A New Approach to Feasibility Study*

by John E. Walsh, Jr.**

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While economist, businessmen, and government officials in developing countries such as Korea may disagree on the proper method, all agree that their major objective is to increase as rapidly as possible per capita income. To accomplish this objective the optimal mix of agricultural, agri-business, and industrial projects is required. And of course there are other necessary projects related primarily to the activities of government organization such as infrastructure, education, health and the like that must be considered. Now the essential problem is to identify those projects that add most to the present and future economic structure of Korea.

It is apparent, therefore. that considerable attention must be given agricultural, fisheries and agri-business projects; for in Korea today, the highest percentage of the labor force is engaged in these activities. With farms and fisheries operating at a subsistence level, farmers and fishermen find they have little money left for consumer goods. Hence, it is difficult to build a healthy industrial structure until the per capita income of persons engaged in farming, and fisheries is increased through increased productivity.

Definition of Feasibility Study

The method to formulate a project, whether it be related to agriculture, government or industry, in such a way that its potential profit can be estimated is called a feasibility study.

* This is the text of a lecture which was delivered by the author at the Graduate School of Public Administration, SNU on May 22.1969 as a part of the graduate course on policy formulation.

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If the study is submited by a company seeking a loan from a private or government bank it would be called a prospectus. If related to an industrial project rather than agricultural or agri-business it might be called an industrial project analysis. In my view, all are in a general sense feasibility studies. For they have in common the objective of presenting on paper, all relevant information related to the future profitability of an agricultural, agri-businse, government, or industrial project.

The use of the term feasibility study is somewhat confusing. The word feasable normally means "capable of being done." Given enough money and time almost any kind of project could be carried out in Korea. Naturally, certain projects might be extremely expensive but they would still be "capable of being done." Therefore, a better definition of the word feasible in proper context would be, "the quality of being practical", for the word practical connotes cost and market price considerations.

The word study also must be defined in context for the closest Webster's unabridged dictionary would define a study as, "the act or process of acquiring knowledge or information on a subject". It should be noted that no mention is made in the definition that the knowledge and information should be written. Yet, it is essential that such reports in fact be written. In my view, the proper definition of what takes place is "a formal statement of the results of an investigation, or of any matter on which definite information is required, made by some person or body instructed or required to do so", This deifinition has been taken from the Oxford English dictionary as the third definition of the word *report*.

From the above definitions it appears that the term "Practicality Report" better describes the processes involved in what is commonly called a feasibility study. But since feasibility studies have received such wide acceptance, it is perhaps too late to coin another phrase. It is necessary, however, to remember that a feasibility study is a practicality report.

The Function of a Feasibility Study

Having reviewed numerous feasibility studies over the past ten years, it has been of interest to note they have varied in length form about 40 pages to more than 1,000 pages. A typical report has contained from 150 to 200 pages.

What should be pointed out at this time is that the report seeks to answer one question which has two parts: First, is the project practical in view of alternative uses of projects funds? To answer the question whether the project is practical requires some knowledge of a

desired rate of return on investment for private investments and in addition a social rate of return for government investments. The second part of the question, "in view of alternative uses of funds" is self explanatory, with the assumption being that all funds are limited and there are numerous alternative uses.

It should be obvious that the question previously stated could be answered in one word, either yes or no. And a 1,000 page feasibility study in the final analysis must lead the decision maker to a yes or no decision. There is a third possible decision and that is "from the material presented in the feasiblity study a decision cannot be made at this time." But such a decision only indicates the feasibility study is incomplete and means a temporary postponement, because eventually a yes or no decision must be made.

Now if there existed on the earth a supreme omniscious authority on feasibility studies a man of infinite genius and prestige, perhaps a one word feasibility study would suffice. But in the real world no such genius or group of geniuses exist. A complete and detailed feasibility study, well structured and presented, however, serves the very important function of interesting foreign as well as domestic capital in a project. A study conducted by the Stanford Research Institute based on a questionnaire answered by over 200 companies in Europe, Asia and the United States representing almost 2,500 investments in foreign countries drew the following conclusion: *The major external factor which led to foreign investment was a well developed prospectus or feasibility study.*

Walsh Model

There have several basic guidelines written for conducting feasibility studies. Two of these guidelines "Feasibility Studies, Economic and Technical Soundness Analysis, Capital Projects" Agency for International Development October 1, 1964, and "International Private Investment A Guide to Prospectus Preparation" by Harry J. Robinson of the Stanford Research Institute are widely used. They present excellent checklists and cover a wide range of areas to consider. Since they are designed as guidelines for any kind of capital project, they are of limited value for any particular project. They are like a rosewine that is acceptable with every kind of food but not quite appropriate for each specific kind of food.

