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COMMENTS

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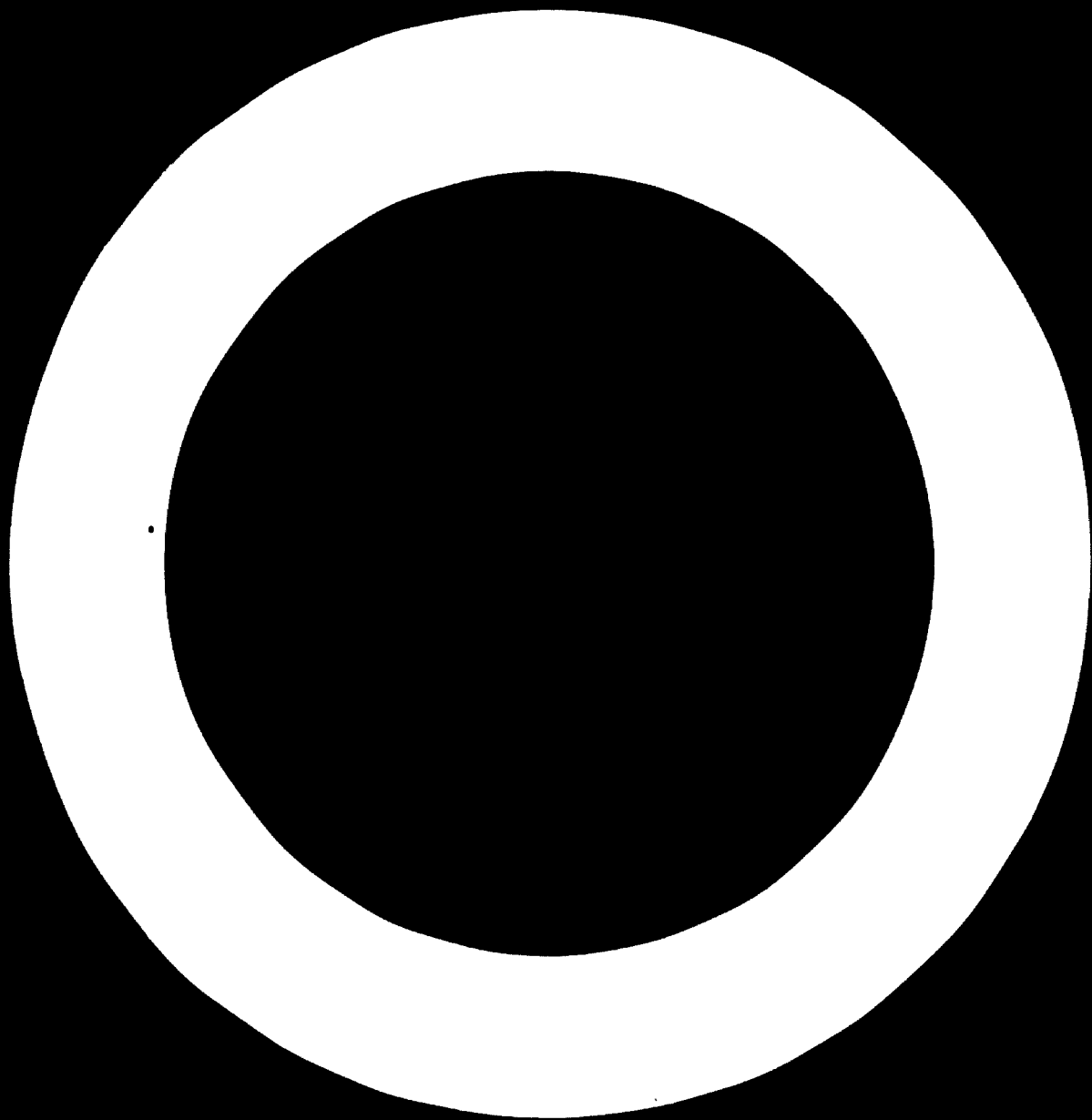
MANUAL FOR THE PREPARATION OF
PRE-INVESTMENT STUDIES^{1/}

by

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A FEW INTRODUCTORY REMARKS

First of all I should like to point out that it was high time, in my opinion, for somebody to publish a book such as the Manual for the Preparation of Pre-Investment Studies as the need for such a manual has been felt for many years.

