THE AMERICAN UNIVERSITY IN CAIRO

MENG 344
Work Analysis and Design

Introduction and Overview

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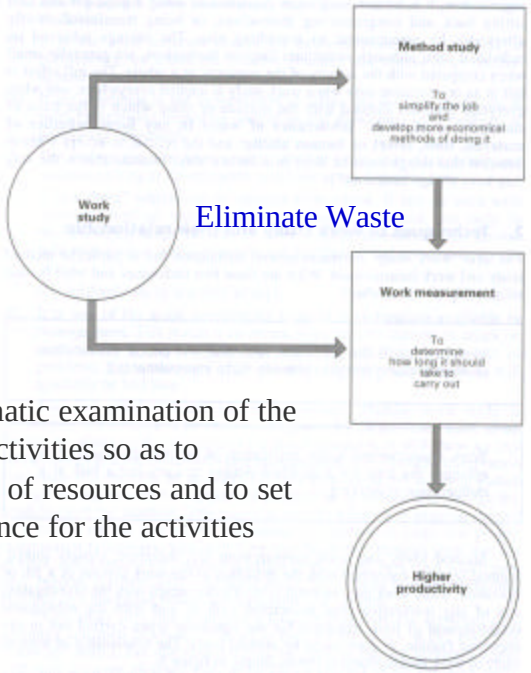
Based on *Introduction to work study*. 3rd ed. International Labor Office, Geneva, 1992.

Work Study



Work Study is the systematic examination of the methods of carrying on activities so as to improve the effective use of resources and to set up standards of performance for the activities being carried out.

Method Study

Method study examines the way a task (changing the clutch on a car, preparing a flower bed for planting, cleaning a hotel room) is done. The industrial engineer has an eye on operational efficiencies and costs, quality of processes, service reliability, staff safety etc. Method study techniques are applicable from factory/workshop manufacturing to cabin crew activities on an international flight and office clerical work.

a collection of techniques used to examine work - what is done and how it is done - so that there is systematic analysis of all the elements, factors, resources and relationships affecting the efficiency and effectiveness of the work being studied.

Work Measurement

Work measurement provides management with a means of measuring the time taken in the performance of an operation or a series of operations in such a way that ineffective time is shown up and can be separated from effective time.

Work measurement is the application of techniques designed to establish the time for a qualified worker to carry out a task at a defined rate of working.

Method Study: Early Applications

Taylor's Shoveling Experiment

Tons handled on piecework during the year ended 30 April 1901				924,040
Cost of handling these materials				$30,798
Former cost per year				$67,215
Net saving				$36,417
Average cost per ton	Now	$0.033	Formerly	$0.072
Average earnings per man per day		$1.88		$1.15
Average tons handled per man per day		57		16
Number of men		140		400–600

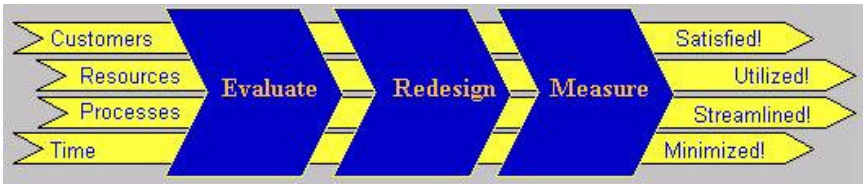
Method Study: Early Applications

Gilbreth's Bricklaying Improvement

Frank Gilbreth designed a special scaffold and a new brick laying procedure that reduced the movements needed from 18 to 5 and in one case to 2. The worker's productivity increased from laying 120 bricks per hour to laying 350 bricks per hour.

Business Process Reengineering (BPR)

Business Process Reengineering is the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance, such as cost, quality, service, and speed. (Hammer and Champy)



BPR - New Language

Radical: Break away from out-dated, patched, obsolete arrangements and practices of work.

Fundamental Re-design: generate new, deeply penetrating, best-way methods. Changing the way work is done.

Process: Re-design core activities cross-functionally, break-down departmentalism. Departments are structures which after all - merely solutions to past organizational problems. They are not fixed for ever.

Dramatic: Don't just make incremental or marginal improvements. Find breakthroughs in performance in terms of cost, quality, service, and time-compression.