Assignment for Next Class

- Read and prepare the case studies 1, 2, and 3.

Put In Nonsense, Get Out Chaos

- Accurate data is crucial.
- False or ambiguous data propagates and puts the integrity of the whole Information System at risk.
- This is an even bigger danger when multiple systems work together and exchange data.

System and Modeling Concepts

A set of elements or components that interact to accomplish goals

- Input
- Processing mechanism
- Output
- Feedback
- System boundary

Components of a System
System Performance and Standards

- Efficiency: output/input
- Effectiveness: extent to which system attains its goals
- Performance standard: specific objective of a system

System Variables and System Parameters

- System variable - item controlled by decision-maker
- System parameter - value that cannot be controlled

Systems Classification

<table>
<thead>
<tr>
<th>Type</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simple</td>
<td>Many elements, highly related; interdependent; problem not simplified</td>
</tr>
<tr>
<td>Complex</td>
<td>Many elements, less related; independent; problem simplified</td>
</tr>
<tr>
<td>Static</td>
<td>Does not change over time, reacts to changes in the environment</td>
</tr>
<tr>
<td>Dynamic</td>
<td>Undergoes rapid and constant change over time</td>
</tr>
<tr>
<td>Reactive</td>
<td>Reacts to changes in the environment, not to changes in response to changes in the environment</td>
</tr>
<tr>
<td>Resistant</td>
<td>Does not respond to changes in the environment</td>
</tr>
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Modeling a System

- A model is an abstraction that is used to represent reality
- 4 major types of models
  - A narrative model is based on words
    - Logical, not physical
  - A physical model is tangible
  - A schematic model is a graphic representation
    - Graphs and charts
  - A mathematical model is an arithmetic representation

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Why makes it sense to use models instead of reality?

• Reality is complex. It is easier to understand the functionality of a system once it has been reduced to its essential structure.

• Automation implies that we treat a set of individuals or items equally. That means, we must find a form of representation which is suited for each.

Models should be validated!

What Is An Information System?

Computer-Based Information Systems (CBIS)
“...changing the way organizations conduct business.”

What do you think is the better approach:

a) Write an individual program that exactly represents a company’s current processes?

b) Change the company’s processes to those already available in standard software?

c) First reengineer all processes and then write respective software.
Organizational Structure

- Organizational subunits and their relationship with the overall organization
- Categories of organizational structure:
  - Team
  - Traditional
  - Multidimensional
  - Project
  - Virtual

Traditional Organizational Structure

Example of a Traditional Structure

Project Organizational Structure

- Centered on major products and services
- Temporary project teams

Team Organizational Structure

- Temporary or permanent teams
- Work groups
- Various sizes
Multidimensional Organizational Structure

- May incorporate several structures at the same time

- Advantage:
  - ability to simultaneously stress both traditional corporate areas and important product lines

- Disadvantage:
  - multiple lines of authority

Virtual Organizational Structure

- Employs business units in geographically dispersed areas
- People may never meet face to face
- Can be permanent or temporary

Organizational Culture

- Shared understandings, values, and assumptions in an organization
- Influences information systems

Reengineering

Reengineering involves the radical rethinking of business processes, organizational structure, incentive systems, and values of the organization to achieve a breakthrough in business results.
Continuous Improvement

- Constantly seeking ways to improve business processes

- Benefits:
  - Increased customer loyalty
  - Reduction in customer dissatisfaction
  - Reduced opportunity for competitive inroads

Continuous Improvement vs. Reengineering

<table>
<thead>
<tr>
<th>Business Process Reengineering</th>
<th>Continuous Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solver action driven to solve various problems</td>
<td>Process action taken to make minor improvements</td>
</tr>
<tr>
<td>Tips from existing software implementation</td>
<td>Minor change</td>
</tr>
<tr>
<td>Short in scope, con across departments</td>
<td>Narrow in scope, focus is on details in a given area</td>
</tr>
<tr>
<td>Goal is to achieve a major breakthrough</td>
<td>Goal is continuous, gradual improvement</td>
</tr>
<tr>
<td>Often led by executives</td>
<td>Usually led by workers close to the business</td>
</tr>
<tr>
<td>Interaction spans across the solution</td>
<td>Information systems provide data to guide improvement level</td>
</tr>
</tbody>
</table>

Total Quality Management (TQM)

- Quality: ability of a product or service to meet or exceed customer expectations

- TQM: approaches and techniques used to achieve quality throughout the organization

  → Feedback ←
Thank you!

The slides will be available on the internet at
http://ruby.fgcu.edu/courses/mhepp/
(-> CRN80097)