### Lecture 15 of MIS

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#### Objectives
1. Demonstrate how building new systems produces organizational change.
2. Explain how a company can develop information systems that fit its business plan.
3. Evaluate most used methods for building information systems and alternative methodologies for modeling systems.

#### Chapter Outline
13.1. Systems As Planned Organizational Change
- Linking Information Systems to the Business Plan
- Establishing Organizational Information Requirements
- Systems Development and Organizational Change

13.2. Business Process Reengineering and Process Improvement
- Business Process Reengineering

13.3. Overview of Systems Development

13.4. Alternative Systems-Building Approaches

#### Key Terms
- Automation, Benchmarking, Business process reengineering
- Component-based development, Critical success factors (CSFs)
- Customization, Data flow diagram (DFD), End-user development
- Enterprise analysis, Feasibility study, Information requirements
- Information systems plan, Maintenance, Process specifications
- Production, Programming, Prototype, Rapid application development (RAD)
- Six sigma, Structure chart, Work flow management

### Section 13.1: Systems as Planned Organizational Change

This section provides students with an introduction to the methodology of redesigning the organization. It takes too long to build systems, and they often do not work as intended. Building systems is difficult and labor intensive.

1. Information Systems Plan: Road map indicating direction of systems development: the rationale, the current situation, the management strategy, the implementation plan, and the budget

2. Enterprise Analysis (Business Systems Planning): Analysis of organization-wide information requirements

3. Process/data class matrix
(4) Strategic Analysis or Critical Success Factors

Critical Success Factors (CSFs): A small number of easily identifiable operational goals shaped by industry, firm, manager, and broader environment. Used to determine information requirements of organization.

(5) The Spectrum of Organizational Change

- Automation: Speeding up performance
- Rationalization of procedures: Streamlining of operating procedures
- Business process reengineering: Radical design of business processes
- Paradigm shift: Radical reconceptualization

(6) Organizational change carries risks and rewards


Change certainly should be a theme throughout the entire course. It takes a change agent to carry out major changes, such as business process reengineering.

(1) Business Process Reengineering: a good example of the problems that information systems can face. First, people react negatively to what they may view as a buzzword. Secondly, business process reengineering implies, probably correctly, that the organization is either not doing things correctly or that the environment has changed and the old ways will not work anymore. It takes some crises or changes in the environment to induce or engender the call for reengineering. ERP is often the computer enterprise incarnation of business process engineering.

(2) Workflow Management

- The process of streamlining business procedures so that documents can be moved easily and efficiently from one location to another
- (2) Steps in Effective Reengineering
  - Senior management needs to develop broad strategic vision
  - Management must understand and measure performance of existing processes as baseline
  - Information technology should be allowed to influence process design from start
  - IT infrastructure should be able to support business process changes

(3) Process Improvement:

Business Process Management (BPM): Enables organizations to manage incremental process changes required simultaneously in many areas of business. Provides a methodology for dealing with the organization’s need to optimize numerous internal business processes and processes shared with other companies.
Total Quality Management (TQM): A concept that makes quality control a responsibility to be shared by all people in an organization.

Six Sigma: A specific measure of quality representing 3.4 defects per million opportunities.

(4) How Information Systems Contribute to Total Quality Management

- Simplify product or production process
- Enable benchmarking
- Use customer demands as guide to improve products and services
- Reduce cycle time
- Improve the quality and precision of the design
- Increase the precision of production

Section 13.3: Overview of Systems Development.

The traditional system lifecycle methodology is usually only used for very large, complex systems. It is inflexible and does not allow easy changes at any step along the way. However, it can be effective for highly-structured systems such as accounting, payroll or complex manufacturing systems.

Section 13.4: Alternative Systems-Building Approaches.

End-user development is a hot area. End-user computing is difficult to manage and support, as the Laudons' note. However, if user needs are not met, they have a strong incentive to get around the rules and restrictions. The purpose of the system is to serve the strategies of the company and the end users.

(1) Systems Lifecycle: Traditional methodology for developing information systems that partitions the system development process into formal stages that must be completed sequentially.

(2) Prototyping: Process of building experimental system quickly and inexpensively for demonstration and evaluation so that users can better determine information requirements.

(3) Application software packages: Set of prewritten, precoded application software programs commercially available for sale or lease.

(4) Customization: Modification of software packages to meet organization’s unique requirements without destroying the software’s integrity.

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