3

UNIT

Project Management

CONTENTS

PART-1

Project Management : Meaning, Scope and Importance.

Questions-Answers

Long Answer Type and Medium Answer Type Questions

Que 3.1. What do you mean by project management ? Describe phases and requirement of various phases of project management.

Answer

A. Project Management :

1. It is a scientific way of planning, implementing monitoring and controlling the various aspects of project such as time, money, material, manpower and other resources with the intention of achieving the basic objectives or goals including technical, cost and time schedule.
2. It also involves coordination of group activity where the manager plan, organize staff and other resources, direct and control to execute the project within constraints of time, cost and performance.
3. Project management is an 'investment of resources' to produce goods and services for consumption.
4. The elements of project management control included program objectives, policy restrictions, resources constraints, government regulations, process implications, review of outputs and revision of objectives.

B. Phases of Project Management :

1. The process of project management may be divided into six broad phases as shown in Fig 3.1.1.

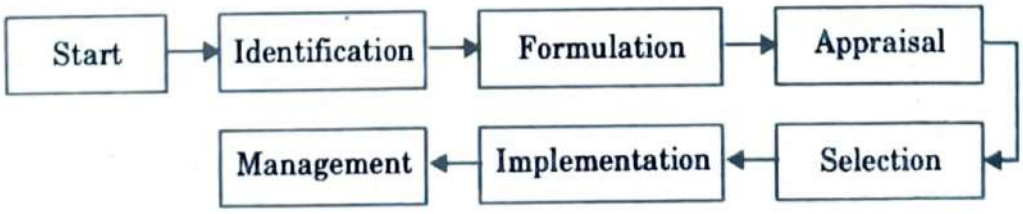

Fig. 3.1.1. Phases of project management.

B. The Requirements of Various Phases :

S. No.	Phase	Requirements
1.	Identification	Selection of a project after sound scanning of the environment of investment opportunity and potential returns.
2.	Formulation	Translation of the project idea into a concrete project by analysis of important parameters. Preparation of feasibility report.
3.	Appraisal	Analysis and evaluation of market, technology, financial and economic parameters break-even analysis, rate of return and profitability assessment.
4.	Selection	Project selection based on objectives and constraints.
5.	Implementation	Project completion within allotted resources.
6.	Management	Operation of enterprise with maximization of returns.

Que 3.2. What is the importance of project management ? Explain.

Answer

The importance of project management is as follows :

1. **Clear Project Plan and Process :** The primary function of project management is to avoid confusion by outlining a clear plan and a process from the beginning to the end.
2. **To Establish Plan and Schedule :** Having agreed on a project schedule, sticking to it inculcates discipline required to avoid delays. A pre-determined process through the project lifecycle gives the project a clear path.
3. **Teamwork :** People are made to work in a team on a project, due to the benefits that accrue through sharing and knowledge of skills. It inspires team members to collaborate on a project.
4. **To Maximize Resources :** Project risk management and project tracking with regular reporting ensure economic and efficient use of all the resources.
5. **To Keep Control of Costs :** Based on the project scope, some projects may incur high costs. So, it is essential to keep track of the budget. Incorporating project management strategies eases the budget overrun risks.

6. **To Build on Knowledge :** Project management serves as a knowledge asset to a company and helps to build on both experience and knowledge.
7. **To Manage Quality :** It is crucial to ensure top-quality results. Project management identifies, controls, and manages standards. This results in a high-quality product/ service and a satisfied client.
8. **Continuous Oversight :** Project management methods ensure that organizations gain control over ongoing projects and make sure they are on the right track and within the stipulated budget.

Que 3.3. What do you understand by scope in project management ? What work is involved in project scope management ?

Answer

Scope in Project Management :

1. In project management, scope is the defined features and functions of a product, or the scope of work needed to finish a project.
2. Scope involves getting information required to start a project, including the features the product needs to meet its owner's requirements.
3. Project scope is oriented towards the work required and methods needed, while product scope is more oriented toward functional requirements.
4. If requirements are not completely defined and described and if there is no effective change control in a project, scope or requirement, then result may not be favorable.
5. Scope management in a project includes :

i. Listing the items to be produced or tasks to be done.
ii. Their required quantity, quality, and variety.
iii. The time and resources available and agreed upon.
iv. Modifying the variable constraints by dynamic flexible juggling in the event of changed circumstances.

B. Work involved in project scope management are :

1. **Planning scope management :** A scope management plan is created based on input from the project plan, the project charter, and consultation with stakeholders.
2. **Collecting requirements :** A requirements management plan is created based on the scope management plan plus stakeholder input. Interviews, focus group discussions, surveys, etc., are used to understand requirements. This will all be documented.
3. **Defining scope :** A project scope statement is produced based on all the requirements documentation plus the project charter and the scope management plan. This definition will be the basis for all project activity.

