I'm not robot!

Listen – to listen to noble people

Build Teams – build teams around issues that matter to them

Action – develop the art of public action

Recognition – demand recognition from people in power

Negotiate – sit down and negotiate for what they want

Perspectives on Power

NEGATIVE POWER	POSITIVE POWER
• Secretive	• Open
• Exclusive	• Inclusive
• Over baring	• Supportive
• Manipulative	• Honest
• Arrogant	• Inspiring
• Tyrannical	• Problem Solving
• Self serving	• Partnering
• Intimidating	• Affirming
• Dismissive	• Creative
(-)	(+)
UNILATERAL POWER OVER	RELATIONAL POWER WITH

ALLIANCE

Exploring our Current Stories: Rebuilding civil society

	As One Individual	
VICTIMS		OVERWHELMED
CLIENTS		ANGRY
BEGGERS		REACTIVE
WE SEE OURSELVES AS		WE ENTER PUBLIC ARENA

Connected Individuals, Mediating Organisations, Engaged Civil Society

	Together	
LEARNERS		HOPEFUL
LEADERS/CREATORS		POWERFUL/EFFECTIVE
ACTORS		PROACTIVE

ALLIANCE

thinkswap

Lecture 1: Introduction to Applied Animal Science

Applied animal science overlaps with veterinary and medical science, physiology, pathology, food science, nutrition and metabolism, genetics, ethology and welfare, botany, conservation and ecology, and economics.

SUSTAINABLE FARMING

- Environmentally friendly
- Ethics
- Profit

Aims of animal applied science:
- Maximise food production ⎫
- Increase food efficiency ⎬ were the main aims to begin with
- Welfare ⎭

Maximise food production

In the past there was not good food security in the UK – this came about due to the industrial revolution and increased transport use, so just able to get most food transported from abroad. (This meant if there was a bad harvest in some parts of the world the food wouldn't be able to be transported very easily). This came about as it was cheaper to get food transported to the UK than harvest it here.

It was realised that the UK had to become more self sufficient.

But the real force behind animal and agricultural science was that we needed more food, and by using technology we would be able to get more food out of using the same amount of land.

In 1789, **Thomas Malthus** – predicted that the food will essentially run out with the rapidly growing populations of humans. – but he was wrong, the human population carried on growing, but we did not run out of food.

