The Project

Chapter 1

Introduction

A program is a series of projects undertaken **over a period of time** with **a particular objective** in view.

Projects and project management are now widely **recognized by organizations as being essential to achieving their strategic objectives**.

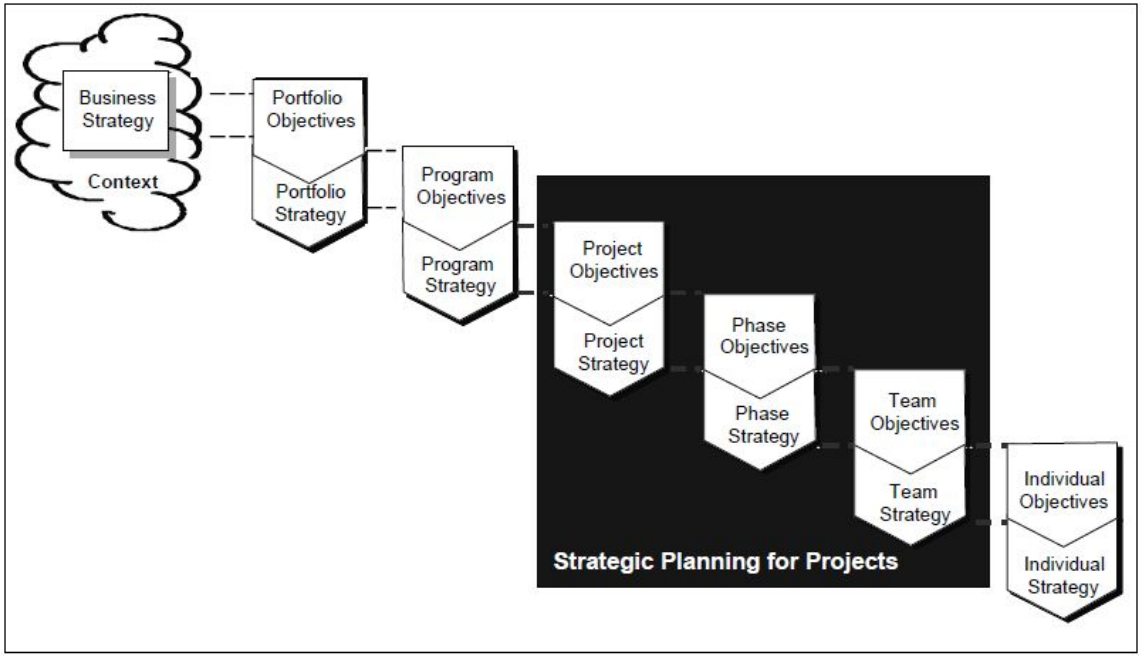
A project is a temporary organization to which resources are assigned to deliver benefit for the parent organization.

The interaction between projects, or programmes, and the enterprise's strategy also may be **'deliberate', as formal vehicles for strategy implementation**, they **create new conditions which in turn influence and shape the intended strategy**.

Consequently projects and programmes often have a two-way relationship with the environment in which they evolve.

Introduction

Turner (1999) advocates the development of a comprehensive definition of a project at the start of the project, in which business plans are aligned with project plans containing key elements of project strategy.



Project- a unique endeavour

A project is a unique endeavour to produce a set of deliverables within clearly specified time, cost and quality constraints. Projects are different from standard business operational activities as they:

• **Are unique in nature.** They do not involve repetitive processes. Every project undertaken is different from the last, whereas operational activities often involve undertaking repetitive (identical) processes.

• **Have a defined timescale.** Projects have a clearly specified start and end date within which the deliverables must be produced to meet a specified customer requirement.

• **Have an approved budget.** Projects are allocated a level of financial expenditure within which the deliverables are produced, to meet a specified customer requirement.

• **Have limited resources.** At the start of a project an agreed amount of labour, equipment and materials is allocated to the project.

• **Involve an element of risk.** Projects entail a level of uncertainty and therefore carry business risk.

• **Achieve beneficial change.** The purpose of a project is typically to improve an organization through the implementation of business change.

Project- an example

DPDC Smart Grid Pilot Project in Bangladesh

Dhaka Power Distribution Company Limited (DPDC) to introduce a smart management system in their power grid as part of the government's goal to build a Smart Bangladesh.

This project is aligned with a smart-grid policy for all the departments under the country's power system.

The smart grid project will include an integrated communication system, advanced sensing with artificial intelligence, advanced metering infrastructure (AMI), measurement infrastructure, comprehensive decision support, and easy to use system interfaces.

Initially this facility will be available in Satmasjid Road, Lalmatia, Asadgate and Jeegatla areas in the city which will gradually expand.

Private & public projects

Projects in question may be public projects – undertaken by the public sector – or private projects. Both types of projects need to be appraised to determine whether they represent an efficient use of resources.

Projects that represent an efficient use of resources from a private viewpoint may involve costs and benefits to a wider range of individuals than their private owners.

A private project may **pay taxes**, **provide employment** for the otherwise unemployed, and **generate pollution**.

These effects are termed **social benefits and costs** to distinguish them from the purely **private costs and returns of the project**.

Social benefit-cost analysis is used to appraise private projects from a social viewpoint as well as to appraise public projects.

Private & public projects

Public projects

Infrastructure: Public parks and recreation areas

Technology and Software: Government funded digital services (e.g., tax portals, public healthcare apps)

Energy: Publicly funded renewable energy plants

Research and Development: Public health research (e.g., disease control studies by health ministries)

Social and Community: Government-funded poverty alleviation programs

Private projects

Infrastructure: Private resorts or hotels

Technology and Software: Creation of a mobile app for a startup

Energy: Private solar or wind farms for corporate use

Research and Development: Pharmaceutical companies developing new drugs

Social and Community: Non-governmental organization (NGO) poverty alleviation programs

Private & public projects

Public projects are often thought of in terms of the provision of physical capital in the form of infrastructure such as bridges, highways and dams. However there are other less obvious types of physical projects that augment environmental capital stocks and involve activities such as land reclamation, pollution control, fishery management and provision of parks.

Other types of projects are those that involve investment in forms of human capital, such as health, education, and skills, and social capital through drug-use and crime prevention, and the reduction of unemployment.

