Part 1

Why MIS?

Experiencing MIS

Fifth Canadian Edition

Chapter 1

The Importance of MIS

The Future Starts Now?

- How many students know where they are headed?
  - Accounting
  - Administration
  - Finance
  - Human Resources
  - Marketing
  - Management
  - …… Something else …
- How many students think they will only have one ‘career’ or job type the rest of their lives

What Do Employers Want?

- Self starter, don't wait to be told what to do
- Team worker
  - Develop ideas and kick them around with others
  - Ask questions
  - Ability to communicate and participate
- Pull more than your own weight

As a future employer, what skills would you look for?

- a Business Student
  or Science (Technology) Student
  - could a Business Student work well with technology?
  - could a Tech Student make business decisions?

Q1-1: What Is an Information System?

- A system is a group of components that interact to achieve some purpose
- An **information system (IS)** is a group of components that interact to produce information
- Five fundamental components of computer-based information systems are:
  1. Hardware
  2. Software
  3. Data
  4. Procedures
  5. People

Figure 1-1
Five Components of an Information System

Q1-2: What Is MIS?

- **Management Information Systems (MIS)** comprise the development and use of information systems that help organizations achieve their goals and objectives
- Key elements:
  - Development and use
  - Information systems
  - Goals and objectives

Development and Use of Information Systems

- You need to:
  - Take an *active role* in order to ensure that system will meet your needs
  - Learn how to *acquire* information systems, by Asking critical questions:
    - "Where did the information come from?"
    - "What new info or opportunities are enabled"
    - "How was the system constructed"
    - "What role did users play in development"
  - Learn how to *use* information systems
    - Security, backup, recovery

Achieving Business Goals and Objectives

- MIS aids businesses in achieving objectives
  - Organizations themselves don't do anything
  - People within an organization or business who: sell, buy, design, produce, finance, market, account, and manage
- MIS empowers users to reach goals
  - Exist to assist business people
  - Need to be developed for right reason

Acquire Information Systems for a *Reason*

- What will a system do for you?
- What is the purpose?
- What will using it enable us to do?
- What goal can be accomplished through its use?
- Will it aid in reaching our objectives?

Social Media: Changing the Relationship Between Customers and Business

- Social media connect people, and when people get connected they talk, share, and let friends know what they think about the world
- **Social networking** was often ignored by companies at first – they do not make positive cash flows.
- Companies learned, however, that "bad press" (and "good press" can now be shared to millions of people within seconds.
- Now, organizations are creating strategies that incorporate social networking tools.

Q1-3: How Does an IS Differ from IT? (1 of 3)

- **Information system (IS)** is a system of hardware, software, data, procedures, and people that produces information
- **Information technology (IT)** represents raw technology, components of IS
  - Hardware
  - Software
  - Data components

Q1-3: How Does an IS Differ from IT? (2 of 3)

- IT refers to:
  - Methods
  - Inventions
  - Standards
  - Products

Q1-3: How Does an IS Differ from IT? (3 of 3)

- IT alone will not help an organization achieve goals
- IT must be embedded into an IS to help accomplish objectives
  - Technology must be combined with people and procedure components
  - IS will make IT useful

