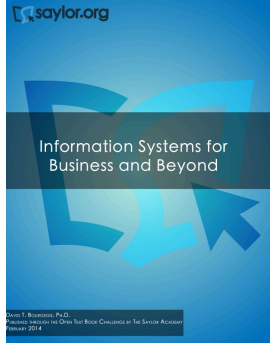


## IFSM300: Information Systems in Organizations

- ❖ **Week 1**
  - ◆ Introductions
  - ◆ Hybrid Class
  - ◆ Content on LEO
  - ◆ Saylor.org eBook
  - ◆ Week 1 Quiz
- ❖ **Week 1 Chapters**
  - ◆ 1 = What is an Information System?
  - ◆ 7 = Does IT Matter?
- ❖ **Watch videos**

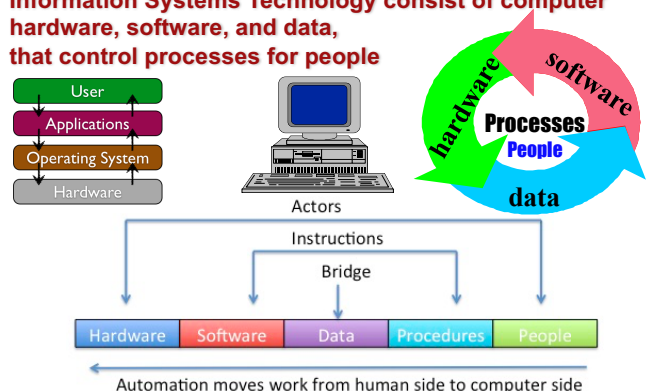


David T. Baerends, Ph.D.  
Revised 2013/11/11. Other text: Creative Commons BY-NC-SA license  
February 2014

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## Chapter 1: What is an Information System?

**Information Systems Technology consist of computer hardware, software, and data, that control processes for people**



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## Brief History of Computers

- ❖ **Mechanical Calculators** increase speed and accuracy of numerical computations
  - ◆ **Abacus** over 5,000 years ago (+/-)
  - ◆ **Adding machines** and **cash register** (+/-) 1800's
  - ◆ **Slide rules** (x/+) 1800's
  - ◆ **Bomb sites** and **ballistic sites** (x/+/-) 1900's
- ❖ **Electric Computers** developed since 1945
  - ◆ **ENIAC** (Electronic Numerical Integrator and Calculator)
    - ◆ Weight 33 tons, power 175 kw, 17,000 vacuum tubes,
    - ◆ 5k (+/-) per second, but sometimes **hardware bugs**
  - ◆ **IBM** sold 100's of **vacuum tube** computers in 1950's
    - ◆ Computers used for for business accounting and research
    - ◆ Machine Language and Assembly Language programs

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## Electronic Semi-Conductor Computers

- ❖ **AT&T** developed **Transistors** 1950's
  - ◆ AT&T developed computers for telephony switches
  - ◆ **IBM** and **DEC** computers (transistors) 1960's
  - ◆ Mainframe Era
- ❖ **Microprocessors and Integrated Circuits**
  - ◆ Personal Computing developed 1970s
  - ◆ Floppy disks and Hard drives
  - ◆ Commodore, Atari, Apple, IBM
  - ◆ Movie: *Pirates of Silicon Valley*
  - ◆ *What computer devices do we use today?*



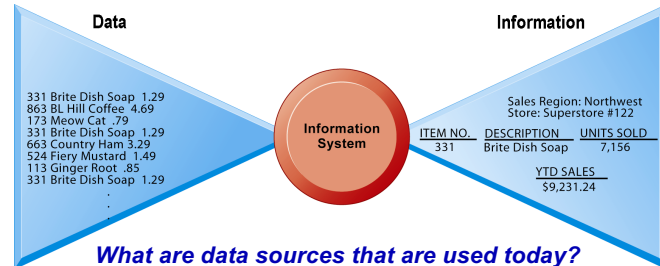
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## Perspectives on Information Systems

### ❖ Information system:

- ◆ Set of interrelated components (*hardware and software*)
- ◆ Collect, process, store, and distribute information
- ◆ Support decision making, coordination, and control

Raw data from a supermarket checkout counter can be processed and organized to produce information.