Copenhagen urban plan

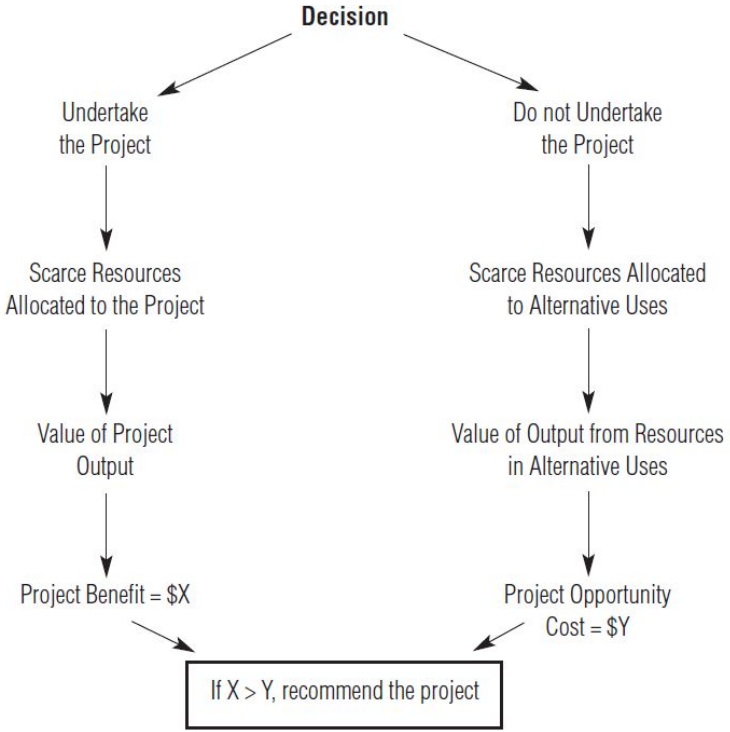
An investment project is a particular allocation of scarce resources in the present which will result in a flow of output in the future; for example, land, labour and capital could be allocated to the construction of a dam which will result in increased electricity output in the future.

The cost of the project is measured as an opportunity cost – the value of the goods and services which would have been produced by the land, labour and capital inputs had they not been used to construct the dam. The benefit of the project is measured as the value of the extra electricity produced by the dam.

Importance of projects: decision-making

An investment project makes a difference and the role of benefit-cost analysis is to measure that difference. Two as yet hypothetical states of the world are to be compared – the world **with the project** and the world **without the project**.

The with-and-without approach is at the heart of the benefit-cost process and also underlies the important concept of opportunity cost.



Importance of projects: decision-making

Without the dam, the scarce land, labour and capital could have been combined to increase the output of food for current consumption. **The value of that food**, assuming that food production is the best (highest valued) alternative use of the scarce resources, **is the opportunity cost of the dam**.

With the dam project we give up the opportunity to produce additional food in the present, but when the dam is complete it will result in an increase in the amount of electricity which can be produced in the future. **The benefit of the project is the value of this increase in the future supply of electricity over and above what it would have been in the absence of the project**.

Difficulties of projects

The degree of difficulty of achieving the project, based on its complexity. Complexity factors include: familiarity with type of work/ innovativeness; interdependency of deliverables; number of stakeholders; stakeholders spread; clarity of objectives, benefits and critical success factors; clarity of scope statement, geographical spread of work, risk management, quality control, resource constraints, communication channels, change management, technical challenges, uncertainty in external factors (e.g., policy changes, market dynamics, geopolitical events).

In a certain project, the degree of complexity can be measured on the basis of human, material and financial resources expended, of the resulting degree of coordination and of the degree of involvement of key decision makers of the organization, and a new dimension can be envisaged: the strategic relevance of the project as a determinant for its success. This is portrayed in a new four-quadrant representation with respect to the dimension of project complexity.

Challenge No. 1: Projects Do Not Meet the Requirements of All Stakeholders.

Challenge No. 2: Poor Management

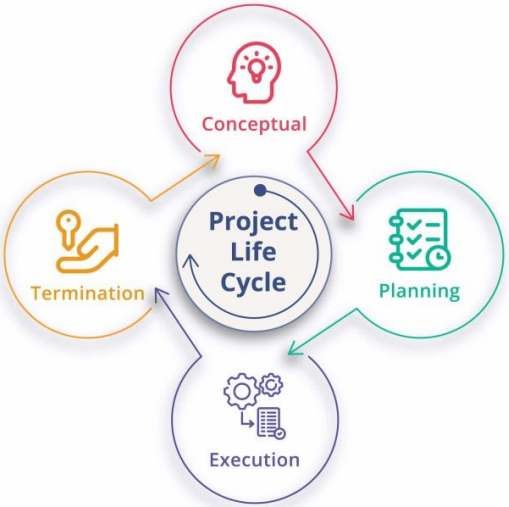
Challenge No. 3: Unclear Definition of Stakeholder Roles

Challenge No. 4: Impact of Technology and Complexity

Stages of a project

Project initiation

The first phase of a project is the initiation phase. During this phase a business problem or opportunity is identified and a business case providing various solution options is defined. Next, a feasibility study is conducted to investigate whether each option addresses the business problem and a final recommended solution is then put forward. Once the recommended solution is approved, a project is initiated to deliver the approved solution. Terms of reference are completed outlining the objectives, scope and structure of the new project, and a project manager is appointed. The project manager begins recruiting a project team and establishes a project office environment. Approval is then sought to move into the detailed planning phase.

