

IS321

Chapter 5 Initiating & Planning Systems Development Projects

Learning Objectives

- ✓ Describe steps involved in the project initiation and planning process
- ✓ Explain the need for and the contents of a Project Scope Statement and Baseline Project Plan
- ✓ List and describe various methods for accessing project feasibility

Learning Objectives

- ✓ Describe the differences between intangible and tangible costs and benefits and between recurring and one-time benefits and costs
- ✓ Detail various methods of cost/benefit analysis
- ✓ Describe the general rules for evaluating the technical risks associated with a systems development project

The Process of Initiating and Planning IS Development Projects

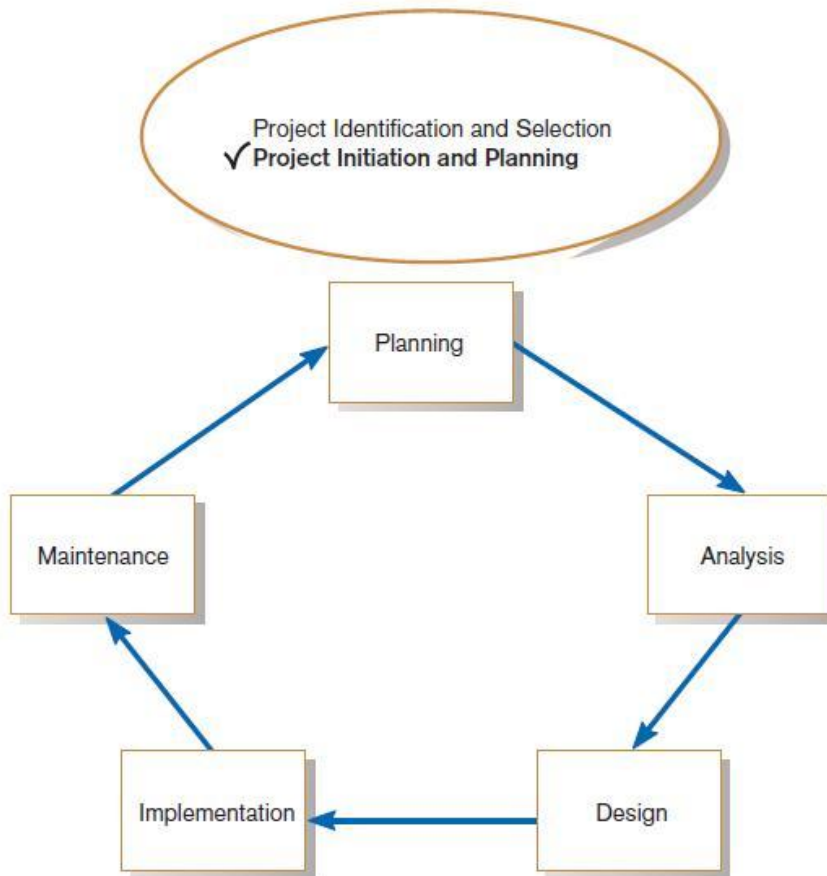


FIGURE 5-1
Systems development life cycle
with project initiation and
planning highlighted

The Process of Initiating and Planning IS Development Projects (Cont.)

- Project Initiation

- Establishment of project team
- Development of relationship with customer
- Project Initiation Plan
- Establishment of Management Procedures
- Establishment of Project Workbook and Project Management Environment
- Project charter

The key activity of project initiation is the development of the *project charter*.

The Process of Initiating and Planning IS Development Projects (Cont.)

- A project charter typically contains:
 - Project title and date of authorization
 - Project manager name and contact information
 - Customer name and contact information
 - Projected start and completion dates
 - Key stakeholders, project role, and responsibilities
 - Project objectives and description
 - Key assumptions or approach
 - Signature section for key stakeholders

The Process of Initiating and Planning IS Development Projects (Cont.)

- Project Planning
 - Defining clear, discrete activities and the work needed to complete each activity.
 - The objective of the project planning process is the development of a Baseline Project Plan (BPP) and the Project Scope Statement (PSS).

Elements of Project Planning

- Describe project scope, alternatives, feasibility.
- Divide project into tasks.
- Estimate resource requirements and create resource plan.
- Develop preliminary schedule.
- Develop communication plan.
- Determine standards and procedures.
- Identify and assess risk.
- Create preliminary budget.
- Develop a Project Scope Statement
- Set baseline project plan.

Deliverables and Outcomes

- **Business Case**
 - Justification for an information system
 - Presented in terms of the tangible and intangible economic benefits and costs
 - The technical and organizational feasibility of the proposed system
- **Baseline Project Plan (BPP)**
 - Contains the best estimate of a project's scope, benefits, costs, risks, and resource requirements

Deliverables and Outcomes (Cont.)

