

D5 Production process – Solutions

1

The tasks of production involve the planning, implementation and monitoring of the manufacture of goods. The "six R's of production" describe the objectives of production: The Right amount of the Right objects are to be built in the Right place at the Right time in the Right quality at the Right cost.

2

Production program breadth means the number of product types produced by an enterprise. In this case, three different types of products offered:

- Bouquets
- Floral decorations
- Flower arrangements

Production program depth means the number of products that are produced within a product type. Under all types of products (bouquets, floral decorations and flower arrangements), three different variants are offered. Using the example of the floral decorations, they can be purchased with roses, tulips or mixed.

3

Advantages

- Diversification of risk
- Better sales opportunities
- Waste from other products could possibly be used

Disadvantages

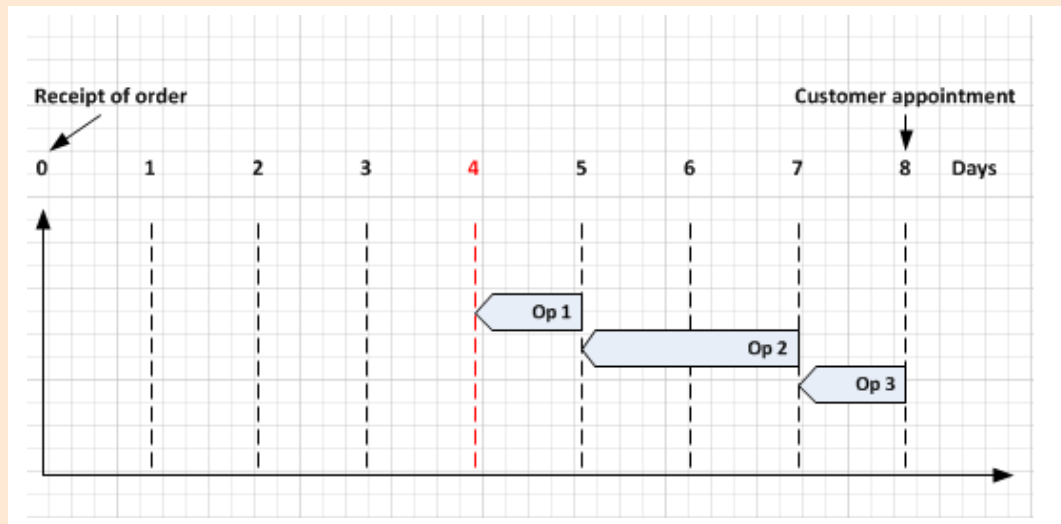
- Possibly higher costs (e.g., advertising expenses for each product)
- Difficult-to-manage operating structure
- Prevents specialization
- Changing the production line leads to idle times

4

Work operations	a) Work step	b) Component of lead time
Op 1: Preparing the dough	Prepare workspace	Setup time
	Prepare the dough	Execution time
	Let the dough rest	Idle time
Op 2: Preparing the pizza	Prepare workspace	Setup time
	Roll out the dough	Execution time
	Wash and cut up toppings	Execution time
	Cover the pizza with toppings	Execution time
	Bake the pizza in the oven	Idle time

5

- a In forward scheduling, the earliest finish date for production is calculated in accordance with the duration of individual operations (Op). The starting point for the calculation is the date on which the production order is received. Backward scheduling, in contrast, determines the latest possible start date of a production order and plans the operations (Op) from the delivery date back to the present.
- b Forward scheduling is characterized by high on-time security for jobs and a low time pressure during production. However, the time reserve between the end of production and the customer appointment leads to larger stocks and thereby higher costs for the capital commitment. Backward scheduling minimizes the capital commitment and therefore the cost of storage. On the other hand, there is high time pressure in production, and the lack of time reserves increases the likelihood of unexpected events (e.g., absence of an employee due to illness) leading to delivery delays.
- c Latest start date: Day 4



6

- a Flow production: skis, cars, cigarettes, pasta
Workshop production: luxury watches, exclusive jewelry, designer clothes
- b Production process is closely linked with production type. The examples of flow production mentioned in part a) are all of the production type "multiple production". A tailor-made product ("individual production") requires workshop production.

7

Indicator	Formula	Calculation
Profitability	Profit/ capital employed	CHF 250,000/CHF 1,650,000 = 0.15 → 15%
Productivity	Production and sales volume / hours worked in production	6,000 units/20,000 hour = 0.3 units per hour