Planning

Unit 2

Topics to be covered

2.1 Identifying and Selecting Systems Development Projects

2.2 Initiating and Planning Systems Development Projects

2.1 Identifying and Selecting Systems Development Projects

- Introduction
- Identifying and Selecting Systems Development Projects
- The Process of Identifying and Selecting IS Development Projects
- Deliverables and Outcomes
- Corporate and Information Systems Planning

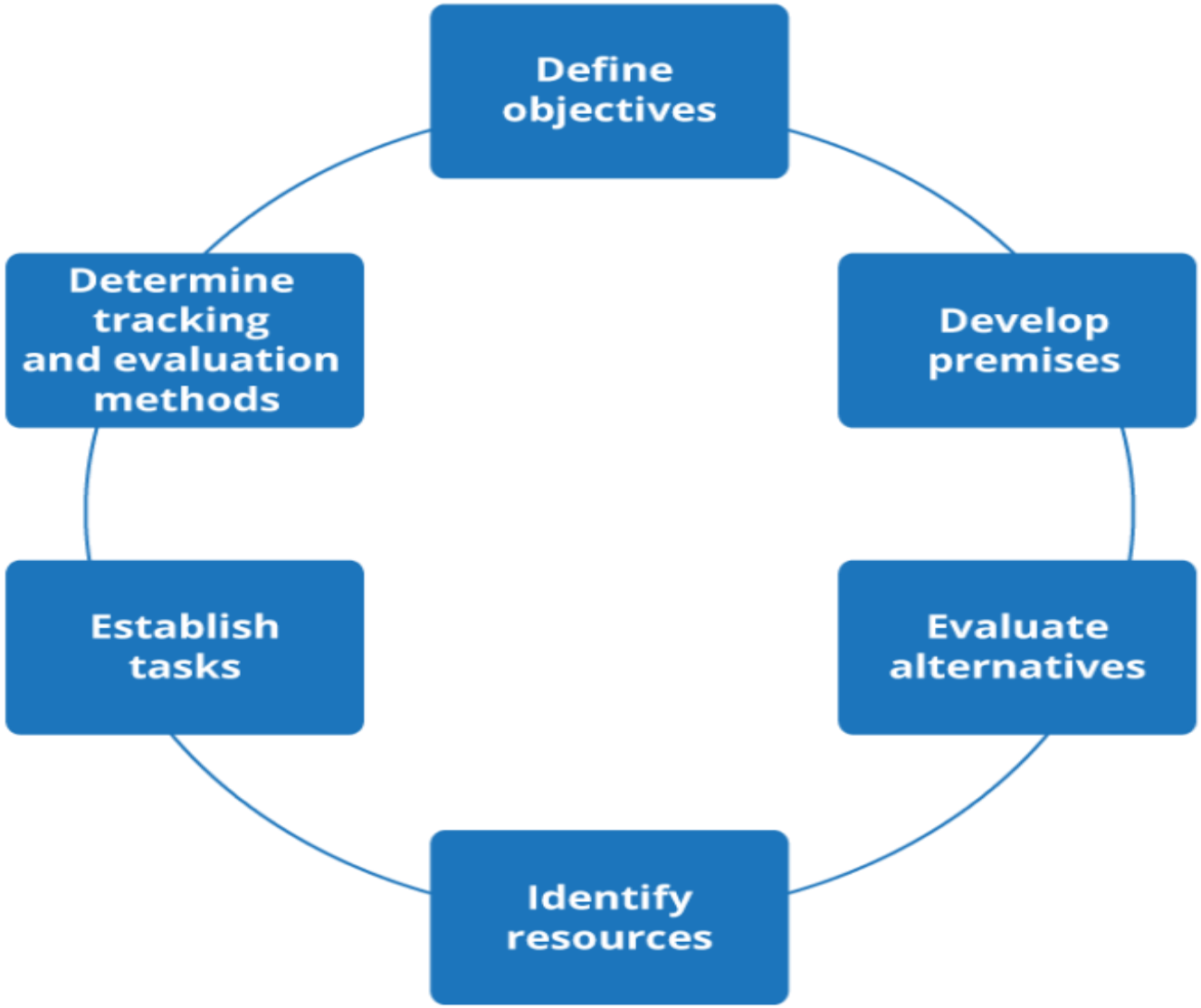
Introduction

- first phase of the systems development life cycle
- It includes planning the steps necessary to meet those objectives by further identifying the specific activities and resources required to complete the project.
- Those projects which yield significant organizational benefits based on given available resources, are selected for subsequent development activities.

