

## بخش اول:

ضرورت تغییر و الزامات ورود به عصر  
اطلاعات و کاربرد سیستم های اطلاعاتی در  
کسب و کار

### Section 1:

## Foundations of Information Age & Information Systems in Business

# عناوین مورد بحث در این بخش:

- مروری بر سیر تحول جوامع و گذار به عصر اطلاعات
- مقایسه سازمان دیروز و امروز و ضرورت بکارگیری سازوکار مدیریتی جدید (سیستم اطلاعاتی)
- تشریح مبانی و مفاهیم سیستم اطلاعاتی و فناوری اطلاعات
- دلایل اهمیت سیستم های اطلاعاتی و نیاز مدیران به درک آن

## سیر تحول جوامع و گذار به عصر اطلاعات

- عصر شکار Hunt Age
- عصر کشاورزی Agricultural Age
- عصر صنعتی Industrial Age
- عصر فراصنعتی (اطلاعات) Information Age
- عصر حکمت (خرد و فرزانیگی) Knowledge (Wisdom) Age

منابع اصلی کسب ثروت و قدرت در اعصار مختلف

# 1- عصر شکار:



– یادگیری در سطح ابتدایی صورت می گرفت.

– مرحله ظهور داده ها

– سبک مدیریت آمرانه

– معرفت از طریق کارآموزی بدست می آمد.

منبع اصلی کسب ثروت و قدرت در عصر شکار، شکار حیوانات و صاحبان قدرت و ثروت شکارچیان بودند

## ۲- عصر کشاورزی

- ترکیبی از داده ها ایجاد شد.

- مدیریت از حالت چماقی به حالت شلاقی تبدیل شد.

- روش پیروی از انسان بزرگ به کار گرفته می شد.



منبع اصلی کسب ثروت و قدرت در عصر کشاورزی، زمین و صاحبان قدرت و ثروت زمین داران (فئودال ها) بودند.

# 3- عصر صنعتی

– عصر تولید اطلاعات



– استفاده از فکر علاوه بر استفاده از نیروی بدنی

– نظریه مدیریت «حماری» شکل گرفت.

– سرمایه منبع استراتژیک به شمار می آمد.

منبع اصلی کسب ثروت و قدرت در عصر صنعتی، سرمایه و نیروی کار بود و صاحبان قدرت و ثروت، صنعتگران بودند.

# 4- عصر فرا صنعتی

– دانش منبع استراتژیک به شمار می آمد.



– عصر ماهواره ها و شبکه های ارتباطی

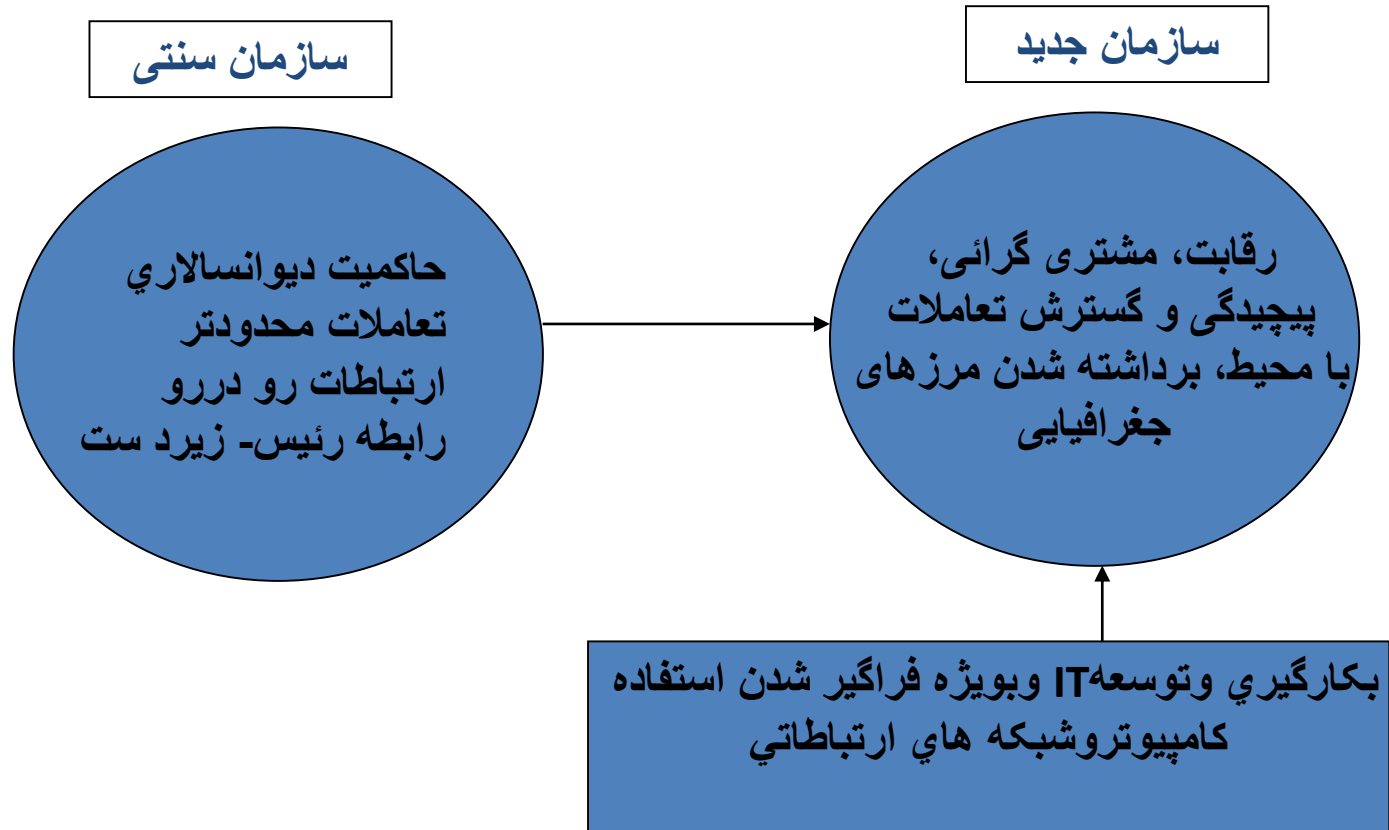
– بر لزوم استفاده از قدرت فکر تأکید می شود.

