

Knowledge Sprint

# Operation Research

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This module covers concepts like -

- Introduction to Operation Research
- Origin of Operation Research
- Definition of Operation Research
- Growth of Operation Research



## Introduction to Operation Research

- Operation Research is field of science, where it is an application of systematic application of mathematical techniques to solve complex problems of day to day business operations and to use resources a optimum levels
- It includes a great deal of problem-solving techniques like Mathematical models, Statistics and algorithms to aid in decision-making.
- This field of science is new, and dynamic in nature
- It is applied in every field of business environment and several different disciplines

## Origin of Operation Research

- Its origin in history is not clear cut different people have diverse views on its origin
- It is generally believed that Charles Babbage (1791-1871) is the father of Operational Research, due to the fact that his research into the cost of transportation and sorting of mail resulted in England's universal Penny Post in 1840.
- However, the term "operation research" evolved from 1940's, where in World War 2, a team of scientist known as Blackett's Circus from UK applied scientific techniques to research military operations to win the war and the techniques thus developed were named as operation research.
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- Later, due to success of Research technique in military services, this gained buzz and was later expanded into other fields and adopted by countries
- The term “Operation Research” was first coined by McCloskey and Trefethen in 1940, they belonged to UK
- The Growth was impetus because, USA implemented in war strategies, Business Owners and industrial managers across the world applied this ‘Research’ in their operations of business and gained profits.
- Over all, Operation Research would focus on to formulate specific proposals and decisions that would optimally use the resources for effective results

## Definition of Operation Research

→ Below are few Widely accepted definitions

- “ Operation Research is a scientific approach to problems solving for executive management” -- by H M Wagner
- “ Operation Research is concerned with Scientifically deciding how to best design and operate man, machine system, allocating of scarce resources” by Operation Research Society, USA
- "Operations research is a scientific method of providing executive departments with a quantitative basis for decisions regarding the operations under their control." by Philip McCord Morse and George E. Kimball,

## General Growth of Operation Research

- Though it evolved in 1940's and was confined to military services, many scientists developed subject further
- First step being from G.B.Dantzig, from USA developed a "Simplex Method(LLP)"
- Later, many scientists took interest in making subject to grow
- A Lot of Scientific based approach formed as basis for this subject, that helps organizational operations to yield profits or least costs
- Today, the Operation Research got acceptance universally and applied in every field of Business like  
- Transportation, Commerce, Agriculture, industrial production and so on



# Thank you

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