The drafting of pre-investment studies is an intricate and most delicate affair requiring sound theoretical knowledge and considerable practical experience. It involves the study of several scientific disciplines on each of which there is a wealth of published material. However, a synthesis of all those materials in the form of a manual in which they would be systematically reviewed was indispensable if we want the developing countries too to have high-quality pre-investment studies. In view of this, the publication of the Manual can but be applauded.

In addition to other advantages, this Manual will also ensure uniformity of method applied by experts of the United Nations and particularly of UNIDO. These experts come from various countries and regions with differing economic and social systems and they continue to work in the way they have grown accustomed to working in their own countries relying exclusively on their own experience. This frequently provokes a great deal of confusion due either to mutual conflicts or to the arrival of new experts or their replacements.

This Working Draft of the Manual has been most ably made and, in my opinion, it suits its purpose. The Draft can be used as it is and my comments are intended merely as suggestions for certain minor improvements of the text. I was mainly guided in my approach by the experience I have gained as a UNIDO project manager.

My suggestions could be divided into two groups:

1/ Suggestions of a general nature, and 2/ Specific suggestions referring to individual chapters. My suggestions regarding the Causes of Miscalculations are listed in Section 3 but they could appear somewhere else, e.g. as a separate paragraph in Section I /particularly if my suggestions on minor changes in the order of items in the Table of Contents are adopted/ or elsewhere.

1. SUGGESTIONS OF A GENERAL NATURE

I believe that several matters of principle need to be mentioned here:

1/ The majority of examples given in the Manual are taken from the experience of India and Saudi Arabia /and a few of its neighbours/ frequently entering unnecessarily into great detail.

With full respect for the efforts these countries are investing in their own development, I do not consider them to be appropriate for our purpose, particularly not if they are the exclusive subjects of consideration. India is a very large

country and Saudi Arabia a very rich one while the majority of developing countries are comparatively small and badly in need of capital.

If it is difficult, at this stage, to find other examples, those given should be generalized as has more or less been done in Chapters 12-15.

2/ One gets the impression that most of the examples refer to large projects. In my opinion, most of the developing countries are interested in medium and small projects. Besides, it should be borne in mind that the majority of pre-investments studies for large projects in most developing countries will continue to be prepared abroad for some time yet. Therefore in its present form, the Manual would not be as helpful as it should be in the preparation of the former.

3/ Some chapters enter into the subject in far greater detail than others. If the reason for this is that it is felt that certain things are known, so they need not be dealt with at length, it might even be said that the entire contents of the Manual are known and have been analyzed somewhere.

As I have already pointed out above, the Manual should provide complete information in condensed form so that no other publications need to be consulted, with regard to techniques, when preparing a pre-investment study. This remark applies primarily to Chapter 9.

4/ Chapter 6 is unnecessary as the same subject matter is dealt with in greater detail in Part III. Parts of this Chapter could be fitted into Part III.

5/ It would be useful to say something on the drafting of studies for small projects when no great details are required. A specific question in this respect is small scale industry.

6/ The headings and numericals need to be coordinated.

7/ Part I should be preceded by a Preface explaining the significance and purpose of the Manual.

8/ Chapter 4 should be divided into two: Opportunity Studies and Pre-Feasibility Studies in view of the significance of each of these studies.

9/ With a view to improving the presentation of the contents, certain minor changes in the order of Chapters in the Table of Contents would be advisable. I suggest the following:

Preface

Part I: Types of Pre-Investment Studies

1. Phases of industrial project development
2. Classification and types of pre-investment studies
3. Basic cautions and constraints
4. Agencies responsible for commissioning and conducting studies

Part II: Preliminary and Partial Pre-Investment Studies

5. Opportunity studies
6. Pre-feasibility studies
7. Support and functional pre-investment studies

Part III:

Remains unchanged with the exception of the order as I feel it would be logical for the Chapter on Total Investment

to come after the Chapters - Material Inputs and Manpower.