– جریان اصلی عصر اطلاعات مبتنی بر ارتباطات است.

منبع اصلی کسب ثروت و قدرت در عصر حاضر دانش و اطلاعات می باشد و دارندگان قدرت و ثروت، دانایان و صاحبان اطلاعات هستند.



# گذار از سازمان سنتی و سازمان جدید





# What is Information Systems?

*Definition:*

- A set of interrelated components that collect (or retrieve), process, store, and distribute information to support decision making and control in an organization.
- Combines information technology with data, procedures for processing data, and people who collect and use the data.

# Information Systems (IS):

Can be manual or computer-based

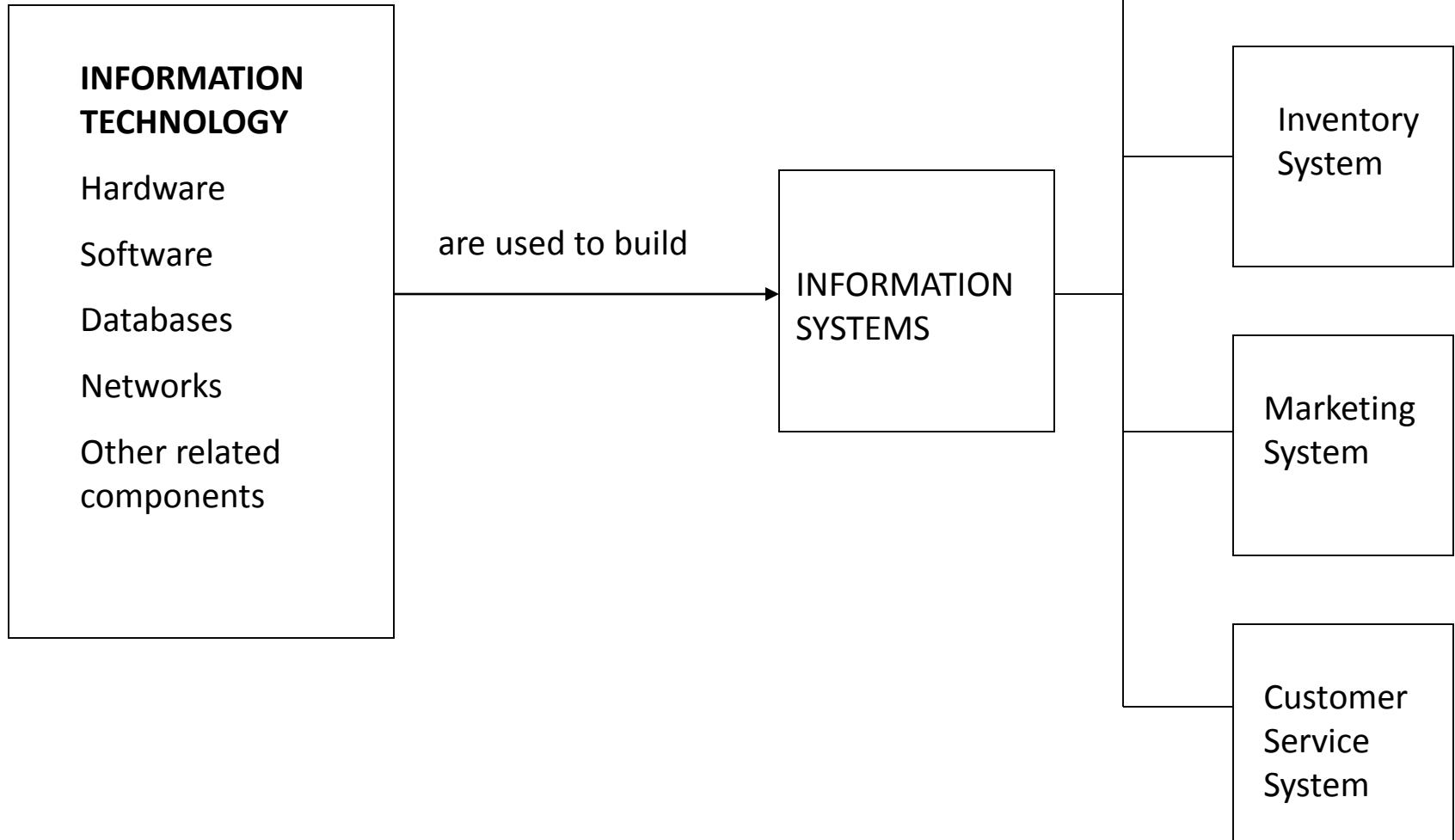
Computer-based Information Systems (CBIS) : Use computer hardware and software to process and disseminate information.

An Information System is an organized combination of people, hardware, software, communication networks and the data resources that collects, transforms and disseminates information in a organization.