The purpose of the project planning phase is to:

- Establish business requirements
- Establish cost, schedule, list of deliverables, and delivery dates
- Establish resources plans
- Obtain management approval and proceed to the next phase

- When articulating the project objectives you should follow the SMART rule:
  - **S**pecific - get into the details. Objectives should be specific and written in clear, concise, and understandable terms.
  - **M**easurable - use quantitative language. You need to know when you have successfully completed the task.
  - **A**cceptable – agreed with the stakeholders.
  - **R**ealistic – in terms of achievement. Objectives that are impossible to accomplish are not realistic and not attainable. Objectives must be centered in reality.
  - **T**ime based - deadlines not durations. Objectives should have a time frame with an end date assigned to them.



Stages in planning cycle

Define Objectives

- The first, and most crucial, step in the planning process is to determine what is to be accomplished during the planning period.
- The vision and mission statements provide long-term, broad guidance on where the organization is going and how it will get there.
- The planning process should define specific goals and show how the goals support the vision and mission.
- Goals should be stated in measurable terms where possible.
- For example, a goal should be “to increase sales by 15 percent in the next quarter” not “increase sales as much as possible.”

Develop premises

- Planning requires making some assumptions about the future.
- We know that conditions will change as plans are implemented and managers need to make forecasts about what the changes will be.
- These include changes in external conditions (laws and regulations, competitors' actions, new technology being available) and internal conditions (what the budget will be, the outcome of employee training, a new building being completed). These assumptions are called the plan premises.
- It is important that these premises be clearly stated at the start of the planning process.
- Managers need to monitor conditions as the plan is implemented.
- If the premises are not proven accurate, the plan will likely have to be changed.

Evaluate alternatives

- There may be more than one way to achieve a goal.
- Managers need to identify possible alternatives and evaluate how difficult it would be to implement each one and how likely each one would lead to success.
- It is valuable for managers to seek input from different sources when identifying alternatives.
- Different perspectives can provide different solutions.
- For example, to increase sales by 12 percent, a company could hire more salespeople, lower prices, create a new marketing plan, expand into a new area, or take over a competitor.

Identify resources

- Next, managers must determine the resources needed to implement the plan.
- They must examine the resources the organization currently has, what new resources will be needed, when the resources will be needed, and where they will come from. The resources could include people with particular skills and experience, equipment and machinery, technology, or money.
- This step needs to be done in conjunction with the previous one, because each alternative requires different resources.
- Part of the evaluation process is determining the cost and availability of resources.

Plan and implementation

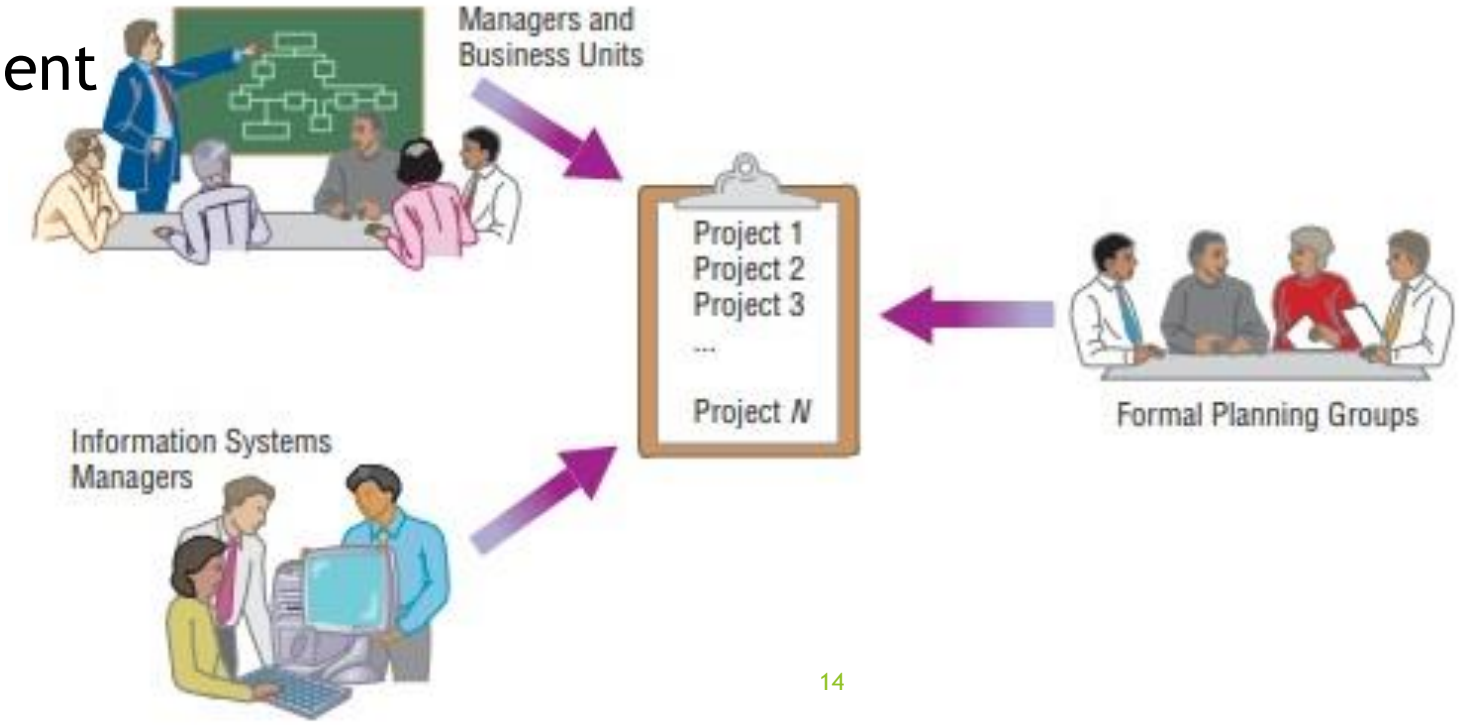
- Management will next create a road map that takes the organization from where it is to its goal.
- It will define tasks at different levels in the organizations, the sequence for completing the tasks, and the interdependence of the tasks identified.
- Techniques such as Gantt charts and critical path planning are often used to help establish and track schedules and priorities.

