OR

Operations Research (OR) is relatively a new discipline. The first formal activities of OR were initiated in England during the Second World War, when a team of British scientists set out to make decisions regarding the best utilization of war material. OR begins when some mathematical and quantitative technique is used to verify the decision being taken. OR provides a quantitative technique or a scientific approach to the executives for making better decisions for operations under their control.

Historical Background of Operations Research

The term Operations Research was first coined in 1940 by McClosky and Trefthen in a small town Bowdsey of U.K. This new science came into existence in military context. As the name implies, (Operations Research) was apparently invented by the team dealing with research on (military) operations. The work of the team of science was named as Operations Research in U.K. During the Second World War, military management called upon scientists from various disciplines, and organized them into teams to assist in solving strategic and tactical problems i.e. to discuss, evolve and suggest ways and means to improve the execution of various military projects. By their joint efforts, experience and deliberations, they suggested certain approaches that showed remarkable progress. This new approach to systematic and scientific study of the operations of the system is called the (Operations Research) or (Operational Research).

The encouraging results obtained by the British OR team quickly motivated the military management of the United States to start on similar activities. The successful applications of the U.S. teams included the invention of new flight patterns, planning sea mining and effective utilization of electronic equipment. This work of OR team was given various names in the United States: Operational Analysis, Operations Evaluation, Operations Research, Systems Analysis, Systems Evaluation, System Research and Management Science.

Following the end of the war, the success of military teams attracted the attention of industrial managers who were seeking solutions to their complex managerial type problems. The most common problem was to seek methods so as to minimize the total cost and maximize the total profit. The first mathematical technique in the field, called the Simplex Method of linear programming, was developed in 1947 by an American Mathematician George B. Dantzig. Since then, new techniques and applications have been developed through the efforts and cooperation of interested individuals in both academic institutions and industry.

In India, Operations Research came into existence in 1949 with the opening of an OR unit at the Regional Research Laboratory at Hyderabad. At the same time, another group was set up in the Defence Science Laboratory which devoted itself to the problems of stores, purchase and planning. In 1953, OR unit was established in Indian Statistical Institute, Calcutta for the application of OR methods in national planning and survey. OR Society of India was formed in 1955. In India, Prof. P. C. Mahalanobis made the first important application of OR in formulating the Second Five Year Plan in order to forecast the trends of demand, availability of resources and for scheduling the complex schemes necessary for developing the economy of the country. In the industrial sector, in spite of the fact that opportunities of OR work at present are very much limited, organized industries in

India are gradually becoming conscious of the role of Operations Research and a good number of them have well trained OR teams. Most popular practical application of OR in India is linear programming.