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## Activities of an Information System

### ❖ Four activities produce information organizations need

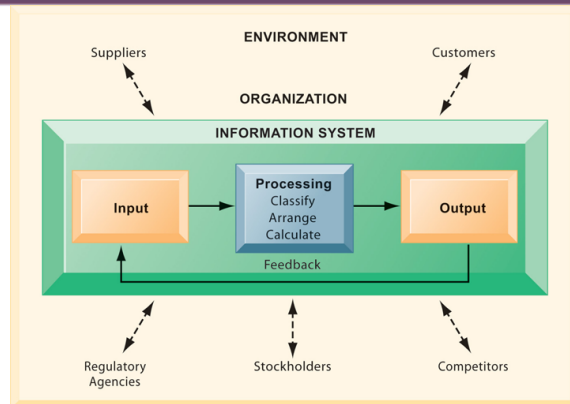
- ◆ **Input:** Captures data from organization & environment
- ◆ **Processing:** Converts raw data into meaningful information
- ◆ **Output:** Transfers information to people or activities for use
- ◆ **Feedback:** Output returned to evaluate or correct input stage

### ❖ An information system contains information about an **organization** and its surrounding **environment**.

- ◆ Environmental actors
- ◆ Customers
- ◆ Suppliers
- ◆ Competitors
- ◆ Stockholders
- ◆ Regulatory agencies

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## Interactions with Organization



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## Role of Information Systems in Business

### ❖ Information systems is transforming business

- ◆ **Mobile Digital Platforms** using wireless technology
- ◆ Internet, World Wide Web, and **E-commerce**
- ◆ **Cloud Computing** business software uses Internet
- ◆ Shifts in media and advertising to WWW, **google.com**
- ◆ Web 2.0 enables networked computing, **zoho.com**
- ◆ It provides opportunities for **Competitive Advantage**

### ❖ Globalization opportunities

- ◆ Internet enables operating business on global scale

### ❖ In the emerging, fully digital business firm

- ◆ Relationships are digitally enabled and mediated
- ◆ Data connectivity achieved using **digital networks**
- ◆ Time shifting (24/7) and Space shifting (global)

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## Information Systems Business Examples

- ❖ Walmart's RetailLink system links suppliers to stores for superior replenishment system
- ❖ Amazon's Warehouse IT robotic assistant system links suppliers to stores
- ❖ Synergy Sports Technology tags game video with descriptive categories and allows coaches and players to stream game footage from Web
  - ◆ **Problem:** Lack of hard data usable in decision-making processes in competitive basketball
  - ◆ **Solutions:** Developed a new system designed to collect and organize data using game video clips

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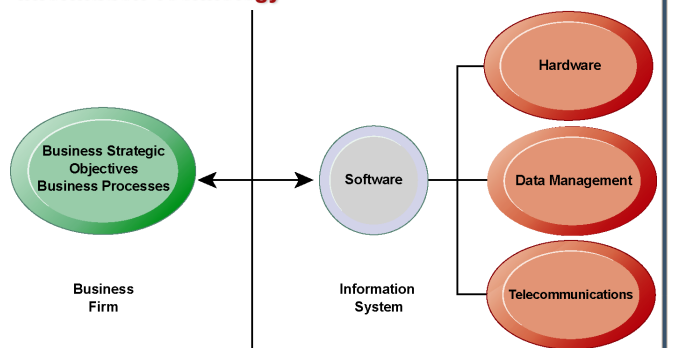
## Chapter 7: Does IT Matter?