World population projections

Predicted there is likely to be 9 bill people by 2100 - could be as high as 10.5 or low as 8. Then predicted the world pop would start to plateau off, or maybe even reduce. This is predicted because as the world becomes more middle class less people have kids. So women get more education and rights, birth control becomes more available. People are living longer due to medical advances and will improve in developed countries.
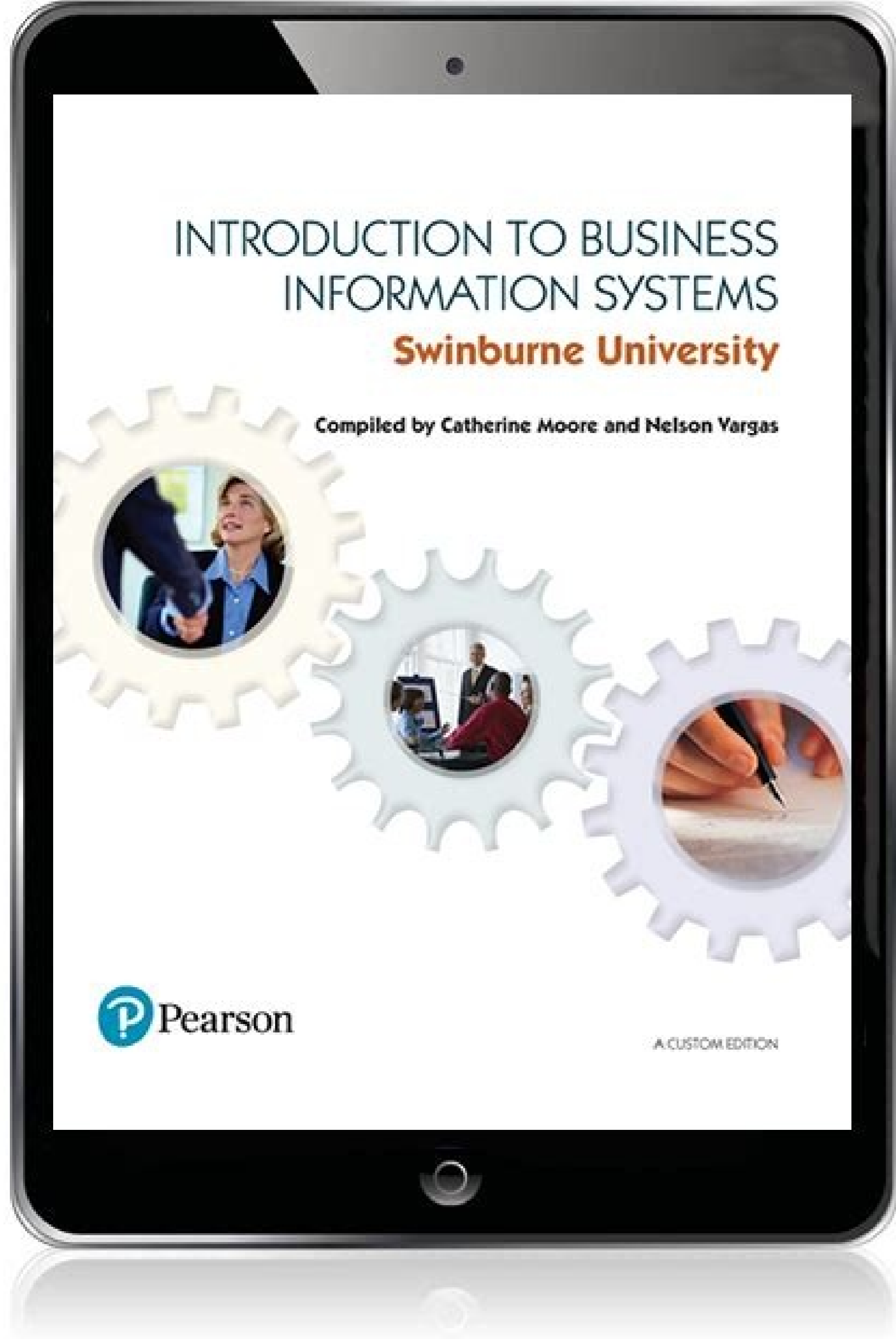
- **Risk management**
  - o Identify, control, and minimise the impact of threats
- **Risk analysis**
  - o Compare cost of security breach vs. cost of control
- **Risk mitigation**
  - o Organisation takes concrete actions against risk
  - o Implement controls and develop recovery plan
  - o Three strategies:
    - **Risk acceptance**
    - **Risk limitation**
    - **Risk transference**

7.5 Information Security Controls

- Defence mechanisms to protect information assets
- The three major types:
  - o Physical controls
  - o Access controls
  - o Communications controls

Physical controls

- Prevent unauthorised individuals from gaining access to a company's facilities
- Examples:
  - o Walls, doors, fencing, gates, locks, badges, security guards, alarm systems
  - o Pressure sensors, temperature sensors, motion detectors
- Physical controls can be inconvenient to employees
- What are examples of physical controls implemented at your work or university?

Access controls

- Restrict unauthorised user access to computer resources
- **Authentication-** Proof of identity
  - o Uses something the user...
    - **Is-** Biometrics a person's innate physical characteristics
    - **Has-** ID cards, Smart ID cards, and tokens
    - **Does-** Voice, signature, and gait recognition
    - **Knows-** Password and passphrase
- **Authorisation-** Permission to do certain activities
- Establishing the rights and privileges that they have on the organisation's systems protect the movement of data across networks
- **Firewalls**
  - o Enforce access- control policy to prevent certain information from moving between untrusted and private networks
- **Anti- malware systems (AV)**
  - o Identify and eliminate malicious software
- **Whitelisting and Blacklisting**
  - o Whitelisting- Allows acceptable software to run

What is the role of business information systems. What is introduction to information systems. What is meant by business information system.