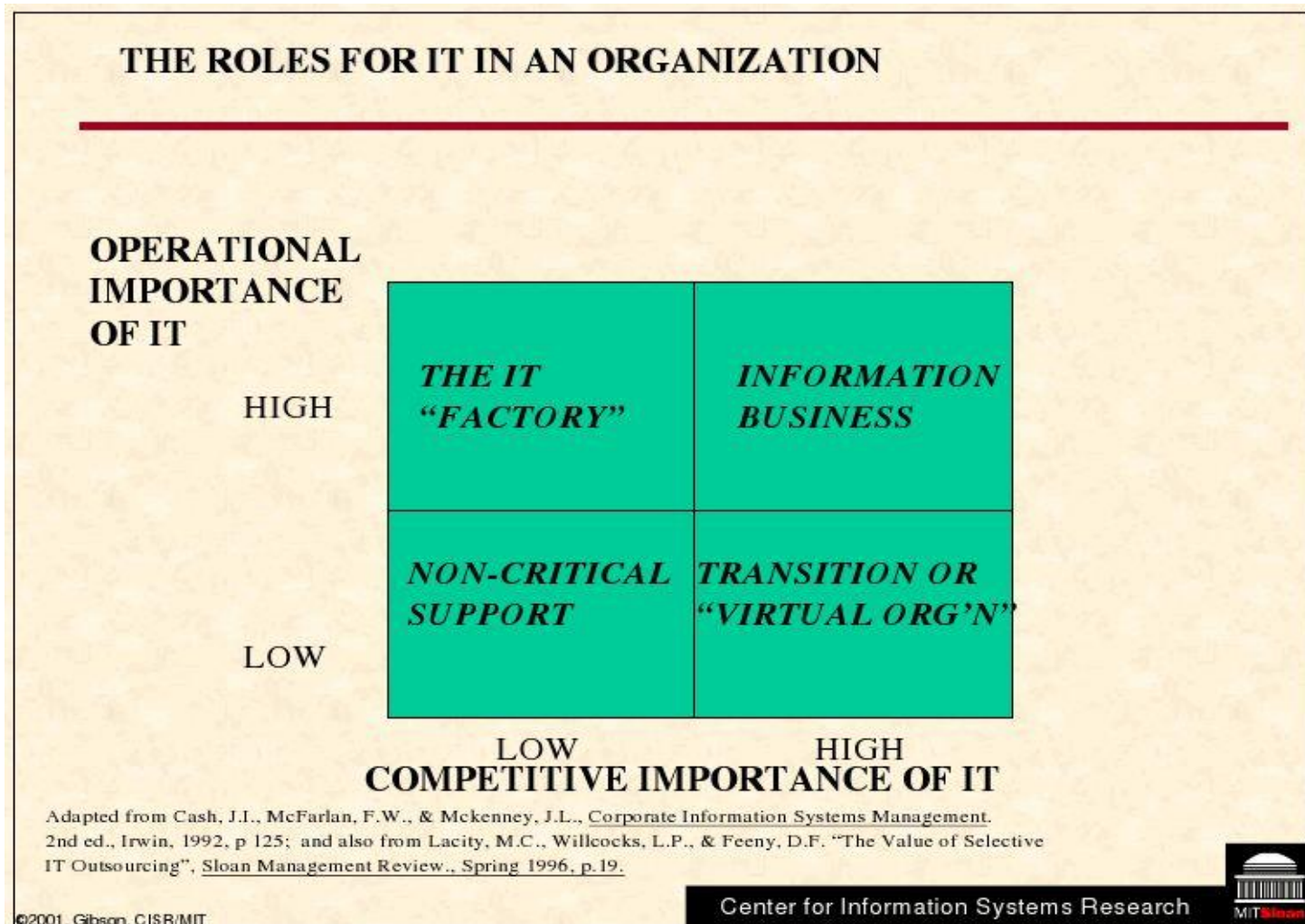
# Role of Information Technology

- Information Technology (IT):  
has allowed individuals, groups, and organizations to manage information effectively and efficiently.
- Information Technology (IT):  
Includes computer hardware, software, database management systems, and data communication systems

