MANUFACTURING MANAGEMENT

WORK STUDY

What is

Work Study

$$Productivity = \frac{Output}{Input}$$

What is productivity

FACTORS AFFECTING PRODUCTIVITY

CONTROLLABLE FACTORS

1. PRODUCT FACTORS
2. PLANT AND EQUIPMENT
3. TECHNOLOGY
4. MATERIAL AND ENERGY
5. HUMAN FACTORS
6. WORK METHODS
7. MANAGEMENT STYLE

UNCONTROLLABLE FACTORS

1. STRUCTURAL ADJUSTMENT
2. NATURAL RESOURCES
3. GOVT. AND INFRASTRUCTURE

TOTAL PRODUCTIVITY MEASURE (TPM)

$$\text{Total productivity measure} = \frac{\text{Total tangible output}}{\text{Total tangible input}}$$

Partial productivity measures (PPM)

$$\textit{Partial productivity} = \frac{\textit{Total output}}{\textit{Individual input}}$$

Partial productivity measures (PPM)

$$\text{Labour productivity} = \frac{\text{Total output}}{\text{Labour input}}$$

$$\text{Capital productivity} = \frac{\text{Total output}}{\text{Capital input}}$$

$$\text{Material productivity} = \frac{\text{Total output}}{\text{Material input}}$$

$$\text{Energy productivity} = \frac{\text{Total output}}{\text{Energy input}}$$

Productivity improvement techniques

- Technology based
- Employee based
- Material based
- Process based
- Product based
- Task based

WORK STUDY

METHOD STUDY

Motion study

WORK MEASUREMENT

Time study

HIGHER PRODUCTIVITY

ADVANTAGES OF WORK STUDY

- It helps to achieve the smooth production flow with minimum interruptions.
- It helps to reduce the cost of the product by eliminating waste and unnecessary operations.
- Better worker-management relations.
- Meets the delivery commitment.
- Reduction in rejections and scrap and higher utilisation of resources of the organization.
- Helps to achieve better working conditions.
- Better workplace layout.
- Improves upon the existing process or methods and helps in standardisation and simplification.
- Helps to establish the standard time for an operation or job which has got application in manpower planning, production planning.

