

M & E (18CS51) – Notes – Module – 4 (V – Sem. CSE A & B - RNSIT) :

Module – 4 (Preparation of project) Project Identification and Selection:

Meaning of a project:

The very foundation of an enterprise is the project. The success or failure of an enterprise largely depends upon the project.

The very dictionary meaning of a project is that **it is a scheme, design, a proposal of something** intended one devised to be achieved.

A project can be defined as scientifically evolved work plan devised to achieve a specific objective within a specified period of time

Projects have the following three basic attributes

(i) A course of action (ii) Specific objectives, and (iii) Definite time perspective
Every project has a starting point, an end point with specific objectives.

Project classification:

Are broadly classified as

- (1) Quantifiable and non-quantifiable projects
- (2) Sectorial projects
- (3) Techno-economic projects

(1) Quantifiable Projects:

are those projects for which a **plausible quantitative assessment** of benefits **can be made** are called quantifiable projects.

Example: projects concerned with industrial development, power generation, mineral development fall in this category

Non-quantifiable projects

Are those in which a **plausible and quantitative assessment cannot be made**. Example: projects involving health education and defense

Non-quantifiable projects are those in which a plausible and quantitative assessment cannot be made.
Example: projects involving health education and defense.

2) Sectorial projects:

A project may fall in any one of the following sectors:

- (i) Agriculture and allied sector
- (ii) Irrigation and power sector
- (iii) Industry and mining sector
- (iv) Transport and communication sector
- (v) Social services sector
- (vi) Miscellaneous sector

3) Techno-economic projects:

These are the projects based on the techno-economic characteristics which include

(a) Factor intensity oriented classification:

May be classified as capital intensive or labour intensive.

If large investment is made on plant and machinery the project is capital intensive.

If the projects involving a large number of human resources will be labour intensive.

(b) Causation oriented classification:

Is based on the demand or raw material

If the project is based on the very existence of demand for certain goods or services makes the project is called demand-based.

If the project is based on the availability of certain raw materials, skills or other inputs makes the project raw material based.

(c) Magnitude-oriented classification:

Is based on the size of the investment involved in the projects which can be classified into large scale, small scale, or medium scale.

Explain the phases of project identification with its process

Project selection consists of two steps:

List out various factors to be considered for selection of a project

- 1) Project identification and
- 2) Project selection.

1) Project identification:

Idea generation: Project selection process starts with the generation of a product idea which can be discovered from various internal and external sources.

These may include

- (i) Knowledge of potential customer needs
- (ii) Watching emerging trends in demands for certain products,
- (iii) Scope for producing substitute product
- (iv) Catering to specific interests like electronics, computers etc.
- (v) Success stories of known entrepreneurs or friends or relatives,
- (vi) Making visits to trade fairs and exhibitions displaying new products and services
- (vii) Meeting with government agencies
- (viii) Ideas given by the knowledgeable persons.
- (ix) Knowledge about the government policies, concessions and incentives, list of items reserved for exclusive manufacture in small-scale sector, and
- (x) a new product introduced by the competitor.

2) Project selection:

Project selection starts where project identification ends after having some project ideas, these are analyzed in the light of existing economic conditions, the government policy and so on by using the tool SWOT analysis that is the intending entrepreneur how analyses his/her strengths and weaknesses as well as opportunities/competitive advantages and threats/challenges offered by each of the project ideas.

On the basis of this analysis, the most suitable is finally selected to convert it into an enterprise and the process involved in selecting a project out of some projects is described as “zeroing in process”

Meaning of a project report:

Project report or a business plan is a

-written statement of what an entrepreneur proposes to take up.

-kind of guide frost or course of action what the entrepreneur hopes to achieve in his business and how he is going to achieve.

Thus a project report can be defined as a evolved course of action devised to achieve the specified objective within a specified period of time.

Significance of a project report:

The preparation of project report is of great significance for an entrepreneur.

The project report serves two essential functions:

First function: it serves as road map, describes the direction the enterprise is going on, what its goals are, where it wants to be, and how it is going to get there.

Also enables an entrepreneur to know what he is proceeding in the right direction.

Second function: it attracts leaders and investors and the preparation of the project report is essential for those small enterprises which apply for financial assistance from the financial institutions and commercial banks and the preparation of the project report forms the basis for financial assistance.