4. **Creating the Work Breakdown Structure :** A Work Breakdown Structure (WBS) is built after analyzing the project scope statement and the requirements of documentation. The WBS is basically the entire project broken down into individual tasks, and deliverables that are clearly defined.
5. **Validating scope :** Here, deliverables are inspected and reviewed. Either they are accepted as complete or further revisions are requested.
6. **Controlling scope :** As the project is executed, scope must be controlled. Performance reports are compared against project requirements to see where gaps exist, which may result in changes to the project plan.

Que 3.4. Describe project management as conversion process. Discuss its various constraints and mechanism.

Answer

The project is viewed as a conversion or transformation of some form of input into an output under a set of constraints and utilising a set of mechanism to make the project happen.

i. **Inputs :** Any project is started with a want or need to develop a product. There are two types of need :
   1. **Original Need :** Nature of work to be undertaken before the start of project.
   2. **Emergent Need :** Customer's changing need during the course of project.

ii. **Output :** This will usually in the form of :
   1. Converted information e.g., a set of specification for new product.
   2. A tangible product e.g., housing colony.
   3. Changed people e.g., through a training project participants have received new knowledge.

iii. **Constraints :** The main constraints are :
   1. **Time :** All projects by definition have a time constant.
   2. **Cost :** The value and timing of financial resources required to carry out the project.
   3. **Quality :** The standard by which both the product and the person itself will be judged.
   4. **Legal :** Statutory requirement.
   5. **Ethical :** Ethics of organization policies.
   6. **Environmental :** Environment control legislation.
   7. **Logic :** The need for certain activities to have been completed before a project can start.
   8. **Activation :** Action of show when a project or activity can begin.

9. **Indirect Effects :** The reactive effect of the project to be taken care.

iv. **Mechanism :** The means of mechanism by which output may achieved are as follows :

1. **People :** Involved directly or indirectly.
2. **Knowledge and Expertise :** Technical specialization and management processes.
3. **Tools and Technique :** The method for organizing the potential work with available resources.
4. **Technology :** The available physical assets that will be performing the conversion process.

PART-2

Role of Project Manager.

Questions-Answers

Long Answer Type and Medium Answer Type Questions

Que 3.5. What are the key skills of a good project manager ?

Answer

Key Skills of Project Manager : A good project manager should have the following skills :

1. Planning and organizational skill,
2. Personnel management skill,
3. Communication skill,
4. Flexibility,
5. Problem solving capability,
6. High energy level,
7. Ability to take suggestion,
8. Ambition for achievement,
9. Ability to develop alternative options,
10. Knowledge of project management tool and technique,
11. Ability of self evaluation,
12. Capability to relate present events to project management, and
13. Entrepreneurial skills, initiative and risk taking ability.

Que 3.6. What are the roles of project manager in a project ?

Answer

The roles of a project manager in a project are :

1. **Planning :** A project manager is responsible for formulating a plan to meet the project's objectives while adhering to an approved budget and timeline.
2. **Leading :** An essential part of any project manager's role is to assemble and lead the project team. This requires excellent communication, people, and leadership skills, as well as a keen eye for others' strengths and weaknesses.
3. **Execution :** The project manager participates in and supervises the successful execution of each stage of the project. This requires frequent, open communication with the project team members and stakeholders.
4. **Time management :** Staying on schedule is crucial to completing any project, and time management is one of the key responsibilities of a project manager. Project managers should be experts at risk management and planning.
5. **Budget :** Project managers devise a budget for a project and stick to it as closely as possible. If certain parts of the project end up costing more than anticipated, project managers moderate the spend and reallocate funds when necessary.
6. **Documentation :** A project manager must develop effective ways to measure and analyze the project's progress. It's also a project manager's job to ensure that all relevant actions are approved and that these documents will be available for future reference.
7. **Maintenance :** The work doesn't end once a project has been completed. There needs to be a plan for ongoing maintenance and troubleshooting in the project.

Que 3.7. What are the traits of a good project manager ?

Answer

Traits required for being a good project manager are :

1. **Effective communication skills :**

One of the qualities of a good manager is being a good communicator so that he can connect with people at all levels. The project manager must clearly explain the project goals as well as each member's tasks, responsibilities, expectations and feedback.

2. **Strong leadership skills :**

Effective project manager means having strong leadership qualities such as being able to motivate his team and drive them to maximum performance so that they can achieve their goals.

3. **Good decision maker :**

An effective project manager needs to have decision-making skills because there will always be decisions that need to be acted on.

4. **Technical expertise :**

Since project management software and other related programs are essential in accomplishing the project goals, an effective project manager needs to have sound technical knowledge to understand the issues that are related to the technical aspect.

5. **Inspires a shared vision :**

An effective project manager can articulate the vision to his team members very well. A visionary person can lead his people to the right direction as well as easily adapt to the changes that come in the way.

