

experiencing

MIS

fourth canadian edition



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EXPERIENCING

MIS

FOURTH CANADIAN EDITION

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PEARSON

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To C.J., Carter, and Charlotte. DK

This book is dedicated to my wife Kathy, my children Christina and Matthew, and all of the students, teachers, reviewers, and colleagues who helped us make a better book. AG

This book is dedicated to those who continue to teach me great things. My partner, Susanne, our children, my parents, colleagues, and, of course, my students, who never fail to astound and inspire me. PT

About the Authors



David Kroenke

David Kroenke has many years of teaching experience at Colorado State University, Seattle University, and the University of Washington. He has led dozens of seminars to college professors on the teaching of information systems and technology; in 1991, the International Association of Information Systems named him Computer Educator of the Year.

David worked for the U.S. Air Force and Boeing Computer Services. He was a principal in the startup of three companies. He also was vice-president of product marketing and development for the Microrim Corporation and was chief of technologies for the database division of Wall Data, Inc. He is the father of the semantic object data model. David's consulting clients have included IBM, Microsoft, and Computer Sciences Corporations, as well as numerous smaller companies. Recently, David has focused on using information systems for teaching collaboration.

His text *Database Processing* was first published in 1977 and was released in its twelfth edition in 2011. He has published many other textbooks, including *Database Concepts*, fifth edition (2011), and *Using MIS*, fourth edition (2011). David lives in Seattle. He is married and has two children and three grandchildren. He enjoys wood-working, making both furniture and small sailboats.



Andrew Gemino

Andrew Gemino has taught at Simon Fraser University (SFU) for over 15 years. He is an accomplished teacher who received the SFU Teaching Excellence Award, the TD Canada Trust Distinguished Teaching Award with the Beedie School of Business, and the MBA Teaching Excellence Award at the University of British Columbia.

Andrew is a past President of the Special Interest Group on Systems Analysis and Design in the Association of Information Systems. He teaches and consults in IT project management and his research is featured at www.PMPerspectives.org. He co-founded a software company that specialized in professional sports scouting and scheduling/payroll systems for sports and entertainment companies.

Andrew's research, has been funded through grants from the National Sciences and Engineering Research Council (NSERC) and the Social Sciences and Humanities Research Council (SSHRC). His work has been published in *Communications of the ACM*, *Journal of MIS*, *European Journal of IS*, *Data and Knowledge Engineering*, *Requirements Engineering*, and *Data Mining and Knowledge Discovery*. He lives in Coquitlam, B.C., with his wife and two children.

Peter Tingling

Peter Tingling has worked in information-intensive industries for more than 30 years. He has held senior line and staff positions at a variety of top-tier firms, and has provided consultations to government, startup, and Fortune 500 companies across North America.

Peter's research interest is in decision process and analysis and his work has involved organizations that run the range from banks to professional sports organizations. Peter's research has been published in academic and practitioner journals and has often been referenced in the public media.

Joining academia because he was interested in "why," Peter considers himself an eclectic reader, although he prefers biographies. His favourite authors are Feynman, Halberstam, Lewis, and Ferguson. Peter is the founder and chief executive officer of Octothorpe Software Corporation and now lives in Vancouver with his wife and four children.



Letter to Students

Dear Student:

You have chosen to begin a career as a business professional by majoring in a business discipline. If your experience is anything like that of the authors of this Canadian edition, you will not regret your choice. Working in business leads to fulfilling, enjoyable experiences and relationships with interesting, quality people.

The overall purpose of this book is to help you prepare for success in your business career, and in today's business environment success will most likely come through your ability to innovate. Canadian businesses face increasing pressure to improve the effectiveness and efficiency with which products and services are delivered to global customers. This innovation will require a workforce with new skills and an improved understanding of the role of information systems in business. In writing the book, we kept in mind three goals:

1. To explain the impact of information systems on organizational issues and how you can apply it address problems and make better decisions in business
2. To show you how to increase your unique value (and marketability) in business by applying knowledge of information systems
3. To describe, in the context of management information systems (MIS), how you can become a better business professional

Note that the emphasis is on you. It is up to you to prepare yourself. No particular book, no course, no professor, no TA can do it for you. However, many people have worked hard to structure this book, so you can maximize the benefit from your study time.