- ❖ Organizations have spent trillions of dollars on IT. Has this investment made a difference?
- ❖ The Productivity Paradox 1991  
Mismeasurement of outputs and inputs
  1. Lags due to learning and adjustment
  2. Redistribution and dissipation of profits
  3. Mismanagement of information and technology
- ❖ Does IT Matter? By Nicholas Carr 2003  
Manage as commodity: Low cost and low risk
  - ◆ Firm should never be first to try a new technology
  - ◆ Letting others take the risks
  - ◆ Goal is best service with minimal downtime

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## IT Should Enable Corporate Strategy & Goals

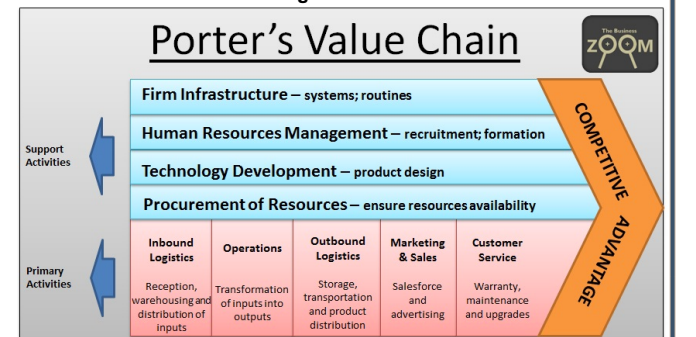
### The Interdependence Between Organizations and Information Technology



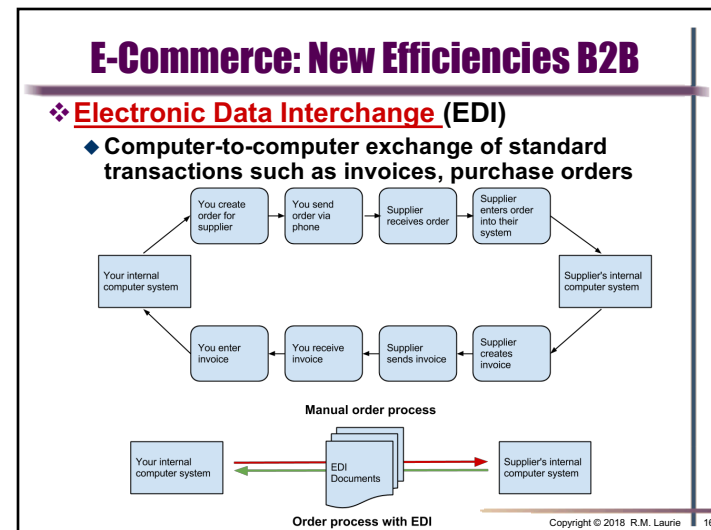
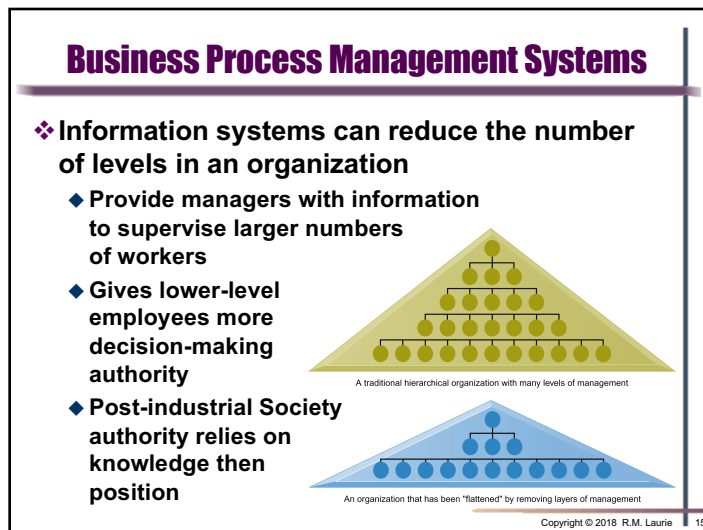
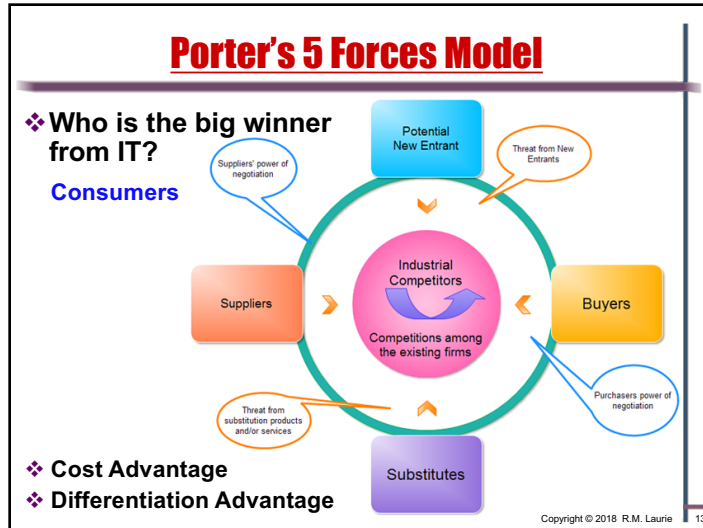
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## Porter's Value Chain Model