6. **Team-building skills :**

It is necessary that a team works in unity otherwise the project will undergo various relationship challenges that might hinder its success. Project managers need to know how to give each of them the importance they need by focusing on their positive traits.

7. **Good negotiation skills :**

One of the qualities needed for effective project management is the ability to negotiate. In times that conflict arise due to differences in opinion, project managers need sheer negotiating skills to settle the issue and maintain harmony in the team.

8. **Empathetic :**

Understanding and caring for people as well as being grateful for their help are a few of the things that an empathetic leader shows to his members. It includes understanding the needs of the project and its stakeholders.

9. **Competence :**

A good manager knows what he is doing, can initiate new projects as well as face the challenges that come with them.

PART-3

Project Lift Cycle.

Questions-Answers

Long Answer Type and Medium Answer Type Questions

Que 3.8. What are the various stages in total life cycle of a project ? Explain with suitable diagram.

Answer

Project Life Cycle :

1. The sequence of phases through which the project will evolve is known as project life cycle.
2. In simple words, a project life cycle is basically defined by its phases, according to which a project swims through and finally reaches to handover stage.
3. The phases in project life cycle are as :

A. Phase 1 : Start up / Conceptualization of Project :

It contains the following keywords :

i. Purpose,
ii. Strategic fit,
iii. Objective,
iv. Scope,
v. Terms of reference,
vi. Draft schedule.

B. Phase 2 : Planning of Project Activities and Resources :

It contains following keywords :

i. Scope,
ii. Select team members,
iii. Plan delivery,
iv. Quality plan,
v. Baseline schedule,
vi. Baseline budget,
vii. Risk analysis,
viii. Issue register,
ix. Approvals, and
x. Communication plan.

C. Phase 3 : Execution of Project :

It contains following keywords :

i. Production of key deliverables,

ii. Monitor / control,
iii. Quality management,
iv. Cost management,
v. Risk management,
vi. Issue resolution, and
vii. Change control reporting.

D. Phase 4 : Termination of Project :

It contains following keywords :

i. Contract close out,
ii. Team feedback,
iii. Recommendation for further action, and
iv. Post implementation review.

4. The level of activity required during project life cycle will vary with time.
5. This can be illustrated by project life cycle curve as shown in Fig. 3.8.1.

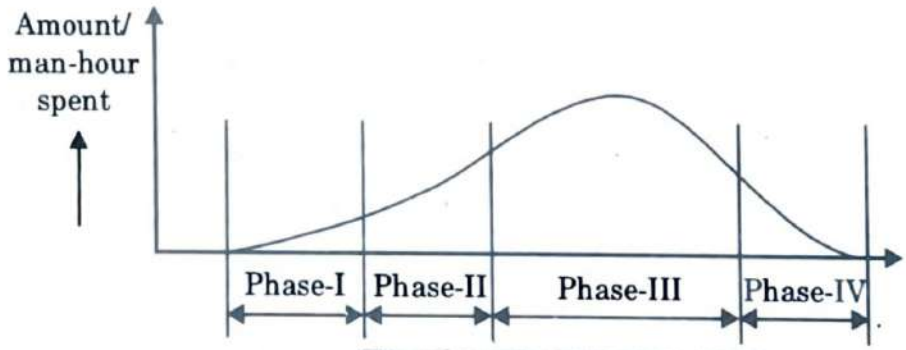

Fig. 3.8.1. Project life cycle.

6. The level of activity is relatively low during the early phases, increases through the implementation stage where the major volume of work is done.
7. This pattern is shown as a group of cumulative expenditure against time in Fig. 3.8.2.

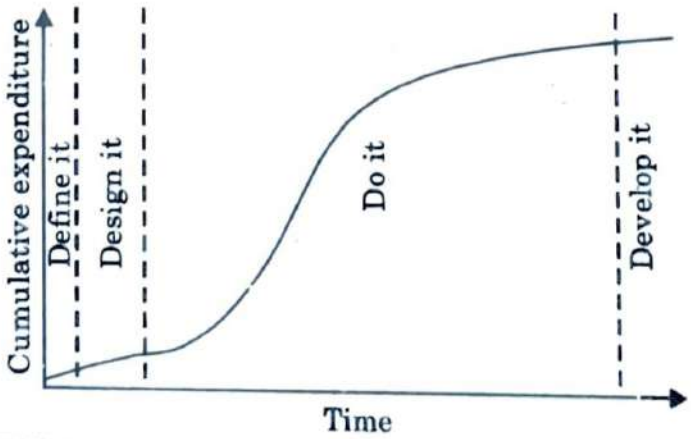

Fig. 3.8.2. Graph of cumulative expenditure against time.