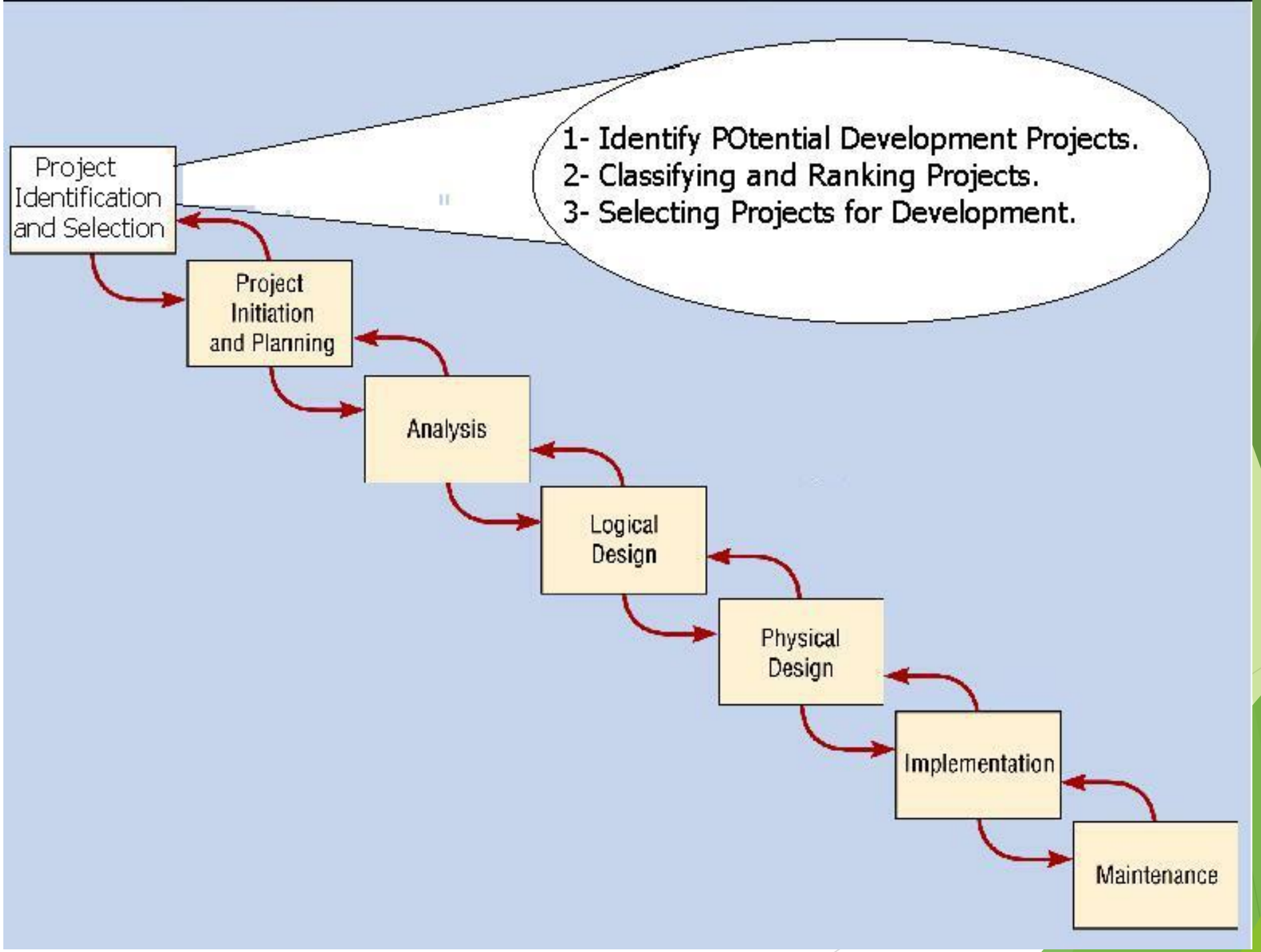
Determine tracking and evaluation methods

- It is very important that managers can track the progress of the plan.
- The plan should determine which tasks are most critical, which tasks are most likely to encounter problems, and which could cause bottlenecks that could delay the overall plan.
- Managers can then determine performance and schedule milestones to track progress.
- Regular monitoring and adjustment as the plan is implemented should be built into the process to assure things stay on track.