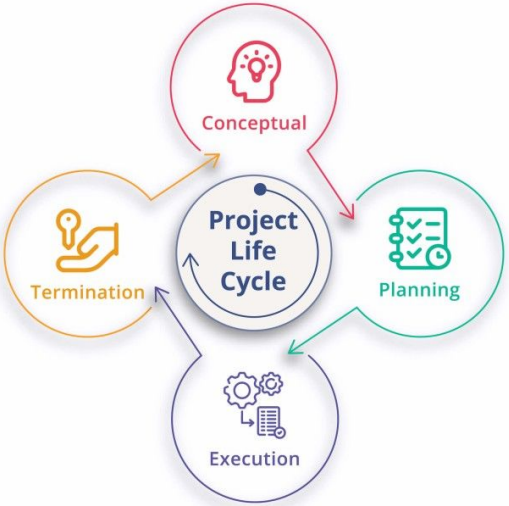


Stages of a project

Project planning

Once the scope of the project has been defined in the terms of reference, the project enters the detailed planning phase. This involves creating a:

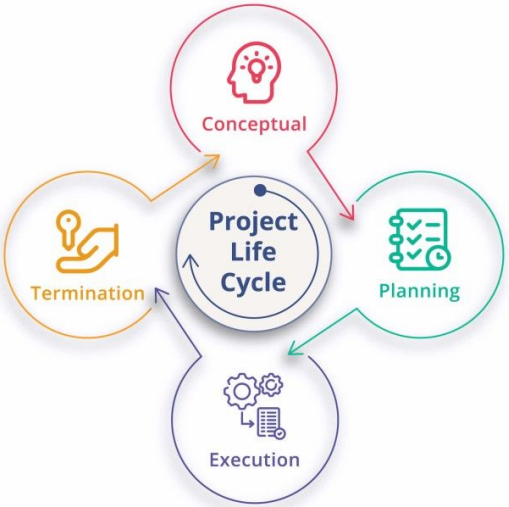
- project plan outlining the activities, tasks, dependencies and timeframes;
- resource plan listing the labour, equipment and materials required;
- financial plan identifying the labour, equipment and materials costs;
- quality plan providing quality targets, assurance and control measures;
- risk plan highlighting potential risks and actions to be taken to mitigate those risks;
- acceptance plan listing the criteria to be met to gain customer acceptance;
- communications plan describing the information needed to inform stakeholders;
- procurement plan identifying products to be sourced from external suppliers.



Stages of a project

Project execution

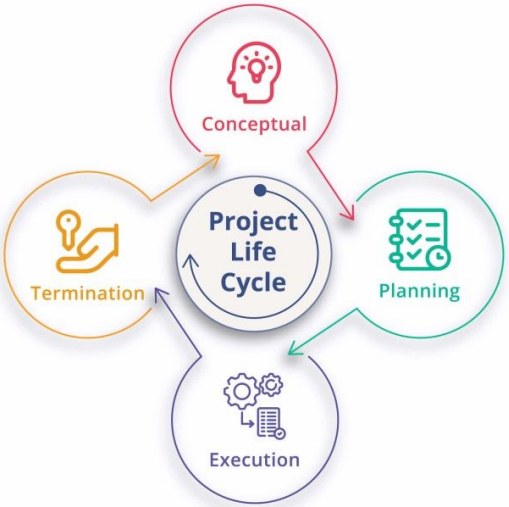
This phase involves implementing the plans created during the project planning phase. While each plan is being executed, a series of management processes are undertaken to monitor and control the deliverables being output by the project. This includes identifying change, risks and issues, reviewing deliverable quality and measuring each deliverable produced against the acceptance criteria. Once all of the deliverables have been produced and the customer has accepted the final solution, the project is ready for closure.



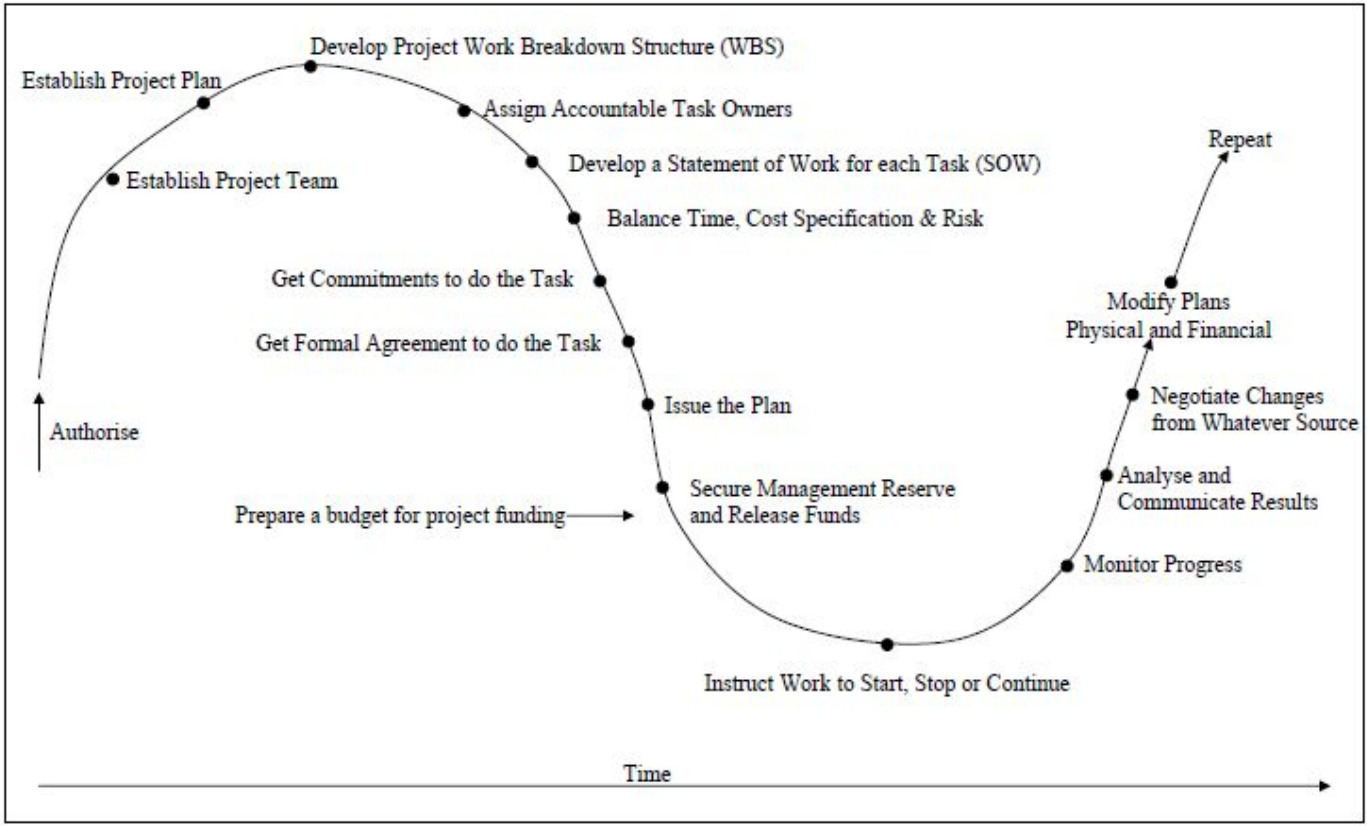
Stages of a project

Project closure

Project closure involves releasing the final deliverables to the customer (end-user), handing over project documentation to the business, terminating supplier contracts, releasing project resources and communicating the closure of the project to all stakeholders. The last remaining step is to undertake a post-implementation review to quantify the level of project success and identify any lessons learnt for future projects.