Que 3.9. **Why project life cycle is important for a project ?**

Answer

Importance of project life cycle is as follows :

i. **Structure a Project :**

Better structuring of a project helps in better monitoring and better results. With a project life cycle, one can divide the project into several stages, making the structure easier to understand and monitor.

ii. **Better Communication :**

With the better structuring and planning of a project, the project life cycle helps in better communication between employees and management. The employees know in advance which tasks to perform on which date and when to complete them.

iii. **Helps in Tracking Progress :**

Finalization of schedule and cost, the project life cycle helps evaluate how competitive project work has been going with planning and where the pace is required or cost-cutting is essential.

iv. **Helps in Better Project Management :**

The project life cycle has great importance in terms of managing a project. It helps in managing the project time, cost, resources, and efforts of employees. With the use of the project life cycle, each aspect of a project is identified and planned initially, which helps strategize each sub-task at a low cost.

v. **Helps in Cost Controlling :**

The project life cycle holds great importance as it makes sure that the project is completed as strategized by the management that helps in cost controlling as the project is completed within the decided resources.

vi. **Better results :**

The project life cycle is of great importance for project management and better project results. The life cycle has been used widely for project planning and completing a project because of its colossal significance.

PART-4

Project Appraisal.

Questions-Answers

Long Answer Type and Medium Answer Type Questions

Que 3.10. What is meant by project appraisal ? Discuss.

Answer

1. Project appraisal is a process of detailed examination of several aspects of a given project before recommending of same projects.
2. Project appraisal is a scientific tool and follows a specific pattern.
3. The group who has promote the project, has to satisfy in all respect before taking step ahead in the starting of project.
4. The group or institution has to ensure that investment on the proposed project will generate sufficient return on the investment made and that loan amount disbursed for the implementation of the project will be recovered along with interest within a reasonable period of time.
5. The various factors considered for project appraisal are shown in Fig. 3.10.1 and include technical, financial, commercial, economic, ecological, social and managerial aspects.

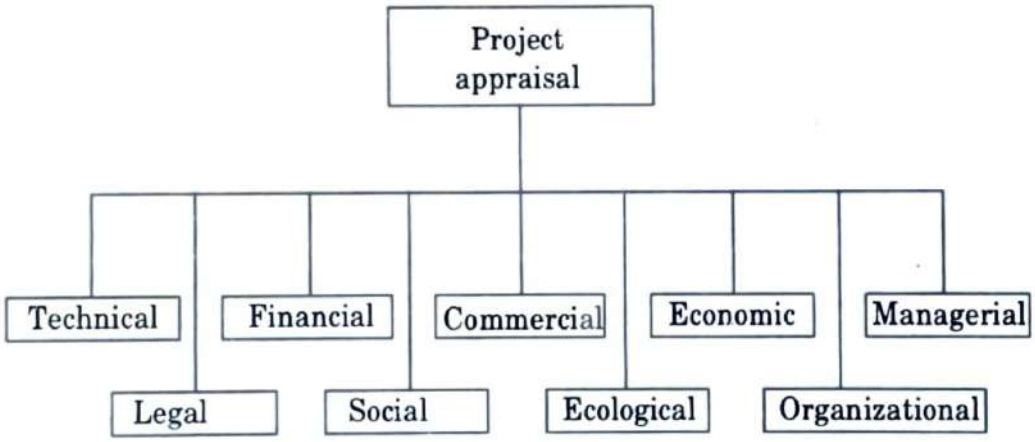

Fig. 3.10.1. Various aspects of project appraisal.

6. The main stages of the system of project appraisal are given in Table 3.10.1.

Table 3.10.1.

Steps	Aspects	Process of Security
1.	Economic	Indicates priority use.
2.	Technical	Involves scale of the project and the process adopted.
3.	Organizational	Suitability is examined.
4.	Managerial	Adequacy and competence are critically scrutinized.
5.	Operational	Capacity of the project.
6.	Financial	Determines the financial viability for sound implementation and efficient operation.

7. Different factors are not independent but are highly interrelated.
8. The methods of analysis may vary from project to project.
9. Certain common aspects of study from the point of view of engineering and technology are given below :
   i. Selection of technical process and appropriate technology.
   ii. Technical know-how and collaboration made, if any.
   iii. Size and scale of operation.
   iv. Location advantages and availability of infrastructure facilities.
   v. Selection of plant and machinery along with qualifications and capabilities of the supplies.
   vi. Details of plant layout and factory buildings.
   vii. Technical engineering services including power, water, etc.
   viii. Project design and network analysis for project implementation schedule.
   ix. Design of effluent disposal system and utilization of byproducts.
   x. Project cost and comparison with similar projects regarding technology, product mix, time spread and machinery.

Que 3.11. Why the project appraisal is done ?

Answer

The project appraisal is done due to following reasons:

1. For selecting the best project;
2. To assess projects credit-worthiness,
3. To assess the profitability of the project;
4. To assess the probable cost and benefit;
5. To assess the requirements of raw material;
6. To assess the fixed and working capital;
7. To anticipate a possible market of the product;
8. To assess the management's competence,
9. To find out whether the various factors of production are available,
10. For the fulfillment of social objectives such as employment generation, development of backward areas, etc.