# IS versus IT



# The Roles for IT in an Organization

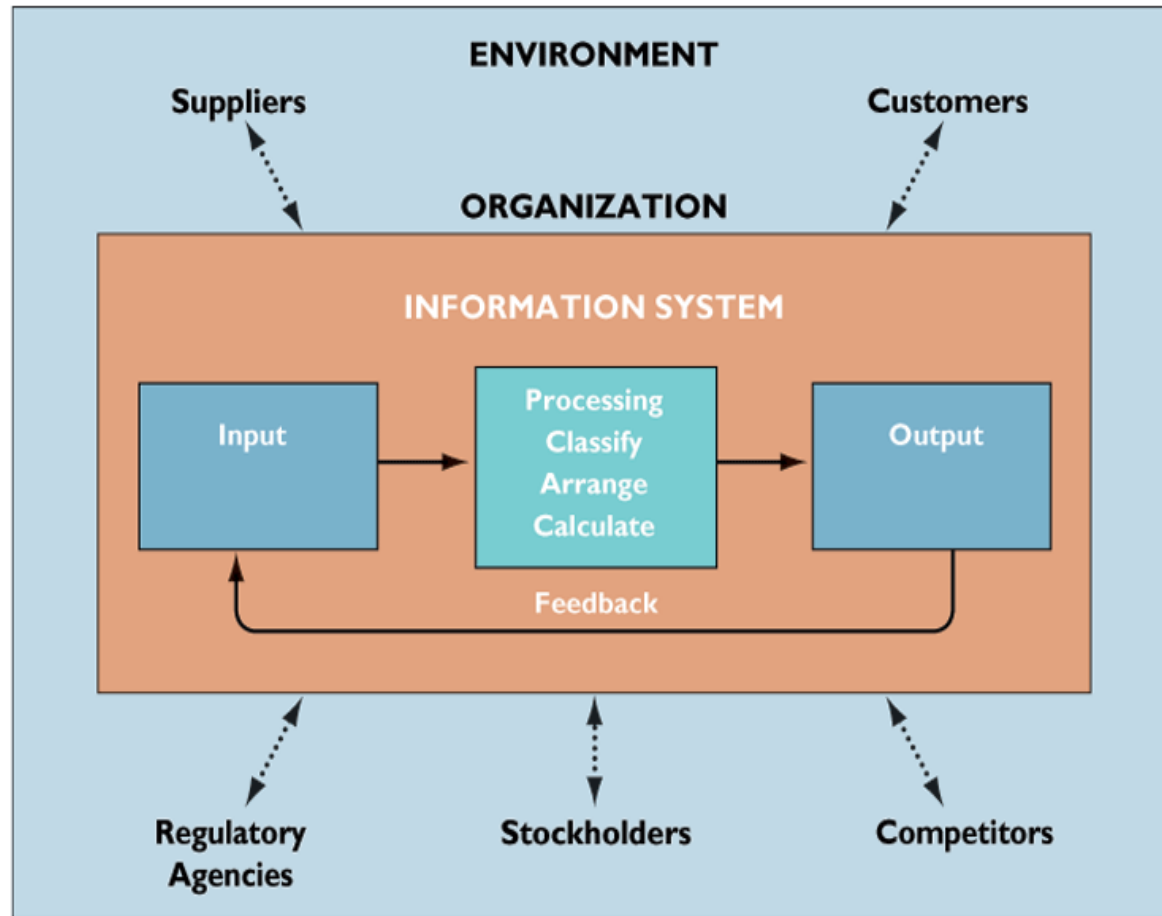


# Managing Information and Information Systems

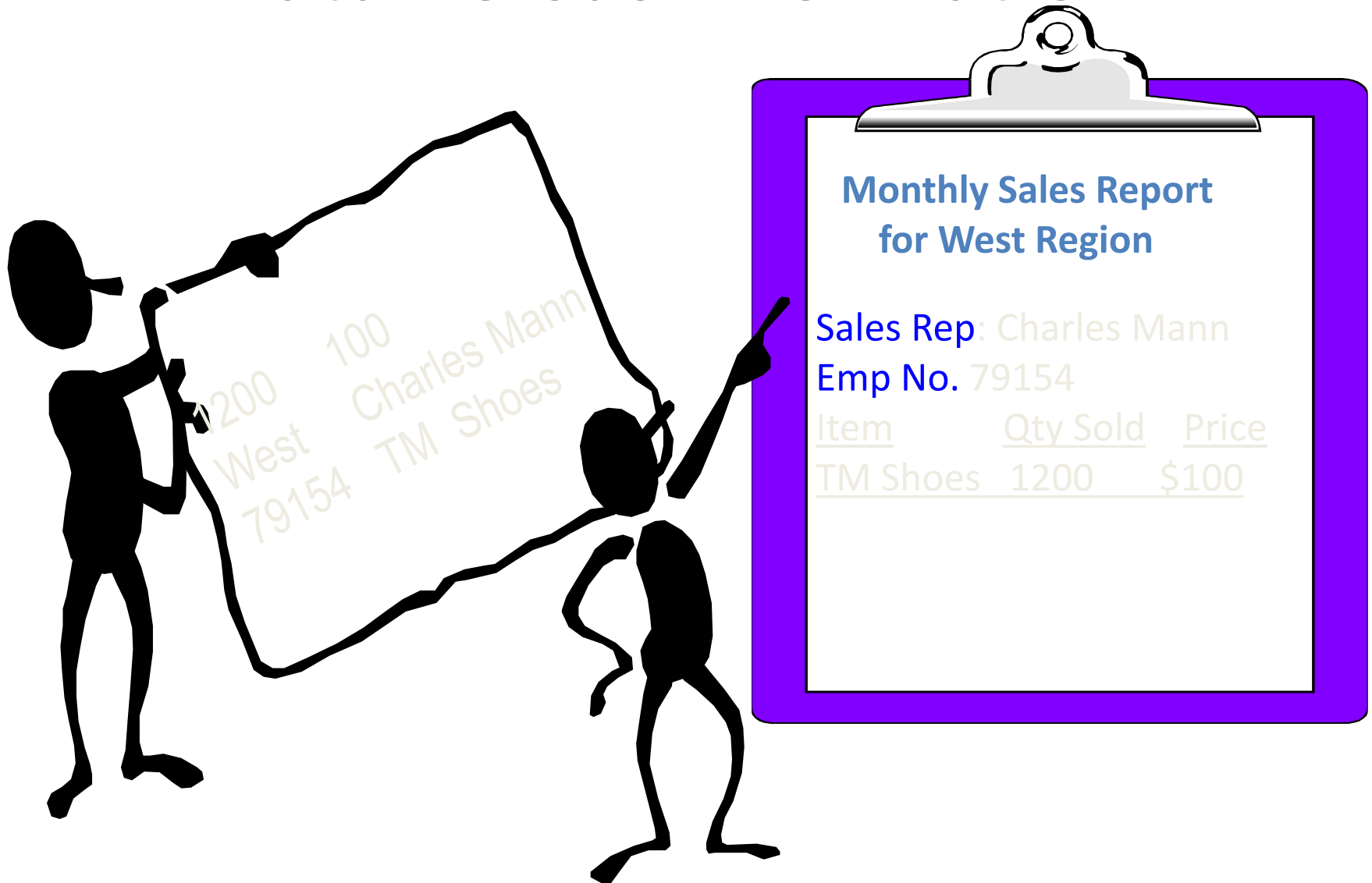
Information Technology + Data + Procedures + People = INFORMATION SYSTEMS



# Functions of an information system



# Data Versus Information





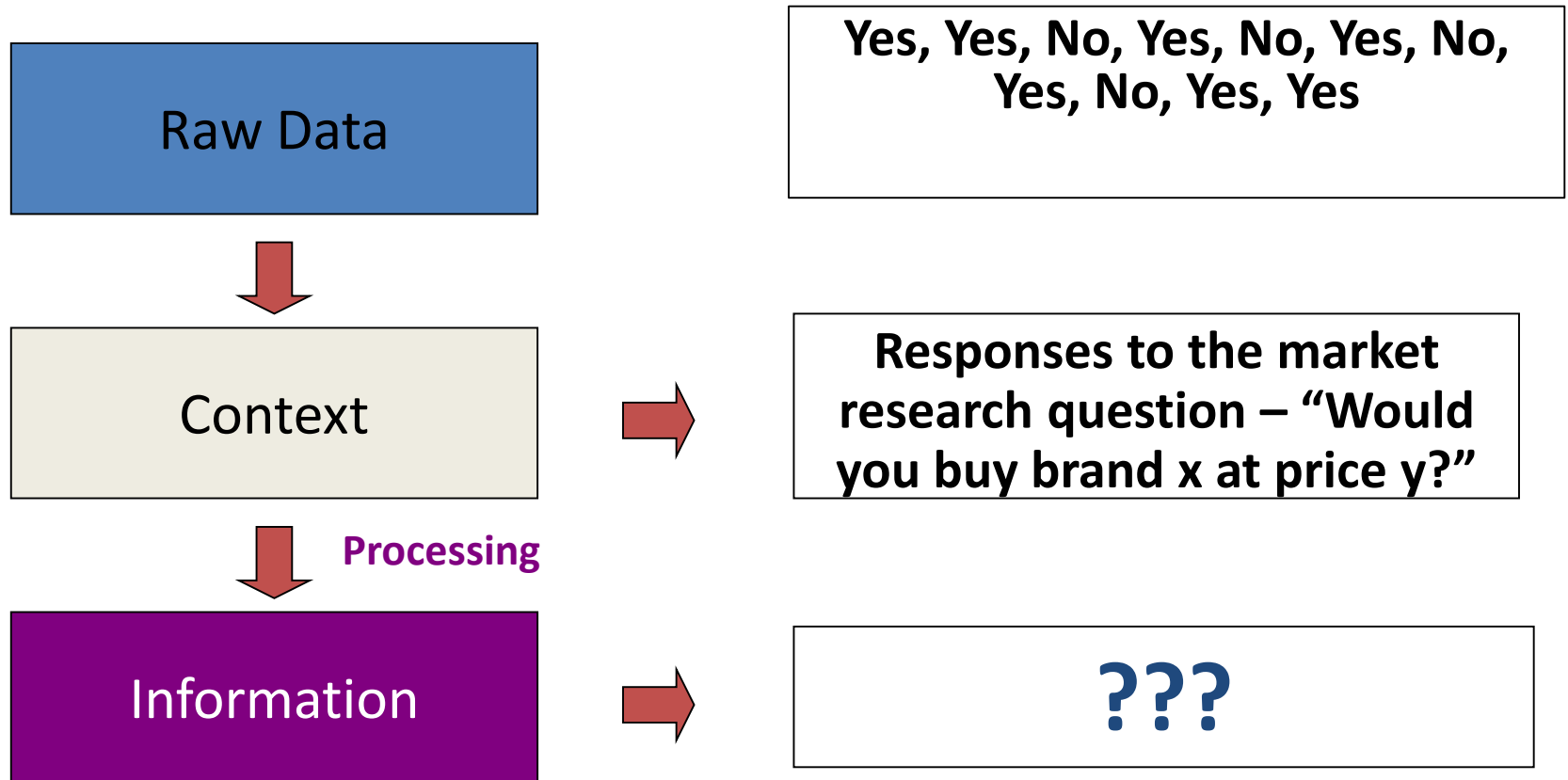
## Distinguish between Data, information and knowledge