Stages of a project: an example



Feasibility of a project

A feasibility study involves undertaking a detailed assessment of a current business problem or opportunity, identifying the various solution options available and determining the likelihood of each alternative solution meeting a customer's requirements. A feasibility study may be undertaken to address **a business problem to be resolved, or a business opportunity to be realized**.

The outcome of the exercise is the creation of a feasibility study document which provides:

• a full description of the business problem (e.g., lack of vision, small scale, inefficiency, etc) or business opportunity (e.g., new market demand, new skill, new technology, new policy)

• a list of the requirements for a solution to fix the problem (e.g., process, skill, infrastructure, technology, etc)

• a list of all available options for delivering a solution (prototyping, market surveys, staff surveys, etc)

• an assessment of the feasibility of each option (actual versus expected result and rank the options)

• a list of the risks and issues associated with each option (risk matrix);

• the preferred solution option for implementation.

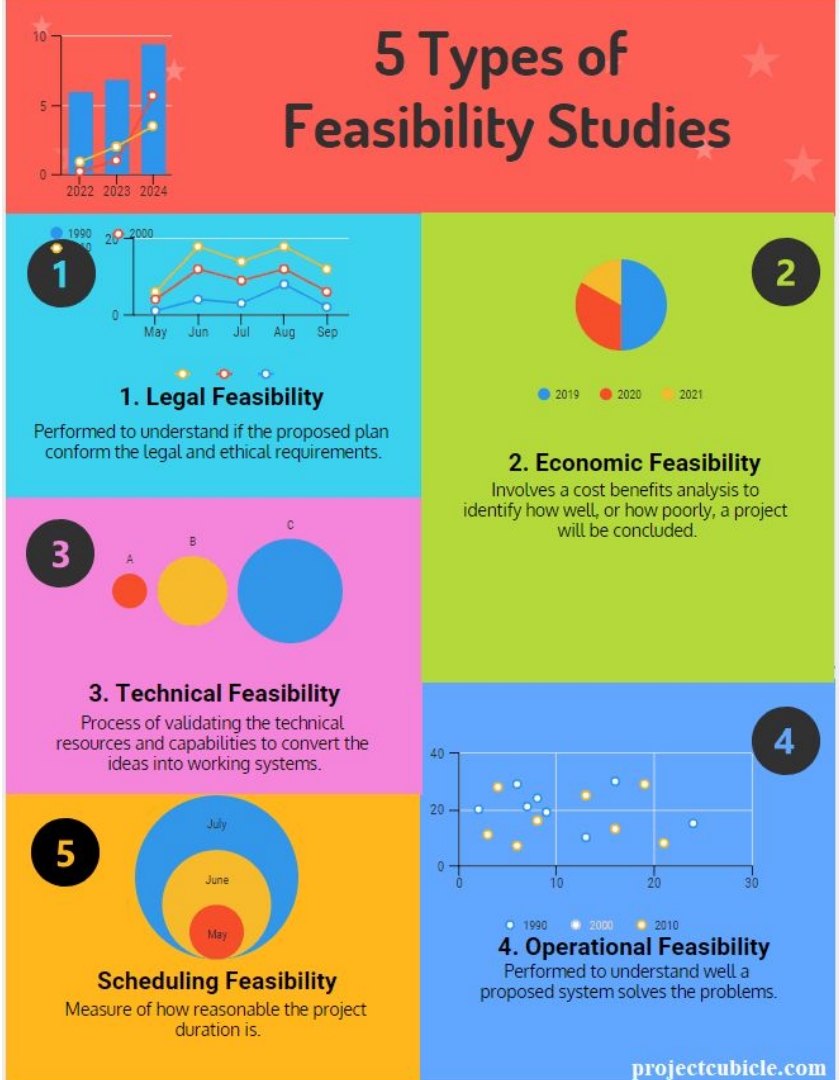
Feasibility of a project: example of a risk matrix

Likelyhood	Consequences				
	Insignificant *Risk is easily mitigated by normal day to day process*	**Minor** *Delays up to 10% of Schedule Additional cost up to 10% of Budget*	**Moderate** *Delays up to 30% of Schedule Additional cost up to 30% of Budget*	**Major** *Delays up to 50% of Schedule Additional cost up to 50% of Budget*	**Catastrophic** *Project abandoned*
Certain *>90% chance*	High	High	Extreme	Extreme	Extreme
Likely *50% - 90% chance*	Moderate	High	High	Extreme	Extreme
Moderate *10% - 50% chance*	Low	Moderate	High	Extreme	Extreme
Unlikely *3% - 10% chance*	Low	Low	Moderate	High	Extreme
Rare *<3% chance*	Low	Low	Moderate	High	High

Feasibility of a project

Your company is planning to open a branch in a new region. According to the studies you recognize that the country does not allow an individual foreigner owning a property. Therefore you select the rental option instead of buying.