To help you achieve your goals, we have updated the content to ensure that it is as current as possible. Beyond the new sections added to the third edition (Web 2.0, Social Media, Smartphones, etc.), we have updated specific technologies such as cloud computing, social trends such as showrooming, and the business environment such as Blackberry.

We have made minor updates to the opening cases for each chapter and the four rich running cases that run through each group of three chapters. In addition, at the end of every third chapter, there are questions to promote analysis of the running case and collaborative questions that can be used to solidify your understanding of the running case and the material presented in each chapter.

We have retained the five Application Extensions, one for database design and one each on MS Excel, MS Access, MS Visio, and MS Project. We believe that these application extensions provide some basic skills for personal productivity software that will be important for future business professionals. The introduction that each of these application extensions provides is intended to make you aware of the capabilities of each application and enable you to explore the further power these applications offer.

In addition to content changes, the book contains five unique features that provide interesting opportunities for learning. First, we have organized the material in every chapter around a set of questions. Use these questions to manage your study time. Read until you can answer the questions.

Second, Collaborative Exercises have been included at the end of every chapter. These new assignments are designed to be accomplished in groups and are meant to help to build your teamwork skills and provide a larger opportunity for developing your interpersonal communication skills. The abilities to communicate and work in a team are critical skills for business professionals.

Third, short MIS in Use cases are included in each chapter, and we have added a number of new cases to this edition. These cases provide real-life examples of how organizations deal with information systems issues. You will also find a Case Study near the end of each chapter for additional insight.

Fourth, we have included a profile of a young and successful business student who has gone on to a professional career in information systems at the beginning of each part. These profiles demonstrate how important knowledge of information systems can be in developing your own career.

Finally, the two-page What Do YOU Think? feature found at the end of each chapter provides stimulating ideas for class discussion and individual thinking. The exercises often include ethical issues and ask you to develop opinions about important issues in information systems. If possible, discuss the questions in these guides with other people. Such discussions will give you a chance to develop your own opinions about important topics in information systems.

Like all worthwhile endeavours, this course takes work. That is just the way it is. No sustainable competitive advantage can ever result from something that is quickly and easily learned and no one can succeed in business without sustained focus, attention, desire, effort, and hard work. It will not always be easy, and it will not always be fun. On the other hand, you will learn concepts, skills, and behaviours that will serve you well throughout your business career.

We wish you, as an emerging business professional, the very best success!

Sincerely,

David Kroenke
Seattle, Washington

Andrew Gemino
Peter Tingling
Vancouver, British Columbia

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Preface

We undertook the development of the fourth Canadian edition of *Experiencing MIS* because we believe that the skills inherent in the study of information systems are important to the innovation and productivity of every Canadian industry. We are not alone in this belief. The Canadian Coalition for Tomorrow's ICT Skills (www.ccict.ca), a collection of companies and educational institutions, has recognized the growing innovation gap and the challenge of developing the skills for tomorrow's workplace in students today. The foundations for these skills are firmly rooted in studies of both information technology and business. We view this course as a gateway to these topics for many students. Our hope in developing this edition is to interest students in furthering their knowledge in the combined study of business and technology.

In the coming years, technologies will radically change how people relate to one another. Organizations will become more virtual, and people will work with other people they may never meet face to face. Many jobs that are here today will be eliminated, and new jobs will take their place. All of this change will be driven by people who experience MIS. So, start your experience today!

Key Updates to This Edition

We have revised this edition of *Experiencing MIS* to include the latest innovations in the field of information systems. We have also added unique new features and application information to help students interact with and apply the material. Key updates to the fourth Canadian edition include the following:

- New and updated material on Database Design
- New thorough coverage on how to use Microsoft Access 2013
- New useful guide covering an Introduction to Microsoft Excel 2013
- New discussion regarding *Big Data* and the controversies about this new term
- Expanded coverage of ereaders and tablets and their influence on information sharing
- Expanded and up-to-date discussion on cloud computing

In addition, for those instructors looking for a more detailed discussion of enterprise systems, we have coordinated the material in this third Canadian edition to fit neatly with Chapters 7 and 8 from the book *Processes, Systems and Information: An Introduction to MIS*. These additional resources focus on procurement (Chapter 7) and sales (Chapter 8) as detailed in SAP enterprise application. These chapters are available on the MyMISLab platform.