Identifying and Selecting Systems Development Projects

- consists of three primary activities:
  - identifying potential development projects,
  - classifying and ranking projects, and
  - selecting projects for development




Project Identification and Selection
1- Identify POtential Development Projects.
2- Classifying and Ranking Projects.
3- Selecting Projects for Development.
Project Initiation and Planning
Analysis
Logical Design
Physical Design
Implementation
Maintenance

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- The key activity of project initiation is the development of the project charter.
- A short document that is prepared for both internal and external stakeholders.
- Provides a high-level overview of the project.
- Useful communication tool that helps to assure that the organizations and other stakeholders understand the initiation of a project.

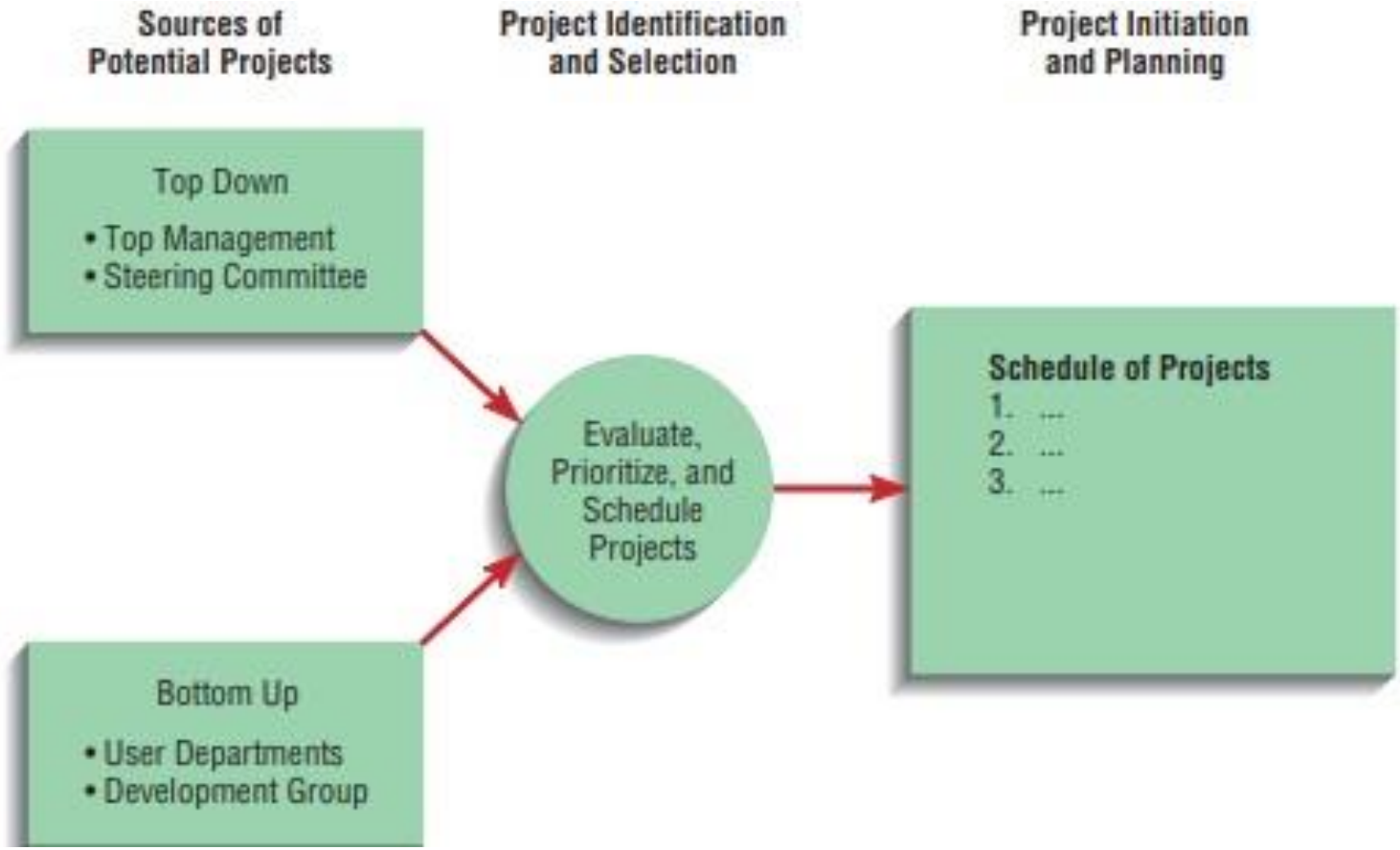
A project charter typically contains

- 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

1. Identifying potential development projects

- Organizations vary as to how they identify projects.
- Projects are identified by
  - Top management
  - Steering committee
  - User departments
  - Development group or senior IS staff