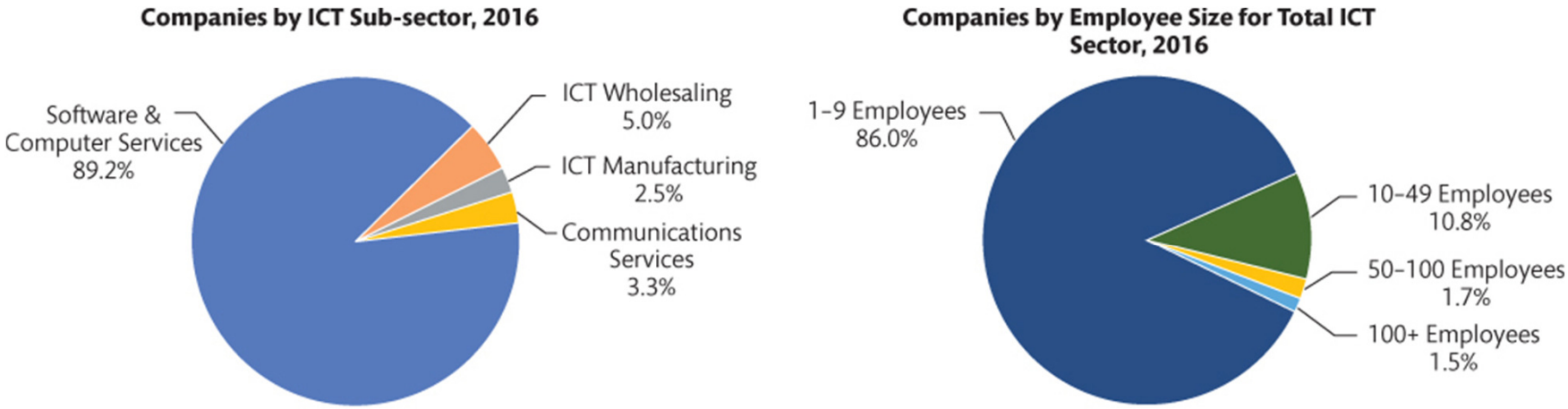
Real Difference Between IS and IT

- IS includes people
- Including people in the system impacts how you design and implement systems
- Successful business people take advantage of crucial differences between IT and IS to improve their systems

Q1-4: How Important Are Information Systems to Our Economy?

- Industry Canada categorizes sectors and collects data about them.
- **Information and Communications Technology** (ICT) **sector** is the most closely related to use of IS in Canada.
- sector provides products, services that other industries rely on
- Includes companies involved in software, computer services, cable, program distributors, telecommunications, manufacturing, wholesaling

Figure 1-2
Canada's ICT Sector, 2015

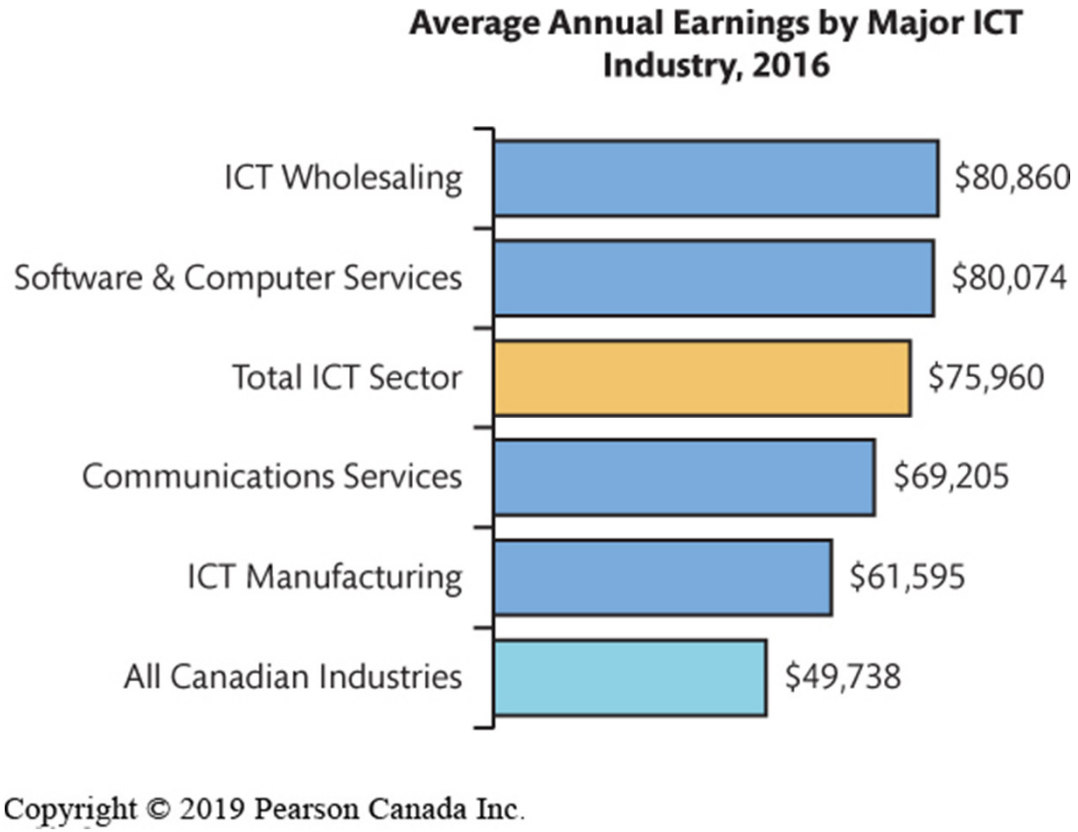


Source: Reproduced with the permission of the Minister of Industry, 2017. https://www.ic.gc.ca/eic/site/ict-tic.nsf/eng/h_it07229.html