The features in this book are designed to encourage students to take an active role in developing their own understanding of MIS and how it relates to their business career. We believe that when we experience MIS from our own personal perspective, we realize the important role that information systems play in our lives now and in our future careers.

Features

Experiencing MIS is the theme of this book and student engagement is the ultimate objective. We have designed the book to engage students through a variety of features and to provide opportunities for students to ground their knowledge in practical exercises and real-life examples.



Student Profiles

Profiles of young, successful students from across Canada that illustrate why they believe that having knowledge of MIS is important and how they have applied it toward their everyday and longer-term goals open each part.

Running Cases

The four parts in the book each begin with a Running Case Introduction to help introduce that section. Following this Running Case Introduction, the chapter opens with a Running Case providing rich examples that run through each group of three chapters. The running cases provide an example that can be used in class and that students can relate to. Each part ends with a Running Case Assignment to promote analysis and collaborative questions that can be used to solidify understanding of the running case and the material presented in each chapter.

Chapter Study Questions

We made a choice to organize all of our content around questions. Each chapter typically focuses on seven or eight questions that guide students through the content. Using questions helps engage students in a search for relevant knowledge and challenges students to think about the material rather than memorize sections and lists.

Active Review

The chapter study questions are supported by Active Review questions near the end of each chapter. These questions are more detailed and offer an opportunity for students to see how much they have learned. If students are unable to answer the Active Review questions, they can turn back and review the appropriate section earlier in the chapter. This section reinforces learning and provides feedback to students so they can better target their study.

MIS in Use and Case Studies

Each chapter includes an MIS in Use mini-case that provides a real-life example of the questions discussed in the chapter. Each MIS in Use mini-case also comes with a set of questions that can be used in the lecture or as hand-in assignments. The mini-cases and their questions provide an additional opportunity to highlight important issues and create student engagement with the material. A Case Study at the end of each chapter provides additional real-world examples. We have worked to provide a wide range of case studies so that students are aware of the differences in MIS across organizations.

Using Your Knowledge

At the end of each chapter, we have included a number of Using Your Knowledge questions. These questions provide opportunities for written assignments or discussion questions that often integrate the various issues raised in the chapter. The Using Your Knowledge questions provide another mechanism for engaging students in developing their own ideas about what MIS means to them.

What Do YOU Think?

These exercises are a unique feature of *Experiencing MIS* because they are designed to encourage students to develop their personal perspectives about issues in MIS. Several of the exercises (Chapters 3, 8, 9, and 10) focus on ethical issues, but a variety of issues is covered. These exercises can be used in class for discussion or outside the classroom as personal assignments. The answers to these exercises are not hard and fast—they require students to develop their own opinions. This forging of opinions creates further

engagement with the material. We encourage instructors to find ways to incorporate these exercises in their classes so that students can experience MIS in a personal way.

Collaborative Exercises

Students often comment that they learn from group experiences. The Collaborative Exercises at the end of each chapter provide opportunities for students to interact and discuss topics related to chapter content. These assignments allow students to engage with the material in a group format designed to stimulate discussion and feedback that supports individual learning.

Application Extensions

We have included five Application Extensions that focus on practical introductory skills for MS Visio, MS Excel, Database Design, MS Access, and MS Project. The Application Extensions on MS Excel and MS Project reflect the personal productivity skills that are now expected of graduating students in any business career.

We believe that the key to creating an effective experience for students in this course is to provide opportunities for them to engage with the material and to develop their own personal perspective on MIS. The features provided in this book are designed to support this development, while providing a stimulating introduction to the world of MIS. We believe this book effectively presents information that students will need to be successful in their careers. We trust that this book demonstrates that the field of MIS remains as important today as it was in the past and that our success in developing students with knowledge of MIS will play a critical role in our future economic development.