PART-5

Preparation of Realtime Project Feasibility Report Containing, Technical Appraisal.

Questions-Answers

Long Answer Type and Medium Answer Type Questions

Que 3.12. What is technical appraisal ? Give aspects of technical appraisal.

Answer

Technical Appraisal :

1. Technical Appraisal is the technical review to ascertain that the project is sound with respect to various parameters such as technology, plant capacity, raw material availability, location, manpower availability, etc
2. Technical appraisal is important as

i. It ensures that the project is technically feasible - all the inputs required to set up the project are available

ii. It facilitates the optimal project formulations in terms of capacity, technology, location, technology, size, etc on.

3. Usually, technical appraisal is carried out by independent agencies carrying out technical studies or by the institution by their in-house technical experts.

4. Aspects of Technical Appraisal :

i. Manufacturing Process/Technology

ii. Technical Arrangements

iii. Material Inputs and Utilities

iv. Product Mix

v. Plant Capacity

vi. Location and site

vii. Machineries and Equipments

viii. Structures and Civil Works

ix. Environmental Aspects

I. Manufacturing Process/Technology : Often two or more alternative technologies available. The choice of technology is influenced by a variety of considerations: plant capacity, principal units, investment outlay, production cost, use by other up product mix, latest developments, and ease of absorption.

II. Technical Arrangements : Having a good technical collaborator or a good consultant is very important.

III. Material Inputs and Utilities : It categorized into :

i. Raw materials

ii. Processed industrial material and components

iii. Auxiliary materials and factory supplies

iv. Utilities

IV. Product Mix : It is important for the unit to have flexibility to alter its product mix to survive in changing market conditions.

V. Plant Capacity : Number of units or volume that can be produced during a given period

VI. Location and site : Location should be close to sources of raw material or to the consumption markets. Power should be available - cost effective, cheap, uninterrupted.

Water availability is also crucial. Accessibility by transportation is also important.

VII. Machineries and Equipments : Smooth flow of production can be achieved if the various stages are matched well. External consultants must be employed for proper selection of machineries and equipments.

VIII. Structures and Civil Works : It comprise of :

i. Site preparation & development

ii. Buildings and structures

iii. Outdoor works

IX. Environmental Aspects : Polluting units should be set-up in approved industrial zones and where permission from Pollution Control Board is easily available. Effluent Treatment Plants (ETPs) should be available to neutralize the output waste.

Que 3.13. Summarize the 10 step procedure involved in critical study of technical appraisal.

Answer

1. The 10 step procedure involved in critical study of technical appraisal are as follows :

Step 1. Selection of Process :

1. For manufacturing a product, more than one technology is available.
2. It will depend upon the product type, quantity and quality of product that which technology should be adopted for manufacturing the product.
3. Sometimes, we have to take license for using the technology due to the patent of that technology. Sometimes, available resources like skilled and unskilled worker, material etc. are key factors for adaptation of technology.

Step 2. Scale of Operation :

1. Scale of operation is signified by the size of plant. Plant size mainly depends upon the market for the output of the project.
2. Economic size of plant varies from project to project.
3. The plant size mainly depends upon the promoter's ability to raise the funds required to implement the project.
4. If the funds required to implement the project at its economic size is beyond the promoter's capacity to arrange for and if the economic size is too big a size for the promoter to manage, the promoter is bound to limit the size of the project that will limit his finance and managerial capabilities.
5. Whenever a project is proposed to be set up at a size below its economic size, it must be analysed to whether the project will survive at the proposed size.

Step 3. Raw Material :

1. Selection of raw material has great impact on the technical appraisal of the project.
2. For a given project, if there is a raw material that should be used, then quality of raw material has greater importance.
3. The grade and quality of raw material, further decided that what type of equipment and technology must be used and what is the transportation cost of the raw material. Hence, the cost of capital investment required on the plant and machinery should also be studied before arriving at a decision on the choice of raw material.

Step 4. Technical Know-how :

1. Technical know-how means that full knowledge about the technology and procedure involve in the project.
2. When the technical know-how is provided by the expert consultant, it must be made sure that consultant has the requisite knowledge and experience about the project.

Step 5. Collaboration Agreement :

1. If the project promoters have entered into agreement with foreign collaborators, the terms and conditions of agreement should be understood by both parties.
2. In this regard, following points should be considered :
   i. The technology proposed to be imported should suit to the local conditions.
   ii. The collaboration agreement should have necessary approval of the government of India.
   iii. The competence and reputation of the collaborators needs to be ascertained through possible senses including the Indian embassies abroad and the collaborator's bankers.

iv. There should not be any restrictive clause in the agreement that import of equipment/machinery required for the project should be channelised through the collaborator.

v. It must be ensured that the collaboration agreement does not infringe upon any patent rights.

vi. If there is financial participation in the project by the collaborator, its effect on the management of the unit and transfer of payment / payment of interest to the collaborator may be studied.