Read this article to learn about Business Information System. After reading this article you will learn about: 1. Meaning of Business Information System 2. Features of Business Information System 3. Key Components. Meaning of Business Information System: Business information systems are sets of inter-related procedures using IT infrastructure in a business enterprise to generate and disseminate desired information. Such systems are designed to support decision making by the people associated with the enterprise in the process of attainment of its objectives. The business information system gets data and other resources of IT infrastructure as input from the environment and process them to satisfy the information needs of different entities associated with the business enterprise. There are systems of control over the use of IT resources and the feedback system offers useful clues for increasing the benefits of information systems to business. The business information systems are sub-systems of business system and by themselves serve the function of feedback and control in business system. Features of Business Information System: Characteristics & features of business information system are: 1. The business information systems are subject to the dynamics of business environment and need to be flexible enough to absorb the inevitable changes in the information needs of business. They have to be efficient to satisfy the demanding and 'hard task masters,' the business managers. Thus, there is need to balance the conflicting objectives in the process of designing business information systems. 2. Business information systems need to be proactive. They should anticipate changes in information needs of users and accordingly adapt themselves to suit their needs. This has become important because of the fact that the managers get involved in the routine activities to the extent that the decision making becomes a matter of imitating what competitors are doing or planning to do, rather than making an informed choice. 3. The purpose of business information system is to cater to the information needs for decision making in business. 4. The business information systems have to be designed keeping in view the availability of financial and human resources to the business enterprise. 5. The cost effectiveness is a matter of prime concern in the development and maintenance of business information systems. Economic justification for investment in IT infrastructure for business information systems is a pre condition for its existence and sustenance. Key Components of Business Information System: Information systems can be described by four of their key components which are: 1. Decisions 2. Transactions and processing 3. Information and its flow 4. Individuals or functions involved. It is difficult to observe the decision process through we can see and review the results of a decision. Transactions are usually more visible, though many current systems use computer programs, which are not easy to understand, to process transactions. In principle, an observer can see information and its flows. Individuals can be observed too, but it is not always easy to figure out the information processing functions they perform. When you think about starting a homebased business, it's probably simple to visualize the immediate benefits. I won't mention bunny slippers and working on the lawn-those are the obvious stereotypes of homebased business owners. In fact, I probably don't need to mention anything at all-because whatever your reasons for starting a homebased business, they're your reasons, and they could range from wanting to cut out a long commute to wanting to spend more time with your cat. What's more important is what you do to get from initial idea to homebased business-the steps you take to make those "reasons" a reality.Of course, when you're sitting before a blank canvas with nothing but a faint sketch of an idea in your mind, climbing those steps toward business ownership can feel like a struggle. Or maybe you don't even have an idea-you just know you don't want to work for someone else, and you know you want to work from home. But don't despair if all you've done so far to start a business is clear a corner of your kitchen table. There are ideas all around you every day, even if you're not the type to think creatively on a whim. One of the easiest ways to get a business idea is to think about a problem in your daily life that you'd like to see solved. Many good ideas were born out of necessity, or even out of what becomes a necessity. (Do we really need the Internet? Most people would say yes now.) This TikTok-Famous Funeral Director Might Bury 10 People a Day, But He Still Finds Time to Write Beautiful Songs A Plea From Job Applicants: Please Reject Us! 'Rules Are Suggestions': This Fashion Founder Is Using AI to Eliminate the Industry's Massive Sizing and Waste Problems Being an Introvert Doesn't Make You a Bad Leader. In Fact, It Just Might Be Your Secret Weapon. What Entrepreneurs Can Learn From Paul Newman I Built Over 10 Million Followers on TikTok in 1 Year. Here's How You Can, Too. This Mediation Expert Reveals the Power