From purely pragmatic reasons, it is impossible to know all facets that might effect a project decision. There are limits to the money, manpower,a nd information available. But even with unlimited resources of money, manpower and all the available information, we would not know

everything about a piece of chalk, e.g., its dimensions, its construction, its structure, its molecules, and its atoms. In view of the limitations brought into focus, how are feasibility studies actually carried out. A review ofmany studies reveals the guidelines as previously mentioned are used and a myriad of information is gathered, frequently in periods of three to six months. In fact feasibility studies, conducted over a year are rare. Sometimes the information is relevant and sometimes it is not. Many feasibility studies are written along the lines of a doctoral thesis; the doctoral candidate, not being sure of his reaearch design and methodology, makes up for his weakness by adding an abundance of extra pages and supplementary data. He hopes, ofcourse, that the professor will not read the report thoroughly if at all, and would much prefer the thesis be weighed rather than read.

It is obvious to anyone who has studied feasibility studies that some writers of feasibility studies at times fail to understand their objects. And another fault related to a failure to understand objectives is to deal with details one by one rather than to assign priorities to areas of consideration. Yet, the critical importance of assigning priorities can be traced back 2.500 years to teachings. Here is a brief excerptf rom those teachings:

> "Suppose a man was pierced by a poisoned arrow, and a surgeon was called to extract the arrow, but the man objected, saying, "Wait a little. Before you begin. I want to know who shot this arrow? Was it a man or a woman? was it some one of noble birth, or was it pesant? Was it a big bow, or a small bow, that shot the arrow? What was the bow-string madeof? was it made of fiber, or of gut? Was the arrow made of rattan, or of reed? What feathers were used? Before you extract the arrow, I want to know all about these things." Before all this information can be secured, the posion will have time to circulate all throuh the system; the man may die before it is secured. The first duty is to remove the arrow with its poison..., Therefore people should first discern what is of first importance, what problem should first be sloved, what is the first misfortune to be expected."

In my view, it is a serious mistake to deal with a succession details for although the writers of the study may clearly understand what they are doing, those who must read and judge the study are in a quagmire looking for a rope. And what happens, is, a feasibity study becomes in the words of Samuel Butler, "the art of drawing insufficient conclusions from insufficient premises."

Dr. Juran, a world famous authority points out by means of a statistical relationship that the biggest cause of any ten causes which may effect a problem has a value of 100 out of 144. Unless the major problem is handled first, handling all the other problems will be ineffective and will not cotntribute to the solving the solving the problem. Here is how the relationship

appears statistically:

Order of Importance	Size of Cause	Effect of Cause
Biggest	10	100
2	5	25
3	3	9
4	2	4
5	1	1
6 or more	1	1

Now there are some qualifications that must be made to the Juran statistical reationships. For we must recognize that once a major problem is solved another proplem becomes the major problem. And once that problem is solved another problem becomes the major problem. Based in part on the statistical relationships of Juran and in part on personal experiences with the causes of bankruptcies in business organizations, the optimum use of manpower, and money and relevant information would limit a feasibility study to the four most important problem facing a tentative project. From the Juran statistical relationship more than 95% of the future problems would be eliminated, if the four major problems would be analyzed in greatdepth which includes good use of quantitative data.

A Case in Point-Korea

How would the intensive study of the four major problems take place? And how would the major problems be determined? In Korea, considerable information has been gathered on the causes of bankruptcy in Korean business organizations. The major causes for 1968 were in order of importance: (1) decrease of sales, (2) poor financial situation, particularly high debt/equity ratios, (3) fluctuation in receipt of raw materials and other supplies, in comparison with demand, (4) poor technology. Applying the model discussed earlier-Intensive and Quantitative Studies of the Four Major Potential Problem Areas-concentration would be placed on market research, finance, procurement, and technology. Of course, the studies of these four areas would provide a good appraisal of the overall capabilities of top management.

Now it should be mentioned that other problems need not necessarily be omitted. But they should only be added after the first four areas had been explored and analyzed to the point where the persons making the feasiblity studies are satisfied beyond a doubt that all the important information bearing on the first four poblem areas had been obtained. How much time would be available for other factors to consider would depend upon the terms of the contract

for preparation of the study. Certainly under no circumstances should time be taken from the first four problem areas to work on other areas.

There is little is little more to add in this short paper. It has been my purpose to stress the point of concentrating on the four major potential areas of problems in relation to their anticipated importance. It is my belief that a feasibility study based on the cencepts prsented will be more accurate, and less costly than the typical feasibility studies currently being carried out. In any event, the model presented should bring to the foreground one method of reducing content in feasiblity studies which offers little in the final determination-of a yes or no answer to an investment project decision.