CHAPTER

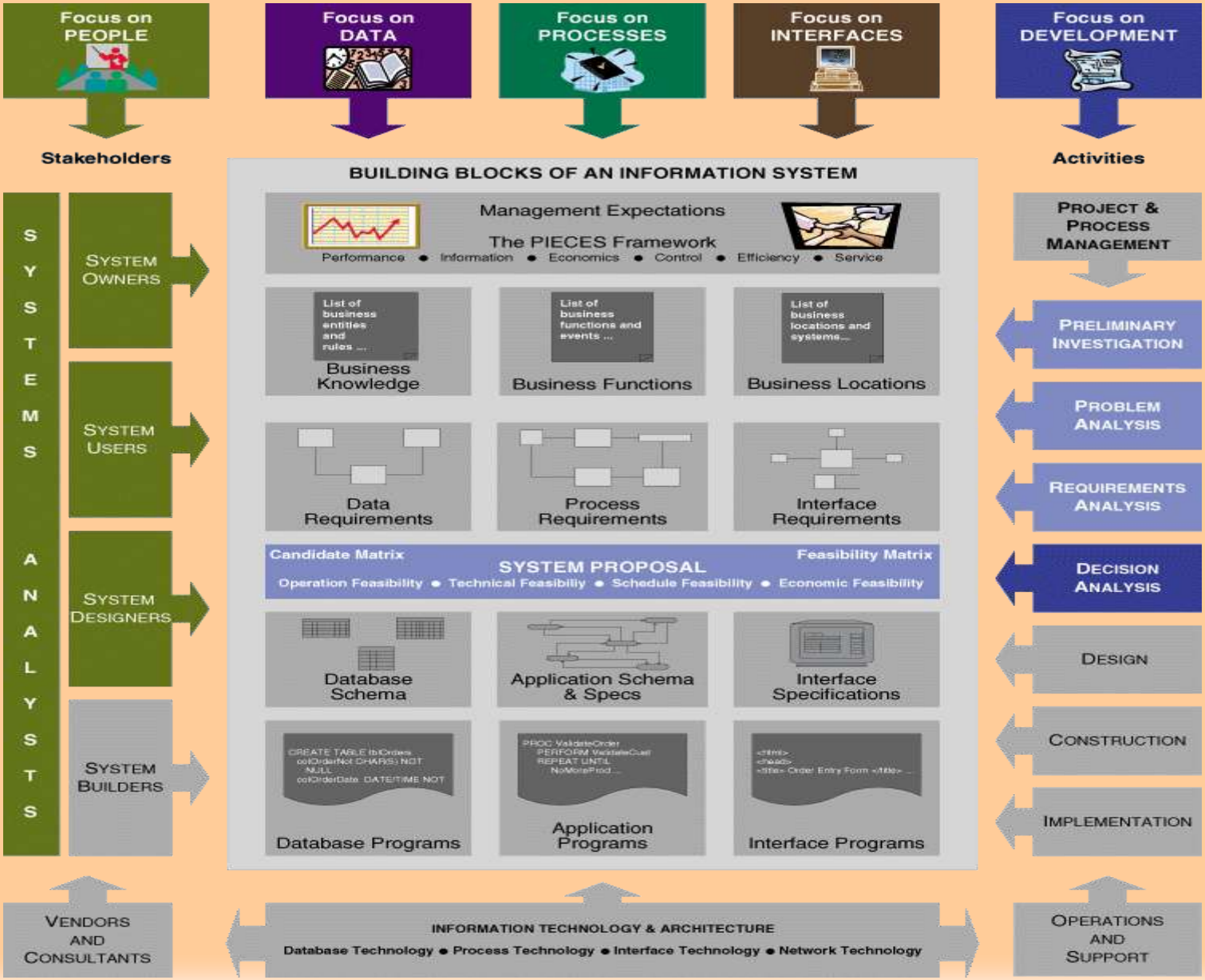
9

FEASIBILITY ANALYSIS AND THE SYSTEM PROPOSAL

Chapter Nine Feasibility Analysis and the System Proposal

- Identify feasibility checkpoints in the systems life cycle.
- Identify alternative system solutions.
- Define and describe four types of feasibility and their respective criteria.
- Perform various cost-benefit analyses using time-adjusted costs and benefits.
- Write suitable system proposal reports for different audiences.
- Plan for a formal presentation to system owners and users.

Chapter Map



Feasibility Analysis

Feasibility is the measure of how beneficial or practical the development of an information system will be to an organization.

Feasibility analysis is the process by which feasibility is measured.