- Project Scope Statement (PSS)
 - A document prepared for the customer
 - Describes what the project will deliver
 - Outlines at a high level all work required to complete the project

Assessing Project Feasibility

- Six Categories
 - Economic
 - Technical
 - Operational
 - Schedule
 - Legal and contractual
 - Political

Assessing Project Feasibility (Cont.)

- Economic feasibility:
 - a process of identifying the financial benefits and costs associated with a development project
 - Often referred to as a *cost-benefit analysis*
 - Project is reviewed after each SDLC phase in order to decide whether to continue, redirect, or kill a project

Determining Project Benefits

- Tangible Benefits
 - Can be measured in dollars easily
 - Examples
 - Cost reduction and avoidance
 - Error reduction
 - Increased flexibility
 - Increased speed of activity
 - Improved management planning and control
 - Opening new markets and increasing sales opportunities

Tangible Benefits Worksheet (example)

A. Cost reduction or avoidance	\$4,500
B. Error Reduction	2,500
C. Increased Flexibility	7,500
D. Increased speed of activity	10,500
E. Improvement in management planning & Control	25,000
TOTAL	\$50,000

Determining Project Benefits (Cont.)

- Intangible Benefits
 - Cannot be measured easily in dollars
 - Examples
 - Increased employee morale
 - Competitive necessity
 - More timely information
 - Promotion of organizational learning and understanding
 - Positive impact on society
 - Improved resource control
 - Faster decision making

Determining Project Costs

- Tangible Costs
 - Can easily be measured in dollars
 - Example:
 - Hardware costs,
 - Labor costs, or
 - Operational costs including employee training and building renovations.

Determining Project Costs (Cont.)

- Intangible Costs
 - Cannot be easily measured in dollars
 - Examples:
 - Loss of customer goodwill.
 - Loss of employee morale.
 - Operational inefficiency.

Determining Project Costs (Cont.)

- One-time cost:
 - a cost associated with project start-up and development or system start-up
 - These costs encompass activities such as:
 - Systems development,
 - New hardware and software purchases,
 - User training,
 - Site preparation, and
 - Data or system conversion.

One-Time Cost Worksheet (example)

A. Development Costs	\$20,000
B. New Hardware	15,000
C. New (purchased) software	5,000
D. User Training	2,500
TOTAL	\$42,500

Determining Project Costs (Cont.)

- Recurring Costs
 - Associated with ongoing use of the system
 - Includes:
 - Application software maintenance
 - Incremental data storage expenses
 - New software and hardware releases
 - Incremental communications
 - Supplies and other expenses

Recurring costs (example)

A. Application software maintenance	\$25,000
B. Incremental data storage required	1,000
C. Incremental communications	2,000
D. New S/W & H/W leases	
E. Supplies	5,00
TOTAL	\$28,500

Determining Project Costs (Cont.)

- Both one-time and recurring costs can consist of items that are fixed or variable in nature.
- *Fixed costs* are billed or incurred at a regular interval and usually at a fixed rate.
- *Variable costs* are items that vary in relation to usage.

Definitions of Terms

- Time value of money (TVM)
 - The concept that money available today is worth more than the same amount tomorrow
- All costs & benefits must be viewed in relation to their *present value* PV

$$PV_n = Y * 1 / (1+i)^n$$

where PV_n is the present value of Y dollars n years from now when i is the discount rate.

- Discount rate: the rate of return used to compute the present value of future cash flows

Assessing Economic Feasibility

Example

	Y1	Y2	Y3
	1,500	1,500	1,500
PV	1,363.65	1,239.60	1,126.95
Net present value (NPV)=	$1,363.65 + 1,239.60 + 1,126.95 = 3730$		

Three Financial Measurements for Economic Feasibility

1. Net Present Value (NPV)
 - Use discount rate to determine present value of cash outlays and receipts
2. Return on Investment (ROI)
 - Ratio of cash receipts divided by cash outlays
 - $\text{ROI} = \text{overall NPV} / \text{NPV of all costs}$
 - Example (slide 27):
 - $\text{ROI} = 35,003 / 145,236 = 0.24$

Three Financial Measurements for Economic Feasibility

3. Break-even analysis: a type of cost-benefit analysis to identify at what point (if ever) benefits equal costs

$$\text{Break-Even Ratio} = \frac{\text{Yearly NPV Cash Flow} - \text{Overall NPV Cash Flow}}{\text{Yearly NPV Cash Flow}}$$

- Example (slide 27)
 - Break-even ratio = $15,303 - 9,139 / 15,303 = .403$
 - Actual break-even occurred at 2.4 years