Additional Chapters on SAP Enterprise Systems

Through Pearson Canada, we have the unique opportunity to coordinate the material in this fourth Canadian edition to fit neatly with Chapters 7 and 8 from the book *Processes, Systems, and Information: An Introduction to MIS* by Kroenke and McKinney. Instructors who would like to provide students with more in-depth knowledge of how SAP treats the procurement and sales processes are encouraged to consider these additional resources. We have adjusted Chapters 1 through 7 in the Canadian edition so that the definitions and business process approach provide a seamless transition to these additional resources. These additional chapters are available on MyMISLab.

Supplements

The fourth Canadian edition of *Experiencing MIS* is accompanied by a range of supplementary material available to both instructors and students.

Teaching Tools for Instructors

The following instructor supplements are available for downloading 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

This valuable resource features numerous teaching tools to help instructors make the most of the textbook in the classroom. Chapter objectives, chapter outlines, and answers to the questions are provided for each chapter.

Computerized Test Bank

Pearson's computerized test banks allow instructors to filter and select questions to create quizzes, tests or homework. Instructors can revise questions or add their own, and may be able to choose print or online options. These questions are also available in Microsoft Word format.

Test Item File

This test bank includes all the questions from the computerized test bank in Microsoft Word format.

PowerPoint® Presentations

These presentations combine lecture notes with images from the textbook. The lecture presentations for each chapter can be viewed electronically in the classroom or printed as black-and-white transparency masters.

Image Library

This library contains .gif or .jpg versions of figures from the textbook.

Learning Solutions Managers

Pearson's Learning Solutions Managers 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 Canada sales representative can provide you with more details on this service program.

MyMISLab

MyMISLab

MyMISLab for Kroenke/Gemino/Tingling's *Experiencing MIS*, Fourth Canadian Edition, is a state-of-the-art learning management system complete with diagnostic tests with customized study plans, student remediation, and media resources such as case studies, PowerPoints, simulations, videos, and an eText. MyMISLab is the most effective way to manage and deliver your course and help your students master the material.

MyMISLab delivers proven results in helping individual students succeed. It provides engaging experiences that personalize, stimulate, and measure learning for each student. And, it comes from a trusted partner with educational expertise and an eye on the future. MyMISLab can be used by itself or linked to any learning management system. To learn more about how MyMISLab combines proven learning applications with powerful assessment, visit www.pearsonmylabandmastering.com.

CourseSmart

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.

CourseSmart for Students

CourseSmart goes beyond traditional expectations—providing instant, online access to the textbooks and course materials you need at a significant savings over the printed book. With instant access from any computer and the ability to search your text, you will find the content you need quickly, no matter where you are. And with online tools, such as highlighting and note-taking, you can save time and study efficiently. See all the benefits at www.coursesmart.com/students.

Pearson Custom Library

For enrollments of at least 25 students, you can create your own textbook by choosing the chapters that best suit your own course needs. To begin building your custom text, visit www.pearsoncustomlibrary.com. You may also work with a 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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Most importantly, we would like to thank our families for providing us with the love, patience, and time necessary to create this fourth Canadian edition.

Andrew Gemino
Peter Tingling

EXPERIENCING

MIS

“Great success is often realized only after you have walked through the bridge of risk and failure.”



In Claudia's Words

Claudia Li founded Shark Truth, a Vancouver-based grassroots non-profit organization that promotes awareness, education, and action on shark conservation. Although small in size and with limited resources, Shark Truth has had international impact, changed consumer and businesses culture, and saved thousands of sharks.

Shark fin soup is popularly served at wedding banquets for middle- to high-income Chinese families as a symbol of respect, status, and generosity. While holding to these values, Shark Truth changes the tradition by rebranding what is deemed “good” or “important” from our culture through our annual Happy Hearts Love Sharks wedding contest. Rather than eat sharks, we ask couples to pledge a Fin Free banquet for a chance to win a trip to swim with sharks. This simple change has diverted 22 000 bowls (and counting) of shark fin soup and saved the lives of 2200 sharks.