- Data: Streams of raw facts representing events such as business transactions
- Data are fundamental facts, figures, observations, and measurement without context or organization.
- Information: Clusters of data that are meaningful and useful to human beings
- Information is data that has been organized and interpreted, and possibly formatted, filtered, analyzed, and summarized.
- Knowledge is a combination of information, experience and insight that may benefit the individual or the organisation

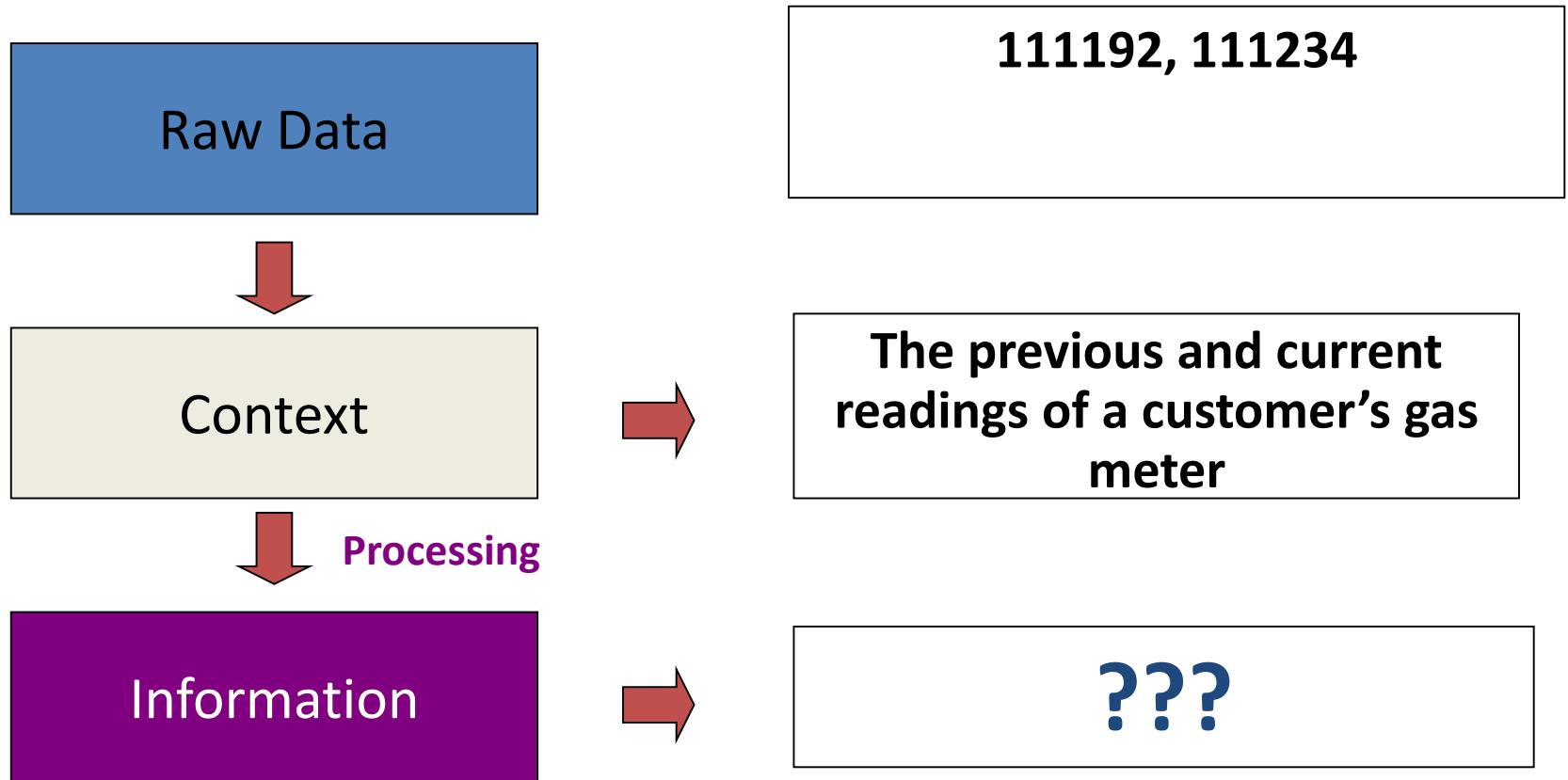
# Data Examples

- Yes, Yes, No, Yes, No, Yes, No, Yes
- 111192, 111234
- None of the above data sets have any meaning until they are given a **CONTEXT** and **PROCESSED** into a useable form