Explain the need and significance of project report

Contents of a project report:

- 1) There is no substitute for a well prepared business plan or project report
- 2) A project report should be prepared with great care and consideration.
Therefore a good project report should contain the following contents:
 - 1) **General information:** information on product profile and product details.
 - 2) **Promoter:** His/her educational qualification, work experience, project related experience
 - 3) **Location:** exact location of the project, lease or freehold, location advantages
 - 4) **Land and building:** land area, construction area, type of construction, cost of construction, detailed plan and estimate along the plan layout.
 - 5) **Plant and machinery:** details of machinery required, capacity, suppliers, cost, various alternatives available, cost of miscellaneous assets.
 - 6) **Production process:** description of production process chart, technical knowhow, technology alternatives available, production programme.
 - 7) **Utilities:** Water, power, steam, compressed air requirements, cost estimates, sources of utilities.
 - 8) **Transport and communication:** Mode, possibility of getting costs.
 - 9) **Raw material:** list of raw material required by quality and quantity, sources of procurement, cost of raw material, tie-up arrangements, if any for procurement of raw material, alternative raw material if any
 - 10) **Man power:** man power required by skilled and semiskilled, sources of manpower supply, cost of procurement, requirement for training and its cost.
 - 11) **Products:** Product mix estimated sales, distribution channels, competitions and their capacities, product standard, input-output ratio, product substitute.
 - 12) **Market:** End users of product, distribution of market as local, national, international, trade practices, sales promotion devices, proposed market research
 - 13) **Requirement of working capital:** Working capital required, sources of working capital, need for collateral security, nature and extent of credit facilities offered and available.
 - 14) **Requirement of funds:** Break up of project cost in terms of costs of land, building machinery, miscellaneous assets, preliminary expenses, contingencies and margin money for working capital, arrangements for meeting the cost of setting up of the project.
 - 15) **Cost of production and profitability of first ten years.**

Formulation of a project report:

Project formulation divides the process of project development into eight distinct and sequential stages which are as described below.

- 1) **General Information** (bio-data of promoter, industry profile, constitution and organization and product details)
- 2) **Project description** (site information, physical infrastructure, utilities, pollution control, communication systems, transport facilities, other common facilities,
Production process, machinery and equipment, capacity of the plant, technology selected, research and development)
- 3) **Market potential** (demand and supply position, expected price, marketing strategy, after sales service, transportation)
- 4) **Capital costs and sources of finance**
- 5) **Assessment of working capital requirements**
- 6) **Other financial aspects**
- 7) **Economic and social variables**
- 8) **Project implementation**

1) General information:

The general information in the project report include the following

(a) Bio-data of the promoter: Name and address, qualification and experience, and other capabilities of the entrepreneur and the characteristics of the partners if any

(b) Industry profile: A reference of analysis of industry to which the project belongs.

(c) Constitution and organization: the constitution and organizational structure of the enterprise in case of partnership firm, its registration with the registrar of the firm, application for getting registration certificate from directorate of industries/district industry center.

(d) Product details: product utility, product range, product design and the advantages to be offered by the product over its substitutes if any

2) Project description:

A brief description of the project covering the following aspects is given in the project report.

(i) Site information: location of the site whether owned or leasehold land, industrial area, no objection certificate from, Municipal authorities or residential.

(ii) Physical infrastructure: availability of the following items of infrastructure should be mentioned in the project report

(a) Raw material: requirement of raw material, whether inland or imported sources of raw material supply.

(b) Skilled labour: availability of skilled labour in the area, arrangements for training labourers in various skills.

Utilities: these include

(i) power: requirement for power, load sanctioned, availability of power.

(ii) fuel: requirement of fuel items such as coal, coke, oil, gas, state of their availability.

(iii) water : the sources and quality of water should be clearly stated in the project report.

Pollution control: the aspects like scope of dumps, sewage system and sewage treatment plant should be clearly stated in the project report.

Communication system: availability of communication facilities telephone, fax, should be stated in the project report.

Transport facilities: requirement, mode , potential means of transport, distances to be covered, bottlenecks should be stated.

Other common facilities: like machine shops, welding shops and electrical repair shops should be stated

Production process: a mention should be made for the process involved in production and period of conversion from raw material to finished goods.

Machinery and equipment: a complete list of machinery and equipments required indicating their size, type, costs and sources of their supply should be enclosed with the project report.

Capacity of the plant: the installed licensed capacity of the plant along with the shifts should also be mentioned in the project report.