Whether starting a for-profit business, a nonprofit enterprise, or a social enterprise, entrepreneurs often face the same challenges: financial stability, finding the right people, and avoiding burn-out. Balancing perseverance and learning can be difficult. I often felt insecure about my skills, but I learned to ask for help by finding mentors and building a strong, diverse team.

When people ask me what Shark Truth does, I tell them we build community—it is not just about shark conservation. Our issue is shark finning, but our philosophy is to build community champions for long-term change. With species disappearing at alarming rates, and the devastating consequences of climate change and global inequality, the challenge for our generation is to empower leaders across all professions, ages, ethnicities, and genders.

Shark Truth uses social media to promote awareness and spread education on conservation issues. Tools such as Facebook and Twitter allow us to build a growing community, and platforms such as Google Apps enable us to virtually connect all our functions. Long-term success of a venture lies within its core values, which start with its people. Tools without the right people and values will ultimately fail. In spite (or because) of our limited budget, we use technology as a means to an end and connect with individuals and communities across cultures, generations, and geography.

I am reminded of the Chinese proverb: “One generation plants the trees; another gets the shade.” It really is our responsibility to preserve these legacies so that future generations will have a safe, healthy planet.



Claudia Li

The effects of information systems have been so large and so widespread that it is difficult to imagine an industry or organization that has not been affected. Whether we consider the largest for-profit corporations, the smallest sole proprietorship business, any level of government, or nonprofit agencies, the accelerating rate of technology adoption has enabled changes that are difficult to believe. Entire industries, such as publishing and distribution, photography, music, and news, have either fallen or been radically restructured, and newer organizations, such as Google, AirBnB, Twitter, Pinterest, and Facebook, have displaced giants in relatively short periods.

With this in mind, we can say with some certainty that having a foundational understanding of management information systems (MIS) and the key concepts of information technology are essential not only for a career in business but also to be an informed and knowledgeable member of society. Regardless of whether you plan to concentrate in accounting, finance, marketing, human resources, or international business, and irrespective of whether your personal goal is to create significant wealth or make a positive impact on society (or perhaps both), the purpose of Part 1 of this textbook is to demonstrate why a basic understanding of MIS and technology are important to every professional today.

Running Case Introduction

At times, MIS can appear abstract and hard to understand. To help address this, we begin each section of the book with a case that runs for three chapters. We have also included a new feature, an integrative running case assignment, which is included at the end of every three chapters. The integrative case assignment helps tie together all the issues across the three chapters and provides a way to explore the issues raised in the chapters in more depth.

In developing the cases, we have selected situations that you are likely to be familiar with. We then use these concepts to encourage broader and deeper understanding of more complicated issues and ideas. Our first “running case” begins with Josie, a young student who has been asked by his grandparents to offer some advice about their coffee shop.

Started by Josie’s grandfather in 1980, Café Italiano is located on Main Street and has had a small but steady following who want more than the traditional mass-market coffee. Josie grew up around Café Italiano, visiting his grandparents when he was younger and, as a teenager, working there during the summers and part time on weekends. He is familiar with almost all aspects of the business, including clean-up, serving customers, and roasting the shop’s custom blend of flavours.

Café Italiano is being challenged by a franchise coffee shop that Josie’s grandparents expect will soon open across the street. The case begins by considering how Josie can evaluate the effect of technology on the business and if there are opportunities that the family can consider. Josie has noticed that coffee shops have gotten much more sophisticated and that the business appears to be changing. More and more stores offer services such as internet access, have websites, and keep track of customers using computerized systems and social network likes. Last summer, while visiting a friend in another town, Josie was surprised to see a coffee shop on a few social networks. His friend had asked him if he wanted to like the shop on Facebook, sign up for the Twitter feed, and even if he wanted to check in on Foursquare.

This case will run throughout Part I. Read more at the beginning of each chapter and then visit MyMISLab online to access the data files to complete the running case questions at the end of Part I.