IS development projects come from top-down and bottom-up initiatives



Selection Methods	Characteristics
Top Management	• Greater Strategic organizational focus • Largest project size • Longest project duration
Steering Committee	• Cross functional focus(diversity) • Formal cost-benefit analysis • Larger and riskier projects
User Department	• Narrow, non strategic focus • Faster development layers • Fewer users, management layers and business functions
IS Development Group	• Integration with existing system focus • Fewer development delays • Less concern on cost benefit analysis to move the system to a new environment

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- Top-Down Identification
  - Senior management or steering committee
  - Focus is on global needs of organization
- Bottom-up Identification
  - Functional Managers, Business unit or IS development group
  - Focus on a particular business need.
  - Don’t reflect overall goals of the organization

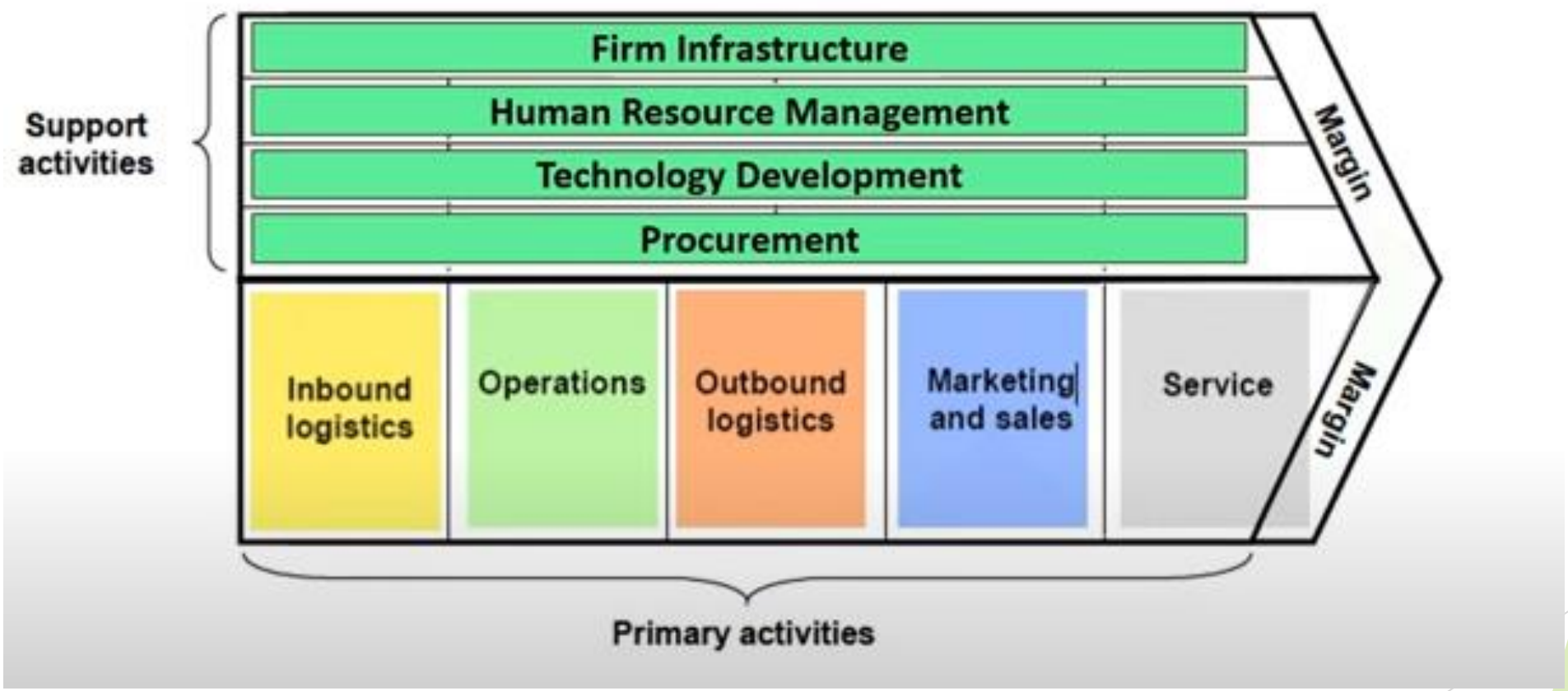
2. Classifying and ranking IS development projects