# Information Example1



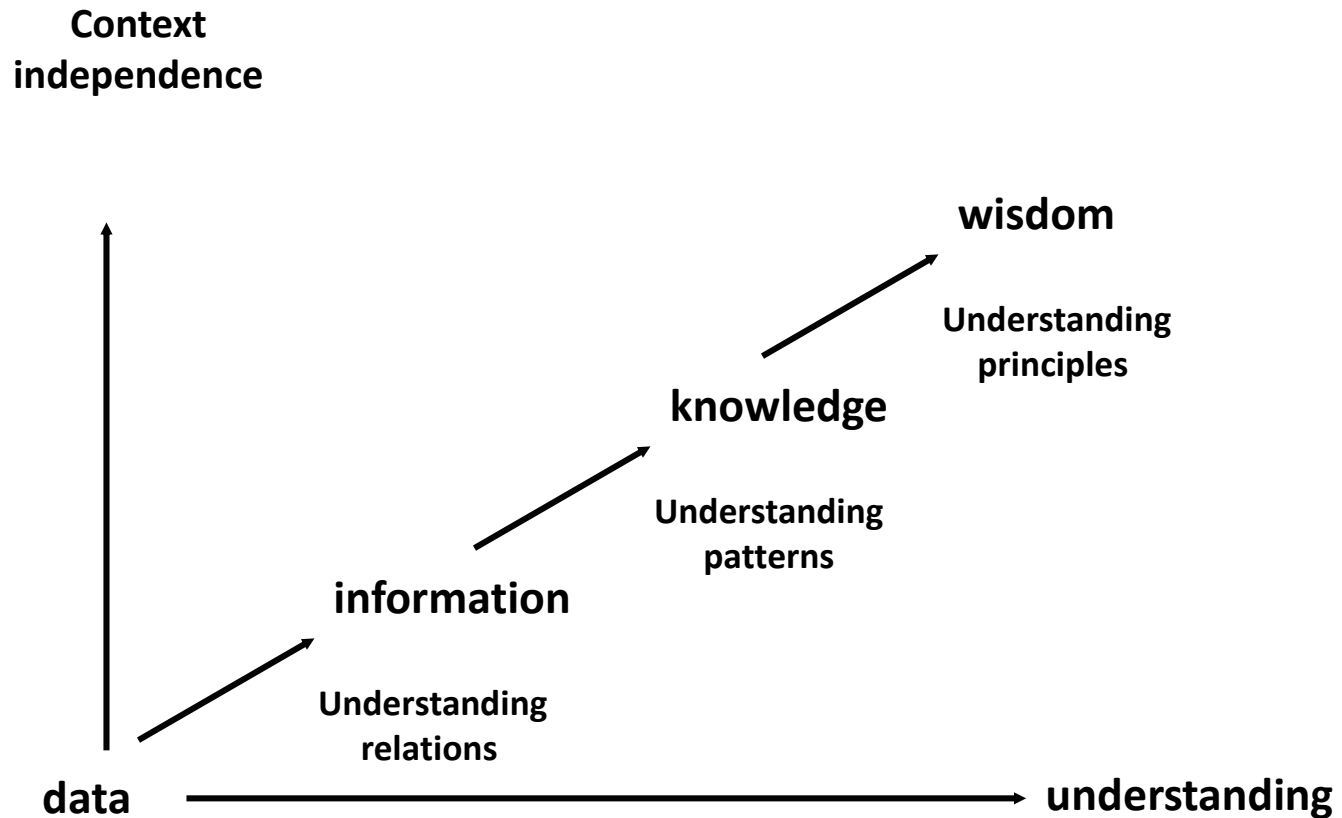
# Example 2



# Knowledge Examples

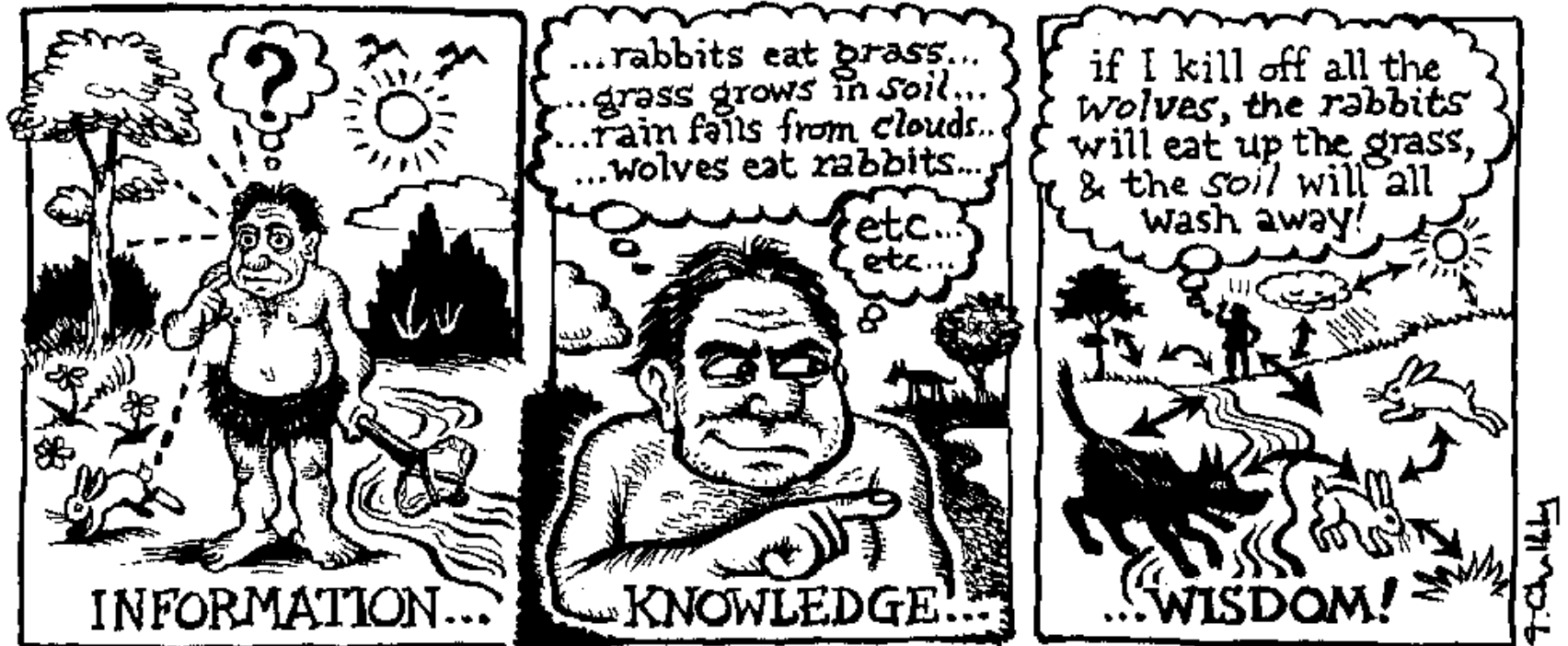
- Using the 2 previous examples:
  - A Marketing Manager could use this information to decide whether or not to raise or lower price y
  - Looking at the pattern of the customer's previous gas bills may identify that the figure is abnormally low and they are fiddling the gas meter!!!

