Computer and Information Systems

Fall 2008

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Ask for Help

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Required Text Book

Using MIS by David Kroenke,
ISBN: 0131433725, Prentice Hall, 2007.

Course Web Site

http://datamining.rutgers.edu/teaching/fall2008/CIS/cis.html

You are responsible for keeping aware of the announcements on the course web site!

Grading Policy

- In-class work (including attendance) 10%
  Assignments 20%
  Projects 20%
  Exam I 25%
  Exam II 25%

Note that the final letter grade is based on a curve.

Attendance

- Regular attendance is compulsory.
- You are **not** allowed to check your emails, access Web sites not related to the course or work on something that is beyond the scope of this course during the class time.

Assignments

- You may have discussions with your class members, but you have to submit your own work. Please be sure to keep a copy of the assignment by yourself in case that there is any problem with your hand-in or you have to use it later this semester.

Exam

- There will be **no make-up exams.** You are required to present a written proof for situations such as going on to an emergency room due to unexpected and serious illness
- Chatting during the exam is **not** allowed.
- Email **communication during the exam will be considered cheating.**
- **No** collaboration between class members will be allowed during any exam.
- There will be **no** extra-credit project.

Scholastic Dishonesty Policy

- The University defines academic dishonesty as cheating, plagiarism, unauthorized collaboration, falsifying academic records, and any act designed to avoid participating honestly in the learning process. Scholastic dishonesty also includes, but not limited to, providing false or misleading information to receive a postponement or an extension on assignments, and submission of essentially the same written assignment for two different courses without the permission of faculty members.

Helpful Comments

- To get full benefit out of the class you have to work regularly. Read the textbook regularly and start working on the assignments soon after they are handed out.
- Plan to spend at least 10 hours a week on this class doing assignments or reading.

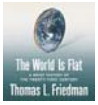
Good luck!

Motivation – Why IT for Managers

- IT is the driving force behind the new way of doing business.
- IT has enabled modern organizations to make tremendous strides in productivity
- IT has opened new market and created new product and service opportunities.

New way of doing business

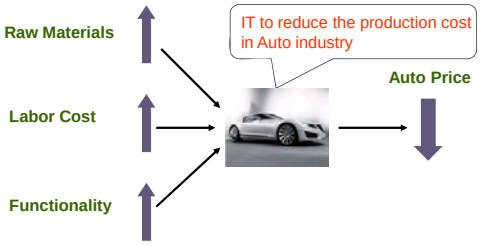
- Global supply chain management



- New business models: Amazon; e-Bay; Google

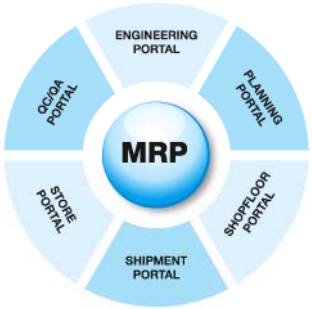
- WEB 2.0 business model

IT: Tremendous strides in productivity

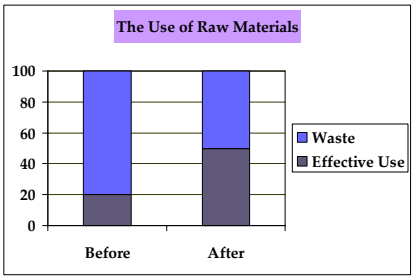


IT: Tremendous strides in productivity

- Toyota
  Reduce the production cost 10 billion (2000~2005)



Manufacturing Resource Management (MRP)



Note that this is just an illustration!

Learning Objectives

- Study Management's role in the development and use of information systems that help businesses achieve their goals and objectives.
- Know the characteristics of information.
- Understand the relationship between information technology (IT) and information systems (IS).
- Prepare to enjoy (yes!) this class.

Achieving Business Goals and Objectives

- Businesses themselves do not "do" anything.
- Information systems exist to help people in business to achieve goals and objectives of that business.

Example: Problem Solving

- Problem Definition
  - Sounds trivial and obvious
  - The difference between solving a real problem or solving something else
  - IT for gathering information and problem finding
- Decision Making
  - All decisions have time restrictions
  - Find and collect all relevant information?
  - How to make the best possible decision?

In-class Reading and Discussion

- The 7 Habits of Highly Effective Technology Leaders, by Stephen J. Andriole

What should business technology leaders do?

- Build business scenarios
- Track technology that matters to business
- Identify business pain and pleasure
- Organize adaptively
- Manage infrastructure cost-effectively
- Communicate well and often
- Market

Building Business Scenarios

- Focused on current and emerging business models and processes.
- Profile market places and profitable transactions

If you understand technology well, you are in a good position to exploit the business technology intersection.