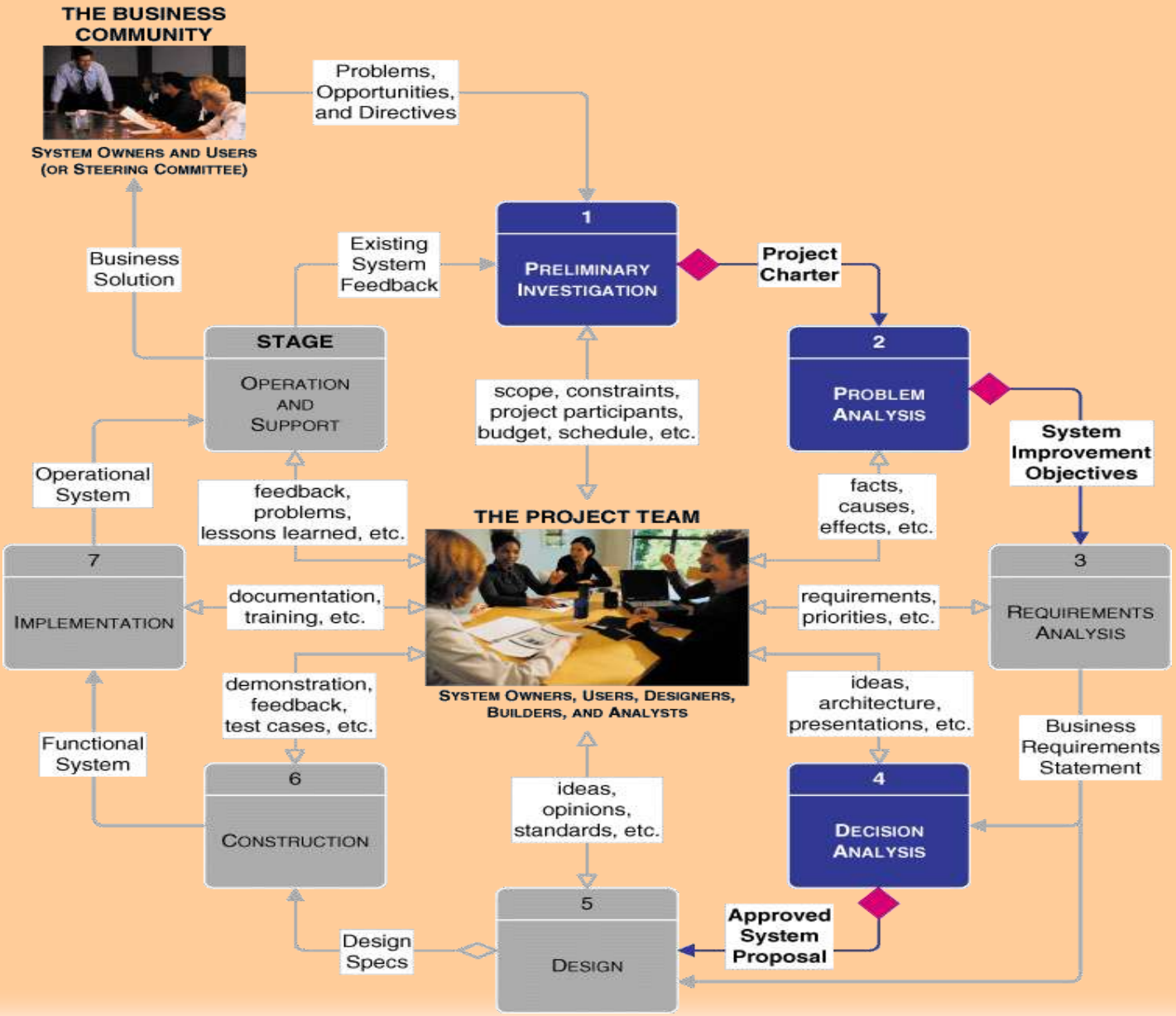
Creeping Commitment approach to feasibility proposes that feasibility should be measured throughout the life cycle.

Systems Development Life Cycle

Feasibility Checkpoints

- Systems Analysis — Preliminary Investigation
- Systems Analysis — Problem Analysis
- Systems Design — Decision Analysis

Feasibility Checkpoints During Systems Analysis



Four Tests For Feasibility

- **Operational feasibility** is a measure of how well the solution will work in the organization. It is also a measure of how people feel about the system/project.
- **Technical feasibility** is a measure of the practicality of a specific technical solution and the availability of technical resources and expertise.
- **Schedule feasibility** is a measure of how reasonable the project timetable is.
- **Economic feasibility** is a measure of the cost-effectiveness of a project or solution.