Move That Will Give You Control in Any Situation — and Help You Get What You Want Most often thought of as opportunities for new entrepreneurs toget into business, franchises are usually overlooked by seasonedbusiness veterans. Established companies should think again,however, before they leave franchises solely to the newbies.Franchise companies are more than just start-up opportunities,they're also extensively networked buyers of products andservices, and could be your ticket to a giant increase in sales aswell as vast new markets you might not otherwise be able totap.That's the experience Dianne and Mike Dougherty had whenthey searched for--and found--a way to increase sales for theirAtlanta business, Heavenly Cheesecakes Inc. Selling cheesecakes,key lime pies and other desserts to additional independent outletswouldn't have boosted their revenues much beyond their 1992level of $360,000. "To really grow, we needed a majoraccount," says Dianne. This TikTok-Famous Funeral Director Might Bury 10 People a Day, But He Still Finds Time to Write Beautiful Songs A Plea From Job Applicants: Please Reject Us! 'Rules Are Suggestions': This Fashion Founder Is Using AI to Eliminate the Industry's Massive Sizing and Waste Problems Being an Introvert Doesn't Make You a Bad Leader. In Fact, It Just Might Be Your Secret Weapon. What Entrepreneurs Can Learn From Paul Newman I Built Over 10 Million Followers on TikTok in 1 Year. Here's How You Can, Too. This Mediation Expert Reveals the Power Move That Will Give You Control in Any Situation — and Help You Get What You Want Dave Bourgeois and David T. Bourgeois Upon successful completion of this chapter, you will be able to: define what an information system is by identifying its major components; describe the basic history of information systems; and describe the basic argument behind the article "Does IT Matter?" by Nicholas Carr. Please note, there is an updated edition of this book available at . If you are not required to use this edition for a course, you may want to check it out. Introduction If you are reading this, you are most likely taking a course in information systems, but do you even know what the course is going to cover? When you tell your friends or your family that you are taking a course in information systems, can you explain what it is about? For the past several years, I have taught an Introduction to Information Systems course. The first day of class I ask my students to tell me what they think an information system is. I generally get answers such as "computers," "databases," or "Excel." These are good answers, but definitely incomplete ones. The study of information systems goes far beyond understanding some technologies. Let's begin our study by defining information systems. Defining Information Systems Almost all programs in a business require students to take a course in something called information systems. But what exactly does that term mean? Let's take a look at some of the more popular definitions, first from Wikipedia and then from a couple of textbooks: "Information systems (IS) is the study of complementary networks of hardware and software that people and organizations use to collect, filter, process, create, and distribute data." "Information systems are combinations of hardware, software, and telecommunications networks that people build and use to collect, create, and distribute useful data, typically in organizational settings." "Information systems are interrelated components working together to collect, process, store, and disseminate information to support decision making, coordination, control, analysis, and viualization in an organization." As you can see, these definitions focus on two different ways of describing information systems: the components that make up an information system and the role that those components play in an organization. Let's take a look at each of these. The Components of Information Systems As I stated earlier, I spend the first day of my information systems class discussing exactly what the term means. Many students understand that an information system has something to do with databases or spreadsheets. Others mention computers and e-commerce. And they are all right, at least in part: information systems are made up of different components that work together to provide value to an organization. The first way I describe information systems to students is to tell them that they are made up of five components: hardware, software, data, people, and process. The first three, fitting under the technology category, are generally what most students think of when asked to define information systems. But the last two, people and process, are really what separate the idea of information systems from more technical fields, such as computer science. In order to fully understand information systems, students must understand how all of these components work together to bring value to an organization. Technology Technology can be thought of as the application of scientific knowledge for practical purposes. From the invention of the wheel to the harnessing of electricity for artificial lighting, technology is a part of our lives in so many ways that we tend to take it for granted. As discussed before, the first three components of information systems – hardware, software, and data – all fall under the category of technology. Each of these will get its