

Differentiate between process layout and work cell layout along with their pros and cons.

Introduction:

In operation management, the layout strategies play an imperative role.

Layout strategies increases the efficiency of firm, while planning the appropriate framework for carrying out the tactical plan.

There are various layout strategies including process layout and work cell layout strategy.

Difference between process layout and work cell layout:

① Difference in the basic format of the two strategies:

The very basic configuration of the two strategies differs in

in accordance with their name.

• Process layout:

Process layout also known as the job shop layout involves grouping of similar equipment together that is involved production.

Example:

In a heavy machinery industry, the drills will grouped at one side, assembly lines will be grouped together, and milling machines at one side. In this way equipments are grouped together according to their process.

• Work cell layout:

Work cell layout also known as Group technology layout includes small work cells of or production units

involved in formation of product.

Example:

This layout strategy is beneficial for industries involved in production of variety of parts in small batches.

② Framework of the two layout strategies:

The basic concept of the process and work cell layout strategy is different.

Process layout strategy:

In process layout strategy, an application of single concept is present. That is grouping of similar items and services together.

Example:

Process layout can be seen in

banks, hospitals and libraries.

• Work layout strategy:

Work cell layout involves a hybrid regime that involves the integration of process and product layout.

Example:

This strategy involves first the identification of similar components (process layout) and then grouping to form units for production (production layout).

③ Difference in the financial scheme of the two strategies:

The cost of the two strategies is dictated by their scheme of work.

• Process layout:

Process layout is more expensive

due to formation of various departments and each one dealing with a different segment of production.

Example ::

In a clothing line industry, following process layout, an article goes through multiple steps involving production, packaging and pricing, which increases the cost at each step.

• Work cell layout ::

In work cell layout each group acts as a complete unit which produces a product and it lacks separate departments. This decreases the overall cost of finished good.

Example ::

In production of specific craftsman product like furniture, the production starts and finishes within the same unit. This decreases the cost.

④ Difference in quantity of production

An operational strategy is based on the productivity and efficiency.

Example:

• Process layout:

Process layout produces small number of finished products due to the involvement of multiple departments.

• Example:

In job shop layout, each product is designed to include customisation which increases time utilisation and decrease quantity.

• Work cell layout:

It produces large masses of products as it involves less time with no customisation.

Example:

Automotive general assembly line

is involved in large mass production.

→ Advantages and disadvantages of Process layout:

Advantage

Disadvantage

① Customised production, which will help in gaining a competitive advantage

② Increase use of labour force

② Departmentalisation produces less amount of wastage (lean manufacturing).

② Presence of different departments increases lead time

③ Non-manufacturing products can be catered with the process layout

③ Fixed system which is difficult to change

→ Advantages and disadvantages of work cell layout:

Advantage

Disadvantage

- ① Less ~~area~~ area required for workspace.
- ② Less expensive with reduced lead time.
- ③ Increased production of goods with better communication.

- ① The products lack customisation.
- ② Complex system due to integration of process layout and product layout.
- ③ Repetitive tasks are involved.

Conclusion:

Operational layout strategies are opted based on the type of production ~~and~~ while increasing efficiency and productivity. The process and

work cell layout are opposite strategies with their own pros and cons. Correct ~~opting~~ adoption of strategy will enhance productivity of finished goods.