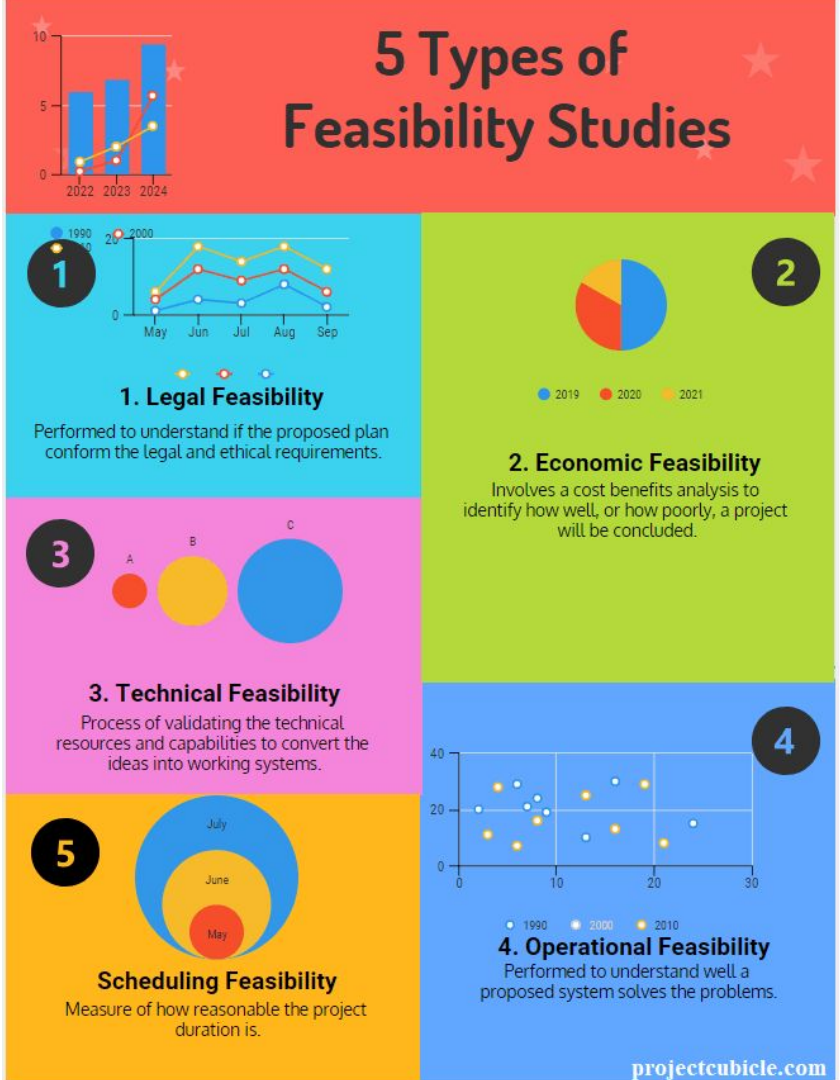
What type of feasibility study is this?



Feasibility of a project

Your company is planning to perform a housing project on the west coast of the city. In order to understand if the project is economically feasible, you will calculate the duration, cost, and income of the project. If the calculations demonstrate a short payback period, the board of directors will decide to undertake the project.

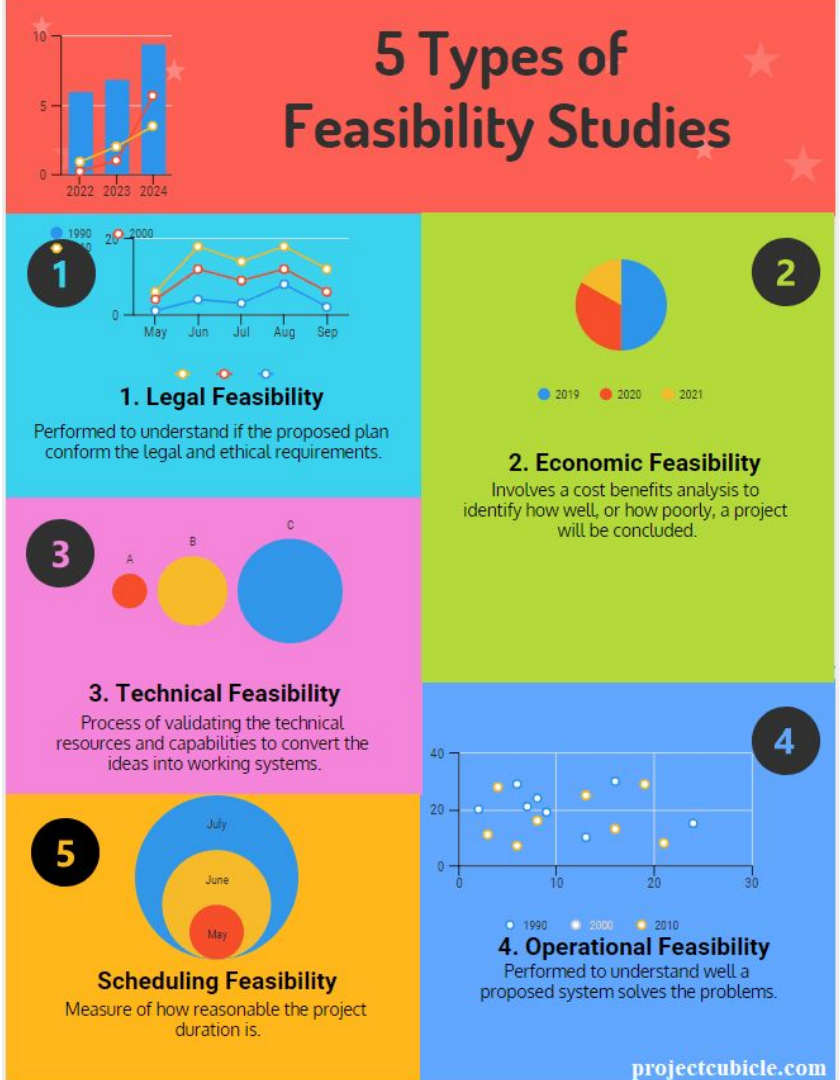
What type of feasibility study is this?



Feasibility of a project

Your company is planning to improve the current network infrastructure. You analyzed the new system and concluded that the new system can use the organization's existing network infrastructure. This shows that a new system is feasible.