Step 6. Product Mix :

1. Customer's needs and preferences have been varying with products therefore, a vast product range has to introduce in the market in order to satisfy the customer's needs and preferences.
2. For this, variation in size and quality of product is necessary to satisfy the choice of customers.

Step 7. Selection and Procurement of Plant and Machinery :

1. The machinery and equipment required for a project depends upon the production technology proposed to be adopted and size of the plant proposed.
2. Before selection of the machinery, following points should be discussed for rough estimate :
   i. Take into consideration output planned.
   ii. Machining time at each work station.
   iii. Machine capacity after giving all necessary allowances.
   iv. Survey of market for availability of different types of machinery.

Step 8. Plant Layout :

1. The efficiency of manufacturing operation depends upon plant layout and layout for machinery.
2. The following factors should be considered while deciding plant layout :
   i. The layout should be such that future expansion of the plant can be done without much change in the existing plant.
   ii. It should have smooth flow of material and semi-finished work.
   iii. There should be provision of quality check at various points.
   iv. It should offer the safety of the workers.
   v. There should be proper lighting and ventilation.
   vi. The layout should facilitate effective supervision of work.

Step 9. Location of Project :

1. To decide the plant location, there are various factors that should be considered :
   a. Availability of raw material,
   b. Proximity to market,
   c. Availability of labour,
   d. Availability of infrastructural facilities,
   e. Availability of power and water,
   f. Good transport facilities, and
   g. Climate of the site.

Step 10. Project Scheduling :

1. Project scheduling is nothing but arrangement of all facilities in time phase.
2. Scheduling will decide in order of time in which activities to be performed.
3. The logical sequence of activities according to project schedule can be given as :
   i. Land acquisition,
   ii. Site development,
   iii. Preparing plan for building,
   iv. Construction of building,
   v. Placing order for machinery,
   vi. Receipt of machinery at site,
   vii. Erection of machinery,
   viii. Commissioning of plant, and
   ix. Commencement of regular commercial production.

PART-6

Environment Appraisal.

Questions-Answers

Long Answer Type and Medium Answer Type Questions

Que 3.14. What is environment appraisal ? What stages are involved in environmental appraisal ?

Answer

Environmental Appraisal :

For finding business's available opportunities and risks, environmental appraisal is needed. Environmental appraisal means to analyze all the factors of business environments. Following are the main stages involved in environment appraisal.

1st Stage : Factors Affecting Environmental Appraisal :

Following are the main factors affecting environmental appraisal :

1. **Factors relating to environment :**

   We cannot evaluate equally two organizations in same environment. We have to study every organization's complexity and flexibility.

2. **Factors relating to Organization :**

   Age of organization will affect our environmental appraisal. We also see the organization's size for doing business and its market type. What are the service/s and products, it is providing?

3. **Factors Relating to Strategies :**

   Policy makers play important role in appraisal. Age, education and experience of policy maker will affect the environmental appraisal.

2nd Stage : Identification of Environmental Factors :

In second stage we have to identification of environmental factors on the basis of following issue :

1. Critical Issues
2. High Priority Issues
3. Low Priority Issues

3rd Stage : Structuring the Environmental Appraisal :

This is the third stage of environmental appraisal. In this stage, we create the structure of environmental appraisal. One side of structure will be our strengths and other side will be our weaknesses. By comparing both, we estimate our surviving power in the environment of business.

Que 3.15. What is the importance of environmental appraisal in a project ?

Answer

The following is the need and importance of environmental appraisal:

1. **Identification of strength :**

   Analysis of internal environment helps to identify strength of the project. After identifying the strength, the project must try to consolidate or maximise its strength by further improvement in its existing plans, policies and resources.

2. **Identification of weakness :**

Monitoring internal environment helps to identify not only the strength but also the weakness of the project. A project may be strong in certain areas but may be weak in some other areas. For further growth and expansion, the weakness should be identified so as to correct them as soon as possible.

3. **Identification of opportunities :**

Environmental analyses helps to identify the opportunities in the market. The firm acquiring a project should make every possible effort to grab the opportunities as and when they come.

4. **Identification of threat :**

Project is subject to threat from competitors and various factors. Environmental analyses help them to identify threat from the external environment. Early identification of threat is always beneficial as it helps to diffuse off some threat.

5. **Optimum use of resources :**

Systematic analyses of environment helps to reduce wastage and make optimum use of available resources in a project, without understanding the internal and external environment resources cannot be used in an effective manner.

6. **Survival and growth :**

Systematic analyses of business environment help the firm to maximise their strength, minimise the weakness, grab the opportunities and diffuse threats

7. **To plan long-term strategy :**

Proper analyses of environmental factors help in project to frame plans and policies that could help in easy accomplishment of the objectives.

