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PROJECT PLANNING IN INDIA[1/]

A CASE HISTORY

by

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PROJECT PLANNING IN INDIA - A CASE HISTORY

1.0 INTRODUCTION

The traditional classification of the world under two heads - Developed and Developing Countries - has lost its original connotation in view of the dramatic changes that have taken place in the last decade in the political, economic, and technical fields. This is particularly so in view of the emergence of the dominating influence of the oil rich countries and the explicit desire of these countries for using this for obtaining political and economic leverage. However, accepting the general concept of developing countries, this section of the world represents a set of diametrically opposite features. On one side, the countries are bedevilled by extreme poverty, mounting unemployment and underemployment with little hope for teeming millions to improve their living standards while, on the other hand, there are enormously rich oil producing countries with unlimited amount of finance. On one side, there are countries rich in agriculture and other natural resources while, on the other side, there are countries which are land-locked, full of desert, and extremely poor. In the field of status for technological and industrial development, the divergence is still more marked. While some of them are still groping in primitive technologies, others have advanced tremendously. However, with all these features of diversities, there is one very important common feature, and that is their desire for rapid industrialization and thus opening up multiple channels of investment. Besides, there are other very important common features, like the after effects of post-colonial era, illitracy of the masses,

scarcity of financial resources, and unproportionate growth of population, etc. This has led to emergence of a generally common type of approach towards investment planning. Because of scarcity of funds, and competing demands in various sectors of the economy, the entire philosophy behind fresh investments is generally based on planned and controlled economy. In majority of the developing countries, the post second world war era saw the initiation of two major changes affecting their development plans - (a) marked acceleration of population growth and (b) an attempt to achieve rapid growth of large scale sector with a view to create an industrialised base. In spite of these changes, even today most of the developing countries have less to export and require more to import by way of intermediates, finished goods, technologies, etc. Most of the countries belonging to the group of developing countries, excepting some oil rich countries, are facing the scarcity of foreign exchange and, therefore, installation of a project in a developing economy has to work under severe limitations and any project planning must take into account policies and regulations of Government, demand forecast, available installed production capacity, and the gap thereof, etc. Government policy on foreign participation, repatriation of funds, import regulations are major factors to be taken into account.

With the gradual rise of the living standards of the masses in developing countries, the demand of consumer goods, both in quality and quantity, is changing and sooner the options become available to consumer, the demand forecast changes. Long range investment planning, therefore, requires a careful scrutiny of demand forecast to arrive at a realistic assessment.

Project planning and implementation in India has its own characteristic features. India has a large domestic market, well developed technological and industrial infra-structure, and a basic philosophy of self-reliance, backed by fairly well developed scientific, managerial, technical, and industrial culture. In this paper it is intended to elaborate the basic concept of project planning and implementation in India with particular reference to the case of setting up of a medium scale chemical process plant in the field of pesticides. The company is in the public sector.

2.0 FORMULATION OF PRELIMINARY PROJECT IDEA

The company was in the field of operation for more than ten years and developed sufficient expertise in the field of management, technology, and engineering. With the generation of sufficient internal resources, the company was on the look out for opportunities for investment. The possibility of expansion in the field of company's operation was the first option considered. An analysis of demand, immediate and long term, was made. This indicated that the quantity produced was able to meet only less than half of the Country's requirement, and that the gap between production and the requirement was likely to increase further in the future. Therefore, a preliminary project idea got developed in the minds of the management of the company. As the managerial and technical expertise was available internally, this was accepted as the immediate choice and further work initiated to give concrete shape to this idea.

3.0 PREPARATION OF FEASIBILITY STUDY

In India, concept of project planning, particularly in the field of non-consumer industries, is based on demand forecast vis-a-vis installed production capacity and the gap thereof, and is subject to approval of the Government in order to have planned growth of various sectors contributing to the economy of the country in general. Concerned authorities have laid down certain guidelines for making a feasibility study on a proposed project, which as a main feature include thorough investigation of the demand analysis, locational studies, technological feasibility/choice of technology, and economic analysis. A social cost-benefit analysis is the central theme for project selection and approval.

3.1 Demand Analysis

The product under discussion has many uses in country's health programme agriculture, etc. A long range demand analysis was made keeping in view the possibilities of obsolescence, threat from other similar products, etc. The company under case study was the only organization producing the product in the country and the future requirements, as arrived at based on the analysis, clearly indicated a big gap existing between requirement of the product and its supply from the local market. A huge quantity of the product was being imported. Therefore, the expansion programme for the company was a fit case for demand analysis.

3.2 Locational Studies

Since some of the raw materials required for the manufacture of this particular product are extremely hazardous and corrosive, availability of these raw materials within very short distance was given the prime consideration for selecting a proper location. Also, as the proposed expansion was of medium scale nature, only existing premises of the company was considered with a view to reduce the overhead expenditure and to obtain economy of scale. This was also necessary from the point of view of quick implementation of the project as the basic facilities were already available in the existing premises.

