CAPACITY PLANNING

Capacity is the upper limit or ceiling on the load that an operating unit can handle. The load might be in terms of units produced or services performed. Capacity also includes – Equipment – Space – Employee skills

The goal of capacity planning of an organization is to achieve a match between long-term capabilities and the long-term demand. Overcapacity causes high operating costs, while under capacity causes strained resources and possible loss of customers.

The basic questions in capacity handling are: What kind of capacity is needed? How much is needed? (Forecasts are key inputs) When is it needed? (Frequency) The question of what kind of capacity is needed depends on the products and services that management intends to produce or provide. Forecasts are key inputs used to answer the question of how much is needed. The factors that influence this frequency are the stability of demand, the rate of technological change in equipment and product design, and competitive factors.

Methods or Strategies used in Capacity Planning:

There are three capacity planning methodologies to assist you in meeting the demand, covering your resource needs, and boosting the productivity of your team members**.**

1. Lag Strategy:

In the lag strategy, an organization maintains its capacity slightly below the current demand level. This means that it doesn't fully meet the current demand but rather lags behind it.

Advantages:

- It can be cost-effective for businesses with limited resources, as they don't have to invest in excess capacity.
- Reduces the risk of overcapacity, which can be costly.

Disadvantages:

- It may result in unmet customer demand or lost sales during peak periods.
- Customer satisfaction may suffer if demand consistently exceeds supply.

2. **Lead Strategy:**

In the lead strategy, a company maintains capacity that exceeds current demand levels. This ensures that there is excess capacity to meet unforeseen surges in demand.

Advantages:

- Helps meet unexpected spikes in demand without delays or lost sales.
- Can be useful for industries with highly variable demand.

Disadvantages:

- Can be costly to maintain excess capacity.
- If demand remains stable, excess capacity may not be efficiently utilized.

3. **Match Strategy:**

The match strategy aims to align capacity closely with demand. It involves monitoring actual demand, demand planning estimates, and market developments to make capacity adjustments as needed.

Advantages:

- Maximizes resource utilization by closely matching capacity to actual demand.
- Provides flexibility to adapt to changing market conditions.

Disadvantages:

- Requires regular monitoring and adjustment, which can be resource-intensive.
- May involve higher upfront costs due to the need for rapid capacity adjustments.

In practice, companies often use a combination of these strategies based on their industry, resources, and market dynamics. For example, a company may use a lag strategy during periods of stability, a lead strategy during peak seasons, and shift to a match strategy when facing uncertain or fluctuating demand.

Effective capacity planning is essential for optimizing resource utilization, managing costs, and meeting customer expectations. The choice of strategy depends on the specific circumstances and goals of the organization.

LOCATION PLANNING

The choice of location for a business organization is of paramount importance for various reasons. Although it might appear that location decisions are one-time problems pertaining to new organizations, existing organizations often have a bigger stake in these kinds of decisions than new organizations.

THE NEED FOR LOCATION DECISIONS:

Existing organizations may need to make location decisions for a variety of reasons…

• Marketing Strategy - Firms such as banks, fast-food chains, retail stores… view locations as a part of their expansion strategy.

• Growth – addition of facility to complement an existing system.

• Depletion of Resources – Some firms face location decisions through depletion of basic inputs. Example – fishing, mining, petroleum…

• Cost of Doing Business – the cost of doing business at a particular location reach a point where other locations begin to look more attractive.

FACTORS INFLUENCING PLANT LOCATION

1. **Availability of Raw Materials:** The proximity to sources of raw materials is crucial for industries that rely on specific inputs. Being close to these materials can reduce transportation costs and supply chain vulnerabilities.
2. **Proximity to Market:** The location of a plant should consider the proximity to the target market to reduce transportation costs and ensure timely delivery of goods to consumers.

3. **Infrastructural Facilities:** Adequate infrastructure, such as transportation (roads, ports, railways), utilities (water, electricity, gas), and communication networks, is essential for smooth operations.
4. **Government Policy:** Government policies, including incentives, subsidies, and regulations, can significantly impact a company's decision on where to locate its plant. Favorable policies can attract businesses to certain regions.
5. **Availability of Manpower:** Access to a skilled and/or affordable workforce is crucial for labor-intensive industries. Proximity to educational institutions and training centers can also be a factor.
6. **Local Laws, Regulations, and Taxes:** Businesses must comply with local laws and regulations, which can vary by region. Tax rates and incentives can also affect the overall cost of doing business.
7. **Ecological and Environmental Factors:** Environmental regulations, as well as the impact of industrial activities on the environment, can influence plant location decisions. Companies may prefer areas with lenient regulations or cleaner energy sources.
8. **Competition:** The competitive landscape in a region can impact a company's decision. Being close to competitors may be advantageous for certain industries, while others may prefer areas with less competition.
9. **Incentives, Land Costs, Subsidies for Backward Areas:** Governments often provide incentives, subsidies, or reduced land costs to encourage industrial development in underdeveloped or backward regions. This can influence location decisions.
10. **Climatic Conditions:** Climate can affect certain industries, such as agriculture or energy production. For instance, solar power plants may be better situated in regions with abundant sunlight.
11. **Political Conditions:** Political stability and the overall business-friendly climate in an area can play a significant role in plant location decisions. Political instability can be a deterrent.

Each of these factors may carry a different weight depending on the industry and the specific goals of the business. Companies often conduct extensive site selection studies to evaluate these factors and make informed decisions about where to establish their plants or facilities.