Technology selected: the selection of technology arrangements made for acquiring it should be mentioned in the business plan.

Research and development: a mention should be made in the project regarding the proposed search and development activities.

3) market potential: while preparing the project report the following aspects relating to the market potential of the product should be stated in the report

(I) Demand and supply position: state the total expected demand for the product and present supply position. This should also be mentioned how , such gap should be filled up in the project report.

(ii) expected price: an expected price of the product to be realized should be mentioned in the project report.

Marketing strategy: arrangements made for selling the product should be clearly stated in the project report.

After sales service: depending upon the nature of the product, provisions made for after sales service should be normally stated in the project report.

Transportation: requirement for transportation means indicating whether public transport or entrepreneurs own transport should be mentioned in the project report.

Capital costs and the sources of finance: an estimate of the various components of capital like land and buildings, plant and machinery, installation costs, preliminarily expenses, Margin for working capital in the project report. the resources should indicate the owners funds together with funds raised from financial institutions and banks.

Assessment of working capital requirements: the requirement for working capital and its sources of supply should be carefully and clearly mentioned in the project report. the sources of supply should be carefully and clearly mentioned in the project report.

Other financial aspects: other financial aspects,

In order to adjudge the profitability of the project to be set up, a projected profit and loss account indicating likely sales revenue, cost of production, allied cost and profit should be prepared. a projected balance sheet and cash flow statement should also be prepared to indicate the financial position and requirements at various stages of the project .break-even point is the level of production/sales where the industrial enterprise shall earn neither profit nor incur loss. in fact, it will just break even. break-even level indicates the gestation period and the likely moratorium required for repayment of loans. break-even(BEP) is calculated as follows.

Break-even point(BEP) is calculated as follows:

$$BEP = F / (S - V) * 100$$

Where, F=Fixed Cost

S=Sales Projected

V=variable Costs.

Thus the break even point analysis so calculated will indicate at what percentage of sales, the enterprise will break even.

Economic and Social Variables:

In view of the social responsibility of business, the abatement costs, i.e. the costs for controlling the environmental damage should be stated in the report.

Besides the socio-economic benefits expected to accrue from the project should also be stated in the report itself. following are the examples of the socio economic benefits.

(i)employment generation

(ii)import substitution

(iii) ancillarisation

(iv)exports.

(v)local resource utilization

(development of the area.

Project implementation:

Last but no means the least, every entrepreneur should draw an implementation scheme or a time-table for his project to ensure the timely completion of all activities involved in setting up an enterprise. timely implementation is important because there is a delay, it causes, among other things , a project cost overrun.

Delay in the project implantation jeopardizes the financial viability of the project, on the one hand and props up the entrepreneur to drop the idea to set au an exercise, on the other. hence, there is a need to draw up an implementation schedule for the project and then to adhere to it.

Following is simplified implementation schedule for a small project.

An illustrative Implementation Schedule:

Tasks/Months	1	2	...	14	15
1)formulation of Project Report					
2)application for term loan					
3)term-loan sanction					
4)possession of land					
5)construction of building					
6)getting power and water					
7)placing order for machinery					
8)receipt and installation of machinery					
9)man power recruitment					
10)trial production					
11)commencement of commercial production					

The above schedule can be broken up into scores of specific tasks involved in setting up an enterprise. Project evaluation and review technique(PERT) and Critical Path Method(CPM) can also be used to get better insights into all activities related to the implementation of the project.