own chapter and a much lengthier discussion, but we will take a moment here to introduce them so we can get a full understanding of what an information system is. Hardware Information systems hardware is the part of an information system you can touch – the physical components of the technology. Computers, keyboards, disk drives, iPads, and flash drives are all examples of information systems hardware. We will spend some time going over these components and how they all work together in chapter 2. Software Software is a set of instructions that tells the hardware what to do. Software is not tangible – it cannot be touched. When programmers create software programs, what they are really doing is simply typing out lists of instructions that tell the hardware what to do. There are several categories of software, with the two main categories being operating-system software, which makes the hardware usable, and application software, which does something useful. Examples of operating systems include Microsoft Windows on a personal computer and Google's Android on a mobile phone. Examples of application software are Microsoft Excel and Angry Birds. Software will be explored more thoroughly in chapter 3. Data The third component is data. You can think of data as a collection of facts. For example, your street address, the city you live in, and your phone number are all pieces of data. Like software, data is also intangible. By themselves, pieces of data are not really very useful. But aggregated, indexed, and organized together into a database, data can become a powerful tool for businesses. In fact, all of the definitions presented at the beginning of this chapter focused on how information systems manage data. Organizations collect all kinds of data and use it to make decisions. These decisions can then be analyzed as to their effectiveness and the organization can be improved. Chapter 4 will focus on data and databases, and their uses in organizations. Networking Communication: A Fourth Technology Piece? Besides the components of hardware, software, and data, which have long been considered the core technology of information systems, it has been suggested that one other component should be added: communication. An information system can exist without the ability to communicate – the first personal computers were stand-alone machines that did not access the Internet. However, in today's hyper-connected world, it is an extremely rare computer that does not connect to another device or to a network. Technically, the networking communication component is made up of hardware and software, but it is such a core feature of today's information systems that it has become its own category. We will be covering networking in chapter 5. People When thinking about information systems, it is easy to get focused on the technology components and forget that we must look beyond these tools to fully understand how they integrate into an organization. A focus on the people involved in information systems is the next step. From the front-line help-desk workers, to systems analysts, to programmers, all the way up to the chief information officer (CIO), the people involved with information systems are an essential element that must not be overlooked. The people component will be covered in chapter 9. Process The last component of information systems is process. A process is a series of steps undertaken to achieve a desired outcome or goal. Information systems are becoming more and more integrated with organizational processes, bringing more productivity and better control to those processes. But simply automating activities using technology is not enough – businesses looking to effectively utilize information systems do more. Using technology to manage and improve processes, both within a company and externally with suppliers and customers, is the ultimate goal. Technology buzzwords such as "business process reengineering," "business process management," and "enterprise resource planning" all have to do with the continued improvement of these business procedures and the integration of technology with them. Businesses hoping to gain an advantage over their competitors are highly focused on this component of information systems. We will discuss processes in chapter 8. Now that we have explored the different components of information systems, we need to turn our attention to the role that information systems play in an organization. So far we have looked at what the components of an information system are, but what do these components actually do for an organization? From our definitions above, we see that these components collect, store, organize, and distribute data throughout the organization. In fact, we might say that one of the roles of information systems is to take data and turn it into information, and then transform that into organizational knowledge. As technology has developed, this role has evolved into the backbone of the organization. To get a full appreciation of the role information systems play, we will review how they have changed over the years. IBM 704 Mainframe (Copyright: Lawrence Livermore National Laboratory) The Mainframe Era From the late 1950s through the 1960s, computers were seen as a way to more efficiently do calculations. These first business computers were room-sized monsters, with several refrigerator-sized machines linked together. The primary