3.3 Technological Feasibility / Choice of Technology

At the time of preparation of feasibility report, two plants of the company were already in operation for about a decade, and the various process parameters, design and other required engineering expertise were available to the management and the same was included in the feasibility report. Some of the technical considerations which formed part of the feasibility report and included in the process design consideration, were the following:

i) Process specifications sheets for vessels, pumps, heat exchanges, agitators, etc., based on which detailed design can be done during the detailed engineering stage.

ii) Process flow diagram.

iii) Piping and instrumentation of diagram.

iv) Process description.

v) Operational instructions

vi) Consumption of raw materials and chemicals.

vii) Utility specifications.

With regard to the choice of technology, all the latest improvements in the process and equipment designs were considered. Also the operational problems faced in the running plants were analysed and an optimum process arrived at after making a cost benefit analysis.

3.4 Economic Analysis

The running plants of the company were working satisfactorily and were giving reasonable profits to the company, and had also enabled the company to develop enough resources to finance their expansion programme using their own resources. Based on the requirement of various raw materials and their existing price, transport facilities available, and other considerations, it was observed that doubling the capacity of the existing plant at one of the factories of the company would be highly economical. The economic considerations included the following items:

i) Sales revenue

ii) Direct/indirect expenses

iii) Depreciation

iv) Gross profits

v) Net profits before taxes

vi) Taxes

vii) Net profit after taxes

A cash flow analysis was made and pay off period for the investment arrived at.

The next step in project planning was to obtain clearance in India from the various authorities on the basis of the feasibility report. This includes:

a) Clearance from the Planning Commission and allocation of funds if the financing is to be done from external resources.

b) Obtaining letter of intent and licence for manufacture under Industrial Development Regulation Act, if the industry comes under its purview.

c) Clearance from the Public Investment Board and allocation of foreign exchange.

d) Clearance from environmental pollution control angle.

e) Administrative approval from the concerned Ministry for a public sector enterprise.

Since the finance for this expansion project was to be met from internal resources, some of the above steps were not required. However, the Industrial Development Regulation licence, allocation of foreign exchange, and approval from the administrative Ministry were obtained.

4.0 PREPARATION OF DETAILED PLANNING REQUIREMENT

Having got clearance from the Government, detailed project report was made including setting up of a separate project division in the company with adequate manpower for detailed designing and implementation of the project. This was a cut-off point when the project was handed over to the implementation division from the planning section.

4.1 Detailed design and Engineering Report

The first task of the project division was to prepare a detailed design engineering report and this included the following items:

i) Land/land development, including internal roads, boundary wall, sanitary, lighting, etc.

ii) Factory layout and building drawings.

iii) Main plant and equipment with identification of indigenous and imported components.

iv) Services, off-site facilities and miscellaneous expenses.

v) Working capital requirement.

4.2 Data sheet for all the major equipments were prepared based on the experience of the running plants.

4.3 Unified and break up process flow diagrams were prepared for the plant as a whole, and also sectionwise.

4.4 Detailed engineering design for all the process equipments was made.

4.5 Equipment layout drawing were finalized.

4.6 Detailed piping layout drawing was prepared.

4.7 Complete bill of materials was prepared for ordering purposes.

5.0 PLANNING AND IMPLEMENTATION OF THE PROJECT

5.1 Preparation of detailed implementation plan

To coordinate various activities involved in the project work, a PERT chart and CPM were made with a time bound plan of action.

A master PERT chart was prepared for the completion of the project as a whole. Sectional PERT charts were made for various individual activities, like civil, electrical equipments ordering and procuring, erection and commissioning works, etc., and matched with the master chart. A review and reporting system was instituted for monitoring the progress and instituting timely remedial measures for the short-fall.

Besides the internal coordination of various activities, some activities where external agencies were involved, did merit special consideration and attention for timely completion of the project. The following paragraphs elucidate this point.

5.2 The layout plans and building drawing were required to be approved by the local authorities. The local authorities considered the proposal from the following points of view:

i) Pollution angle

ii) Master Plan for the city development

iii) Laws and by-laws with respect to construction, covered area, etc.

It took more than a year to get clearance from the local authorities for the layout and building plans. This activity, therefore, assumed a very significant dimension in the implementation of the project.

5.3 The next step was to obtain the approval of various regulating bodies under the Government, like the Factories Act, Indian Boiler Regulation Act, Explosives Act, etc. A lot of endeavour was essential for speedy approval within the scheduled time.

5.4 Availability of electricity is an essential criterion for selecting a proper location, and this factor of necessity was considered and resolved at the feasibility report making stage. But, getting the final sanction and the electric connections were the activities which required intensive follow up. Although in the overall sense electricity was available, yet because of rapidly increasing demand in the particular industrial area, transmission and distribution systems were found to be already fully loaded. It took considerable period to resolve this issue and obtain the final connections.

5.5 One important activity was also to obtain the import licence for a small amount of imported equipment. Considering the difficult foreign exchange resources position at the time of implementation of the project, import was tied up with credit facilities from three countries only. Although this was unavoidable, this restricted the field of choice.