Planning commissions guidelines for the formulating a project report:
1) General information: the feasibility report should include an analysis of the industry to which the project belongs. it should deal with the past performance of the industry. the description of the type of industry should also be given, the priority of the industry, increase in production, role of public sector, allocation of investment of funds, choice of technique.
2)preliminary analysis of the alternatives: This should also contain present data on the gap between demand and supply for the outputs which are to be produced, data on the capacity that would be available from the projects that are in production, or under implementation at the time report is prepared, a complete list of all existing plants in the industry, giving their capacity and level of production actually attained, list of all projects and a list of proposed projects. the location of the project and its implications are looked into.an account of foreign exchange requirement should be taken into consideration. The rate of return investment and alternative cost calculations return should be presented.
3)project description: The feasibility should provide a brief description of the technology/process chosen for the project .information relevant to the determining the optimality of the locations should also be included. Every feasibility report should present the information on specific points population, land, water, fauna etc. The report should contain the operational requirements of the plant, requirements of water and power, requirements of personnel, organizational structure envisaged, transport costs, activity wise phasing of construction, and factors affecting it.
4)Marketing plan: it should contain the following data items: Data on the marketing plan Demand and prospective supply of each of the areas to be served. The method and data used for main estimates of domestic supply and election of market areas should be presented. Should contain analysis of past trends and prices.
5)capital requirements and costs: The estimates should be reasonably complete and properly estimated. Information on all items and costs should be carefully collected and selected.
6)operating requirements and costs: Operating costs are those costs which are incurred after the commencement of commercial production information of all items of operating cost should be collected. Operating costs include materials and intermediates, fuel, utilities, labour, repair and maintenance, selling expenses and other expenses.
7)financial analysis: The purpose of this analysis is to present some measures to assess the financial viability of the project. aproforma of the balance sheet for the project data should be presented. Depreciation should be allowed for on the basis of specified by the bureau of public enterprises. Foreign exchange requirements should be cleared by the department of economic affairs. The feasibility report should be taken into account income tax rebates for priority industries, incentives for backward areas, accelerated depreciation etc. the sensitivity analysis should also be presented. the report must analyze the rate of return of exchange in the level and the pattern of product prices.
8)economic analysis: social profitability analysis needs some adjustment in the data relating to the costs and returns to the enterprise. one important type of investment involves a correction in input costs, to reflect the true value of foreign exchange, labor and capital. the enterprise should try to assess the impact of its operations on foreign trade. indirect costs and benefits should also be included in the report. if they cannot be quantified, they should be analyzed and their importance emphasized.
9)miscellaneous aspects: the preceding three areas are deemed appropriate to almost every new small enterprise. notwithstanding, depending upon the size of the operation and peculiarities of a particular project, other items important to be applied out in the project report.

Specimen of a project report:

Illustrative project report or business plan:

Project Profile for Manufacturing Unit.....

A. PRODUCT DESCRIPTION

B. PRODUCTION AND GENERAL EVALUATION OF PROSPECTS

C.MARKET ASPECTS

- 1.Users
- 2.Sales Channels and methods
- 3.geographicalnad extent of market
- 4.competitive situation
 - (a) Domestic Market
 - (b) Export market
- 5.Market needed for plant described.

D.PRODUCTION REQUIREMENTS

Salient Features

- 1.annnual capacity(one/two/three-shift operation
- 2.capital requirements
 - Land and buildings on rent(mention value, if owned) Equipment, furniture and fittings.
 - Working capital
3. total capital which the entrepreneur would need for the project provided he uses agencies planned by the Government for financial accommodation as discussed in the book
 - (i)Own
 - (ii)Borrowings.
- 4.Expected net profit per annum.

E. CAPITAL REQUIREMENTS

- 1.Fixed assets and working capital
 - (a) Land(...sq. meters) and Building(...sq. meters) on rent
At Rs.....per annum
 - (b) equipments
 - (i)production equipment(list down in an appendix, giving values etc., of each machine separately)
 - (ii)other tools and equipment
 - (iii)furniture and fittings.
 - (c)working capital

II. Raw Material and Allied Supplies(Annual)

Description	Qty.	Rate	Annual requirements
1.			
2.			
3.			
4.			
5.power fuel and water			
6.maintenance and allied supplies			
7.other supplies			

III. Manpower(Annual)

Description	No.	Rate (Rs.)	Annual Cost (Rs.)
Manager			
Foreman			
Supervisors			
Skilled Workers,			
Semi-Skilled workers			
Unskilled workers			
Office staff			

IV. Other Costs(Annual)

- (a) Depreciation on equipment, furniture and fittings...annum
- (b) Interest on capital(fixed and working...per annum on average)
- (c) Administrative costs
- (d) Sales cost(including sales commission, advertisement ,etc)
- (e) Provision for discount, bad debts and miscellaneous contingencies
- (f) Training costs

F.TOTAL ANNUAL COSTS,SALES REVENUE AND NET PROFITS**(a)Annual Costs**

- (i)Rent For Land and Buildings
- (ii)Raw materials and allied supplies
- (iii)Man power
- (iv)Other Costs

(b)Annual Sales Revenue**(c)Expected annual profit****(d)%profit on own capital****(e)%profit on total annual sales turnover****(f)%on total investment**

