LECTURE – 1

SERVICE CAPACITY MANAGEMENT

Learning objective

- To discuss various strategies to manage capacity in services
8.1 Service Capacity

- Ability of a service system to deliver the intended service and to match customer demand
- Service capacity is perishable and can be intangible.
- Service capacity cannot be inventoried & hence cannot be transferred from one customer to other. We cannot prepare the service package in advance to deliver it at the later point of time.
- Service capacity has to be managed in a highly dynamic environment where service organizations face more personalized demand due to the presence of customer than in manufacturing sector. Meeting personalized demand directly affects the service quality perceived by the customer.

Capacity of a service is also attributed to the highest possible amount of output that may be obtained in a specified period of time with a predefined level of staff, installations and equipment (Lovelock, 1992). Managing capacity can be viewed as minimizing waiting time while avoiding idle capacity to meet the demand in the most efficient way.

8.1.1 Service Capacity Measurement

- In general service capacity is measured as maximum rate of output, which poses challenges like:
  - How to define service output?
  - Whether the service output is tangible or intangible.
  - How to capture the variability in output over a period of time?
  - Different customers need different types of resources and time in service system. Can we standardize the service output?
  - Are we considering customer’s perspective of capacity measure or service organization’s perspective?
  - The difference in the perspectives of capacity measure by different entities are presented by Pullman and Rodgers (2010) as presented in Table 8.1
Examples:

1. The capacity of a hospital can be measured in terms of number of beds.
2. The capacity of supermarket can be measured in the square meter area utilized.
3. The performance measures of a call center can be percentage of abandoned calls or increase in answered calls.

4. TABLE 8.1: DIFFERENT PERSPECTIVES ON SERVICE CAPACITY MEASURES

<table>
<thead>
<tr>
<th>Customers' perspective</th>
<th>Managers' perspective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability: Right time, Right price, Right type</td>
<td>Revenue or profits</td>
</tr>
<tr>
<td>Crowding and spacing: Too many people/very less space, Few space/too much space</td>
<td>Variable and physical resources</td>
</tr>
<tr>
<td>Intimacy/privacy</td>
<td>Utilization</td>
</tr>
<tr>
<td>Interaction/sociability</td>
<td>Percentage of depletion</td>
</tr>
<tr>
<td>Perceived service time</td>
<td>Actual service time</td>
</tr>
<tr>
<td>Perceived wait time</td>
<td>Actual waiting time</td>
</tr>
<tr>
<td></td>
<td>Number of visitors</td>
</tr>
</tbody>
</table>

8.2 Service Capacity Management

There are many factors which impact the service capacity related decisions, which are given below.

- Decision levels of Capacity Management
- Type of demand
- Altering or improving available resources
- Modification in the product offering and pricing
- Capacity flexibility

8.2.1 Decision levels of capacity management
The capacity management decisions can be taken at either strategic level or long term decisions and tactical level and operational level or short term decisions as shown in Figure 8.1. Strategic capacity decisions based on the long term objectives of an organization considering competitive position includes capacity size and expansion, optimal use of the resource, prediction of demand and capacity flexibility. Short term or tactical level and operational level decisions are usually in small time durations and specific processes of staffing, daily allocation and scheduling of resources to different shifts and other short term decisions, wherein customers’ requirement is taken into consideration to match supply and demand.

8.2.2 Type of demand

The demand faced by any service organization can be divided as High demand and low demand in the alternative periods of demand. The service organizations have to align the capacity based on the varying demand which becomes a dynamic decision. The service organizations generally follow two types of strategies; chase strategy and level strategy.

- Chase strategy: Capacity is modified in line with the demand where customers do not wait long for the service and there is an immediate need at least to get the process started and taken to a reasonable stage so that customers feel satisfied.
- Level strategy: Demand is more visible and capacity is limited. In this strategy the focus is on influencing demand to be in line with capacity. The service is valued by the customer and is willing to wait.

Service organizations can either alter the staff, working hours and shifts to manage the demand or can offer some pricing strategies to manage the gap between supply and demand.

### 8.2.3 Altering or improving available resources

The main and most important resource in service organizations is human being. Service organizations can hire more employees during high demand and lay off employees in the period of low demand. The other possibilities of altering the shifts timings, number of shifts, overtime and number of employees per shifts based on the demand any service organization face. The other important resource is utilization of technology. The service organizations can utilize automation or provide self-service technologies to substitute human resource.

### 8.2.4 Modification in the product offering and pricing

The service product offered by service organization can be altered or modified by limiting or improving service provision, searching for counter-cyclical services in periods of low demand for the original service, Provide off-site access. The service organizations can also utilize pricing options like Vary the price; Carry out promotions, Partition visitors as per spending capability and Yield management.

