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Operations Research Approach in Productivity Development

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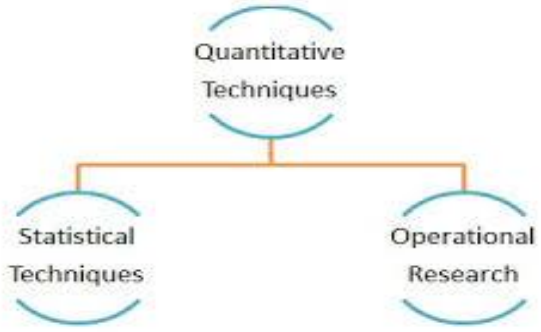
ABSTRACT
Operations research (O.R) played a virtual role in industries as well as in quality management. In this paper operations research described various optimal solutions for complex problems, which are faced by industrial engineers. In this paper we will provide an overview of O.R from the perspective of an industrial engineer. Operations research is defined as using a set of mathematical and engineering skill to solve complex problems in government or business sectors.

Key Words: Operations research technique, productivity decision making, and model formulation

INTRODUCTION

OR is a set of various mathematical techniques or tools. Operations research is a part of quantitative techniques. Depending upon variety of mathematics technique; operation research has a wide scope. In other words, OR is simply a systematic and analytical approach to decision making and problem- solving. The goal of OR is provide a platform for decision making by seeking to analyze the situation of complex problems, and to utilize and improve the performance of the system. OR advised by providing a decision maker with a set of optimal solution, derived alternatives.



Operation research techniques can be classified as:

- Linear Programming :
- Transportation problems
- Assignment problems

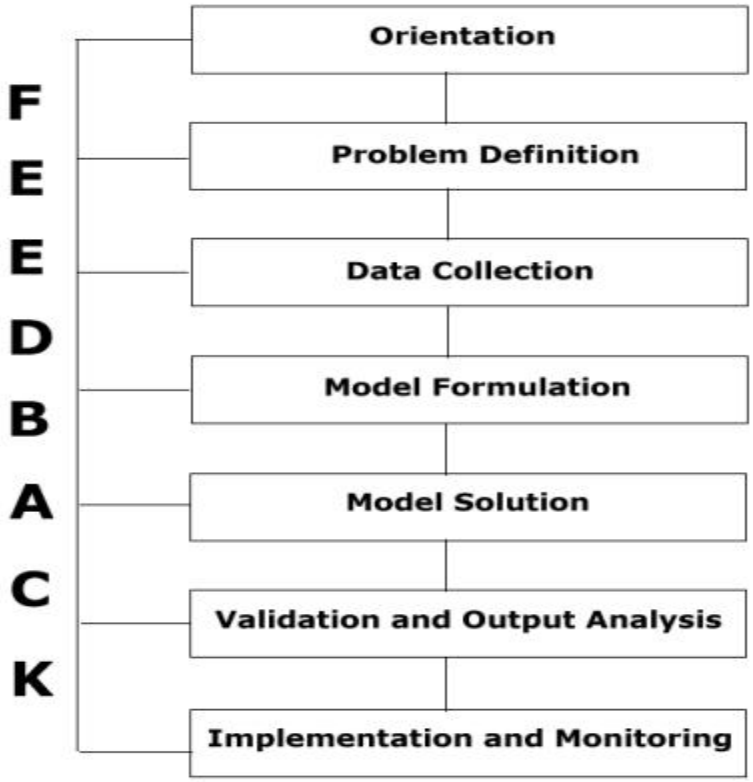
- Queuing theory
- Game theory
- Dynamic programming
- Integer programming
- Goal programming
- Sequencing theory
- Network schedule CPM –PERT
- Information theory

OR technique improves effectiveness and efficiency of the system due to following features:

- Decrease the initial cost
- Increase return on investment
- Profit in market share
- Improve quality level
- Improve better utilization of inventory

.APPROACHS

Operation research describes a flowchart to help making decisions for the complex real problems. So its is necessary to understand the flowchart steps properly for established a optimal solution.

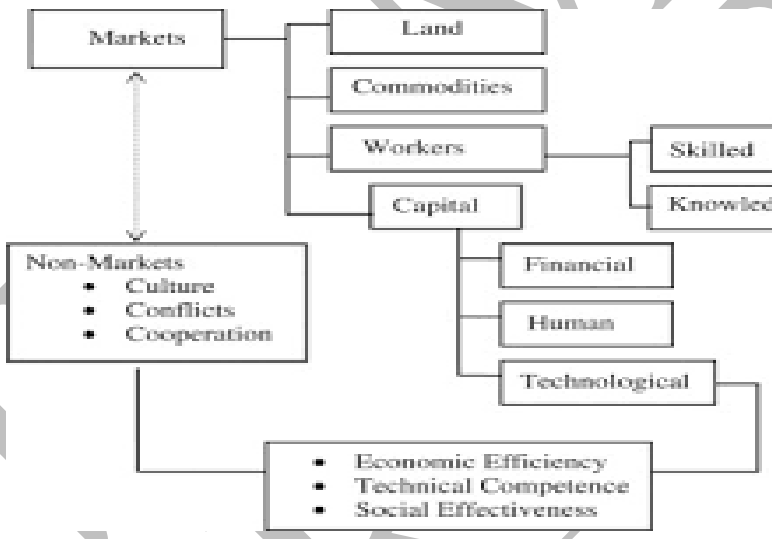


Orientation involves with the identification of the real problems. Every members of the team should clearly identify the real problem. Problem definition is the most complicated steps in operation research. The main function of problem definition is to modify the orientation phase. Process data is collected in next phase for translating the defined problem into a model by observation and standard methods. Fourth stage of flowcharts is

model formulation in which lot of attention is included about the characteristics of models. In model solution the solution is presented of the problem by lot of research and development in OR. Validation and analysis involved with the verification of solution. Implementation and monitoring is the last step in the process chat. Implementation entails the constitution of a team and establishes control over it.

SIGNIFICANCE

1. **Decision making:** Primarily, OR is managerial decision making for improvement of productivity. Situation compellability is involved with the decision making.
2. **Scientific approach:** OR use scientific method for problem solving and calculation.
3. **Objectives:** Operation research represents the best optimal solution to increase the efficiency of decision maker.
4. **Digital computers:** with the help of digital computers, the accuracy of decision making rapidly increase.



CONCLUSION

Operation research techniques improved the productivity by intelligence models. OR improved the efficiency of decision maker with the all possible optimal solutions. It reduces the initial inventory cost of investment. Forecasting and planning become more accurate with the help of scientific methods. OR improve the better utilization of resources. Although, this technique has some limitations due to the dependence on electric computers. There is a distance created between manager and operation researcher. Therefore operations research methods reduced the risk management. So, OR is used to allocate the best and optimal solution to the complex problems under considerations.

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