Chapter Seven
Process Modeling, Process Improvement and ERP Implementation

Objectives
After completing this chapter, you will be able to:
• Use basic flowcharting techniques to map a business process
• Evaluate the value added by each step in a business process
• Develop process improvement suggestions
• Discuss the key issues in managing an ERP implementation project
• Describe some of the key tools used in managing an ERP implementation project

Introduction
• Tools that can be used to describe business processes
  – Flowcharts, event process chains
  – Not specific to ERP
  – Can help managers identify process elements that can be improved
• Role of process-modeling tools in ERP implementation projects

Process Modeling
• Business processes can be quite complex
• Process model: any abstract representation of a process
• Process-modeling tools provide a way to describe a business process so that all participants can understand the process
• Advantages of process models
  – Graphical representations are usually easier to understand than written descriptions
  – Provide a good starting point for analyzing a process
    • Participants can design and implement improvements
  – Document the business process
    • Easier to train employees to support the business process
Flowcharting Process Models

- **Flowchart**
  - Any graphical representation of the movement or flow of concrete or abstract items
  - Clear, graphical representation of a process from beginning to end
  - Uses a standardized set of symbols
- **Process mapping**
  - Often used interchangeably with flowcharting
  - Specifically refers to activities occurring within an existing business process

Fitter Snacker Expense Report Process

- Maria, Fitter Snacker salesperson
  - Completes a paper expense report after travel
  - Makes a copy for her records
  - Attaches receipts for any expenses over $25
  - Mails it to her zone manager at the branch office
- Kevin, zone manager
  - Reviews expense report
  - Approves report or mails it back to Maria asking for explanation, verification, or modification
  - After approval, mails it to corporate office
- Process at corporate office
  - Accounts payable (A/P) clerk

Flowcharting Process Models (cont’d.)

[Diagram of basic flowcharting symbols]

Fitter Snacker Expense Report Process (cont’d.)

[Diagram of partial process map for Fitter Snacker expense-reporting process]
**Process Boundaries**

- **Process boundaries** define:
  - Which activities are to be included in the process
  - Which activities are considered part of the environment—external to process
- All processes should have only one beginning point and one ending point
- Decision diamond asks a question that can be answered with “yes” or “no”

**Extensions of Process Mapping**

- **Hierarchical modeling**: ability to flexibly describe a business process in greater or less detail, depending on the task at hand
- Modeling software that supports hierarchical modeling
  - Provides user the flexibility to move easily from higher-level, less detailed views to the lower-level, more detailed views

**Extensions of Process Mapping (cont’d.)**

- **Deployment flowcharting**
  - Swimlane flowchart
  - Depicts team members across the top
  - Each step is aligned vertically under the appropriate employee or team
  - Clearly identifies each person’s tasks in the process
Figure 7-4  Deployment, or swimlane, flowcharting of the FS expense report process

Process Improvement

• Value analysis
  – Each activity in the process is analyzed for the value it adds to the product or service
  – Value added is determined from the perspective of customer
  – Real value: value for which the customer is willing to pay
  – Business value: value that helps the company run its business
  – No value: an activity that should be eliminated

Evaluating Process Improvement

• Disrupting the current process to make changes can be costly and time consuming
• Dynamic process modeling takes a basic process flowchart and puts it into motion
  – Uses computer simulation techniques to facilitate the evaluation of proposed process changes
• Computer simulation
  – Uses repeated generation of random variables that interact with a logical model of the process
  – Predict performance of the actual system

ERP Workflow Tools

• Workflow tools
  – Software programs that automate the execution of business processes and address all aspects of a process, including:
    • Process flow (logical steps in the business process)
    • People involved (the organization)
    • Effects (the process information)
• ERP software provides a workflow management system
  – Supports and speeds up business processes
• Workflow tasks: links that can include basic information, notes, documents, and direct links to business transactions
• SAP system can:
  – Monitor workflow tasks
  – If the tasks are not completed on time, can automatically take various actions
ERP Workflow Tools (cont’d.)

- Workflow provides a number of useful features
  - Employees can track progress of workflow tasks
  - System can be programmed to send reminders to employee(s) responsible for a task
  - For sporadic processes, workflow tools are a powerful way to improve process efficiency and effectiveness

Implementing ERP Systems

- Late 1990s: many firms rushed to implement ERP systems to avoid the Y2K problem
- Since 2000: pace of implementations has slowed considerably
  - Most Fortune 500 firms have implemented an ERP system
  - Current growth is in the small to midsized business market
- Implementation of ERP is an ongoing process
ERP System Costs and Benefits

• ERP implementation is expensive
  – Usually ranging between $10 million and $500 million, depending on company size
• Costs of ERP implementation
  – Software licensing fees
  – Consulting fees
  – Project team member time
  – Employee training
  – Productivity losses

ERP System Costs and Benefits (cont’d.)

• Companies must identify a significant financial benefit that will be generated by ERP system
• Only way companies can save money with ERP systems is by using them to support more efficient and effective business processes
• Companies must manage transfer of data from old computer systems to new ERP system

Implementation and Change Management

• Key challenge is not in managing technology, but in managing people
• ERP system changes how people work
  – To be effective, change may have to be dramatic
  – Business processes that are more effective require fewer people
  – Some employees may be eliminated from their current jobs

Implementation and Change Management (cont’d.)

• Organizational change management (OCM): managing the human behavior aspects of organizational change
• People do not mind change, they mind being changed
• If ERP implementation is a project that is being forced on employees, they will resist it
• When employees have contributed to a process change, they have a sense of ownership and will likely support the change
Implementation Tools

• Many tools are available to help manage implementation projects
  – Example: process mapping
• SAP provides Solution Manager tool
  – Helps companies manage implementation of SAP ERP
• In Solution Manager, ERP implementation project is presented in a five-phase Implementation Roadmap:
  – Project Preparation (15 to 20 days)
  – Business Blueprint (25 to 40 days)
  – Realization (55 to 80 days)
  – Final Preparation (35 to 55 days)
  – Go Live and Support (20 to 24 days)

Implementation Tools (cont’d.)

• Project Preparation
  – Organizing technical team
  – Defining system landscape
  – Selecting hardware and database vendors
  – Defining project’s scope
• Business Blueprint
  – Produces detailed documentation of business process requirements of the company

Implementation Tools (cont’d.)

• Realization
  – Project team members work with consultants to configure the ERP software in development system
• Final Preparation
  – Testing the system throughput for critical business processes
  – Setting up help desk for end-users
  – Setting up operation of the Production (PROD) system and transferring data from legacy systems
  – Conducting end-user training
  – Setting Go Live date
Implementation Tools (cont’d.)

• Go Live and Support
  – Company begins using new ERP system
  – Monitoring of system is critical so that changes can be made quickly if performance of the system is not satisfactory
  – Important to set a date at which the project will be complete

Summary

• Business processes
  – ERP systems are designed to provide the information, analysis tools, and communication abilities to support efficient and effective business processes
  – Process modeling: fundamental tool in understanding and analyzing business processes
• Process mapping: process-modeling tool that uses graphical symbols to document business processes
• SAP’s Solution Manager: set of tools and information that can be used to guide an implementation project
  • Included in SAP ERP to help manage the implementation of ERP software
• SAP’s system landscape was introduced to show how changes to ERP system during implementation (and beyond) are managed