	A	B	C	D	E	F	G	H
1	<i>Pine Valley Furniture</i>							
2	<i>Economic Feasibility Analysis</i>							
3	<i>Customer Tracking System Project</i>							
4								
5					Year of Project			
6		Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	TOTALS
7	Net economic benefit	\$0	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	
8	Discount rate (12%)	1.0000	0.8929	0.7972	0.7118	0.6355	0.5674	
9	PV of benefits	\$0	\$44,643	\$39,860	\$35,589	\$31,776	\$28,371	
10								
11	NPV of all BENEFITS	\$0	\$44,643	\$84,503	\$120,092	\$151,867	\$180,239	\$180,239
12								
13	One-time COSTS	(\$42,500)						
14								
15	Recurring Costs	\$0	(\$28,500)	(\$28,500)	(\$28,500)	(\$28,500)	(\$28,500)	
16	Discount rate (12%)	1.0000	0.8929	0.7972	0.7118	0.6355	0.5674	
17	PV of Recurring Costs	\$0	(\$25,446)	(\$22,720)	(\$20,286)	(\$18,112)	(\$16,172)	
18								
19	NPV of all COSTS	(\$42,500)	(\$67,946)	(\$90,666)	(\$110,952)	(\$129,064)	(\$145,236)	(\$145,236)
20								
21								
22	Overall NPV							\$35,003
23								
24								
25	Overall ROI - (Overall NPV / NPV of all COSTS)							0.24
26								
27								
28	<i>Break-even Analysis</i>							
29	Yearly NPV Cash Flow	(\$42,500)	\$19,196	\$17,140	\$15,303	\$13,664	\$12,200	
30	Overall NPV Cash Flow	(\$42,500)	(\$23,304)	(\$6,164)	\$9,139	\$22,803	\$35,003	
31								
32	Project break-even occurs between years 2 and 3							
33	Use first year of positive cash flow to calculate break-even fraction - $((15303 - 9139) / 15303) = .403$							
34	Actual break-even occurred at 2.4 years							
35								
36	Note: All dollar values have been rounded to the nearest dollar							

Assessing Technical Feasibility

- Technical Feasibility
 - Assessment of the development organization's ability to construct a proposed system
 - Project risk can be assessed based upon:
 - Project size
 - Project structure
 - Development group's experience with the application
 - User group's experience with development projects and the application area

Assessing Technical Feasibility (Cont.)

- Project size
 - Team size, organizational departments, project duration, programming effort
- Project structure
 - New vs. renovated system, resulting organizational changes, management commitment, user perceptions
- Development group
 - Familiarity with platform, software, development method, application area, development of similar systems
- User group
 - Familiarity with IS development process, application area, use of similar systems

Assessing Technical Feasibility (Cont.)

- Four general rules emerged as technical risk assessments:
 - Larger projects are riskier than smaller projects.
 - A system in which the requirements are easily obtained and highly structured will be less risky than one in which requirements are messy, ill structured, ill defined, or subject to the judgment of an individual.
 - The development of a system employing commonly used or standard technology will be less risky than one employing novel or nonstandard technology.
 - A project is less risky when the user group is familiar with the systems development process and application area than if unfamiliar.

Assessing Technical Feasibility (Cont.)

		Low Structure	High Structure
High Familiarity with Technology or Application Area	Large Project	(1) Low risk (very susceptible to mismanagement)	(2) Low risk
	Small Project	(3) Very low risk (very susceptible to mismanagement)	(4) Very low risk
Low Familiarity with Technology or Application Area	Large Project	(5) Very high risk	(6) Medium risk
	Small Project	(7) High risk	(8) Medium-low risk

Assessing Other Project Feasibility Concerns

- **Operational Feasibility**
 - Assessment of how a proposed system solves business problems or takes advantage of opportunities
- **Schedule Feasibility**
 - Assessment of time frame and project completion dates with respect to organization constraints for affecting change
- **Legal and Contractual Feasibility**
 - Assessment of legal and contractual ramifications of new system
- **Political Feasibility**
 - Assessment of key stakeholders in organization's view toward proposed system

Building the Baseline Project Plan

- Baseline Project Plan (BPP) is a document intended primarily to guide the development team.
- Four Sections
 - Introduction
 - System Description
 - Feasibility Assessment
 - Management Issues

Building the Baseline Project Plan

- Introduction
 - Brief overview
 - Recommendation
- System Description
 - Outline of possible alternative solutions
 - System description
- Feasibility Assessment
 - Economic, technical, operational, legal and contractual, political and Schedule analysis.

Building the Baseline Project Plan

- Management Issues
 - Team composition
 - Communication plan
 - Project standards and procedures

Building the Baseline Project Plan

- Project Scope statement is part of the BPP introduction.
- Sections:
 - Problem statement
 - Project objectives
 - Project description
 - Business benefits
 - Deliverables
 - Expected duration

Reviewing the Baseline Project Plan

- Objectives
 - Assure conformity to organizational standards
 - All parties agree to continue with project

Reviewing the Baseline Project Plan

- Walkthrough
 - Peer group review
 - Participants
 - Coordinator
 - Presenter
 - User
 - Secretary
 - Standards Bearer
 - Maintenance Oracle

Reviewing the Baseline Project Plan

- Walkthrough (continued)
 - Activities
 - Walkthrough Review Form
 - Individuals polled
 - Walkthrough Action List
 - Advantages
 - Assures that review occurs during project