Tracking Technology that Matters

- Strategic technology
  - To customers, market share, the competition, and collaboration, such as CRM
- Operation technology
  - To the computing and communications infrastructure

Identifying Business Pain and Pleasure

- Business Pain
  - In the form of cost control, such as headcount and overhead cost.
- Business Pain Relief
  - Improved business response and control, such as improved management effectiveness, employee productivity.

Organize Adaptively

- Optimize the value of shared services in centralized and decentralized companies
- Focusing on the governance of business technology resources, investments, responsibilities, principles, and priorities.

Manage Infrastructure Cost-effectively

- The computing and communications infrastructure should be secure, reliable, scalable, and cost-effective

Market

- Selling hard and soft information and insights, tangible and intangible assets, and processes.

What Should You Learn from This Class?

- Sufficient knowledge to be an informed and effective consumer of information technology products and services
- Able to ask pertinent questions
- Able to correctly interpret the responses to your questions
- Make wise decisions and to manage effectively

Figure 1-2 Summary of "Using MIS" Content

	Knowledge Category	Examples	Where in Text
Why	Need for information systems	• Competitive advantage • Problem solving • Decision making	Chapters 1, 2, 7, and 8
What	Fundamental terms	• CPU • DBMS • IP address	Chapters 3, 4, and 5
	Essential technologies	• Relational data model • LANs, WANs, and the Internet • HTML and XML	Chapters 4, 5, and 8
	Information systems types	• Customer Relationship Management (CRM) • Enterprise Resource Planning (ERP) • Decision Support Systems (DSS)	Chapters 7, 8, and 9
How	Methodologies	• Data modeling • Systems development processes and techniques • Management of MIS • Security management	Chapters 5, 6, 10, and 11
	Technology frameworks	• Five components of an IS • TCP/IP-OSI architecture • Systems development lifecycle	Chapters 1, 4, 5, and 6

What Is Management Information Systems (MIS)?

- MIS is the development and use of information systems that help businesses achieve their goals and objectives
- There are three key elements:
  - Components of an information systems
  - Development and use of information systems
  - Achieving business goals and objectives

Components of an Information Systems

- An information system is a group of components that interact to produce information.
- It is commonly referred to as a Computer-Based Information System.

Figure 1-1 Five Components of an Information System

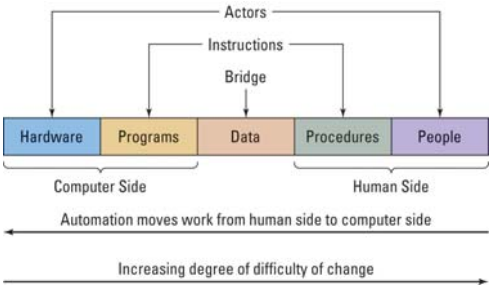
Development and Use of Information Systems

- You need to take an active role in the information system's development.
- It does not matter if you are an operator or a manager, you must be active in:
  - Specifying the system's requirements
  - Helping to manage the development project
  - Using the Information System

Using the Five-Component Framework

- The five-component framework can help guide your learning and thinking about IS both now and in the future.
- This concept consists of:
  - Actors
  - Instructions
  - Bridge
- Automation occurs when a business process is moved to a computer to perform the business process

Figure 1-3 Characteristics of the Five Components



The Most Important Component-YOU

- You are part of every information system that you use.
- Your mind and thinking are the most important component.
- If you do not know what to do with your information system's information, you are wasting time and money.

High-Tech vs. Low-Tech IS

- Information systems differ in the amount of work that is moved from the human side.
  - Low tech–email program and addresses only
  - High tech–customer support system

Understanding New Information Systems

- Use the five-component framework to learn about new systems.
- Focus questions on:
  - Hardware needs
  - Programs to license
  - Databases and other data to create
  - Procedures to create or modify
  - System administration
  - Organization impact (people)

Components Ordered by Difficulty and Disruption

- Hardware–usually simple to install
- Program, database, and procedure development or modification can be difficult.

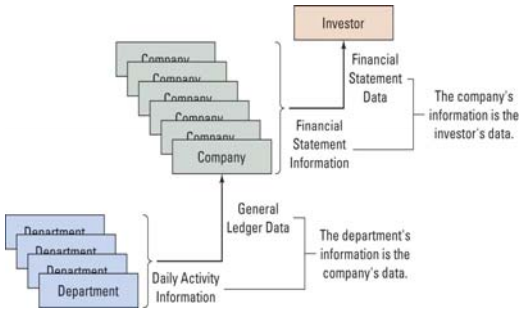
Information Characteristics: What Is Information?