Evaluation Criteria	Description
Value chain Analysis	Extent to which activities add value and cost when developing products and/or services
Strategic Alignment	Extent to which the project is viewed as helping the organization achieve its strategic objectives and long-term goals
Potential Benefits	Extent to which the project is viewed as improving profits, customer service, and so forth, and the duration of these benefits
Resource Benefit	Amount and type of resources the project requires and their availability
Project Size/ Duration	Number of individuals and the length of time needed to complete the project
Technical Difficulty	Level of technical difficulty to successfully complete the project within given time and resource constraints

Value Chain Analysis

- **Value chain** represents the internal activities a firm engages in when transforming inputs into outputs
- is the process of analyzing an organization's activities for making products and/or services to determine where value is added and costs are incurred
- It includes the stages of a product's lifecycle, from design to production and distribution
- is a strategy tool used to analyze internal firm activities. Its goal is to recognize, which activities are the most valuable (i.e. are the source of cost or differentiation advantage) to the firm and which ones could be improved to provide competitive advantage.

Porter's Value Chain



3. Selecting IS development projects

- final activity in the project identification and selection process is the actual selection of projects for further development
- is a process of considering both short- and long-term projects and selecting those most likely to achieve business objectives

Project Selection

Project Selection follows:

- **Formal project selection:** process followed by a large organization, where a proposed project is rigorously compared to all competing projects and thus the projects are the outcomes of a larger overall planning.
- **Informal project selection:** followed by a small organization, which allows the highest ranking IS manager to independently select projects or allow individual business units to decide on projects after agreeing to provide project funding

Deliverables and outcome

- Major Deliverables and outcome of planning phase are:

  a) Functional specification:

  - It is a formal document which is used to describe in detail for the software developers a product intended capabilities appearance and interaction with the users.

  b) Master project plan:

  - The project scope, cost, schedule, activities resources is all planned here.
  - It is planned by the project manager.

  c) Master project schedule:

  - It is created from the project plan and individual schedules.
  - It will give the team an overview of what need to be done when and how.
  - It allows the project manager to monitor the progress of the project.

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d) Risk Management status :

- It gathers all the IT operations information about how the risks are changing.
- This information will support the decisions and actions that are made in the next phase.

e) Milestone review report:

- It summarizes the observations and the findings of the project milestone.
- It is undertaken as a transition point for the project to ensure quality and make the adjustments.
- It helps the project team to analyze how it is conducted and the quality of the output given by the project.

Corporate Strategic Planning

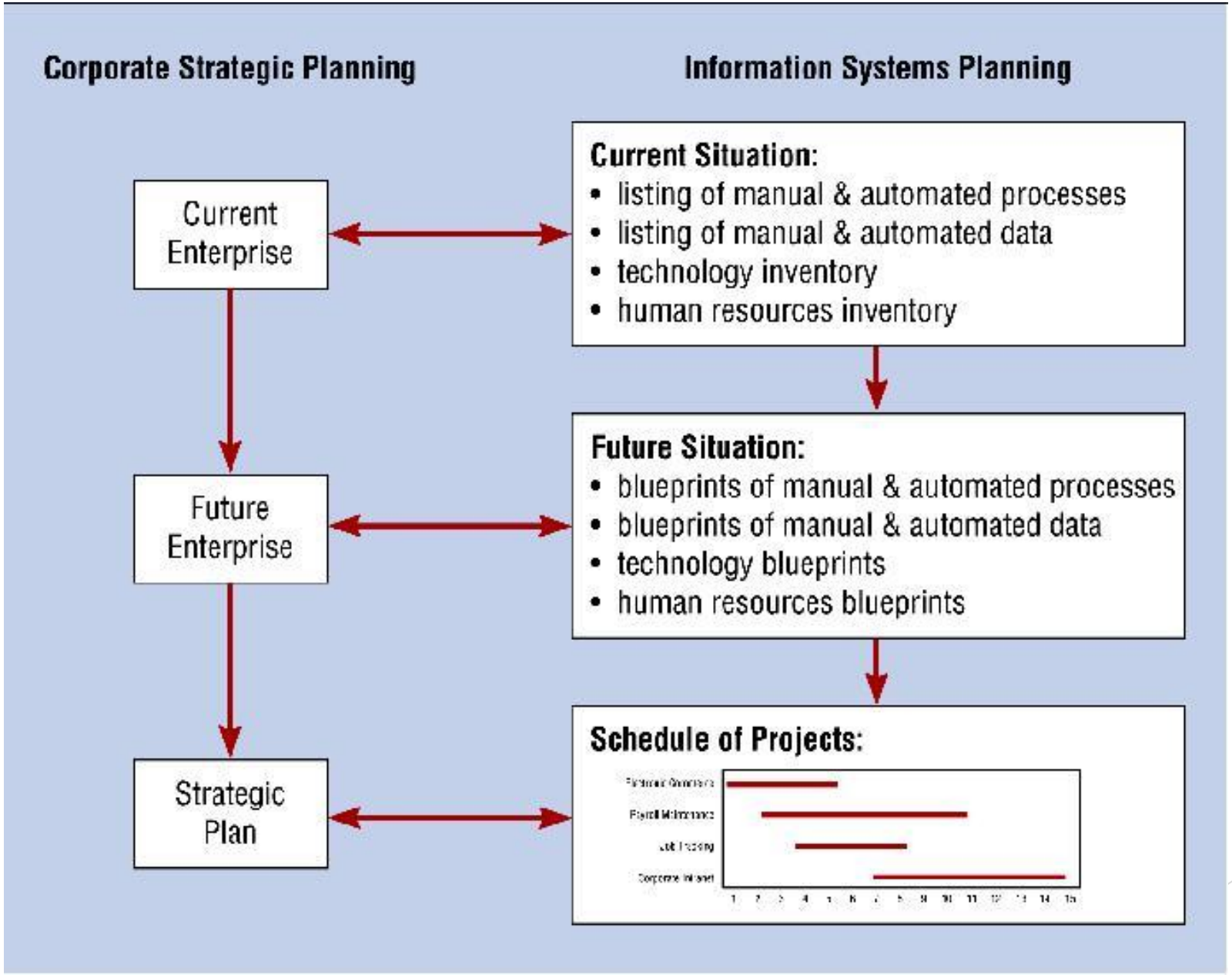
- A prerequisite to making effective project selection decisions is to gain a clear idea of where an organization is, its vision of where it wants to be in future, and how to make the transition to its desired future state. Corporate strategic planning is a three-step process:

  -->Current Enterprise-->Future Enterprise-->Strategic Plan.

- **Corporate Strategic Planning :** An ongoing process that defines the mission, objectives, and strategies of the organization.
- **Mission Statement :** A statement that makes it clear what business a company is in.
- **Objective Statement :** A series of statements that express an organization's qualitative and quantitative goals for reaching a desired future position.
- **Competitive Strategy :** The method by which an organization attempts to achieve its mission and objectives.

Information System Planning

- means of assessing the information needs of an organization and defining the systems, databases, and technologies that will best satisfy those needs
- Information Systems Plan:
  - Organization Mission
  - Informational Inventory
  - Mission and Objectives of IS
  - Constraints
  - Long-term Plan
  - Short-Term Plan
  - Conclusions


Corporate Strategic Planning
Information Systems Planning
Current Enterprise
Future Enterprise
Strategic Plan
Current Situation:
• listing of manual & automated processes
• listing of manual & automated data
• technology inventory
• human resources inventory
Future Situation:
• blueprints of manual & automated processes
• blueprints of manual & automated data
• technology blueprints
• human resources blueprints
Schedule of Projects:

Assignment 2.1

1. Describe the project identification and selection process.
2. Describe several project evaluation criteria.
3. Describe value chain analysis and how organizations use this technique to evaluate and compare projects.
4. Describe the steps involved in corporate strategic planning
5. List and describe the advantages of top-down planning over other planning approaches

2.2 Initiating and Planning Systems Development Projects

- Introduction
- Initiating and Planning Systems Development Projects (Process of Initiating and Planning IS Development Projects, Deliverables and Outcomes),
- Assessing Project Feasibility
- Cost Benefit Analysis Techniques
- Building and Reviewing the Baseline Project Plan

Project Initiation

- is the first step in starting a new project.
- During the project initiation phase, you establish why you're doing the project and what business value it will deliver
- Where we need to prove that our project is feasible, then only we can move on to the project planning phase

The project initiation process: 4 steps to get started

1. Create a project charter or business case
2. Identify key stakeholders and pitch your project
3. Run a feasibility study
4. Assemble your team and tools

The Process of Initiating and Planning IS Development Projects

- Project initiation focuses on activities designed to assist in organizing a team to conduct project planning.
  - Establishing the Project Initiation Team.
  - Establishing a Relationship with the Customer.
  - Establishing the Project Initiation Plan.
  - Establishing Management Procedures.
  - Establishing the Project Management Environment and Project Workbook.
  - Developing the Project Charter.

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

- The key activity of project planning is the process of defining clear, discrete activities and the work needed to complete each activity within a single project.
- 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 statement of work.
- 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)A major outcome and deliverable from the PIP phase.
- 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

- Economic
- Technical
- Operational
- Scheduling
- 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 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 refer to items that can be measured in dollars and with certainty.
- Most tangible benefits will fit within the following categories:
- Cost reduction and avoidance
- Error reduction
- Increased flexibility
- Increased speed of activity
- Improvement of management planning and control
- Opening new markets and increasing sales opportunities.