In my suggestions on individual chapters of the Manual, I have retained the numbers of the chapters as given in the Draft.

2. SPECIFIC SUGGESTIONS

Chapter 1

The text of the subchapters: The Scope and The Design should be included in the Preface so that Chapter 1 should deal exclusively with phases of industrial project development.

Chapter 3

Certain miscalculations on the essential elements of a project provoke much disappointment and considerable financial difficulties when the plant in question begins operations. I believe that an overview of possible short-falls should be included in the Manual as a whole regardless of the fact that attention is drawn to possible short-falls of individual elements dealt with in individual chapters. A comprehensive review of possible miscalculations would underline the significance of the problem.

I therefore suggest that Chapter 3 should be supplemented with a subchapter entitled Causes of Miscalculations. The proposed text of this subchapter is provided in Annex 1.

Chapter 6

As I have said above, I propose that this Chapter be left out while the subchapters Contents, Project History and Economic Perspectives could be dovetailed with the text of Part III and included in it.

I see no reason why the same subject matter should be dealt with twice in the same book, first briefly and then at length.

Chapter 7

I have several minor observations regarding the text of this Chapter. Namely; I believe that:

- the cost of studies should not be included in a publication of this kind. If the Manual is being published by the UNIDO Secretariat it is questionable whether it can officially support the given percentages. Furthermore, the cost of studies varies very much depending upon a number of different, frequently divergent circumstances.

If it is felt that those costs should be included after all, it would be better to do so in the form of an Annex to the Manual.

- the experience of two countries should be left out as many other countries have had similar experiences. These comments should be generalized and made more flexible so that they can apply to everybody.

- development banks should not be engaged in this kind of studies for the interested parties. How can the banks' experts be objective in approving loans and evaluating projects if the feasibility studies are done by them?

We all know that many development banks would like to develop their own consultancy services departments.

In my opinion, banks may engage in general studies for their own needs but not in feasibility studies for specific projects.

- prefeasibility and feasibility studies cannot be successfully performed by one person alone. Any one expert may produce highly specialized studies in his particular field. Also, in a publication of this kind, I feel it is not advisable to engage in any polemics on the kind of expert who would be most suitable, as an individual, for a particular study.

Should my observations be accepted, the entire Chapter would have to be re-written. I have attempted to do so in Annex 2. Though the text I am proposing may not be entirely acceptable, it may be of assistance in finding a middle solution.

Chapter 8

1/ With regard to the observations on the market and demand analysis, I believe that a distinction should be made between the domestic market and the export market. This could be done in several ways but the simplest would be:

- to insert on page 2 before the subchapter "Minimum Economic Size:

"When analyzing the market and demand, research should be carried out separately for the domestic and for the foreign market.

/a/. Domestic Market"

- to insert on page 13 after the second paragraph:

"/b/. Export Market

The analysis in this case is far more complex as knowledge of the world market is required, both as a whole

and its individual parts /e.g. the region of Africa, the Middle East, etc./. It is on the basis of that knowledge that a decision has to be made as to whether a certain product or products can be exported and where they should be exported to. As estimates of export possibilities are complicated, on the one hand, and of relative value on the other, it is dangerous to be too optimistic in that respect particularly if one intends to take advantage of the availability of raw materials and inexpensive labour and export the bulk of one's output."

2/ The subchapter Minimum Economic Size should be deleted from this Chapter and fitted into the text on capacity.

3/ I am not quite sure that the example mentioned on page 6 is an acceptable one. There are many countries in which bricks are transported far beyond a radius of 40 kilometers yet production is profitable.

Chapter 9

1/ In view of the fact that demand projection is the most important part of market analysis, I propose that this Chapter be enlarged to some extent. There are quite a number of experts whose knowledge of forecasting techniques is inadequate so that all the mentioned techniques should be explained in detail and illustrated with numerical examples. It would for instance be useful to use the same example to illustrate each trend method /extrapolation/ and to explain in which cases the individual methods are used and why the results obtained differ. As different terms are sometimes used for the same method, this should perhaps be pointed out. I know that this entails

a great deal of work but I believe that it would be very helpful for the Manual's users. In addition, it would be desirable to include several graphs and to round off the whole chapter with a final assessment of market size.

