

Operation Management

Dr. Shady

Group: 10

Q1: Define process selection, and then differentiate between process types?

Process selection: Deciding on the way production of goods or services will be organized.

Process types:

Job shop ⇒ Small scale.

Batch ⇒ Moderate Volume.

Repetitive / assembly line ⇒ High volumes of standardized goods or services.

Continuous ⇒ Very high volumes of non-discrete goods.

Q2: Define facilities layout then compare basic layout types?

Layout: The configuration of departments, work centers, and equipment, with particular emphasis on movement of work (customers or materials) through the system.

Basic layout types:

1-Product layout: Layout that uses standardized processing operations to achieve smooth, rapid, high-volume flow.

2-Process layout: Layout that can handle varied processing requirements.

3-Fixed Position layout: Layout in which the product or project remains stationary, and workers, materials and equipment are moved as needed.

Q3: List product or service design activities?

Product or service design activities:

- 1-Translate customer wants and needs into product and service requirements.
 - 2-Refine existing products and services.
 - 3-Develop new products and services.
 - 4-Formulate quality goals.
 - 5-Formulate cost targets.
 - 6-Construct and test prototypes.
 - 7-Document specifications.
-

Q4: Define standardization then list its advantages?

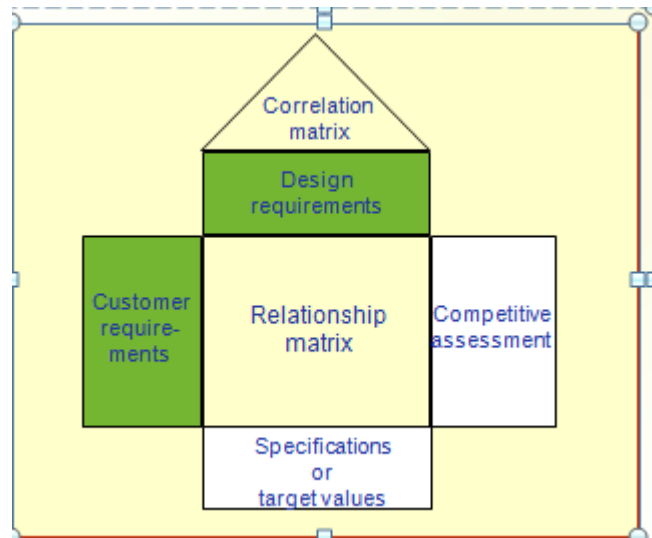
Standardization: Extent to which there is an absence of variety in a product, service or process.

Standardized products are immediately available to customers.

Advantages of standardization:

- 1-Fewer parts to deal with in inventory & manufacturing.
- 2-Design costs are generally lower.
- 3-Reduced training costs and time.
- 4-More routine purchasing, handling, and inspection procedures.
- 5-Orders fill able from inventory.
- 6-Opportunities for long production runs and automation.
- 7-Need for fewer parts justifies increased expenditures on perfecting designs and improving quality control procedures.

Q5: Illustrate house of quality concept?



Q6: Define Strategy, Mission, Goal, and Tactics?

Strategies: Plans for achieving organizational goals.

Mission: The reason for existence for an organization.

Goals: Provide detail and scope of mission.

Tactics: The methods and actions taken to accomplish strategies.

Q7: How can company improve productivity?

- 1-Develop productivity measures.
- 2-Determine critical (bottleneck) operations.
- 3-Develop methods for productivity improvements.
- 4-Establish reasonable goals.
- 5-Get management support.
- 6-Measure and publicize improvements.
- 7-Don't confuse productivity with efficiency.

Q8: Define operation management, what are the key decisions of operations managers?

Operation management: The management of systems or processes that create goods and/or provide services.

Key decisions of operations managers:

What: What resources/what amounts

When: Needed/scheduled/ordered

Where: Work to be done

How: Designed

Who: To do the work

Q9: Mention the responsibilities of operation management?

Planning: 1- Capacity.

2- Location.

3- Products and services.

4- Make or buy.

5- Layout.

6- Projects.

7- Scheduling.

Organizing: 1- Degree of centralization.

2- Process selection.

Staffing: 1- Hiring / laying off.

2- Use of overtime.

Directing: 1- Incentive plans.

2- Issuance of work orders.

3- Job assignment.

Controlling/ Improving:

1- Inventory.

2- Quality.

3- Costs.

4- Productivity.

Exercise

Break even volume (bep) حجم الانتاج المتعادل

$$\frac{\text{Total fixed cost}(Tfc)}{\text{selling price per unit}(s) - \text{variable cost per unit}(V)}$$

هذا القانون يستخدم لحساب كمية الانتاج بدون وجود عائد ربحي زائد



Break even profit (be profit) =

$$\frac{\text{Total fixed cost}(Tfc) + \text{Profit}}{\text{Selling price per unit}(s) - \text{Variable cost per unit}(V)}$$

هذا القانون يستخدم لحساب كمية الانتاج و لكن في حالة وجود ربح زائد.

Tfc= اجمالي التكلفة لكل الوحدات (كمية الانتاج الاجمالية)

S= سعر بيع للمنتج الواحد

V= تكلفة للمنتج الواحد

Profit = ربح

A production company has a total fixed 200,000\$ (**Tfc**) and a variable cost per unit 50\$ (**v**) with a selling price of 60\$ per unit (**s**) calculate the break even volume. And if the company is willing to gain 100,000\$ profit. What is the production volume to achieve this goal?

$$1- \text{bep} = \frac{\text{Total fixed cost}}{\text{Selling price per unit} - \text{Variable cost per unit}} = \frac{Tfc}{S-V} = \frac{200,000}{60-50} = 20,000 \text{ units}$$

$$2- \text{be profit} = \frac{\text{Total fixed cost} + \text{Profit}}{\text{Selling price per unit} - \text{Variable cost per unit}} = \frac{Tfc + \text{Profit}}{S-V} = \frac{200,000 + 100,000}{60-50} = 30,000 \text{ units}$$

If the variable cost increased to 55\$ per unit. What is the volume to break even?

In case of changing variable cost from 50\$ to 55\$

$$\text{Bep} = \frac{\text{Total fixed cost}}{\text{Selling price per unit} - \text{Variable cost per unit}} = \frac{Tfc}{S-V} = \frac{200,000}{60-55} = 40,000 \text{ units}$$

Number of units will increase.

هنا حصل تغيير في سعر تكلفة (زاد) و بالتالي هيحصل تغيير في كمية الانتاج (زاد)

بتعوض في القانون بالارقام جديدة و الناتج اللي يطلع تكتب الملاحظة بتاعتك عليه (جزء من الاجابة)