work of these devices was to organize and store large volumes of information that were tedious to manage by hand. Only large businesses, universities, and government agencies could afford them, and they took a crew of specialized personnel and specialized facilities to maintain. These devices served dozens to hundreds of users at a time through a process called time-sharing. Typical functions included scientific calculations and accounting, under the broader umbrella of "data processing." Registered trademark of International Business Machines In the late 1960s, the Manufacturing Resources Planning (MRP) systems were introduced. This software, running on a mainframe computer, gave companies the ability to manage the manufacturing process, making it more efficient. From tracking inventory to creating bills of materials to scheduling production, the MRP systems (and later the MRP II systems) gave more businesses a reason to want to integrate computing into their processes. IBM became the dominant mainframe company. Nicknamed "Big Blue," the company became synonymous with business computing. Continued improvement in software and the availability of cheaper hardware eventually brought mainframe computers (and their little sibling, the minicomputer) into most large businesses. The PC Revolution In 1975, the first microcomputer was announced on the cover of Popular Mechanics: the Altair 8800. Its immediate popularity sparked the imagination of entrepreneurs everywhere, and there were quickly dozens of companies making these "personal computers." Though at first just a niche product for computer hobbyists, improvements in usability and the availability of practical software led to growing sales. The most prominent of these early personal computer makers was a little company known as Apple Computer, headed by Steve Jobs and Steve Wozniak, with the hugely successful "Apple II." Not wanting to be left out of the revolution, in 1981 IBM (teaming with a little company called Microsoft for their operating-system software) hurriedly released their own version of the personal computer, simply called the "PC." Businesses, who had used IBM mainframes for years to run their business, finally had the permission they needed to bring personal computers into their companies, and the IBM PC took off. The IBM PC was named Time magazine's "Man of the Year" for 1982. Because of the IBM PC's open architecture, it was easy for other companies to copy, or "clone" it. During the 1980s, many new computer companies sprang up, offering less expensive versions of the PC. This drove prices down and spurred innovation. Microsoft developed its Windows operating system and made the PC even easier to use. Common uses for the PC during this period included word processing, spreadsheets, and databases. These early PCs were not connected to any sort of network; for the most part they stood alone as islands of innovation within the larger organization. Client-Server In the mid-1980s, businesses began to see the need to connect their computers together as a way to collaborate and share resources. This networking architecture was referred to as "client-server" because users would log in to the local area network (LAN) from their PC (the "client") by connecting to a powerful computer called a "server," which would then grant them rights to different resources on the network (such as shared file areas and a printer). Software companies began developing applications that allowed multiple users to access the same data at the same time. This evolved into software applications for communicating, with the first real popular use of electronic mail appearing at this time. Registered trademark of SAP This networking and data sharing all stayed within the confines of each business, for the most part. While there was sharing of electronic data between companies, this was a very specialized function. Computers were now seen as tools to collaborate internally, within an organization. In fact, these networks of computers were becoming so powerful that they were replacing many of the functions previously performed by the larger mainframe computers at a fraction of the cost. It was during this era that the first Enterprise Resource Planning (ERP) systems were developed and run on the client-server architecture. An ERP system is a software application with a centralized database that can be used to run a company's entire business. With separate modules for accounting, finance, inventory, human resources, and many, many more, ERP systems, with Germany's SAP leading the way, represented the state of the art in information systems integration. We will discuss ERP systems as part of the chapter on process (chapter 9). The World Wide Web and E-Commerce First invented in 1969, the Internet was confined to use by universities, government agencies, and researchers for many years. Its rather arcane commands and user applications made it unsuitable for mainstream use in business. One exception to this was the ability to expand electronic mail outside the confines of a single organization. While the first e-mail messages on the Internet were sent in the early 1970s, companies who wanted to expand their LAN-based e-mail started hooking up to the Internet in the 1980s. Companies began connecting their internal networks to the Internet in order to allow communication between their employees and employees at other