MyMISLab

1

Information Systems and You



Running Case: Café Italiano

Josie is quite familiar with Café Italiano. He has worked there for several years and helped out when his grandparents were on vacation. The café itself is set up in the European style with about half a dozen small tables and couches inside and four small tables outside. Most of the customers are regulars, who drop by in small groups to chat for 20 to 30 minutes. Café Italiano is aimed at the higher-quality coffee drinker who wants a coffee house experience rather than a quick cup. The café sells a wide variety of coffee and tea, and Josie's grandparents try to manage inventory carefully. The café also sells a variety of small snacks, such as biscotti, but has avoided donuts and other sweet treats. Besides his grandparents, the café has between six and eight employees (mainly students) and has very little technology aside from the grinding and espresso machines. The cash registers were new in 2012 and so are computer ready, but the café is not yet using all the features.

Getting ready for his weekly business class, Josie was thinking about the changes that the new coffee shop would bring. He knew that this situation would require careful consideration. Café Italiano may sell a good, but it also provides a service, a relaxing experience that could not be easily duplicated at home. He made a list of the things that Café Italiano *could* do, and then he wondered what things the café *ought to* do. Should the café start off small with a basic website, or was that even necessary? Should he register the domain "cafeitaliano.com" (or .ca) just in case? Did the café need to provide Wi-Fi access? Should he set up a page on Facebook and ask customers to like it? Should he start a Twitter feed?

Was Pinterest something that the café could use for marketing? His grandparents were supportive of making changes. What Josie needed was a strategy. He thought he should first estimate the benefits, costs, and effort required for each idea and then prioritize them. One thing for sure, having a plan would help him focus and increase the chances of success.



Sergey Nivens/Shutterstock



Study Questions

- Q1** What is an information system?
- Q2** What is MIS?
- Q3** How does an IS differ from IT?
- Q4** How important are information systems to our economy?
- Q5** How do successful business professionals use information systems?
- Q6** What is the shape of things to come?
- Q7** What is this course about?



Go to MyMISLab to watch a video about what is an information system

Q1 What Is an Information System?

A *system* is a group of components that interact to achieve some purpose. As you might guess, an **information system (IS)** is a group of components that interact to produce information. However, while true, this definition raises some questions: Do all information systems involve technology, and what are the interacting components? As it turns out, these seemingly simple questions only remain simple if we have common or colloquial definitions for *information* and *technology*; for now, if we consider that most people think of technology as involving computers (at least when thinking about information systems and information technology) and consider information something that reduces uncertainty, then we can confidently say that not all information systems require computerization. For example, a public library organized with the Dewey Decimal System or a calendar posted outside a conference room that is used to organize bookings can both be considered information systems, even though they may not be computerized.

In this text, we will give much clearer definitions for *information* and provide a structure in which to discuss technology. But for now, if we accept the common definitions, we can then describe a computerized information system (which we will now simply call an *Information System*, since that is the focus of this course) as illustrated in Figure 1-1. In this figure, we show that all information systems, from the simplest (someone using a smartphone to find out when the next bus arrives) through to the most complicated (a high-technology Customer Relationship Management (CRM) system that uses algorithms and databases to predict customer behaviours), comprise a **five-component framework of computer hardware, software, data, procedures, and people**.

These five components are often linked together through networks that leverage the power of connectivity to tie software, hardware, and data together to make information more accessible and powerful. Social networks, such as Facebook and LinkedIn, and systems, such as Alibaba, Pinterest, and Groupon, use the internet to eliminate the effects of distance and to allow people to remain connected and interact in new ways.

You may already be familiar with the term *hardware*. Hardware has sometimes been used incorrectly to refer to all the tangible or physical aspects of a computer system. More correctly, hardware refers to the electronic components and associated gadgetry that constitute a computer system. CDs for example, do not technically qualify as hardware. *Software*, which has occasionally been used to refer to all the intangible or non-hardware components of a system, is nowadays more correctly used to refer only to programs (or **applications**) that run, or operate, on computer systems. That is how we use these terms throughout this book. *Data* are the basic building blocks of information, such as facts and observations. *Procedures* are the instructions or processes that you follow to achieve your desired objective; these can be formal and documented policies that are extensive and written down or less detailed, informal instructions. *People* are the actors who want to achieve a particular outcome by interacting with the system.