8. **Environmental scanning aids decision-making :**

Decision-making is a process of selecting the best alternative from among various available alternatives. An environmental analysis is an extremely important tool in understanding and decision-making in all situations.

PART-7

Market Appraisal (Including Market Survey for Forecasting Future Demand and Sales).

Questions-Answers

Long Answer Type and Medium Answer Type Questions

Que 3.16. Explain market appraisal.

Answer

Market Appraisal :

1. The market appraisal deals with the market for the promotion of a product or services.
2. The main idea of a project is to produce same product or service and introduce it in market for earning a profit.
3. The success of any product depends upon the question as to whether the product and service offered by the project is successful commercially.
4. Market appraisal of a product is done studying the commercial successfulness of the product or service offered by the project from the following angles :
   a. Demand for the product,
   b. Supply position for the product,
   c. Distribution channels,
   d. Pricing of the product, and
   e. Government policies.
6. Market appraisal consists of two aspects :
   a. Market opportunity for the product expressed in terms of demand forecast and market shares.
   b. Marketing strategy and marketing process is the design of blue print consisting of a set of inputs including product quality, price, design, agency discounts distribution network / channels, packaging, etc.
7. Market analysis should cover the following :
   a. Analysis of market opportunity and specifying marketing objectives.
   b. Planning the process of marketing the product.
   c. Organization of the marketing process.
   d. Control of the implementation of the marketing plan and taking corrective action when the actual results deviate from the estimates or expectations.

Que 3.17. What are the objectives and scope of market research ?

Answer

Objectives of Market Research :

1. Market research determines who and where the customer is, what are his needs and wants, what will he buy, where and how he will buy, and how much he will pay.

2. Market research measures sales, trends and sales potential.
3. Market research analyses distribution, economic trends and profitability.
4. Market research determines advertisement effectiveness, consumer reaction and dealer reaction.
5. Market research studies market potential and market share.
6. Market research conducts demand and price studies.
7. Market research popularizes the company products and makes them acceptable to consumers.
8. Market research keeps a business in touch with its markets.
9. Market research explores new markets and helps developing new products.
10. Market research safeguards company's interest against unforeseen changes in the market.
11. Market research guides sales promotion efforts.
12. Market research analyses user characteristics, attitudes, opinions with particular emphasis on any shift in market composition or personal preferences.

Scope of Market Research are :

1. Measurement of market potential.
2. Determination of market characteristics.
3. Market share analysis.
4. Competitive products studies.
5. New products acceptance and potential.
6 Share and long range forecasting.
7. Studies of business trends.
8. Establishment of sales quotas and territories.
9. Studies of advertisement effectiveness.
10. Plant and warehouse location studies.

Que 3.18. Describe the various demand fore casting techniques involved in predicting the demand for product in market appraisal.

Answer

1. Forecasting methods can be classified as 'qualitative' or 'quantitative'.
2. The qualitative methods use personal judgment and involve qualities like intuition and experience as the basis of forecasts, and are subjective by their varying nature.
3. Quantitative methods are objective in nature and they employ numerical information as the basis of making forecasts.

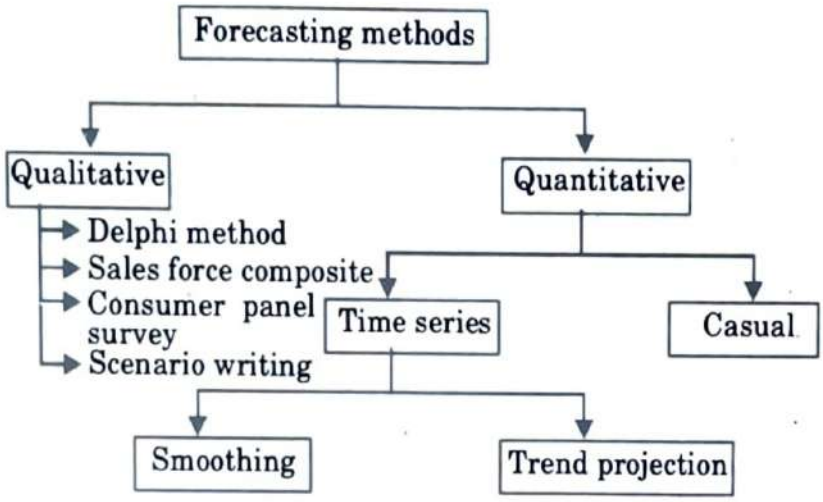

Fig. 3.18.1. An overview of forecasting methods

4. Some techniques for demand forecasting of product in commercial appraisal are given as :

A. Moving Average Method :

i. This method uses the average of the most recent n data values in the time series as the forecast for the next period.