2/ Reference to Hijri year and Gregorian calendar year could be left out as they are highly specific phenomena.

Chapter 10

1. The subchapter Determination of Capacity should be deleted and incorporated into the text on capacity.

2. I am not sure that the best place for the paragraph on Product Costing and the examples illustrating it is in this Chapter.

Chapter 11

1. My impression is that capacity and the method of ascertaining it have not been explained clearly enough though this is one of the essential elements of pre-investment studies. Perhaps this is due to the fact that the whole subject has been dealt with in fragmentary form in several Chapters /8,10,13 and 11/.

In my opinion all observations referring to this question should be collected in one place, in this Chapter or in another, separate Chapter.

2. Contrary to the statement made in this Chapter, I think that data on technology and particularly on the prices of equipment are not nearly as easy to come by. This is evidenced by practice. Large overruns in investments are due, to a high degree, to the absence of data for pre-investment studies.

I also find the first paragraph on page 8 to be rather too optimistic.

3. In my opinion, the example for capacity selection given on pages 15-17 cannot be recommended under any circumstances. The given capacity is very low and in view of the principle of economies of scale it cannot be profitable except in the case of a very high degree of custom protection. There is a typographical error on page 16.

Chapter 12

1. The tables would be far more effective if figures were included in them.

2. In subchapter 3. Building and Civil Engineering Works, I propose the addition of the following text:

"The buildings should be such as to suit their purpose and to provide normal working conditions for the workers without being luxurious. Practice tells us that the buildings designed are frequently more suited for concert halls than for factory halls. In such cases, the required capital investment rises unnecessarily, which in turn causes an increase of operative costs which again has a negative effect on the profitability of the project."

3. In subchapter 4. Machinery and Plant, I propose the addition of the following text:

"Particular attention should be devoted to provisions on the manufacture of spare parts for the main products of a particular factory. E.g. spare parts for tractors, automobiles, machine tools etc. to be produced by the factories of those products."

4. At the end of the text on page 31 under 3/ add:

"Costs are reduced for the value of sold goods produced in trial run period."

Chapter 13

Subchapter "A /Raw Materials" could be supplemented with the following text:

"A great deal of caution is required when engaging in an export-oriented project based on large quantities of available raw material. Such an undertaking must be preceded by a comprehensive analysis of the market, the price of products and the world's leading producers in the field /particularly if they have formed an association/.

Caution is also required in the case of imported raw materials. It is very dangerous to build a factory that is entirely or predominantly based on imported raw materials unless possibilities of importing supplies have been carefully studied or supplies ensured for a protracted period of time. Otherwise, such a factory could come to a standstill or have to operate at a reduced capacity.

Difficulties of this kind may arise:

- because of shortages of required raw material on the world market due to increased demand. For this reason, estimates of total production and supplies of corresponding raw material are of priority importance in such analyses. The development of domestic industry for the processing of a given raw material in the producing country results in reduced supply, i.e. causes difficulties in supplying established consumers,

- because of shortage of foreign currency in the purchasing country particularly in relation to certain countries-suppliers. The situation may arise when a consumer is unable to purchase a raw material which is in ample supply on the world market due to a lack of foreign currency.

The development of export-oriented industry based predominantly on imported raw materials can be recommended only if inexpensive and skilled labour is in ample supply /which is not frequent in the case of developing countries/ or if there is a marked trend towards integration and cooperation between raw-material producing and consuming countries.

Naturally, the most dangerous situation is when the principal raw material is imported and the products are primarily meant for export."

Chapter 14

At the end of page 5 the following could be added:

"One of the ways of training manpower is to have it participate in the assembly of equipment so as to get acquainted from the very beginning with the machinery it will work with later. The necessary means should be planned for this purpose in the pre-investment studies."

Chapter 15

The text on pages 13-15 has not been printed in the right order and a part has been left out.

Again the tables would be more effective if the figures were included.

Chapter 16

1. The statement in the last paragraph on page 5 is highly optimistic. The practice of the majority of countries points in the opposite direction.