companies. It was with these early Internet connections that the computer truly began to evolve from a computational device to a communications device. In 1989, Tim Berners-Lee developed a simpler way for researchers to share information over the network at CERN laboratories, a concept he called the World Wide Web. This invention became the launching point of the growth of the Internet as a way for businesses to share information about themselves. As web browsers and Internet connections became the norm, companies rushed to grab domain names and create websites. Registered trademark of Amazon Technologies, Inc. In 1991, the National Science Foundation, which governed how the Internet was used, lifted restrictions on its commercial use. The year 1994 saw the establishment of both eBay and Amazon.com, two true pioneers in the use of the new digital marketplace. A mad rush of investment in Internet-based businesses led to the dot-com boom through the late 1990s, and then the dot-com bust in 2000. While much can be learned from the speculation and crazy economic theories espoused during that bubble, one important outcome for businesses was that thousands of miles of Internet connections were laid around the world during that time. The world became truly "wired" heading into the new millenium, ushering in the era of globalization, which we will discuss in chapter 11. As it became more expected for companies to be connected to the Internet, the digital world also became a more dangerous place. Computer viruses and worms, once slowly propagated through the sharing of computer disks, could now grow with tremendous speed via the Internet. Software written for a disconnected world found it very difficult to defend against these sorts of threats. A whole new industry of computer and Internet security arose. We will study information security in chapter 6. Web 2.0 As the world recovered from the dot-com bust, the use of technology in business continued to evolve at a frantic pace. Websites became interactive; instead of just visiting a site to find out about a business and purchase its products, customers wanted to be able to customize their experience and interact with the business. This new type of interactive website, where you did not have to know how to create a web page or do any programming in order to put information online, became known as web 2.0. Web 2.0 is exemplified by blogging, social networking, and interactive comments being available on many websites. This new web-2.0 world, in which online interaction became expected, had a big impact on many businesses and even whole industries. Some industries, such as bookstores, found themselves relegated to a niche status. Others, such as video rental chains and travel agencies, simply began going out of business as they were replaced by online technologies. This process of technology replacing a middleman in a transaction is called disintermediation. As the world became more connected, new questions arose. Should access to the Internet be considered a right? Can I copy a song that I downloaded from the Internet? Can I keep information that I have put on a website private? What information is acceptable to collect from children? Technology moved so fast that policymakers did not have enough time to enact appropriate laws, making for a Wild West-type atmosphere. Ethical issues surrounding information systems will be covered in chapter 12. The Post-PC World After thirty years as the primary computing device used in most businesses, sales of the PC are now beginning to decline as sales of tablets and smartphones are taking off. Just as the mainframe before it, the PC will continue to play a key role in business, but will no longer be the primary way that people interact and do business. The limited storage and processing power of these devices is being offset by a move to "cloud" computing, which allows for storage, sharing, and backup of information on a massive scale. This will require new rounds of thinking and innovation on the part of businesses as technology continues to advance. The Eras of Business Computing Era Hardware Operating System Applications Mainframe (1970s) Terminals connected to mainframe computer. Time-sharing (TSO) on MVS Custom-written MRP software PC (mid-1980s) IBM PC or compatible. Sometimes connected to mainframe computer via expansion card. MS-DOS WordPerfect, Lotus 1-2-3 Client-Server (late 80s to early 90s) IBM PC "clone" on a Novell Network. Windows for Workgroups Microsoft Word, Microsoft Excel World Wide Web (mid-90s to early 2000s) IBM PC "clone" connected to company intranet. Windows XP Microsoft Office, Internet Explorer Web 2.0 (mid-2000s to present) Laptop connected to company Wi-Fi. Windows 7 Microsoft Office, Firefox Post-PC (today and beyond) Apple iPad iOS Mobile-friendly websites, mobile apps Can Information Systems Bring Competitive Advantage? It has always been the assumption that the implementation of information systems will, in and of itself, bring a business competitive advantage. After all, if installing one computer to manage inventory can make a company more efficient, won't installing several computers to handle even more of the business continue to improve it? In 2003, Nicholas Carr wrote an article in the Harvard Business Review that questioned this assumption. The article, entitled "IT Doesn't Matter," raised the idea that information technology has