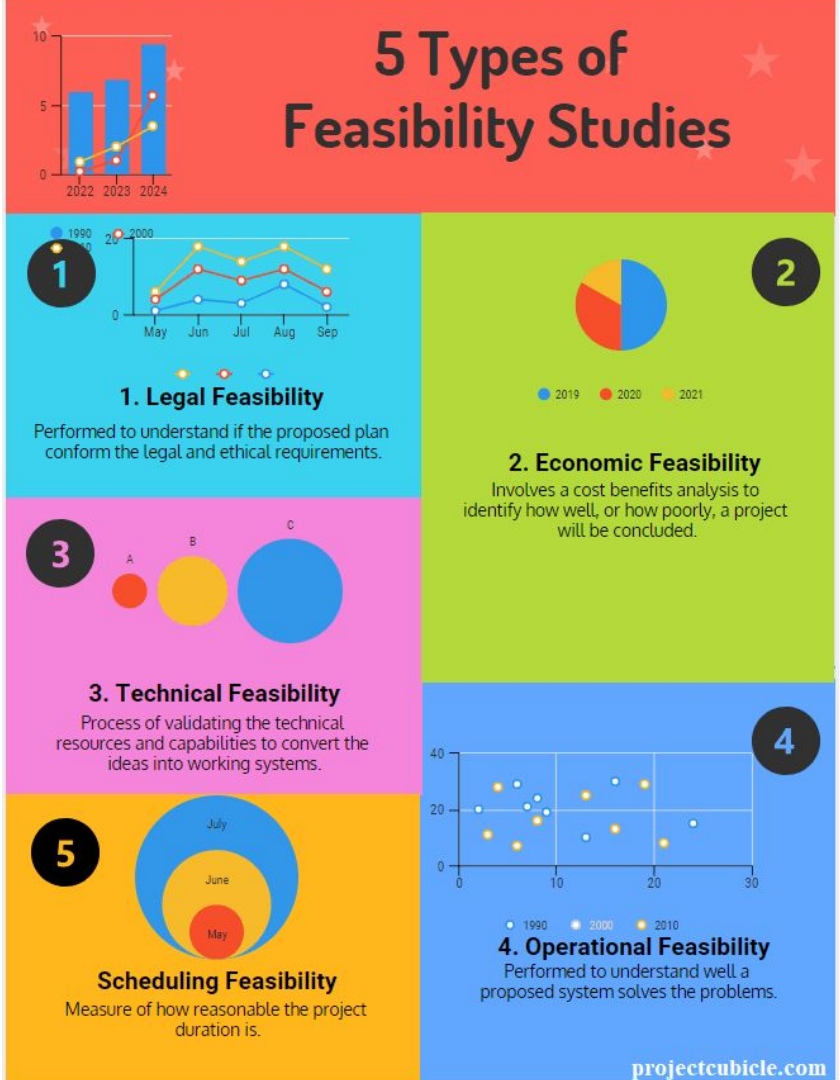
What type of feasibility study is this?



Feasibility of a project

Your company has undertaken a project to build a new theme park for a client. Then you performed a study to determine how the theme park will operate in a way that is conducive to its inhabitants, parking, dining, human flow, accessibility.

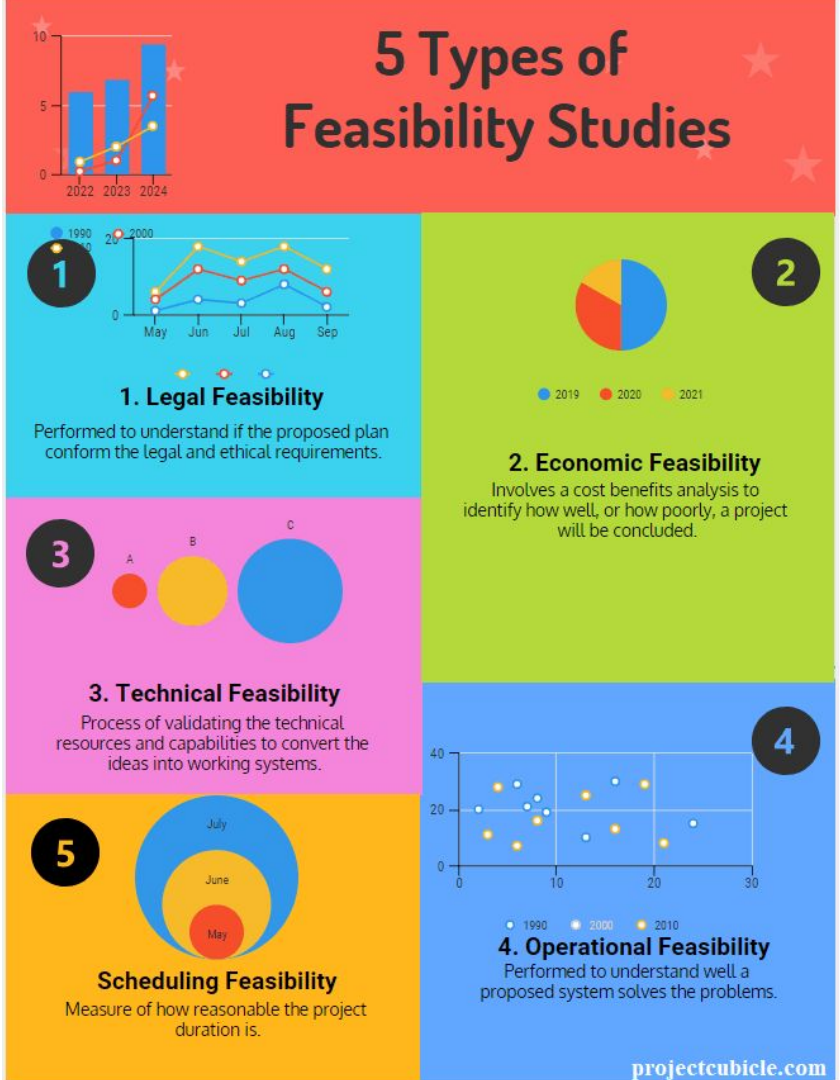
What type of feasibility study is this?



Feasibility of a project

An investor proposed a hotel construction project to your company. However, he requested that the project will be completed in one year. The project team conducted a feasibility study based on a list of requirements to complete the project on time.

What type of feasibility study is this?



Project design

- **vision, mission, objectives, scope and deliverables (ie what you have to achieve);**
- **stakeholders, roles and responsibilities (ie who will take part in it);**
- **resource, financial and quality plans (ie how it will be undertaken).**

Food Waste Reduction Alliance Project *(United States)* – The Food Marketing Institute (FMI) and the Grocery Manufacturers Association (GMA) have teamed up in this three-year initiative to reduce the amount of food waste sent to landfills and increase the amount of food donated to food banks. They also use waste for energy, compost, and animal feed.

