ABSTRACT

Computer has ushered in the age of self regulating devices and automatic control. The trend or direction in which automation is leading us, is one of extrapolating our present practices. Just as mechanisation has been continuing process, one can predict that automation will continue to find ever wider applications throughout the economy. The economic advantages of the computer have been very precisely stated by Frank K. Shaller berger, Professor of Industrial Management at Stanford University as under:

"Automation has given us devices which can see better, hear better and measure better than human operator. They think and move infinitely faster than humans. They never get tired, they willingly work around the clock, they do not make mistakes, they do not talk back, they are obedient consistent and fully predictable. They will not go out on strike, they do not ask annually for higher wages and they have few personal problems".

Besides these many potential advantages, computers also bring in certain deterrents and problems areas. Because automation involves change, the management has to take the initial difficult decision as to why, where and how much to automate. New equipment is expensive and cost is a major consideration. The impact of new machinery, retooling and related production problem on the labour force has to be considered. The worker must be prepared to accept the change, and trained to operate and maintain the equipment. These were
the conflicting considerations in decision making process for automation. The management had to be offered a suitable tool to gauge the impact of computerization on its organization and also to foresee the rate of recovery of the investment and deciding the most optimum level of utilization of the facility for achieving the fastest rate of return.

Exploring a suitable tool for achieving these end of was the main aim of this study.

While it was quite clear at the outset that no single measure could offer all the answers to the problem of rational decision making in the field of automation, it was appreciated that economic and financial analysis could provide a framework within which all aspects of the proposed project on datamation could be evaluated in a co-ordinated and systematic manner. The rate of return or benefit cost ratio computed from such an analysis could provide a useful measure of the project’s wealth creating capacity. A project thus analysed and revised in light of these findings, had a much better chance of yielding the benefits desired from it.

Clearly such a tool of analysis could not be developed in isolation, without considering the broader aspects of datamation and its inter relationship with the economic system of the community which was affected by its impact. The study was, therefore, conducted in two parts, so as not to mix up the concept development and formulation of ideas for applying the tools of economic and financial analysis in decision making process, with those of practical applications of such concepts.
Part I of the study was accordingly devoted to concept development for project analysis and its development with special reference to a project on datamation. The whole process of concept development for project formulation in datamation and its evaluation through cost benefit analysis technique has been completed through six chapters in this part.

The process of introducing the subject, with special reference to the impact of datamation, and the man-machine relationship in computerised information system is completed in chapter 1. Chapter 2 deals with a wide range of literature survey covering various applications of techniques of cost-benefit analysis and ends up with discussing the scope of applying this technique for evaluating a project in datamation. Finer points of applying this technique and its edge over other similar techniques of analysis is elaborated in Chapter 3. Chapter 4 is entirely devoted to the technique of project formulation. Carrying out a proper technological assessment for selecting the appropriate technique and setting up and evaluation of organisational structure for a project in datamation is the main theme of this chapter. Evaluating of costs and benefits of datamation are discussed in Chapter 5 and Chapter 6 deals with the formulation of a suitable model to assess the level of optimum utilisation of project for achieving the fastest rate of return.

Part II of the study deals with the actual application of the concepts developed to real life situation through the process of a case study. For this purpose an ongoing project
in data collection, data collected and studies were conducted to check the applicability of the concepts developed in Part I. Lessons were learnt based on this case study and conclusion drawn accordingly for project formulation and its evaluation.

This part is again divided in 5 chapters as follows:

Chapter 1 deals with a brief history of development of computerised information system in the chosen organisation, highlighting the process of decision making at various stages of project development. The basic motivations for computerisation are discussed in Chapter 2. The process of developing the new system is the theme of Chapter 3. Actual evaluation of the project is carried out in Chapter 4, and Chapter 5 discusses the results and throws the light on the conclusions drawn from this study.

For the purposes of this case study a hypothetical name of a firm was chosen to cover up the data of commercial importance obtained from existing firms. The discounting factors for evaluation of present worth of benefits and costs were chosen at the rate of 12% from Compounding and Discounting Tables for Project Evaluation as published by Economic Development Institute of the International Bank for Reconstruction and Development under the editorship of Gittinger J. Price.

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