∴ Moving average = [Σ (most recent n data values)]/n.

ii. The term moving indicates that, as a new observation becomes available for the time series, it replaces the oldest observation in the above expression, and a new average is computed.

iii. As a result, the average will change, or move, as new observations become available.

iv. After calculating the moving average forecast, we compute forecast error.

v. For this, we compute the difference between the observed value of the time series and the forecast value.

vi. This forecast error may be positive or negative, depending on whether the forecast is too low or too high.

B. Weighted Moving Averages :

i. In this method, each observation in the calculation receives the same weight.

ii. One variation, known as weighted moving averages, involves selecting different weights for each data value and then computing a weighted average of the most recent n data values as the forecast.

iii. In most of the cases, the most recent observation receives the most weight, and the weight decreases for older observations.

iv. It may be noted that the weights used for the three weeks are, respectively 3/6, 2/6 and 1/6, such that the sum of weights is equal to 1. For a four week average, the weights would be 4/10, 3/10, 2/10 and 1/10.

C. Exponential Smoothing :

1. It is a special case of the weighted moving averages method, where the forecast for the next period is calculated as weighted average of all the previous observations.
2. It is based on the premise that the most recent observation is the most important for predicting the future value.
3. The basic exponential smoothing model is :

$$F_{t+1} = \alpha Y_t + (1 - \alpha) F_t$$

where, F_{t+1} = Forecast of the time series for period $t + 1$,
Y_t = Actual value of the time series in period t,
F_t = Forecast of the time series for period t, and
α = Smoothing constant, $(0 \leq \alpha \leq 1)$.

4. The above equation is rewritten as,

$$F_{t+1} = F_t + \alpha(Y_t - F_t)$$

The difference $(Y_t - F_t)$ represents the error in the previous forecast.

5. To start the calculations, we let F_1 equal the actual value of the time series in period 1, *i.e.*, $F_1 = Y_1$. Hence, the forecast for period 2 is :

$F_2 = \alpha Y_1 + (1 - \alpha) F_1 = F_1 + \alpha(Y_1 - F_1) = Y_1 + \alpha(Y_1 - Y_1) = Y_1$.

This shows that the exponential smoothing forecast for period 2 is equal to the actual value of the time series in period 1.

6. The forecast for period 3 is

$$F_3 = \alpha Y_2 + (1 - \alpha) F_2 = \alpha Y_2 + (1 - \alpha) Y_1$$

7. Similarly,

$$F_4 = \alpha Y_3 + (1 - \alpha) F_3 = \alpha Y_3 + (1 - \alpha) [\alpha Y_2 + (1 - \alpha) Y_1]$$
$$= \alpha Y_3 + \alpha(1 - \alpha) Y_2 + (1 - \alpha)^2 Y_1.$$

Hence, F_4 is a weighted average of the first three time series values. The sum of the coefficients, or weights, for Y_1, Y_2 and Y_3 equals 1.

8. A similar argument can be made to show that in general, any forecast F_{t+1} is a weighted average of all previous time series values.

PART-B

Management Appraisal.

Questions-Answers

Long Answer Type and Medium Answer Type Questions

Que 3.19. What is managerial appraisal ? What are the qualities needed to be studied in managerial appraisal.

Answer

A. Managerial Appraisal :

1. The managerial appraisal is done to find out whether management is capable enough to make the project successful with considerable margin of profit.
2. Basically, management is the most important factor that can either make a project a success or a failure.
3. Sometimes it is very common to observe that a good project at the hand of a poor management may fail while a not so good project at the hand of an effective management may succeed.
4. Hence, banks and financial institution that lend money for financing projects lay more emphasis on managerial appraisal.
5. The morale of employees, the prevailing superior-subordinate relationship, labour turnover, labour unrest, productivity of employees, are some key factors on which managerial capabilities of person concerned.
6. Now a days, managerial appraisal has become so common because number of sick unit has been increasing considerable due to mismanagement.
7. In managerial appraisal, we have to analyse the performances of top level in a unit.
8. This is because management appraisal is concerned with the appraisal of human qualities.

B. Qualities : The following qualities need to be studied in managerial appraisal :

1. Integrity,
2. Foresightedness,
3. Leadership qualities,
4. Interpersonnel relationship,
5. Technical and financial skills,
6. Commitment,
7. Perseverance.

Que 3.20. What is scope of managerial appraisal ?

Answer

1. The management appraisal is done on the sole promoter of a small project.

2. In case of partnership firm, the management appraisal is done on managing partner. However, mutual understanding among all the partners is a key factor for the success of the enterprise.
3. In private limited companies, the promoter director or managing director or executive director is responsible for running the enterprise. The management appraisal is done on him.
4. In public limited companies, the management appraisal is done board of directors and chief executive officer of the company.
5. Management appraisal technique is purely subjective and qualitative in nature unlike other appraisal techniques.
6. The technical and management qualifications of the person being appraised are important in managerial appraisal.
7. The present and past experience of the person being appraised for managing other enterprise is very important feedback of his past performance can be effectively used for managerial appraisal.