- Information is defined as:
  - Knowledge derived from data
  - Data presented in a meaningful context
  - Data processed by summing, ordering, averaging, grouping, comparing, or other similar operations
  - A difference that makes a difference

Information Is Subjective

- Information in one person's context is just a data point in another person's context.
- Context changes occur in information systems when the output of one system feeds a second system.
- Information is always subjective.

Figure 1-4 One User's Information Is Another User's Data



Characteristics of Good Information

- Accurate
- Timely
- Relevant
  - To context
  - To subject
- Just barely sufficient
- Worth Its Cost

Information Technology vs. Information Systems

- Information technology and information systems are two closely related terms.
- Information technology refers to the products, methods, inventions, and standards that are used for the purpose of producing information.
- Information technology drives the development of new information systems.

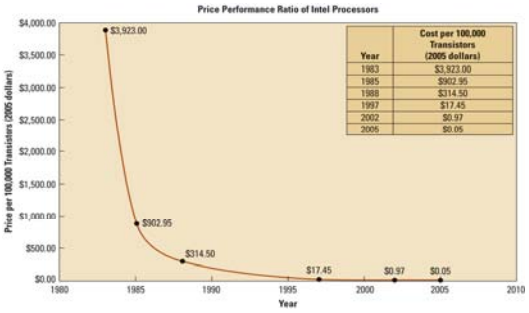
Moore's Law

- Gordon Moore, cofounder of Intel Corporation, stated that because of technology improvements in electronic chip design and manufacturing the number of transistors per square inch on an integrated chip doubles every 18 months, and as a result the speed of computer chip, also doubles

Dramatic Reduction in Price/Performance Ratio

- As a result of Moore's Law, the price/performance ratio of computers has fallen dramatically for over 40 years
- The availability of increased computing power has enabled developments such as:
  - Laser printers
  - Graphical user interfaces
  - High-speed communications
  - Cell phones
  - PDAs
  - Email
  - Internet

Figure 1-6 Computer Price/Performance Ratio Decreases



Year	Cost per 100,000 Transistors (2005 dollars)
1983	$3,923.00
1985	$902.95
1988	$314.50
1997	$17.45
2002	$0.97
2005	$0.05

Enjoying This Class

- Apply what you are learning to situations and organizations of interest to you.
- Think about the information systems around you.
- Every day you touch dozens of information systems.
  - Begin to ask yourself about the nature of those systems.
  - How do they impact you?

Key Terms and Concepts

- Accurate information
- Computer hardware
- Computer-based information system
- Data
- Five-component framework
- Information
- Information system (IS)
- Information technology
- Just – barley sufficient information
- Management information systems (MIS)

Problem Solving Guide – Understanding Perspectives and Points of View

- Every human being speaks from the perspective of a personal point of view.
- Everything you read in any text is biased by the author's point of view.
- Examine both the Opposing Forces and Reflections Guide in this chapter.
  - It is easy to recognize that they are written from a strongly held point of view and contain personal bias

Problem Solving Guide–Understanding Perspectives and Points of View

- The definition "Information is a difference that makes a difference".
  - There are many differences, but only those that make a difference qualify as information.
  - Some may find this definition useful and other's may find it useless.
  - How could the definition formalize anything?
  - Both sides are correct (a matter of different perspectives)

Problem Solving Guide – Understanding Perspectives and Points of View (Cont.)

- Compare your goals and perspectives to your professor's goals and perspectives as you read this book.
- In the business world, being able to discern and adapt to the perspectives and goals of with whom you work will make you much more effective.

Ethics Guide–Ethics of Mis-Directed Information Use

- You hear over a conversation regarding the offer that a competing customer is going to make on a condo that you are also going to make an offer.
  - Do you use this information you hear to your advantage?
- Same situation as above except you receive the information via email
  - Do you read the email?
  - If so, do you use the information you read to your advantage?

Ethics Guide–Ethics of Mis-Directed Information Use (Continued)

- You sell computer software and accidentally receive information of what the maximum price the customer will pay.
  - Do you read the email?
  - If so, do you use the information you read to guide your negotiating strategy?
- You insert your email address into a company list without anyone's knowledge and find out that your best friend's department will be eliminated.
  - Do you forewarn your friend?

Reflection

- The critical resource for humans is not money, it is time.
- How can you maximize the return on the 4,320 heartbeats you are investing per hour reading this book?
- The secret is to personalize the material.
- At every page, learn to ask yourself, "How does this pertain to me?"