

## BOOK REVIEW

**Network Analysis Techniques** by S. K. Bhatnagar, Wiley Eastern Limited, 1986, Rs. 75/-.

The use of Network Analysis Technique as a device for planning, scheduling and controlling projects of large size has been well recognised by the practitioners. The topic is included in all books of operations research. In addition a number of books dealing exclusively in Network Analysis Technique are also available. The present book dealing with network planning is an addition to the existing literature.

Chapters one, two and three introduce the subject with appropriate historical background. The use of Bar Charts and Gantt Charts have been illustrated through examples. These chapters are well written and indicate the development of network planning technique as a device of controlling and monitoring large scale projects. While illustrating the success of network planning device the author has cited extensively about applications in the USA. The author could have mentioned about a few successful applications of network planning in Indian environment.

Chapters four and five develop the idea of network logic and network diagram of a project. This has been accomplished with a lot of details. Not less than forty-five printed pages have been devoted to explain the construction of network diagrams. While discussing network diagram in utmost detail the author has included several practical aspects such as location prefix, work prefix, dangling activities, fragnets, zoned networks which are unlikely to be included in other books.

Chapter six discusses at length the network computation and identification of critical path. This chapter will be specially helpful to students who intend to learn the network analysis technique at an elementary level.

Chapter seven deals with the activity on network analysis. Although the author claims that AON networks are being used increas-

ingly these days, the reviewer is yet to be convinced of this claim.

Chapter eight discusses Programme Evaluation and Review Technique (PERT). This chapter is well written and the probabilistic aspects of the time duration have been explained lucidly.

Chapter nine discusses about bar diagrams and to some extent it duplicates the material of chapter two. Chapter ten discusses the problem of resource allocation with the help of network analysis. Both load smoothing and limited resource allocation have been discussed using heuristic method and illustrated by numerical examples. No attempt has been made in this chapter to formulate the problem mathematically.

The next chapter (chapter eleven) discusses in detail the analysis of cost in network planning. As in the previous chapter the treatment is heuristic in nature.

Chapters twelve to fifteen deal with the operational aspects of network planning. These include the technique of monitoring and control, use of computers, network information system and the problem of installing network in an organisation. These aspects of implementation of network have been discussed with meticulous care. However, analysis of a project with the help of an available package programme would have made the readers familiar on application of network planning in a real life project.

The next chapter (chapter sixteen) discusses the scope of application of network planning device in different types of projects. This chapter is interesting to read. A few actual applications of network planning device from abroad have also been included in this chapter.

Chapter seventeen introduces the generalised network. This chapter although only introductory in nature is a welcome addition to the book.

In the concluding chapter (chapter eighteen), the author has considered a general review of the network planning technique.

The book although deficient in certain respects deserves praise. A student desirous of learning the subject at an elementary level will find the book helpful. On the other hand, a specialised book on network analysis should have dealt with the various topics with greater mathematical rigour. On the application side the book gives the impression that network planning technique has only been applied abroad. Mention should have been made about some applications of net-

work planning in India in chapter sixteen which includes so many applications of the said technique in the UK and the USA. The exercises included at the end of various chapters (except chapter sixteen) appear to be somewhat artificial. The students would have been more benefited if small projects with appropriate logic and duration were given as exercises.

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