2. This Chapter could be supplemented with the following:

"In the majority of countries certain consumer durable products /such as cars, refrigerators, television sets, etc./ and capital goods cannot be sold for cash but on hire purchase. The means required for these loans do not come under the heading of investments nor are these arrangements the affair of the manufacturers of these products. However, the means have to be found if production is not to be cut i.e. if the installed capacity is to continue to be fully utilized. This problem has been settled in various ways in individual countries, the most widespread being:

- commercial banks grant loans to consumers directly,
- banks grant loans to the manufacturers of these products and manufacturers to the customers. Such an arrangement is most frequent in export deals,
- the manufacturers themselves give loans to their customers,
- various combinations of the above-listed methods.

Regardless of the method applied, this matter must be analyzed and the means provided in the financial planning of pre-investment studies."

x
x x

I shall make some additional but less important and minor suggestions during the discussion at the Expert Group Meeting.

ANNEX 1

The following subchapter should be added to Chapter 3 on page 4:

Causes of Miscalculations

Preparation of pre-investment studies must be based on realism. Unfortunately, pre-investment studies are frequently over optimistic. Consequently it is almost the rule for such optimistic studies to be the cause of great disappointment later. When one wants to build a factory a certain amount of optimism is necessary but too much optimism is both dangerous and unnecessary.

For this reason, the authors of pre-investment studies must be conscious of the possible shortfalls and must try to eliminate them as much as possible.

The developing countries which are anyway short of capital cannot afford the luxury of their factories coming to a stand-still or producing losses or results below those anticipated by the pre-investment studies which they were guided by in their decision-making.

A summary review of short-falls is listed below and they will also be referred to in corresponding chapters later on.

Short-falls in effects-common phenomenon

The short-falls in actual effect in comparison with planned results are the problems, which, as a rule, follow every industrialization.

Such short-falls are a consequence of erroneous calculations and in such cases the expected results are not achieved. The short-fall may become apparent immediately after the start of the operation of the new works, or it may emerge at a later time.

All the cases where the result achieved falls below expectations may be classified according to the various subjective causes that lie at the root of miscalculations. Generally speaking, miscalculations are mainly due to unrealistic evaluation of: capital expenditure, raw material costs and other costs, and selling prices of produced goods.

Mis-calculations of capital expenditure

The limits of the estimated cost of projects are exceeded and the difference between the planned and actual costs arise mainly for the following reasons:

- Poor quality of investment documentation /feasibility studies and others/. The documentation has been prepared in a perfunctory way so that the divergences appear in the course of construction. In such a case either the bill of quantities data or the prices, taken as a basis for the calculations, were unrealistic. An error in both these counts is also not excluded.

- Increase in the volume of works.

- Unforeseen works.

- Price rises. This means the rise in the level of prices of construction works /services/ and of equipment, caused by increase in the prices of building materials and reproduction materials and by rises in wage rates, it is a generally observed phenomenon in all countries that prices are continually going up, more or less rapidly, in accordance with the fluctuations of demand and supply and due to the impact of inflationary tendencies. Thus, it may happen that, inspite of a well prepared documentation based on prices that could be expected as realistic at the time when the documentation was being prepared, the actual cost will still differ from the estimated cost. This is quite an unusual occurrence when construction, but its very nature, requires a rather long period of time for completion.

Miscalculations in the cost of raw materials and other expenses

It is not easy to estimate in advance the level of production costs of a project, yet a miscalculation in these costs may completely distort the pattern of profitability of the further production.

The occurrence of higher production costs than those estimated in the project documentation is usually caused by the following conditions:

- Errors in the application of the norm for raw materials and labour, resulting either from using unrealistic norms, or although the norms are correct, the specific local conditions have not been taken into account /for instance, the

influence of local atmospheric conditions on the working capability of labour was overlooked/.

- Unrealistic prices of the basic and auxiliary raw materials. It is no easy matter to determine what the realistic prices would be in the future period when the project will have been put into operation.