Let us look at what is hopefully a familiar example—the support system that your university or college uses to support active learning (perhaps even in this course), such as Moodle, Canvas, or Desire2Learn. Like all systems, it has all five components illustrated in Figure 1-1, and, like many, it makes extensive use of networking technology. The *hardware* of the system includes the tangible or physical devices used to access the system, such as personal computers or other devices (e.g., a tablet or smartphone). It is important to note that although most modern computer systems are designed to be used by multiple types of devices, there are still cases

**Figure 1-1**

Five Components of an Information System

where specific types of hardware are required. The *software* of the system includes the stored set of instructions that run on your device, as well as the specific program that your university has licensed to provide the service. *Data* for the system may be stored on specialized computers called *servers*, which, through the power of networking, can be located almost anywhere in the world. Data for this system include such things as student identification numbers, enrollment dates, and answers to test questions. The system *procedures* are the steps that you follow to achieve your goal and include how you log on to, or access, the system and how you save or submit your work. You are one of the *people* in this system, but so are the IS professionals who built and maintain the site. An important point to learn in this course is that people are often the most critical part of an information system. Information systems are not just computers and data. Although we have not yet covered the communications aspects of modern information systems, in many cases, not only must systems be available to thousands, if not millions, of people at all hours of the day, but also they may use varying devices and be located in different places. Tying them all together is a network infrastructure.

Q2 What Is MIS?

Management information systems, or **MIS**, comprise the development and use of information systems that help organizations achieve their goals and objectives. The definition of MIS has three key elements: *development and use*, *information systems*, and *goals and objectives*. We have just discussed information systems. Now, let us consider development and use, followed by goals and objectives.

Development and Use of Information Systems

Information systems do not magically appear. Instead, they are designed and created by business analysts and systems designers at the request of senior managers or entrepreneurs in order to solve a particular problem or meet a perceived need. With this in mind, you might be thinking, “Wait a minute. I am a finance (or accounting, or marketing) major, not an information systems major. I do not need to know how to put together information systems” or (as we have been told by students in our classes), “I know what I want, I can get my staff to do it.”

This could be a sign that you are headed for trouble. Consider, for example, that you are driving to work and you hear a strange noise from your car or you remember that it is due for some maintenance work. Imagine how an unscrupulous or perhaps mistaken person could talk you into a major engine repair, even if all you needed was air in your tires or an oil change. Think about how knowing even just a little about the basic operation of the car would enable you to have a much more insightful discussion with your mechanic, get better performance, and avoid being overcharged. If you really know nothing, then you are like a lamb headed for fleecing. Throughout your career, in whatever field you choose, you will need new information systems. To have an information system that meets your needs, you need to take an *active role* in that system’s development. Without active involvement on your part, only good luck can enable the new system to meet your needs.

Throughout this book we will discuss your role in acquiring information systems. In addition, Chapter 10 is specifically focused on this important topic. As you

Watch

Go to MyMISLab to watch a video about what is MIS?

read this text and think about information systems, you will learn how to ask critical questions, such as “Where did that information come from?” “How was that system constructed?” and “What roles did the actual people who will use it play in its development?” Important consequences depend on your answers so, if you start asking these questions now, you will be better prepared to answer them as you take your place in society.

In addition to helping choose and implement information systems, you will have important roles to play in the *use* of information systems. Of course, you will need to learn how to employ the system to accomplish your goals. But you will also have other important functions. For example, when using corporate information systems, you may be responsible for protecting the security of the system and its data; in managing your own computer and system usage, you may need to back up data to protect yourself from losing important information. When the system fails (and most do at some point), you will have tasks to perform while the system is down, as well as to help restore the system quickly and correctly.