become just a commodity. Instead of viewing technology as an investment that will make a company stand out, it should be seen as something like electricity: It should be managed to reduce costs, ensure that it is always running, and be as risk-free as possible. As you might imagine, this article was both hailed and scorned. Can IT bring a competitive advantage? It sure did for Walmart (see sidebar). We will discuss this topic further in chapter 7. Sidebar: Walmart Uses Information Systems to Become the World's Leading Retailer Registered trademark of Wal-Mart Stores, Inc. Walmart is the world's largest retailer, earning $15.2 billion on sales of $443.9 billion in the fiscal year that ended on January 31, 2012. Walmart currently serves over 200 million customers every week, worldwide. Walmart's rise to prominence is due in no small part to their use of information systems. One of the keys to this success was the implementation of Retail Link, a supply-chain management system. This system, unique when initially implemented in the mid-1980s, allowed Walmart's suppliers to directly access the inventory levels and sales information of their products at any of Walmart's more than ten thousand stores. Using Retail Link, suppliers can analyze how well their products are selling at one or more Walmart stores, with a range of reporting options. Further, Walmart requires the suppliers to use Retail Link to manage their own inventory levels. If a supplier feels that their products are selling too quickly, they can use Retail Link to petition Walmart to raise the levels of inventory for their products. This has essentially allowed Walmart to "hire" thousands of product managers, all of whom have a vested interest in the products they are managing. This revolutionary approach to managing inventory has allowed Walmart to continue to drive prices down and respond to market forces quickly. Today, Walmart continues to innovate with information technology. Using its tremendous market presence, any technology that Walmart requires its suppliers to implement immediately becomes a business standard. Summary In this chapter, you have been introduced to the concept of information systems. We have reviewed several definitions, with a focus on the components of information systems: technology, people, and process. We have reviewed how the business use of information systems has evolved over the years, from the use of large mainframe computers for number crunching, through the introduction of the PC and networks, all the way to the era of mobile computing. During each of these phases, new innovations in software and technology allowed businesses to integrate technology more deeply. We are now to a point where every aspect of our lives is using information systems and asking the question: Does it bring a competitive advantage? In the end, that is really what this book is about. Every businessperson should understand what an information system is and how it can be used to bring a competitive advantage. And that is the task we have before us. Study Questions What are the five components that make up an information system? What are three examples of information system hardware? Microsoft Windows is an example of which component of information systems? What is application software? What roles do people play in information systems? What is the definition of a process? When was the personal computer or the Internet first lifted? In what year were restrictions on commercial use of the Internet first lifted? When were eBay and Amazon founded? What does it mean to say we are in a "post-PC world"? What is Carr's main argument about information technology? Suppose that you had to explain to a member of your family or one of your closest friends the concept of an information system. How would you define it? Write a one-paragraph description in your own words that you feel would best describe an information system to your friends or family. Of the five primary components of an information system (hardware, software, data, people, process), which do you think is the most important to the success of a business organization? Write a one-paragraph answer to this question that includes an example from your personal experience to support your answer. We all interact with various information systems every day: at the grocery store, at work, at school, even in our cars (at least some of us). Make a list of the different information systems you interact with every day. See if you can identify the technologies, people, and processes involved in making these systems work. Do you agree that we are in a post-PC stage in the evolution of information systems? Some people argue that we will always need the personal computer, but that it will not be the primary device used for manipulating information. Others think that a whole new era of mobile and biological computing is coming. Do some original research and make your prediction about what business computing will look like in the next generation. The Walmart case study introduced you to how that company used information systems to become the world's leading retailer. Walmart has continued to innovate and is still looked to as a leader in the use of technology. Do some original research and write a one-page report detailing a new technology that Walmart has recently implemented or is pioneering.

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