Determining Project Benefits (Cont.)

- Intangible benefits are benefits derived from the creation of an information system that cannot be easily measured in dollars or with certainty.
- May have direct organizational benefits, such as the improvement of employee morale.
- May have broader societal implications, such as the reduction of waste creation or resource consumption.

Determining Project Costs

- **Tangible costs:** a cost associated with an information system that can be measured in dollars and with certainty.
  - IS development tangible costs include:

Hardware costs, Labor costs & Operational costs including employee training and building renovations.

- **Intangible costs:** a cost associated with an information system that cannot be easily measured in terms of dollars or with certainty.
  - Intangible costs can include: Loss of customer goodwill, Employee morale & Operational inefficiency.

Determining Project Costs (Cont.)

Recurring cost: a cost resulting from the ongoing evolution and use of a system.

Examples of these costs include:

- Application software maintenance,
- Incremental data storage expenses,
- Incremental communications,
- New software and hardware leases, and Supplies and other expenses (i.e. paper, forms, data center personnel).

Cost Benefit Analysis

- Is a part of economical feasibility study
- Is an analysis for estimating cost involved in the development of a project and the possible profit to be derived from it.
- It works on a simple rule, i.e identifying the benefits from the proposal and associated costs, and subtracting the costs from benefits.
- It helps us to assign value to a proposal, calculate the future cash flow and measure the financial worthiness of it

Process:


Identification of cost and benefit
Evaluation of cost and benefit
Choice of a system

How to perform Cost-benefit Analysis

- Identify cost and benefit from the system*(list out & assume cost)*
- Assign values to costs and benefit
- Determine the total cash flow*(incoming and out-going)*
- Determine the project's economic value*(overall value)*
  - Return On Investment(ROI)

    ROI=(Profit/Total Cost)*100
  - Break-Even Point(how many time it will take to recover)
  - Net Present Value(NPV)

    NPV=Yearly Total Benefit-Yearly Total cost

ROI

- tells you how much money you've made (or lost) an investment or project after accounting for its cost
- Analyze how money is being returned monthly or yearly
- How Do You Calculate Return on Investment (ROI)?
  - is calculated by dividing the profit earned on an investment by the cost of that investment.
  - For instance, an investment with a profit of $100 and a cost of $100 would have an ROI of 1, or 100% when expressed as a percentage.

Break Even Point

- That point of sales volume when
  - Total revenue=total expenses or
  - Total sales=total cost
- Refer to that level of output which evenly breaks the costs and revenues
- Also know as critical point or balancing point or equilibrium point

Net Present Value

- is the difference between the present value of cash inflows and the present value of cash outflows over a period of time
- is the result of calculations used to find the current value of a future stream of payments

Pay back period

- is the time you need to recover the cost of your investment
- it is time an investment takes to reach the break-even point

Payback Period =Initial investment/Cash flow per year

For example: you have invested Rs 1,00,000 with an annual payback of Rs 20,000.

Payback Period = 1,00,000/20,000 = 5 years.

Building the Baseline Project Plan

- starting point for your project plan
- All the information collected during project initiation and planning is collected and organized into a document called the baseline project plan
- Once the BPP is completed, a formal review of the project can be conducted with customers
- An outline of a baseline project plan has major four sections:
    1. Introduction (overview of report)
    2. System description
    3. Feasibility assessment
    4. Management issues

Components of baseline project

- Schedule
- Cost and
- Scope

These are separately monitored, controlled, and reported to ensure each is on track. When fully integrated, it may be referred to as a performance measurement baseline (PMB)

How do you set a project baseline?

- first determine the scope of your project
- must map out your project schedule with clearly defined due dates and a final deadline
- plan the total cost of your project
- Set up a meeting to present your plan

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- For example, let’s say your project is on target to finish in six weeks. Is that good or bad? If your schedule baseline has a four-week completion, you can tell that there is a problem, and your team may need to make adjustments to speed up your progress.

Reviewing the baseline Project Plan

- Before the next phase of the SDLC can begin, the users, management, and development group must review the BPP in order to verify that it makes sense.
- takes place before the BPP is submitted or presented
- Objective of this review is to ensure that the proposed system conforms to organizational standards
- common method for performing this review is called a ***structured walk-through***.
- **Walk-throughs** are peer group reviews of any product created during the systems development process and are widely used by professional development organizations

Assignment 2.2

1. Define feasibility study. Why do we need it?
2. Explain the various steps of cost benefit analysis? What are the goal of cost benefit analysis? Explain
3. Explain the payback period with example.
4. Explain with example of tangible and intangible benefit.
5. A system costs Rs. 2,00,000 to install. The profit per year is Rs. 50,000. Assuming an interest rate is 6% what is the payback periods of the investment?