- Increase in production costs due to other circumstances. It may happen, namely, that the prices have been estimated accurately, but an error occurred in some other aspects of the evaluation, for example, it is proved impossible to obtain raw materials from the planned sources, so that it was necessary to provide them from another place, as a result of which the transportation costs rose, the quality of the raw material was not up to the standard, etc.

Miscalculations in cost of raw materials and similar expenses produced particularly disastrous consequences in export oriented industries.

Miscalculations in the selling price of produced goods

It is difficult to estimate whether the selling price is realistic, i.e. whether it will be possible to sell a given product at the price, at the time of putting the new industry into operation, and for a certain period of time after that. It is especially true in the case of export oriented new industries.

The miscalculations in selling price always are the result of the ignorance of the domestic and foreign market."

ANNEX 2

Chapter 7 Agencies responsible for commissioning
and conducting pre-investment studies

1. Institutional Framework and Public Policy

The text stands on page 1 and the first 5 lines of page 2

2. Responsibility for Commissioning Pre-Investment Studies

The text on page 2 stands with the exception of the example mentioned in the first paragraph.

3. Responsibility for Conducting Pre-Investment Studies
Difficulties and Problems

Nearly in every developing country, in the earlier stage of development, the consultancy services are provided by foreign consultant firms.

The establishing of its own consultancy services involves many problems. The main ones are:

- Lack of skilled labour force.
- Lack of experience. As it is known, the consultancy is a very complex matter.
- Training of cadre lasts fairly long.
- By their nature, the consultancy services are very heterogeneous and they claim a large number of different experts. Development of a country as a rule covers a wide range. To satisfy all that is not an easy matter.

However, in spite of all these difficulties, each developing country solves these problems and slowly step by

step, establishes its own consultancy services to a certain degree.

Steps in the course of development of services for conducting pre-investment studies

Though each developing country in the development of consultancy went its own way, some general characteristics, common for all, may be drawn out. In this regard, it is worth to point out the following:

- In the very beginning, efforts have been made to master only some types of consultancy. Principle of centralisation comes into the picture, for the reason of scarcity of skill and experience.

- Later on, when industries start to mean something in the scope of national economy, the consultancy begins to enlarge its fields, comprising a large number of different consultancy services. The principle of centralisation still is valid and predominant.

- Much later on, when the development of the country reaches a certain advanced level, centralised consultancy organisations become too clumsy. Then the appearance of specialised organisations is a regular phenomenon. As the development of a country, as a whole, goes ahead, more and more consultancy organisations appear, with a tendency of specialisation by industrial branches, but at the same time with a desire to enlarge the number and volume of individual services. These organisations are always independent.

Agencies to Conduct Pre-Investment Studies

The preparation of pre-investment studies may be entrusted to various domestic agencies, depending upon the social order of a given country, such as:

- government-sponsored agencies with different names and status,
- public organizations /specializing in this field/ enjoying the status of legal person,
- private specialized organizations,
- industrial enterprises, private or public, in the relevant field of activity,
- engineering firms,
- equipment manufacturers.

Foreign agencies may draft the pre-investment studies when the laws of the country permit it and when the necessary foreign currency is available.

In the case of large projects, pre-investment studies may be drafted, upon request, by international organizations such as UNIDO, the World Bank and the like, of course if they agree to do so.

In view of the nature of their activities, it would not be acceptable for development banks to engage in pre-investment studies. They may draft certain kinds of opportunity studies but not studies for specific projects.

The domestic agencies must be completely independent in their work and their studies must be the product of their knowledge, experience and objectivity. They should have such a status as to be able to resist various pressures regardless

of their source. Pre-investment studies should be a basis for the construction of profitable and not for "political" factories.

UNIDO may be of great assistance in setting up domestic agencies.

These agencies as a rule operate on a team basis. Only exceptionally, when partial and highly specialized studies are involved, may they be entrusted to one person. Pre-feasibility and feasibility studies however, may not, under any circumstances, be done by a single expert.