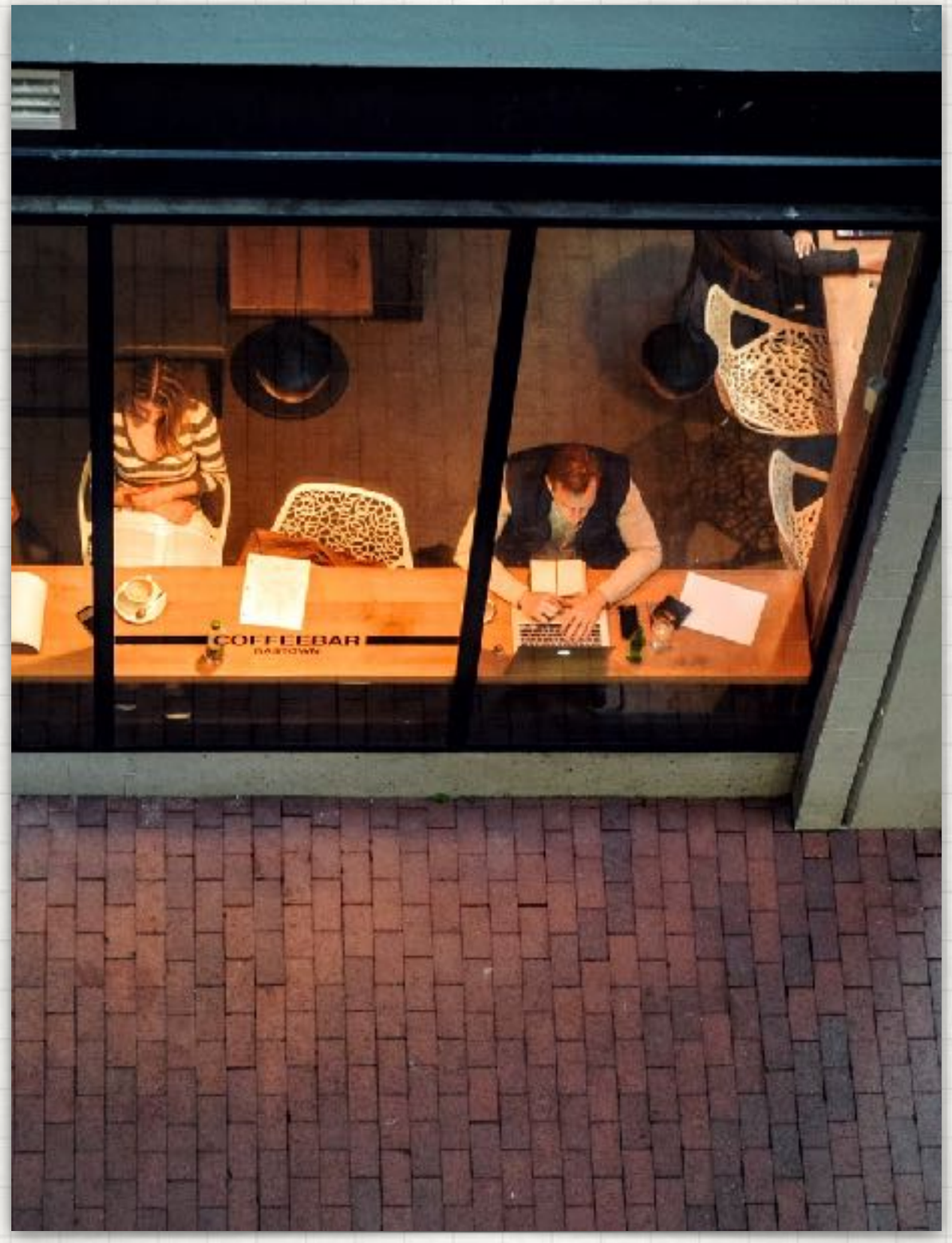
METHOD STUDY IS ALSO CALLED **METHODS ENGINEERING OR WORK DESIGN.** METHOD ENGINEERING IS USED TO DESCRIBE COLLECTION OF ANALYSIS TECHNIQUES WHICH FOCUS ON IMPROVING THE EFFECTIVENESS OF MEN AND MACHINES.

OBJECTIVES OF METHOD STUDY

Method study is essentially concerned with finding better ways of doing things. It adds value and increases the efficiency by eliminating unnecessary operations, avoidable delays and other forms of waste.

SCOPE OF METHOD STUDY

The scope of method study is not restricted to only manufacturing industries. Method study techniques can be applied effectively in service sector as well. It can be applied in offices, hospitals, banks and other service organizations.



METHOD STUDY STEPS

SELECT

RECORD

EXAMINE

DEVELOP

EVALUATE

DEFINE

INSTALL

MAINTAIN

CONSIDERATIONS FOR SELECTION OF METHOD STUDY

- Economic aspects
- Technical aspects
- Human aspects

MOTION STUDY

USE OF THE HUMAN BODY

ARRANGEMENT OF WORKPLACE

DESIGN OF TOOLS AND EQUIPMENT

WORK MEASUREMENT

OBJECTIVES:

1. COMPARING ALTERNATIVE METHODS.
2. ASSESSING THE CORRECT INITIAL MANNING (MANPOWER REQUIREMENT PLANNING).
3. PLANNING AND CONTROL.
4. REALISTIC COSTING.
5. FINANCIAL INCENTIVE SCHEMES.
6. DELIVERY DATE OF GOODS.
7. COST REDUCTION AND COST CONTROL.
8. IDENTIFYING SUBSTANDARD WORKERS.
9. TRAINING NEW EMPLOYEES.

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TIME STUDY - THE APPLICATION OF TECHNIQUES DESIGNED TO ESTABLISH THE TIME FOR A QUALIFIED WORKER TO CARRY OUT A SPECIFIED JOB AT A DEFINED LEVEL OF PERFORMANCE

— British Standard Institute

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STEPS IN MAKING TIME STUDY

SELECT

DEFINE

OBTAIN AND RECORD

EXTEND

MEASURE

COMPUTE

DETERMINE

MANUFACTURING MANAGEMENT

THE END