Note Taker Position

- Contact DRC
- 1 person will be hired (paid position)
- Email: drc@ucsc.edu

Review

Data Processing Era
- Mainframes, time sharing, dumb terminals, data processing manager

Micro Era
- PCs on individual’s desks; Apple first “mass market”, IBM makes PC acceptable to bus.

Network Era
- PCs connected to servers w/ Intranets. New cost reductions and revenue models on Internet.

Information Resource Management

- Strategic realization
  - Information is the resource to be managed not just data.
  - Need to get information into the hands of workers, so workers can be more productive.

Result: Organizational Performance Improvement

![Market Value Chart]

Source: Standard & Poor’s Component; Market values and PC 84 calendar year-end value.
The Network Era (1995 - ?) – Internet Phenomenon

- For IT manager -- Enormous challenge to manage networks of thousands of computers!

"The Technology leader of Tomorrow must be a business leader with all of the management skills of any other senior executive..."

The CIO has gone from being a corporate god in the 1980s to the chief blame taker in the 1990s when IT initiatives often have failed to deliver their promised productivity gains.”

Sifonis and Goldberg, "Changing Role of the CIO," Information Week, March 24 1997

The Network Era (1995 - ?) – Internet Phenomenon

- In 1996 the CIO turnover rate was 17.7%!

Take Away: Managing IT in the Network Era is difficult, but if you do it right the rewards can be huge!

What is a Business?

An organization that provides a product and/or a service that satisfies a need for which people are willing to pay money.

Makes money if revenues exceed costs.

Deloitte and Touche

Why Does a Company Need to Make a Profit?

- An obligation to owners/shareholders
  - Owners and shareholders have invested money and time. They expect to see something in return.

- Survival requires continued investments
  - new product development.
  - facilities and equipment.
  - acquiring other companies.
  - Invest in employees (training and salary increases)

- Stakeholders want to see performance before investing in a company's future.

Recall: What is a System?

System Definition: A group of interrelated components working toward the attainment of a common goal by accepting inputs and producing outputs in an organized transformation process

- Input
- Processing
- Output
- Feedback
- Control
A business is an organizational system where economic resources (input) are transformed by various organizational processes (processing) into goods and services (output).

Information systems provide information (feedback) on the operations of the system to management for the direction and maintenance of the system as it exchanges inputs and outputs within its environment.

Business Functions

**Function:** A group of people with related skills (specialized) seems to be a good starting point in understanding functions but this is a fairly loose definition.

**Examples**
- Design
- Engineering
- Sales
- Finance
- Marketing
- Etc...

Helps to remember and to tie together:

- Some business basics while remembering the importance of making a profit.
- The understanding of business functions.
- The appreciation for the importance of business processes.

Important Things to Understand

Two terms:

1) business functions
2) business processes

Will be frequently used throughout this course.

It would be a good idea to make absolutely sure that you know what they are.
What prompts the creation and justification of business functions?

- Specialization
- Size
- Efficiency
- More cost effective

Business Processes

What is a business process?

- A designed succession of actions to the accomplish of some result in a business.
- Example
  - Order Fulfillment

A Business Process

Cross Functional Process

- A business process that crosses over multiple functions
- Are all business processes cross functional?

A business process within a function

Example: Channel Selection Process within Marketing function

Processes tend to be more simple at smaller organizations

Enrollment Process at a small, fictitious university...
Processes tend to be more simple at smaller organizations

Enrollment Process at UCSC...

Similarly, at small companies

Example: Capital Equipment Purchase Business Process...

Big company

Capital Equipment Purchase Business Process

So where do Information Systems Fit into this Story??

- Coordinates flow of information between functional departments carrying out a business process.
  - Increase Speed
  - Reduce Errors
- May reduce number of steps in a business process.
- May even allow new processes that would not have been feasible before...

Information System Roles

Competitive Advantage

Effectiveness

Efficiency

A few Information System Categories...
Transaction Processing Systems

- Record and process data resulting from business transactions
- Example: Credit card trans. processing
- 2 types
  - Real-time
  - Batch-Processing

An example: Process Control Systems

- Monitor and control physical processes
- Example:

An example decision support systems

What is Business Process Reengineering?

- A fundamental rethinking and redesign of business processes
- Minor improvement to a business process is often called streamlining the business process

Business Process Example

A Streamlined Business Process

- Automatic Credit Check

Customer → Sales → Take Order → Enter Order → Credit Check → Check Stock → Print Packing List → Find Goods → Ship → Tell Mfg. to make order
A Reengineered Business Process

Role of Information Systems in Business Process Reengineering?

- IS often enables complicated business processes be made more simple.
- IS doesn't always drive business process reengineering though...

Porter Competitive Model?

- What is it?
  - A model to help understand the competitive environment in which a company operates.

- What are the "5 forces"?
  - Intra-Industry Competition
  - Bargaining power of Suppliers
  - Bargaining power of Customers
  - Substitutes
  - Threat of New Entrants.

