world business scenarios and data and learn firsthand what MIS is all about. These projects heighten student involvement in this exciting subject.

- **Video Cases.** Students can watch short videos online, either in-class or at home or work, and then apply the concepts of the book to the analysis of the video. There are over 30 videos that explain how business firms and managers are using information systems, describe new management practices, and explore concepts discussed in the chapter. Each video case consists of a video about a real-world company, a background text case, and case study questions. These video cases enhance students’ understanding of MIS topics and the relevance of MIS to the business world. In addition, there are many Instructional Videos that describe developments and concepts in MIS keyed to respective chapters. In addition to the cases, a list of relevant YouTube videos is available on the Companion Website. [[TO BE UPDATED]]

- **“Window On” features.** Two short cases in each chapter have been designed to be used in the classroom (or on Internet discussion boards) to stimulate student interest and active learning. Each Window on Management, Window on Technology, and Window on Organizations concludes with case study questions which provide topics for class discussion, Internet discussion, or written assignments.

WINDOW ON MANAGEMENT

Should you Use your Iphone for Work?

Look around. On the street, at restaurants, sports events, and stores, you will find many people using their smartphones. And many people are starting to use these devices on the job as well. According to a Juniper Research report, the number of employees who use personal devices at work will increase to 350 million by 2014. About 150 million people use their own mobile phones and tablets at the workplace today. Forty-one percent of Canadians used smartphones in 2011, compared to twenty-eight percent worldwide. Interestingly, the largest trend in the Canadian market was in young men between the ages of 22 and 30.

If almost everyone has a personal smartphone, why not use it for work? Employees using their own smartphones permit companies to enjoy all of the same benefits of a mobile workforce without spending their own money on these devices, but IT departments need to overcome several logistical hurdles to make that vision a reality. Using personal devices for business poses difficult problems for companies, including security, inventory management, support, integrating mobile devices into pre-existing IT functions and systems, and measuring

pared companies, keeping track of who gets access to what data can be a nightmare. In addition, firms need to specify what corporate uses the individual may use on the phone and when the company will or will not reimburse employees for corporate use. In addition, employee privacy is an issue that must be considered (see Chapter 4). Establishing corporate policies governing smartphone use is a necessity for companies today.

With the variety of phones and operating systems available, providing adequate technical support for every employee can be difficult. When employees are not able to access critical data or encounter other problems with their mobile devices, they need assistance from the information systems department. Companies that rely on desktop computers tend to have many of the same computers with the same specs and operating systems, making technical support much easier. Mobility introduces a new layer of variety and complexity to technical support that companies need to be prepared to handle.

A firm’s software development teams can benefit from having one person specifically focused on ensuring that new

Each chapter contains two Window On boxes focused on management, organizations, or technology using real-world companies to illustrate chapter concepts and issues.

- **Hands-on MIS Projects.** Every chapter concludes with a Hands-on MIS Projects section containing three types of projects: two Management Decision Problems, a hands-on application software exercise using Microsoft Excel, Access, or Web page and blog creation tools, and a project that develops Internet business skills. The Dirt Bikes running case is included with the Instructor’s Resource Manual and can be used for additional hands-on projects for each chapter.

Hands-On MIS Projects

The projects in this section give you hands-on experience in developing solutions for managing IT infrastructures and IT outsourcing, using spreadsheet software to evaluate alternative desktop systems, and using Web research to budget for a sales conference.

Management Decision Problems

1. The University of Guelph Medical Centre (UGMC), a fictitious organization, relies on information systems to operate 19 hospitals, a network of other care sites, and international and commercial ventures. Demand for additional servers and storage technology is growing by 20 percent each year. UGMC sets up a separate server for every application, and its servers and other computers are running a number of different operating systems, including several versions of Unix and Windows. UGMC is managing technologies from many different vendors, including Hewlett-Packard (HP), Sun Microsystems, Microsoft, and IBM. Assess the impact of this situation on business performance. What factors and management decisions must be considered when

of global airline traffic. To remain competitive, the airline must find ways to keep costs low while providing a high level of customer service. Qantas had a 30-year-old data centre, and management had to decide whether to replace its IT infrastructure with newer technology or outsource it. What factors should be considered by Qantas management when deciding whether to outsource? If Qantas decides to outsource, list and describe points that should be addressed in a service level agreement.

Improving Decision Making: Using a Spreadsheet to Evaluate Hardware and Software Options

Software skills: Spreadsheet formulas

Business skills: Technology pricing

In this exercise, you will use spreadsheet software to calculate the cost of desktop systems, printers, and software.

Each chapter features a project to develop Internet skills for accessing information, conducting research, and performing online calculations and analysis.

- **Collaboration and Teamwork Projects.** Each chapter includes a collaborative project on the Companion Website that encourages students working in teams to use Google Sites, Google Docs, and other open-source collaboration tools. The first team project in Chapter 1 asks students to build a collaborative Google site.

Assessment and AACSB Assessment Guidelines The Association to Advance Collegiate Schools of Business (AACSB) is a not-for-profit corporation of educational institutions, corporations, and other organizations that seek to improve business education primarily by accrediting university business programs. As a part of its accreditation activities, the AACSB has developed an Assurance of Learning Program designed to ensure that schools do in fact teach students what they promise. Schools are required to state a clear mission, develop a coherent business program, identify student learning objectives, and then prove that students do in fact achieve the objectives.