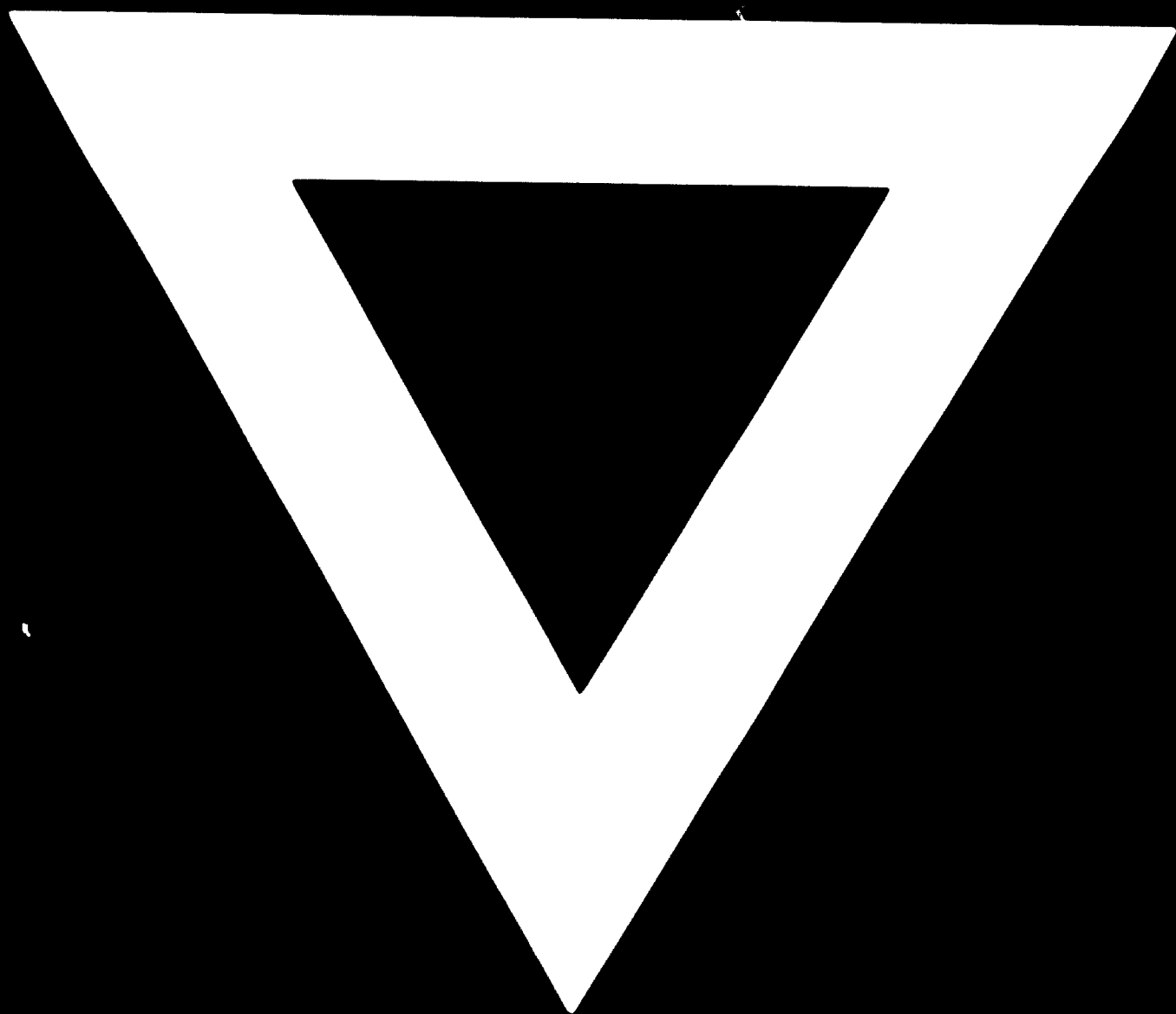
The size of the team depends on the kind of pre-investment study involved but as a rule the team comprises:

- one or more technologists /engineers specializing in the candidate industry/,
- an industrial economist,
- a market expert and
- possibly a civil engineer and a financial analyst.

Specialization is indispensable. Economists and technologists with a general training will not be of great assistance. Therefore, if the agency does not have the particular specialist required for a particular study on its pay-roll it must hire him on a short-term basis."

I suggest that the rest of Chapter 7 be deleted.





76.01.20