Porter Competitive Model
(Identify the Industry and the Specific Market Being Evaluated)

Porter Model in Business Paper

- You must include a Porter Model in your Business Paper
  - Figure
    - Make it look nice!
  - Narrative analysis of the five forces
    - Identify the industry.
    - Identify the major buyers, suppliers, potential new entrants, substitutes, and intra-industry rivals.
    - Discuss if and why these players put strong or weak competitive pressures on your business.
Example: Usefulness of Porter Model

Bob wants to start a dentist office
- However, Bob did not go to dental school
- Bob will hire the dentist and other staff
- Is this a good model?

Suppliers
- Bob's Dentist Office

New Entrants
- Dentists moving in from other regions

Buyers
- Public in general
- Insurance companies
- Those wanting cosmetic dentistry

Dentist (Alice)

Substitutes
- Alternative Medicine?
- Dental School Graduates
- Dentists moving in from other regions

Example: Usefulness of Porter Model

Suppose Alice, who is a dentist, opens an office

New Entrants
- Students

Intra-industry rivals
- Other local dentist offices

Substitutes
- Public in general
- Insurance companies
- Those wanting cosmetic dentistry

“Primary” Porter Strategies

- In economics you will learn a market where
  - Product is a commodity
  - Firms all have the same production costs
  - New firms can enter market at no cost (‘free entry’)
- Consequently Firms need to
  - Differentiate and/or
  - Achieve Cost leadership

Porter Supporting Strategies

- Innovation
  - Can reduce costs and or differentiate
- Growth
  - Help offset fixed costs
  - Establish reputable brand (differentiate)
- Alliances
  - Achieve more complete solution (differentiate)
  - Integration of each others technology may reduce costs

Rules Regarding Strategies

- Must pick at least one of the two primary strategies.
- Can pick any combination of supporting strategies.

Let’s test the logic of this using Dell and Wal-Mart Stores.
**Dell, Inc. Strategies**

*Primary Strategy:*
- Differentiation
- Least Cost

*Supporting Strategies:*
- Innovation
- Growth
- Alliances

**Wal-Mart Strategies**

*Primary Strategy:*
- Least Cost
- Differentiation

*Supporting Strategies:*
- Innovation
- Growth
- Alliances

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**What do Porter Models Have to do with IT?**

*Any ideas?*

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**Porter Model and Information Systems:**

1. Build barriers to prevent a company from entering an industry?
2. Build in costs that would make it difficult for a customer to switch to another supplier?
3. Change the basis for competition within the industry?
4. Change the balance of power between a company and its customers or suppliers?
5. Provide the basis for new products and services?

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**Porter's Value Chain**

- The Competitive Model deals with the environment within which a company competes
- The Value Chain addresses the flow of a product through the organization.
  - It starts with the original idea in research and tracks its progress all the way to the customers.

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**Generic Value Chain**

[Diagram of the Generic Value Chain showing primary and support activities]
**Value Chain Purpose**

- A way of classifying a company’s activities and how they help deliver value to customer.

- A framework for evaluating decisions like outsourcing, or deployment of IT.

**Things to Remember Regarding the Value Chain**

- The ultimate objective is value to customer.

- As a new product and/or services moves through the value chain, it is important to maximize value-add activities and minimize things that do not add value to customer.

- Functional departments must be sure to emphasize the ultimate goal of value to customer and not do things that seem to make them look good but contradicts the ultimate objective.

**Simple Value Chain for Manufacturing Industry**

**Examples of IT Supporting Value Chain**

**Other terms in Chapter 2**

- **Agile Company**
  - Ability to prosper in rapidly changing environment
  - Some good examples in O’Brien ch2

**A Virtual Company**

A form of organization that uses telecommunications networks and other IT to link the people, assets and ideas of a variety of business partners, no matter where they may be located, in order to exploit a business opportunity.
Virtual Company Positives

- Share infrastructure and risk.
- Link complementary core competencies.
- Reduce concept-to-cash time through sharing.
- Increase facilities.
- Expand market coverage.
- Migrate from selling products to selling solutions.
- Migrate from selling boxes to selling systems.

Possible Negative Factors

- Will the vendor be able to perform the service at a cost sufficiently low enough and still gain a profit?
- Will the people laid off take with them essential skills and insights that the company needs?
- Will the vendor be able to respond to the organization’s new needs for capabilities and flexibility?

Other terms in Chapter 2

- Explicit knowledge
  - That which can be written down
- Tacit Knowledge
  - That which is cannot be written down
  - Example: How to ride a bicycle.
- Much of a company’s value is in its knowledge
  - Patents, documents
  - Tacit knowledge in employee’s heads

Other terms in Chapter 2

- Knowledge-Creating Company
  - Create new business knowledge
  - Disseminate knowledge throughout company
- Knowledge Management Systems
  - Facilitate this dissemination
  - Often, like a search engine on a company intranet.
- Aside: might a knowledge management system affect the negotiating power of employees?

Chapter 2 Summary

- Porter models are important as a way to evaluate competitive environment and/or internal processes.
- Use Porter strategy terminology in discussing how an industry and companies in the industry compete.