Explain the various functional areas of enterprise resource planning(ERP)

What is ERP? Explain its Importance

Module – 4 - ERP - Enterprise Resource Planning:
Introduction
Today's business organizations are complex systems in which functions such as purchasing, production, distribution, sales HR finance and accounting must work together to achieve the goals of the organization. In such a scenario sharing of information resources backlogs due dates complaints priorities across functions becomes burdensome. Technology has helped simplify and integrate all functions on the same computer platform and it is called Enterprise Resource Planning (ERP). ERP represents an effort to operate simultaneously different departments in an origination in order to manage a system more effectively. In other words, ERP software provides a system to capture and make data available in real time to decision makers and others throughout the organization
Importance of ERP
The importance of ERP can be understood through the following points
1)It provides a set of tools for planning and monitoring various business processes to achieve the goals of the organization
2)ERP assures one database, one application and one user interface for the entire enterprise, in order to help decision making not only faster but also done in consultation and interaction with each other
3) ERP can be general purpose or custom built for an organization. General purpose software's can be useful in restaurants, lodges, banks, post offices ,travel agencies, warehouses, educational institutes while it may have to be made to order for most other types of organizations which are generic in nature
4)ERP generation and implementation can be costly and time consuming and may require extensive employee training throughout the organization
Advantages of ERP
1.ERP helps integrate financial data
As the management of a company tries to understand its overall performance, it may find many versions of the truth . Finance Manager may come up with his own set of revenue numbers, the Sales Manager may give his side of version and so on. With ERP system, a single version of truth manifests, and therefore cannot be questioned because everyone is using the same system
2.ERP helps standardize manufacturing processes
Large manufacturing companies often find multiple business units across the company using the items for different units and workstations. Standardizing these processes and using a single, integrated computer system can save time, increase productivity and reduce human resources . Imagine TATA, a conglomerate, may use stationery in every one of their business verticals, and if integrated, may reduce fortune in terms of overall costs.
3.ERP helps standardize HR information
ERP can address the time of tracking employee time and communicating with them about benefits and services, leading towards a unified and a simple HR system
4.ERP helps reduce inventory
ERP helps flow of manufacturing processes more smoothly and this can improve the order fulfilment process inside the company. This can lead to reduction in work and in process inventory which helps better delivery to the customers
5.ERP is multi-faceted
ERP eliminates problems like material shortages , enhances productivity , improves customer services , facilitates smooth cash flow , overcomes inventory problems , solves quality issues , honors delivery schedules, plans logistics etc.
Disadvantages of ERP
1.Training
Training For workers is a must for effective implementation of ERP which is expensive and since workers have not only to learn a new set of processes, but also a new software interface
2.Integration and Testing
To migrate to new system like ERP from the current one can be time consuming and messy and some errors also may creep up which may result in confusion

3.Data Conversion

Corporate **information**, such as customer and supplier records needs **to be moved from old format to the new one** which may be **time consuming and costly**

4.Waiting for Return on Investment(ROI)

The effectiveness of ERP implementation may take a long time to be realized. In other words, the improvement in the ROI is something that the management have to wait before they realize it

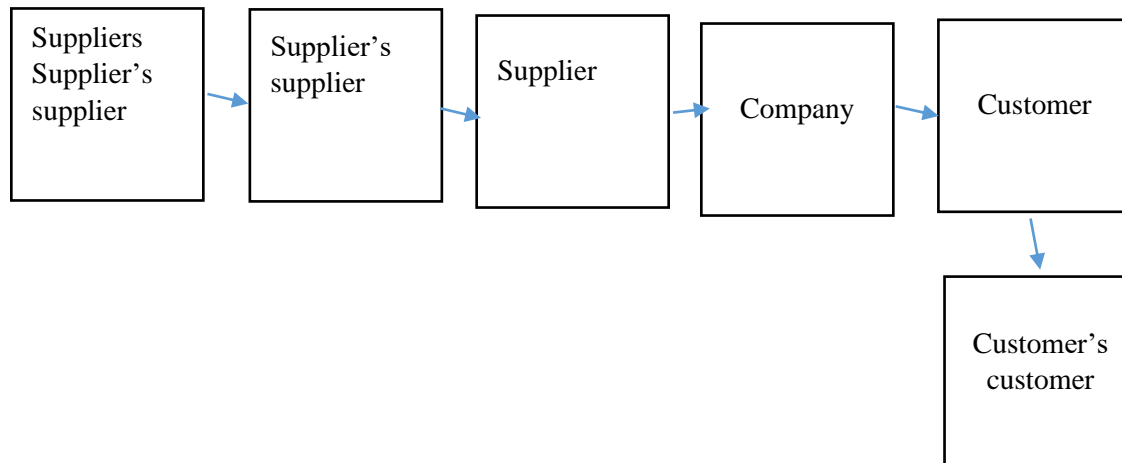
5.ERP implementation leads to panic

ERP implementation often wreaks havoc in the companies which are trying to install them. The most common reason for the performance problems is the everything looks and works differently from what was before