# Difference Between Data, Information & Knowledge



# The Data Information Knowledge and Wisdom Hierarchy (DIKW)

TOM CHALKLEY



# The Characteristics of Valuable Information

**TABLE 1.2**

*Characteristics of Valuable Data*

Characteristics	Definitions
Accurate	Accurate information is error free. In some cases, inaccurate information is generated because inaccurate data is fed into the transformation process (this is commonly called garbage in, garbage out [GIGO]).
Complete	Complete information contains all the important facts. For example, an investment report that does not include all important costs is not complete.
Economical	Information should also be relatively economical to produce. Decision makers must always balance the value of information with the cost of producing it.
Flexible	Flexible information can be used for a variety of purposes. For example, information on how much inventory is on hand for a particular part can be used by a sales representative in closing a sale, by a production manager to determine whether more inventory is needed, and by a financial executive to determine the total value the company has invested in inventory.
Reliable	Reliable information can be depended on. In many cases, the reliability of the information depends on the reliability of the data collection method. In other instances, reliability depends on the source of the information. A rumor from an unknown source that oil prices might go up may not be reliable.



# The Characteristics of Valuable Information

Relevant	Relevant information is important to the decision maker. Information that lumber prices might drop may not be relevant to a computer chip manufacturer.
Simple	Information should also be simple, not overly complex. Sophisticated and detailed information may not be needed. In fact, too much information can cause information overload, whereby a decision maker has too much information and is unable to determine what is really important.
Timely	Timely information is delivered when it is needed. Knowing last week's weather conditions will not help when trying to decide what coat to wear today.
Verifiable	Information should be verifiable. This means that you can check it to make sure it is correct, perhaps by checking many sources for the same information.
Accessible	Information should be easily accessible by authorized users to be obtained in the right format and at the right time to meet their needs.
Secure	Information should be secure from access by unauthorized users.

# Why Information Systems?

Four powerful worldwide changes that have altered the business environment:

- 1. Globalization**
- 2. Rise of the Information Economy**
- 3. Transformation of the Business Enterprise**
- 4. Emergence of the Digital Firm**

# Globalization

- Management and control in a global marketplace
- Competition in world markets
- Global workgroups
- Global delivery systems

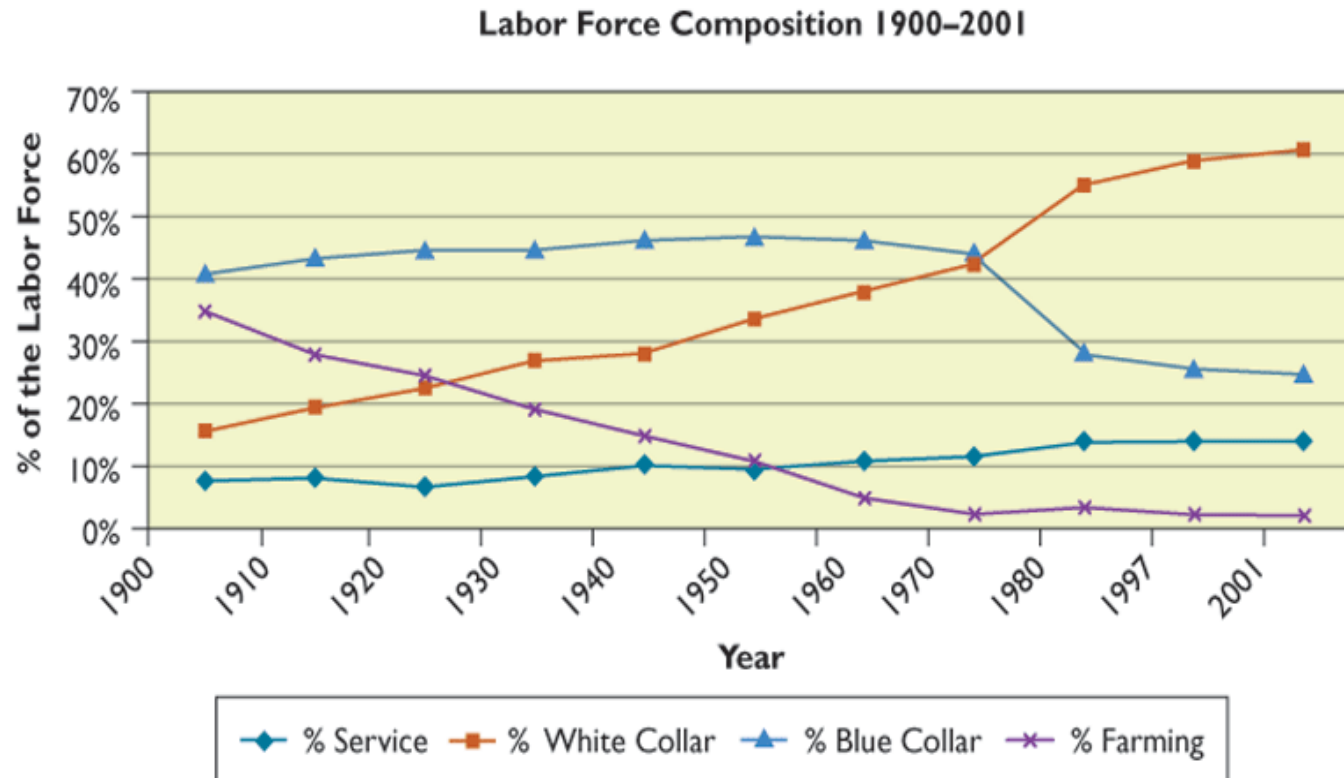
# Rise of the Information Economy

- Knowledge- and information-based economies
- New products and services
- Knowledge: a central productive and strategic asset
- Time-based competition
- Shorter product life
- Turbulent environment
- Limited employee knowledge base