We have attempted in this book to support AACSB efforts to encourage assessment-based education. The front end papers of this edition identify student learning objectives and anticipated outcomes for our Hands-on MIS projects. Because each school is different and may have different missions and learning objectives, no single document can satisfy all situations. The authors will provide custom advice on how to use this text in their colleges with different missions and assessment needs. Please e-mail the authors, or contact your local Pearson Canada representative for contact information.

For more information on the AACSB Assurance of Learning Program and how this text supports assessment-based learning, please visit the Web site for this book.

Customization and Flexibility: New Learning Track Modules Our Learning Tracks feature gives instructors the flexibility to provide in-depth coverage of the topics they choose. There are more than 40 Learning Tracks available to instructors and students. A Learning Tracks section at the end of each chapter directs students to short essays or additional chapters on the Companion Website. This supplementary content takes students deeper into MIS topics, concepts, and debates; reviews basic technology concepts in hardware, software, database design, telecommunications, and other areas; and provide additional hands-on software instruction. The 7th Canadian Edition includes new Learning Tracks on E-Commerce Payment Systems, LAN Topologies, and the Occupational and Career Outlook for Information Systems Majors 2014–2018.

Student Learning-Focused

Student learning objectives are organized around a set of study questions to focus student attention. Each chapter concludes with a review summary and review questions organized around these study questions.

The Companion Website

The Companion Website contains study tools that will help students learn the key concepts of MIS. For each chapter, students will find a Self-Study Quiz, Glossary Flashcards to help them study key terms, a review summary, and a student version of the PowerPoint slides. The Hands-On MIS data files and the Learning Track Modules are also available, along with video links that will help bring MIS to life, and other valuable resources. Visit the Companion Website at www.pearsoncanada.ca/laudon.

Career Resources

Also available on the Companion Website, the Career Resources package includes a job-hunting guide, tips for writing résumés and cover letters, interview advice and instructions for building a Digital Portfolio to demonstrate the business knowledge, application software proficiency, and Internet skills you acquired from using this text. The portfolio can be included in a resume or job application or used as a learning assessment tool for instructors.

Instructional Supplements

Most of these instructor resources are available for download from a password-protected section of Pearson Canada's online catalogue (www.pearsoncanada.ca/highered). Navigate to your book's catalogue page to view a list of those supplements that are available. See your local sales representative for details and access.

Instructor's Resource Manual The Instructor's Resource Manual features not only answers to review, discussion, case study, and group project questions, but also in-depth lecture outlines, teaching objectives, key terms, teaching suggestions, and Internet resources.

MyTest MyTest from Pearson Canada is a powerful assessment generation program that helps instructors easily create and print quizzes, tests, and exams, as well as homework or practice handouts. Questions and tests can all be authored online, allowing instructors ultimate flexibility and the ability to efficiently manage assessments at anytime, from anywhere. MyTest for *Management Information Systems* is a comprehensive collection of true-false, multiple-choice, fill-in-the-blank, and essay questions. The questions are rated by difficulty level, and the answers are referenced by section. The test bank also contains questions tagged to the AACSB learning standards. The authors have worked closely with skilled test item writers to ensure that higher level cognitive skills are tested. The test bank includes multiple-choice questions on content but also includes many questions that require analysis, synthesis, and evaluation skills. All the MyTest questions are also available in Microsoft Word format (see below).

Test Item File The Test Item File contains all of the questions from the MyTest (see above) in a convenient Word format.

PowerPoint Slides A comprehensive collection of more than five hundred PowerPoint slides is available for use in lectures. Each slide is annotated with teaching suggestions for asking students questions, developing in-class lists that illustrate key concepts, and recommending other firms as examples in addition to those provided in the text. The annotations are like an Instructor's Manual built into the slides and make it easier to teach the course effectively.

Image Library The Image Library can help instructors create vibrant lecture presentations. Almost every figure in the text is provided and organized by chapter for convenience. These files can be imported easily into PowerPoint to create new presentations or to add to existing ones.

Technology Specialists Pearson's Technology Specialists work with faculty and campus course designers to ensure that Pearson technology products, assessment tools, and online course materials are tailored to meet your specific needs. This highly qualified team is dedicated to helping schools take full advantage of a wide range of educational resources, by assisting in the integration of a variety of instructional materials and media formats. Your local Pearson Education sales representative can provide you with more details on this service program.

CourseSmart for Instructors CourseSmart goes beyond traditional expectations—providing instant, online access to the textbooks and course materials you need at a lower cost for students. And even as students save money, you can save time and hassle with a digital eTextbook that allows you to search for the most relevant content at the very moment you need it. Whether it is evaluating textbooks or creating lecture notes to help students with difficult concepts, CourseSmart can make life a little easier. See how when you visit www.coursesmart.com/instructors.

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dedicated Pearson Custom editor to create your ideal text—publishing your own original content or mixing and matching Pearson content. Contact your local Pearson Representative to get started.

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