What Do the Numbers Mean?

- 32,000 ICT sector companies in Canada, 2015
  - More than 90% had fewer than 100 employees!
  - Only 115 had more than 500 employees.
- In 2015, the ICT sector added $71.3 billion to the Canadian GDP
- This adds up to jobs
  - 2015: 584,850 people employed in ICT sector
  - Most growth in software and computer-services
  - Manufacturing is relatively flat
  - Service is expected to continue to grow

Figure 1-3
Average Annual Earnings by Major ICT Industry, 2015



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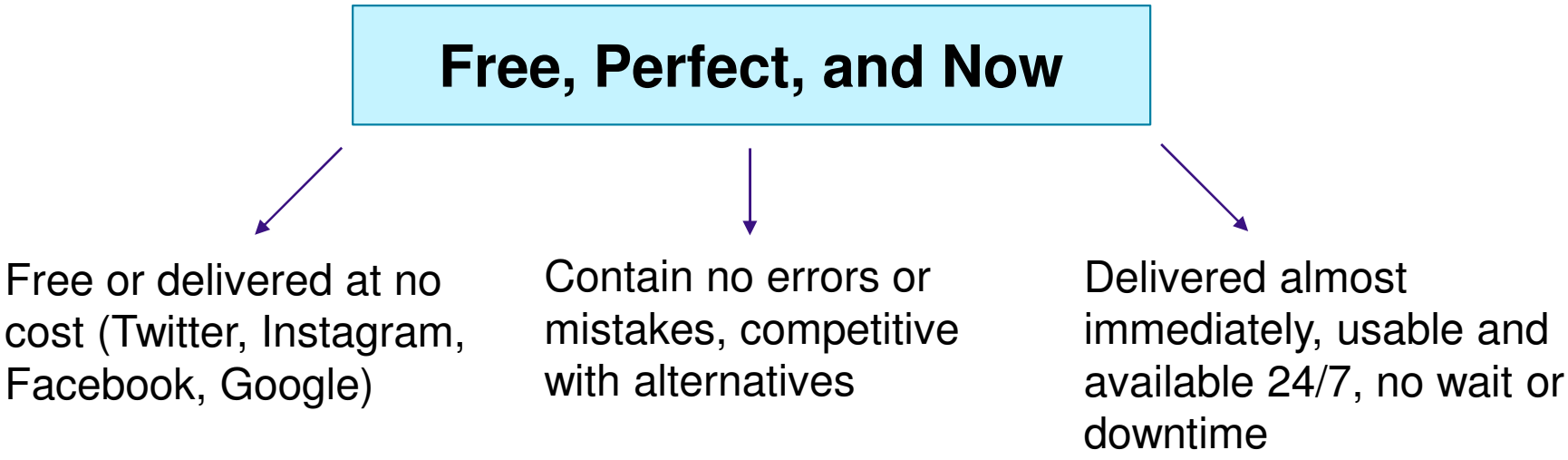
Q1-5: How Do Successful Business Professionals Use IS? (1 of 2)

- Consumers are accustomed to yearly advances in
  - devices (smaller, more powerful)
  - services (faster, more reliable)
  - costs that are either lower or services greater for same cost



Q1-5: How Do Successful Business Professionals Use IS? (2 of 2)

- Today, every business professional uses numerous information systems
- Some of basic information systems are:
  - Email
  - Accessing webpages
  - Using word processors and spreadsheets
  - Creating presentations
  - Instant messaging and location-based services on smart phones

Beyond the Basics

- To be effective in today's economy, you need **more** than the basics
- Business professionals need to expand their knowledge to include the following:
  - Use of mobile devices and applications
  - Use of project-management software – Microsoft Project, OpenProject
  - Business graphics – MS Visio, SmartDraw
  - Collaborative systems such as Google Docs

Gaining a Competitive Advantage (1 of 2)

Five key transformative technologies will be in demand:

- Virtual and augmented reality
- 5G mobile
- 3D printing
- Blockchain
- Artificial intelligence

Source: "The Next Talent Wave: Navigating the Digital Shift – Outlook 2021," The Information and Communications Technology Council (ICTC) of Canada 2017.