Goal #1

REDUCE THE AMOUNT OF FOOD WASTE GENERATED

Goal #2

DONATE MORE SAFE, NUTRITIOUS FOOD TO PEOPLE IN NEED

Some generated food waste is

Goal #3

RECYCLE UNAVOIDABLE FOOD WASTE, DIVERTING IT FROM LANDFILLS

Project design

A mission statement outlines the purpose and goals of an organization, while a vision statement describes its aspirations and future objectives.

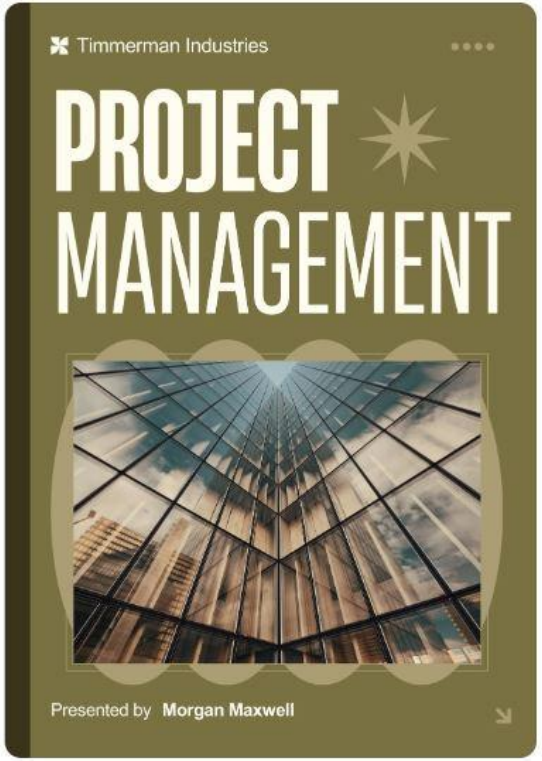
Mission Statement:

"Our mission is to provide accessible and innovative education solutions that empower individuals to achieve their full potential and contribute positively to their communities."

Vision Statement:

"Our vision is to create a world where every person has equal opportunities for learning and growth, leading to a more equitable and prosperous society for all."

Project design template



Project design template

PROJECT OBJECTIVES

- SPECIFIC
- MEASURABLE
- ACHIEVABLE
- RELEVANT
- TIME-BOUND

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SCOPE OF WORK

DELIVERABLES

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FEATURES

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FUNCTIONS

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RESOURCE REQUIREMENTS

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- **PERSONEL**

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- **EQUIPMENT**

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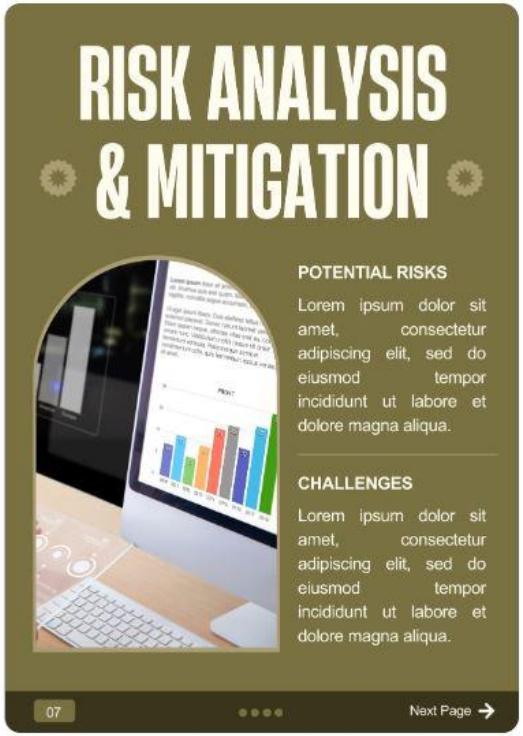
Project design template



Sustainable Harvest International has proven success in agroecology extension, having partnered with farming families in Central America for over twenty years in a variety of climates, geographies, and cultures. Now is the time for us to scale up the impact of our programs to turn the tides of food insecurity and environmental degradation.

OUR VISION

By 2030, Sustainable Harvest International will....

- Transform 1 million farms
- Plant 1 billion trees
- Sequester 18 million tons of CO_2
- Regenerate 8 million acres of land
- Achieve food security for 5 million people

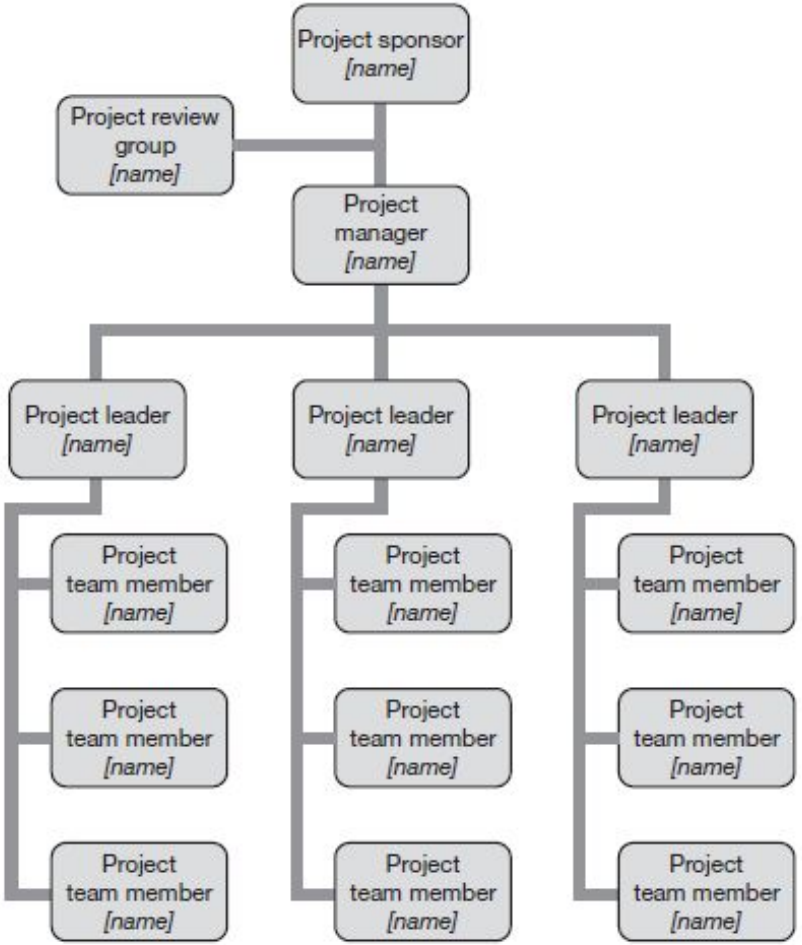
13 Essential Components of Project Management

Project team

A ‘stakeholder’ is simply a person or entity outside the project that has a key interest or ‘stake’ in the project.