Achieving Business Goals and Objectives

The last part of the definition of MIS is that information systems exist to help organizations achieve their *goals and objectives*. This statement has many important implications. First, because all businesses are organizations but not all organizations are businesses, information systems are found in almost every type of enterprise, social,



Social Media: Changing the Relationship between Customers and Business

Social media connect people, and when people connect, they talk, share, and let friends know what they think about the world. When instant messaging (IM), web logs (blogs), wikis, video logs (Vlogs), podcasts, and social networking (SN) sites first became popular, many business organizations responded by simply ignoring them. From a pure accounting perspective, many SN

sites did not, and may never, make positive cash flows; as a result, it seemed that there were few good business reasons to consider using social media. Some organizations, therefore, allowed only limited access to IM and SN sites because they did not want their employees wasting time on these sites while at work. Some organizations even created policies that restrained employees from responding to blogs about the company.

It was not too long before companies learned that ignoring social media could be bad for business. For example, when musician Dave Carroll discovered that his guitar was damaged on a United Airlines flight, he responded by writing a protest song “United Breaks Guitars” and posted it to YouTube and iTunes where it became an immediate hit and public relations embarrassment for the airline. United Airlines, of course, is not alone. Governments and large organizations have had to learn to deal with the influence that connected individuals can bring to bear on issues such as Kony 2012 or the Arab Spring.

Some Examples of Using Social Media

As social media mature, organizations are formulating strategies that incorporate blogs, wikis, and SN sites

and nonprofit organization, as well as governments of all levels. Indeed, we believe it is easier to find an organization without a marketing system than to find one without an information system. (Consider, for example, the penal system. Although prisons do not generally run advertising campaigns, they still have computerized systems for keeping track of inmates.) More importantly, you are probably aware that organizations themselves do not *do* anything. Although corporations are legally considered to have many of the characteristics of humans, they are not truly living beings and, thus, need people to think and act on their behalf. It is the people within an organization or business who sell, buy, design, produce, finance, market, account, and manage. Information systems exist to help organizational actors achieve the goals and objectives of that organization.

In most cases, information systems are not developed for the sheer joy of exploring technology. They are not created to make the company more modern or so the company can claim to be “new-economy.” They are not created because the information systems department thinks they need to be created or because an executive thinks the company is “falling behind the technology curve.”

This may seem so obvious that you wonder why we mention it, but every day organizations acquire and develop information systems for the wrong reasons. Right now, somewhere in the world, a company is creating a website simply because they think “every other business has one,” rather than asking important questions such as “What is the purpose of the website?” “What is it going to do for us?” or “Are the costs of the website sufficiently offset by the benefits?”

into their business practices. For example, SCENE cards offered by Scotiabank and Cineplex have been used by Facebook (www.facebook.com/SCENE) to provide special offers and events that support the use of the cards. Another example is Molson in the Community (<http://blog.molson.com/community>), which provides a place for staff to share the work they do on behalf of Molson Canada in communities across the country. The site contains blogs and Vlogs about the staff’s volunteer work. The Big Wild (www.thebigwild.org) was founded by the Canadian Parks and Wilderness Society (CPAWS) and Mountain Equipment Co-op to allow people to share pictures and videos of wild spaces and to connect with others who are interested in preserving these spaces.

What About Small Business?

The examples above are all large organizations, but perhaps the most exciting thing about social media has been its impact on small businesses. Mabel’s Labels, a company based in Hamilton, Ontario, is a great example of how a small company can effectively use social media. Mabel’s Labels has a blog called The Mabelhood (www.blog.mabel.ca), a podcast series on parenting, a Facebook fan page, a Twitter account (mabelhood),

a photostream on Flickr, and a YouTube account. All these social media channels help Mabel’s Labels connect with customers and increase the size of the network familiar with their products. Social media are changing the way small businesses connect with their customers, and this is a message that businesses everywhere are listening to.

Questions

1. **Are the social media sites that Mabel’s Labels uses information systems?**
2. **What are the benefits and costs of Mabel’s Labels’ participation in various social media sites?**
3. **Can larger companies do the same social media marketing and promotion that Mabel’s Labels does? Do small businesses have an advantage in social media over larger organizations? Justify your answers.**
4. **What risks does Mabel’s Labels face in its social networking strategy? That is, what are the downsides of using social media for small businesses?**
5. **Not all social media sites make money or make a direct and measurable financial contribution to organizations’ bottom lines. Will this always be the case, and how will this fact affect management in planning social media initiatives?**