Gaining a Competitive Advantage (2 of 2)

- **Communication** and **business skills** are paramount
- For business majors, adding technical knowledge will increase ability to work across spectrum of industries
- Five occupations predicted to have above-average growth rates:
  - Computer and information systems managers
  - Computer engineers (except software engineers, designers)
  - Database analysts, administrators
  - Computer programmers and interactive media developers
  - Graphic arts technicians

Q1-6: What Is the Shape of Things to Come?

- **Moore's Law** noted that the density of circuits on an integrated chip was doubling approximately every two years or so
- This prediction has been generally accurate for almost five decades
- Moore's Law is one of the few predictions in area of IT that has really stood the test of time
- The cost of computers has declined over the past 50 years, the same amount of money can buy increased computer capacity

Network Effects and Lock-In

- The value that is received from using certain technologies increases significantly as the number of users increases.
- The more, the merrier.
- Examples:
  - Fax machines: couldn't have sold just one
  - Social networks: need others to join
- Once established, network effects can lock-in users and make it harder for them to switch technologies

General Shrinking of Device Size

- Recall Moore's Law
- Devices stay on us at all times
- Adoption of location-based technology

Business of IT and IS

- How will the changes in IT and IS affect the way we live and work?
- Hal Varian, chief economist at Google, suggested that:
  - Business is changing because of advances in IS and IT
  - Mobility devices will change what it means to go to work
  - Work will come to you, wherever you are, and you will deal with it at any time and in any place
  - Ability to handle (find, process, understand, communicate) data is going to be important skill for decades to come

Google Knows Best (1 of 2)

- Millions of people worldwide daily log in to Gmail
- Supported entirely by advertising
- When email is sent or received, a fresh column of ads appear on the right-hand side of the screen
- **Google scans email**, understand its content, and provide contextual advertising.
- This distinguishes Google from other email providers – only Google tries to understand what you are writing ("content extraction")

Google Knows Best (2 of 2)

- When you visit a google site, your IP address is recorded and all your searches are tracked, and can be done across its various products
- Creates complex profiles
- "Gmail has broken a fundamental trust" (Marc Rotenberg, Electronic Privacy Information Centre)

Google Knows Best ?

- *Do people who use free email systems understand the implications of the tradeoffs that they have made? (Hint: Do you?)*
- *Is email different from postal or telephone services? Is it more like a postcard, where privacy should not be assumed?*
- *"How complete a profile can Google assemble of a typical user? (Hint: what Google services—Calendar, Google Maps, etc.—do you use?).*
- *What are your privacy rights and expectations while using the Internet?*

ICTS Jobs 2.0 Report

- Within the next decade:
  - Unlimited storage will be almost free
  - Analytical software will reveal hidden information
  - The real and virtual world will collide as wide-area networks (WANs) become cheap, reliable, and widely available
  - These technology trends will enable deep, powerful, performance-enhancing innovations that will be felt in almost every industry

  - Source: David Ticoll, “ICTS Jobs 2.0”, ICTC of Canada.

What Is This Course About? (1 of 2)

- Much more than Excel, Access
- Focus on learning how to use tools to accomplish organizational goals
- MIS = development and use of IS that help organizations achieve goals and objectives
  - To understand MIS, you need to understand business and technology, and relate the two

What Is This Course About? (2 of 2)

- Chapters 2, 3: relationship of business processes and information system
- Chapters 4-6: hardware, software, content, databases, network and communications tech
- Chapters 7-9: how technology can be used to gain competitive advantage
- Chapters 10-12: how IT departments work, IT architecture, IS ethics, green IT, privacy, and security