

Imp. * Scope of Operation Research

1. Defence Application
2. Industrial Application
3. Application in public system
4. Research and Development

1. Defence Application

many of defence applications involves scientific decision making

The method like N/w technique for shortest path problem, scheduling algorithms

for vehicle routing & allocation technique for shipping goods can be applied in defence establishment.

2. Industrial Application

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Industrial mgt. includes managing 4 functional areas like production, marketing, personnel & finance

A sample set of technique which are used in production function is:

(i) Production:-

- Linear programming for aggregate planning
- N/w base technique for project management & line balancing
- Replacement analysis for equipment replacement decision

(ii) Marketing: A sample set of technique which are used in marketing as:

- Linear programming for product mix problem
- Game Theory for order making decision
- Distance N/w related technique for shipping finished goods.

(iii) Personnel:

A sample set of technique which are use in personnel as

- Linear programming for man power planning
- Queuing theory for determine the size of maintenance
- scheduling techniques for man power scheduling.

(iv) Finance :-

A sample set of technique which are use in finance is

- Integer programming for capital budgeting
- Linear programming for break analysis
- Integer programming or dynamic programming for portfolio selection

③ Application in Public system

- Some of the O.R. technique can be applied to plan, design & operate, different public systems like government & government-institutions, postal system, banks, highway, railway station & hospital etc.

- In some gov. offices, techniques like goal programming for policy decision & integer programming for budgeting can be used.
- In postal system, technique which are related to vehicle scheduling, manpower planning can be used.
- Bank would generally applied technique like queueing theory for determining the number of counters etc.
- For managing highway, the techniques of integer programming for project selection, simulation for traffic system design can be used.

4. Research and Development

- Control of Develop project
- Co-ordination of multiple Research project
- Determination of Time & Cost Requirement

The above mention applications of OR in the context of modern management, its use has now extended to a wide range of problem.