5.6 Planning for the procurement of indigenous equipments was a relatively easy task. However, price fluctuations, scarcity of some special materials at times were the factors to be kept in sharp focus in purchase planning.

5.7 Even with utmost care in planning, follow up and control, some unforeseen factors are likely to crop up, and contingency plans have to be available to smoothen out their effect on the time schedule. Some important factors in this regard are exchange rate fluctuations, changes in international political situation, etc. In the case under study, closure of Swez Canal due to the Arab-Israel conflict posed a problem with regard to the receipt of imported equipment. This was partly overcome by rescheduling the activities and taking up the trials and commissioning of the plant in parts.

6.0 COMMERCIAL PRODUCTION

After the plant was commissioned, the start up of the commercial production required a continuous check on various aspects in order to verify the design parameters which were made at the beginning of the project. At this point, the project division was reinforced by drawing operational manpower suitably.

7.0 CONCLUSION

In this paper attempt has been made to highlight the various important and essential features of conception and implementation of a project in India as a sort of case history of setting up a medium size chemical process plant project. While the problems and procedures are common in many countries, project planning in developing countries requires particular care in many fields because of multiple facets elaborated in the body of the paper.

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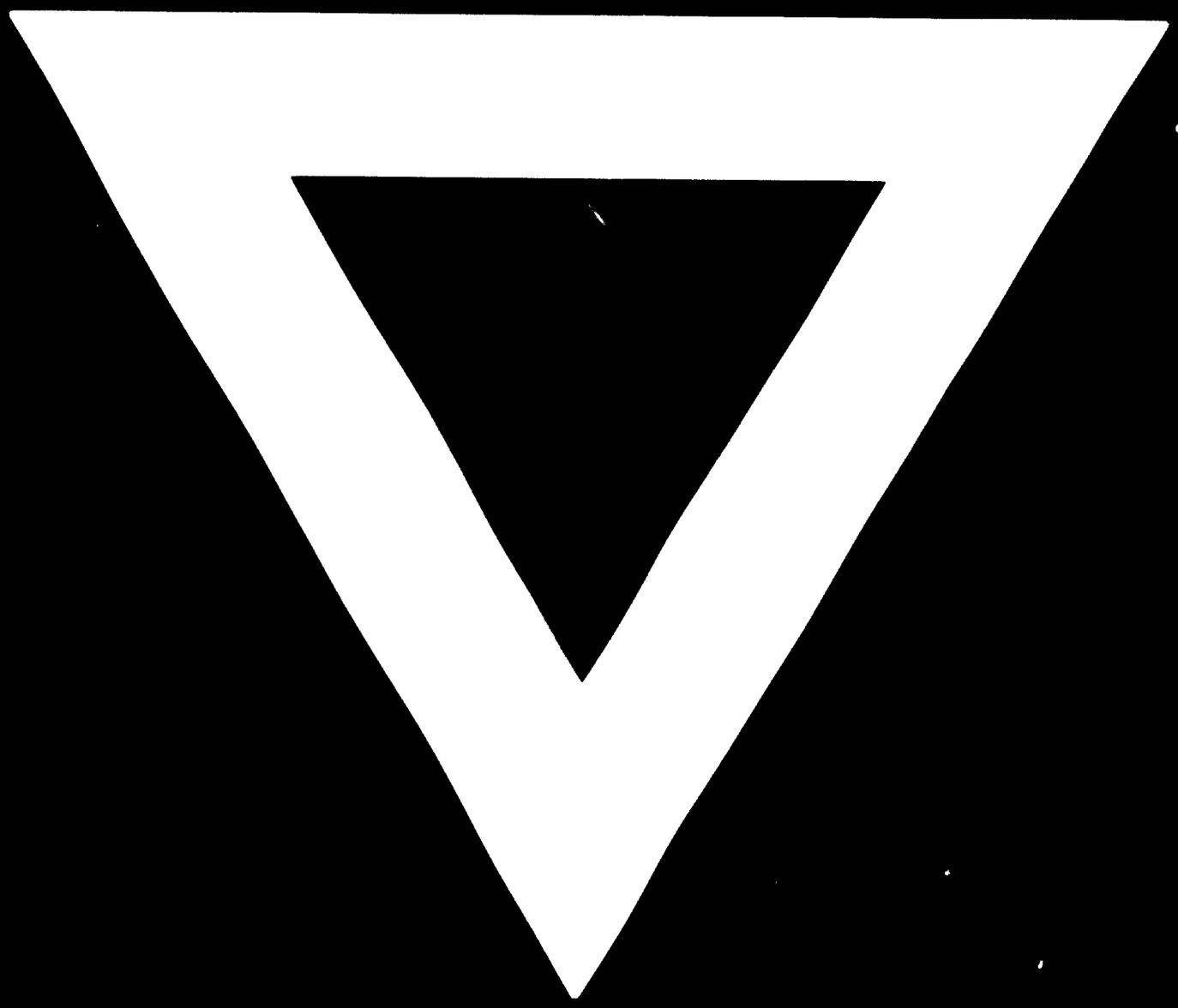

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