- ❖ Michael Porter on Competitive Advantage
  - ◆ Cost Advantage
  - ◆ Differentiation Advantage



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## E-Commerce: New Efficiencies B2B

- ❖ Collaborative Systems
  - ◆ Cloud Storage: Document sharing and backup  
Dropbox, Google Drive, iCloud, GitHub,
  - ◆ Sharepoint and Lotus Notes
  - ◆ Email *asynchronous*
  - ◆ Teleconference *synchronous*: Skype, WebEx, Zoom
  - ◆ Browser based Web apps: Google docs and Zoho
- ❖ Net marketplaces (e-hubs)
  - ◆ Single market for many buyers and sellers
  - ◆ Generate revenue from transaction fees
  - ◆ Use prices established through negotiation, auction, Request For Quotes, or fixed prices
  - ◆ Long-term contract or short-term spot purchasing

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## Decision Support Systems

- ❖ Supports decision making process
  - ◆ Can Serve all levels of management
  - ◆ Customer Service Management
- ❖ Supports unstructured non-routine decisions
  - ◆ Labor or Legal issues
  - ◆ May involve unknowns
  - ◆ Managers may use intuition
- ❖ Semi-structured decisions
  - ◆ Most factors known, but human experience helpful
  - ◆ Investment decisions
  - ◆ Medical **Watson Health** [www.isabelhealthcare.com](http://www.isabelhealthcare.com)
- ❖ Highly structured decisions can be automated
  - ◆ Inventory management
  - ◆ Robotic automation

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## The Internet and Organizations

- ❖ The Internet increases the accessibility, storage, and distribution of information and knowledge for organizations
- ❖ The Internet can greatly lower transaction and agency costs
  - ◆ Customer service
  - ◆ Marketing
- ❖ The Internet's impact on competitive advantage
  - ◆ Transformation, destruction to some industries
  - ◆ Competitive forces, but rivalry more intense
  - ◆ Universal standards allow new rivals
  - ◆ New opportunities for building brands and loyalty
  - ◆ Empowers customers

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## Videos to View

1. Walmart IT History <https://youtu.be/b5K1yrICMII>
2. Amazon IT <https://youtu.be/UtBa9yVZBJM>
3. The Productivity Paradox 1991  
<http://ccs.mit.edu/papers/CCSWP130/ccswp130.html>
4. Does IT Matter? [https://youtu.be/hj\\_mzU3N70g](https://youtu.be/hj_mzU3N70g)
5. Value Chain [https://youtu.be/UI\\_kXIFdwQE](https://youtu.be/UI_kXIFdwQE)
6. 5 Force Model [youtu.be/ZWQMwnCFIj0](https://youtu.be/ZWQMwnCFIj0)
7. EDI <https://youtu.be/jV7okF2MVxI>
8. DSS Health [https://youtu.be/ZPXCf5e1\\_HI](https://youtu.be/ZPXCf5e1_HI)

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