### 8.2.5 Capacity Flexibility

There can be many opportunities a service organization can have to be flexible in altering service capacity. Pullman and Rodgers (2009) classified flexibility as physical flexibility, price or segment flexibility, labor flexibility and visitor flexibility as shown in Table 8.2. Labor flexibility is same as altering human resource availability and price flexibility is same as offering different prices based on market segmentation. Physical flexibility deals in renting or sharing resources with other service organizations or subcontracting some
part of service. Visitor flexibility deals in limiting or restricting customer demand by having queues and waiting time.

### TABLE 8.2: CAPACITY FLEXIBILITY IN SERVICE ORGANIZATIONS

<table>
<thead>
<tr>
<th>Capacity Flexibility</th>
<th>Managing flexibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical flexibility</td>
<td>Renting or sharing capacity, sub-contracting, provide off-site support and automation</td>
</tr>
<tr>
<td>Price/segment flexibility</td>
<td>Different pricing based on segmentation groups, yield management or revenue management</td>
</tr>
<tr>
<td>Labour flexibility</td>
<td>Hire/layoff employees, overtime, idle time, cross training</td>
</tr>
<tr>
<td>Visitors flexibility</td>
<td>Allow waiting, balking, provide complementary services, provide rewards and incentives, encourage reservations</td>
</tr>
</tbody>
</table>

### 8.3 Elements of Service Capacity

All the elements of capacity presented in the Figure 8.2 are very important to be present and are dependent on each other to manage capacity of service organization effectively and to provide a good quality service. Many strategies can be proposed to manage capacity in services if some organization understands the importance of all the elements presented in Figure 8.2. Altering human resources can be good capacity management strategy provided what kind of demand an organization is targeting to meet, whether demand is seasonal or cyclical. Are there any opportunities to automate the service where customers can utilize the technology from anywhere by avoiding personal visits to the service organizations. It is equally important to understand the knowledge level of customer. For example the internet penetration in India especially in rural India is very low. So, providing service through online mode may not help in such situations. The number of facilities, their locations and the possible considerations of facility expansion helps in managing the demand fluctuations.
After understanding these elements there can be many capacity management strategies which service organizations can utilize.

### 8.4 Strategies for Managing Service Capacity

- Work force related changes in service capacity
- Increasing customer participation
- Automate the service
- Renting or sharing equipment / resources
- Adjustable and sharing capacity

#### 8.4.1 Workforce Related Changes in Service Capacity

- Use of part time employees or employees on contract basis.
• Appropriate when we can predict the peak demand season or peak demand time of the day or peak demand day of the week /month.

• Adds flexibility in controlling the service capacity.

Examples:
1. Hiring part time employees during the lunch hours or dinner hours of a day in any restaurant.
2. Many call centers like Amazon and GE hires part time workers which work from home to cover specific hours of work like in the evenings or weekends.

Changing the level of work force to match demand

• Divide the planning period according to the demand pattern

• Hire more workers during the length of high demand

• Gradually decrease the hiring during low demand time zone

• Challenge of this strategy are the high cost associated with hiring, training and termination

Examples:
• There may be less demand for 24/7 services at night time for example telephone companies and police departments
• Call centers forecast the demand on hourly basis and then assign the number of workers based on the shifts requiring different number of workers depending on the shift demand

Cross training employees

• Training employees to perform the jobs or duties other than those regularly assigned to them.

• Employees gain additional skill & provide good overall job coverage.

• Employee can work for the absent employee on the same day or they may switch between jobs.

• Also, reduces the boredom due to doing same job daily.
Example:
In banks tellers are doing multi tasks of cashing and depositing checks as well as handling credit – card transactions. At the same time training is given regarding customer service skills

8.4.2 Increasing Customer Participation

- Customer acts as co-producer and brings more capacity in the service system as and when required.
- Customer participation helps in reducing the labor input and related payments which in turn increase the service speed.

Examples

- Self-service models at Mc. Donald’s and KFC fast food centers and buffet – style restaurants.
- Retail stores provide the grocery items easily available and accessible to the customer. The customer can use shopping cart and choose the items they want to buy without any human service assistance.

8.4.3 Automation in Service

- Complete elimination of human in some service element or complete automated service.
- Higher and consistent output.
- Convenient for customer to utilize the benefit of automation from anywhere and anytime.

Examples:

1. Many retail stores like KMART have introduced automated check-out or billing counter. There is no need to appoint personnel for each counter.
2. ATMs, online banking and mobile banking helps in all banking operations
3. Online web-check –ins reduces the queue length
8.4.4 Renting Equipment/ Resources or Sharing Resources

- Lack of resources due to high economic value of certain equipment's may result in unmet demand during peak season.
- Rent / Lease or share the required equipment.

**Examples:**

- Many airlines rent airplanes during the holiday season
- In airline industry various airline share same gates, baggage handling equipment
- Banking facilities have been opened on India post (Source: /the Hindu , 17th August 2010).

8.4.5 Adjustable Capacity

Some part of the service capacity can be made variable either through design or through dividing the existing space to adjust to handle more than one activity.

**Examples**

- To meet the changing demand, airlines move the partition between business class and economy class.
- During offseason, the hotels can convert or turn some rooms for business meetings.