# New Economy vs. Old Economy

Example	Old	New
Buying and selling textbook	Visit the bookstore	Visit web site for publishers and retailers
Registering for classes	Walk around campus to Departments, Registrar's office, etc.	Access campus web site
Photography	Buy film, use camera, take picture, take it for processing	Use digital camera
Paying for Gasoline	Fill up your car, go inside, pay cash or credit card	Use speed pass token; wave over the sensor and go
Paying for Transportation	Pay cash, metal tokens	Metro cards electronic cards
Paying for goods	Visit store, select item, pay, go	Use self-service kiosks
Supplying commercial photos	Use newspapers, paper, catalog, or online	Use hub-like supply chain with digitized picture

## The growth of the information economy

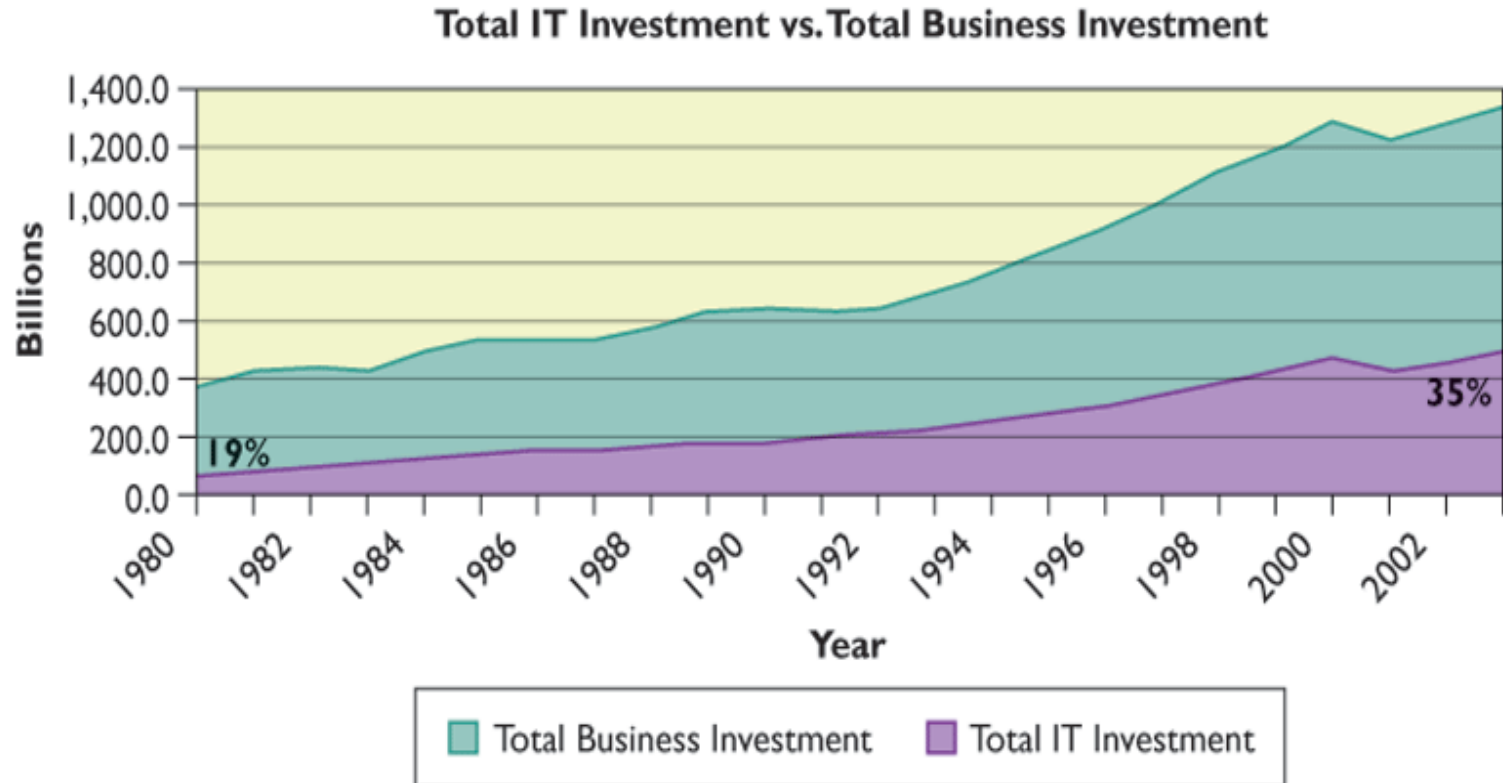


**Sources:** U.S. Department of Commerce, Bureau of the Census, *Statistical Abstract of the United States*, 2002, Table 588; and *Historical Statistics of the United States, Colonial Times to 1970*, Vol. 1, Series D, pp. 182–232.

# Transformation of the Business Enterprise

- Flattening
- Decentralization
- Flexibility
- Location independence
- Low transaction and coordination costs
- Empowerment
- Collaborative work and teamwork

# Information technology capital investment 1980-2003



**Source:** Based on data in U.S. Department of Commerce, Bureau of Economic Analysis, National Income and Product Accounts, Tables 5.2 and 5.8, 2003.



# Emergence of the Digital Firm

- Digitally enabled relationships with customers, suppliers, and employees
- Core business processes accomplished via networks
- Digital management of key corporate assets
- Rapid sensing and responding to environmental changes

# Why Managers need to understand IS?

- **The considerable amount of the dollars spent on IS.**
- **Management's involvement leads to IS- enabled business process such as; BPR, TQM.**
- **Lack of Management Involvement can lead to business failure.**