Cost-Benefit Analysis Techniques

Costs:

- Development costs are one time costs that will not recur after the project has been completed.
- Operating costs are costs that tend to recur throughout the lifetime of the system. Such costs can be classified as:
  - Fixed costs — occur at regular intervals but at relatively fixed rates.
  - Variable costs — occur in proportion to some usage factor.

Benefits:

- Tangible benefits are those that can be easily quantified.
- Intangible benefits are those benefits believed to be difficult or impossible to quantify.

Costs for a Proposed Systems Solution

Estimated Costs for Client-Server System Alternative

DEVELOPMENT COSTS:

Personnel:

2	Systems Analysts (400 hours/ea $50.00/hr)	$40,000
4	Programmer/Analysts (250 hours/ea $35.00/hr)	$35,000
1	GUI Designer (200 hours/ea $40.00/hr)	$8,000
1	Telecommunications Specialist (50 hours/ea $50.00/hr)	$2,500
1	System Architect (100 hours/ea $50.00/hr)	$5,000
1	Database Specialist (15 hours/ea $45.00/hr)	$675
1	System Librarian (250 hours/ea $15.00/hr)	$3,750

Expenses:

4	Smalltalk training registration ($3,500.00/student)	$14,000

New Hardware & Software:

1	Development Server	$18,700
1	Server Software (operating system, misc.)	$1,500
1	DBMS server software	$7,500
7	DBMS Client software ($950.00 per client)	$6,650

Total Development Costs: $143,275

PROJECTED ANNUAL OPERATING COSTS

Personnel:

2	Programmer/Analysts (125 hours/ea $35.00/hr)	$8,750
1	System Librarian (20 hours/ea $15.00/hr)	$300

Expenses:

1	Maintenance Agreement for Server	$995
1	Maintenance Agreement for Server DBMS software	$525
	Preprinted forms (15,000/year @ .22/form)	$3,300

Total Projected Annual Costs: **$13,870**

Three Popular Techniques to Assess Economic Feasibility

- Payback Analysis
- Return On Investment
- Net Present Value

The **Time Value of Money** is a concept that should be applied to each technique. The time value of money recognizes that a dollar today is worth more than a dollar one year from now.

Payback Analysis

Payback analysis is a simple and popular method for determining if and when an investment will pay for itself.

Payback period in capital budgeting refers to the period of time required for the return on an investment to "repay" the sum of the original investment.

Payback Analysis

For example,

A $1000 investment which returned $500 per year would have a two year payback period.

The time value of money is not taken into account.

Present Value Formula

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

Where n is the number of years and i is the discount rate.

Return-on-Investment Analysis (ROI)

Return-on-Investment compares the lifetime profitability of alternative solutions or projects.

The ROI for a solution or project is a percentage rate that measures the relationship between the amount the business gets back from an investment and the amount invested.

ROI Formulas

Lifetime ROI = (estimated lifetime benefits – estimated lifetime costs) / estimated lifetime costs

Annual ROI = lifetime ROI / lifetime of the system

Formats for Written Reports

	Factual Format		Administrative Format
I.	Introduction	I.	Introduction
II	Methods and procedures	II	Conclusions and recommendations
III	Facts and details	III	Summary and discussion of facts and details
IV.	Discussion and analysis of facts and details	IV.	Methods and procedures
V.	Recommendations	V.	Final conclusion
VI.	Conclusion	VI.	Appendices with facts and details

Secondary Elements for a Written report

Letter of transmittal

Title page

Table of contents

List of figures, illustrations, and tables

Abstract or executive summary

(The primary elements--the body of the report, in either the factual or administrative format--are presented in this portion of the report.)

Appendices

System Proposal – formal presentations

Formal presentations are special meetings used to sell new ideas and gain approval for new systems. They may also be used for any of these purposes:

- Sell new system
- Sell new ideas
- Head off criticism (disapproval)
- Address concerns
- Verify conclusions
- Clarify facts
- Report progress

Typical Outline and Time Allocation for an Oral Presentation

I. Introduction (one-sixth of total time available)
   - A. Problem statement
   - B. Work completed to date

II. Part of the presentation (two-thirds of total time available)
   - A. Summary of existing problems and limitations
   - B. Summary description of the proposed system
   - C. Feasibility analysis
   - D. Proposed schedule to complete project

III. Questions and concerns from the audience (time here is not to be included in the time allotted for presentation and conclusion; it is determined by those asking the questions and voicing their concerns)

IV. Conclusion (one-sixth of total time available)
   - A. Summary of proposal
   - B. Call to action (request for whatever authority you require to continue systems development)