

Quality of Information Systems

Note: In addition to the following main points, the students should refer to the detailed study material which has already been e-mailed to them.

- **Four kinds of structural organizational change enabled by IT**
 1. **Automation**
 - Increase efficiency, replace manual tasks
 2. **Rationalization**
 - Streamline standard operating procedures
 3. **Business process reengineering (BPR)**
 - Analyze, simplify, and redesign business processes
 4. **Paradigm shifts**
 - Rethink nature of business, define new business model, change nature of organization

- **Business process reengineering (BPR)**
 1. Large payoffs can result from redesigning business processes
 - Replacement of sequential tasks with “work cell” or team approach
 2. **Work flow management:** Process of streamlining business procedures so documents can be moved easily and efficiently

- **Steps in effective reengineering**
 1. Determine which business processes should be improved
 - Must avoid becoming good at the wrong process
 2. Understand how improving the right processes will help the firm execute its business strategy
 3. Understand and measure performance of existing processes as a baseline

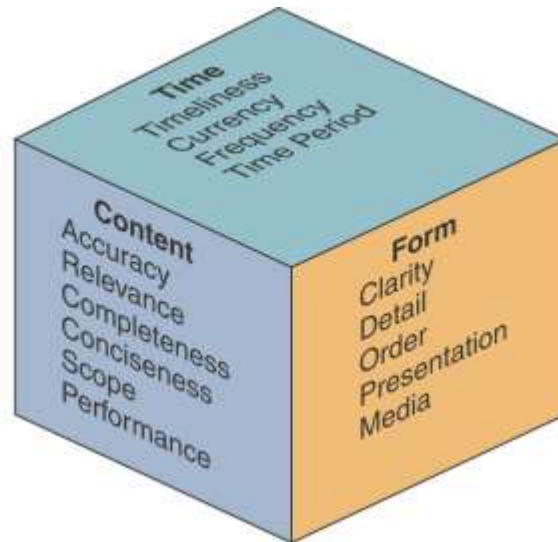
- Even with effective BPR, majority of reengineering projects do not achieve breakthrough gains because of inadequate change management

- **Business process management (BPM)**
 1. Helps firms manage incremental process changes
 2. Uses process-mapping tools to:
 - Identify and document existing processes
 - Create models of improved processes that can be translated into software systems
 - Measure impact of process changes on key business performance indicators
 3. Includes:
 - Work flow management
 - Business process modeling notation
 - Quality measurement and management
 - Change management
 - Tools for standardizing business processes so they can be continually manipulated
 - Process monitoring and analytics
 - To verify process performance has improved and measure impact of process changes on key business performance indicators

- **Information Quality**
 1. **Timeliness**
 - Provided WHEN it is needed
 - Up-to-date when it is provided
 - Provided as often as needed
 - Provided about past, present, and future time periods as necessary
 2. **Content**
 - Free from errors
 - Should be related to the information needs of a specific recipient for a specific situation
 - Provide all the information that is needed
 - Only the information that is needed should be provided
 - Can have a broad or narrow scope, or an internal or external focus
 - Can reveal performance

3. Form

- Provided in a form that is easy to understand
- Can be provided in detail or summary form
- Can be arranged in a predetermined sequence
- Can be presented in narrative, numeric, graphic, or other forms
- Can be provided in hard copy, video, or other media.



Time Dimension

Timeliness
Currency
Frequency
Time Period

Information should be provided when it is needed.
Information should be up-to-date when it is provided.
Information should be provided as often as needed.
Information can be provided about past, present, and future time periods.

Content Dimension

Accuracy
Relevance

Completeness
Conciseness
Scope

Performance

Information should be free from errors.
Information should be related to the information needs of a specific recipient for a specific situation.
All the information that is needed should be provided.
Only the information that is needed should be provided.
Information can have a broad or narrow scope, or an internal or external focus.
Information can reveal performance by measuring activities accomplished, progress made, or resources accumulated.

Form Dimension

Clarity

Detail
Order
Presentation

Media

Information should be provided in a form that is easy to understand.
Information can be provided in detail or summary form.
Information can be arranged in a predetermined sequence.
Information can be presented in narrative, numeric, graphic, or other forms.
Information can be provided in the form of printed paper documents, video displays, or other media.

- **Quality management:**
 1. Fine-tuning business processes to improve quality in their products, services, and operations
 2. The earlier in the business cycle a problem is eliminated, the less it costs the company
 3. Quality improvements raise level of product and service quality as well as lower costs

- **Total Quality Management (TQM):**
 1. Achievement of quality control is end in itself
 2. Everyone is expected to contribute to improvement of quality
 3. Focuses on continuous improvements rather than dramatic bursts of change

- **Six sigma:**
 1. Specific measure of quality
 2. 3.4 defects per million opportunities
 3. Uses statistical analysis tools to detect flaws in the execution of an existing process and make minor adjustments

- **Information systems support quality improvements by helping firms:**
 1. Simplify products or processes
 2. Make improvements based on customer demands
 3. Reduce cycle time
 4. Improve quality and precision of design and production
 5. Meet **benchmarking** standards
 - **Benchmarking:** Setting strict standards for products, services, and other activities, and then measuring performance against those standards