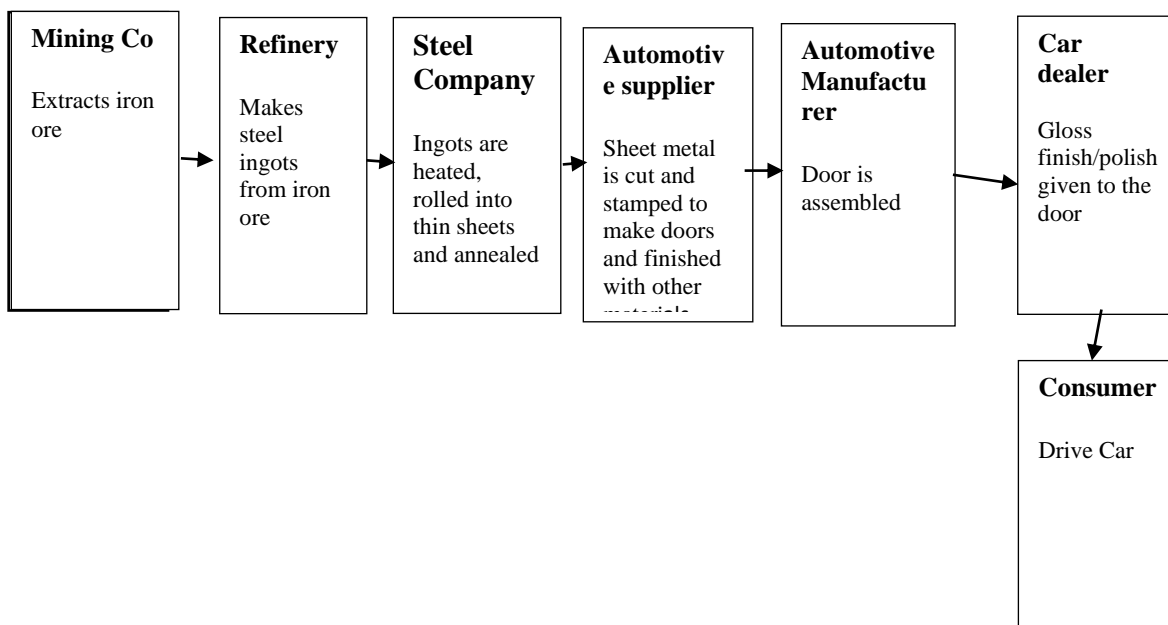
Supply Chain Management

One of the growing field of management in the world today is the Supply Chain Management. This is because of the **globalized manner** in which business is run today. When a company has its suppliers and customers all over the worlds it becomes important for the company to have ~~its suppliers and customers all over the world it becomes important for the company to have~~ the entire network of suppliers and customers in view to keep the business going.it is **increasingly important today to view the flow of the materials from suppliers all the way to consumers as a system to be managed** and thus has born the concept of **'Supply Chain Management'**

A supply chain management basically consists of all parties involved, directly or indirectly in fulfilling customer request. The supply chain includes not only the manufacturer and supplier but also **transporters, warehouses, retailers and even customers**. In the broadest sense, a supply chain refers to the way that materials flow through different organizations starting with basic raw materials and ending with finished products delivered to the ultimate customer. But supply chain management is not just about a company along with its suppliers and customers but extends from the company to its supplier and backward to its suppliers supplier and again the chain extends forward from the company to its customer and further forward to its customers customer and so on s shown in the figure below.



Generic supply chain management



Example of supply chain management for an automobile steel door

Supply chain like the one shown exists for each and every product or component. Although supply chain shows only the movement of materials, it should be viewed in terms of movement of information, funds, product flows along the directions of this chain

Give the meaning of project appraisal