Project stakeholders are individuals, groups, or organizations that have an interest or stake in a project and can influence its outcomes or be affected by its results.

Internal (project team and management) and external (end-users, partners, collaborators, etc) stakeholders

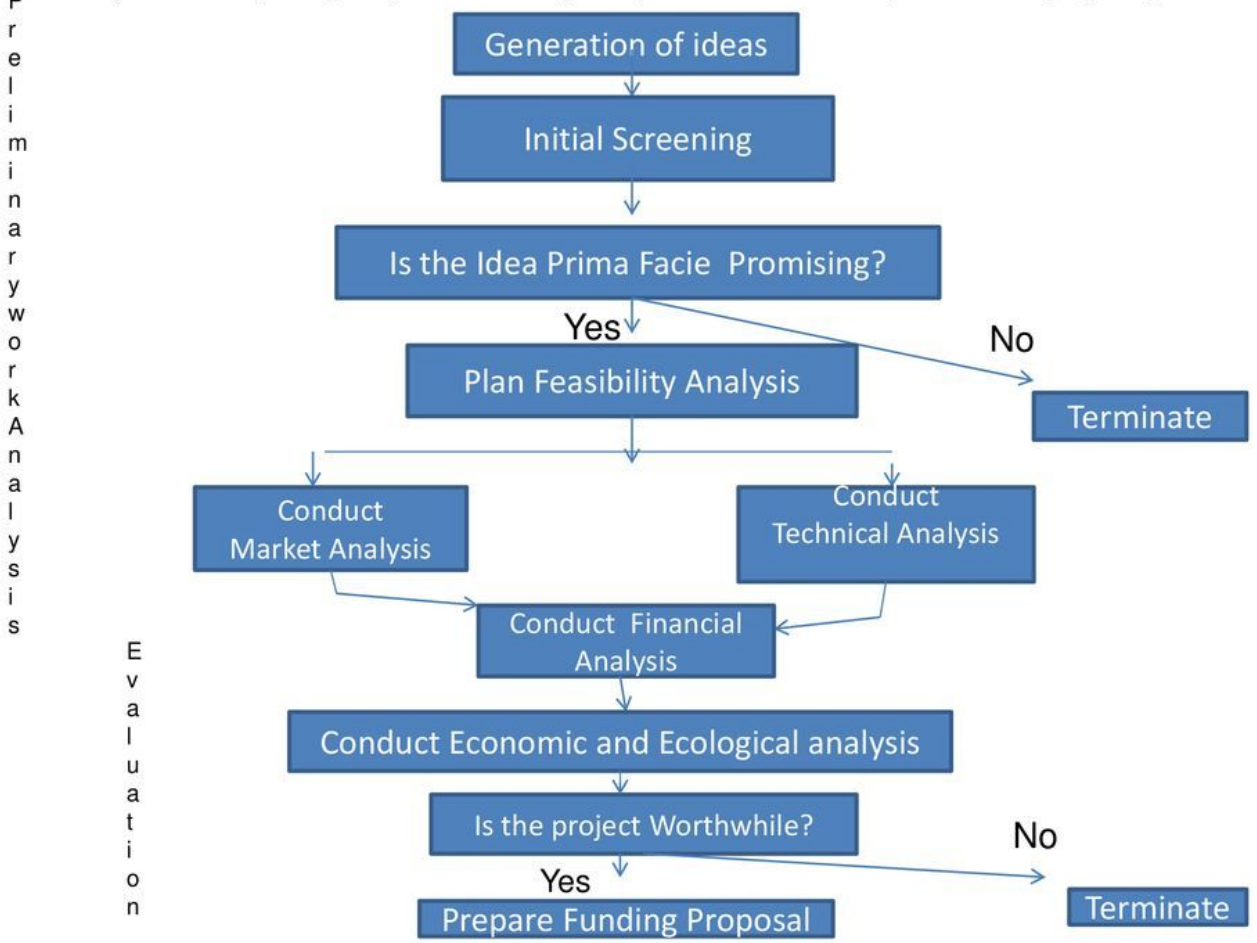


Project success

Project mission	**Clearly defined goals and direction**
Top management support	**Resources, authority and power for implementation**
Schedule and plans	**Detailed specification of implementation processes**
Client consultation	**Communication with & consultation of all stakeholders**
Personnel	**Recruitment, selection & training of competent personnel**
Technical tasks	**Ability of the required technology & expertise**
Client acceptance	**Selling/delivering the final product to end-users**
Monitoring and feedback	**Timely & comprehensive control**
Communication	**Provision of timely data to key players**
Troubleshooting	**Ability to handle unexpected problem**

Feasibility Analysis: A Schematic Diagram

(P Chandra (2003) Projects: Planning……, Tata McGraw –Hill, New Delhi. page 13).



What you learnt...

- Definition and types of projects
- Features of projects
- Decision-making for the importance of a project: with-and-without approach
- Difficulties in undertaking a project
- Project life-cycle: stages of a project
- Feasibility studies in project undertaking
- Project design and essential components in project management
- Project success factors
- Schematic diagram in a feasibility study of a project

Exemplar questions

Suppose you and some of your classmates want an environment-safe learning system at Rajshahi University. Write a 3-page project proposal with its feasibility study that the team can submit to the responsible authority.

Suppose a sub-urban community is facing communication difficulties with the city CBD. What type of project should be proposed and what is the feasibility of such a project?

There is a training project planned for local farmers in a district on using climate-smart technology. Write this project's vision and mission statements, deliverables and stakeholders. What will be possible risks and their reduction strategies?