

Managing Services
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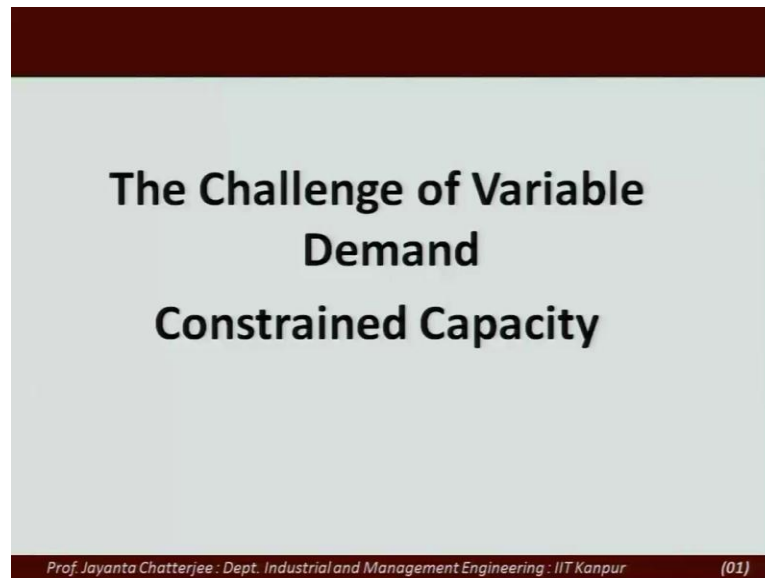
Lecture – 13
Challenges of Services

Hello, this is Jayanta Chatterjee from IIT, Kanpur and we are discussing Managing Services a Contemporary Issues. Last week, we were discussing some challenges that arise in the service business due to some unique characteristics of service namely intangibility and heterogeneity. We studied the kind of problems that are raise, like non searchability or abstractness or generality and so on.

And we also discussed, how by managing the process, the service process by understanding the process flow, by mapping the process, by creating the blue print, how we can identify points, where the touch points where the service may fail or the customer may have confusion and therefore, we can create their suitable communication, that will resolve the challenge. We also looked at how promotion can calibrate, the customer expectation or can provide knowledge and education to the customer for proper utilization of the service.

So, that the service provider can go create the service solution in collaboration together with the service consumer, if that proper knowledge flow has already happened before the customer is in the service process. So, we saw basically the two piece of out of the 6, 7 piece that we have discussed for service business, the two piece that is promotion and our process service process, how we can manage these two piece to address the unique challenges created in service due to intangibility and heterogeneity. Today, we are going to discuss another set of unique challenges created due to service characteristics and how we address those challenges.

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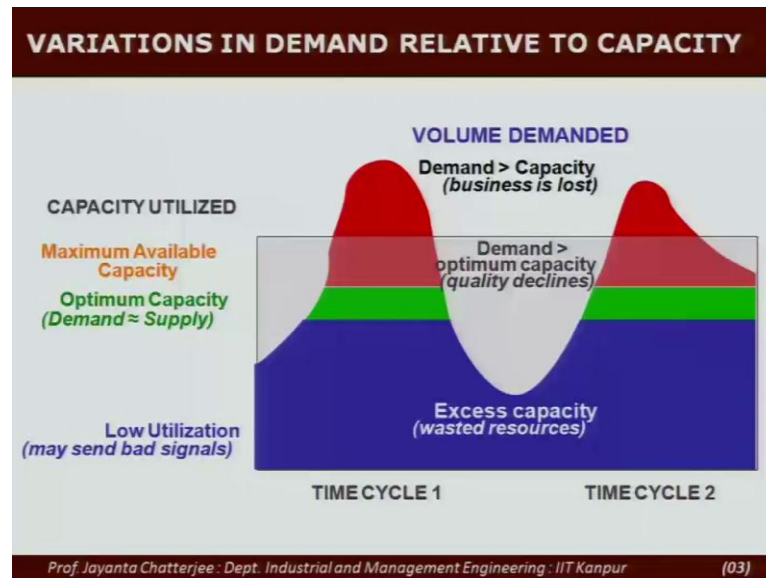
So, the first topic that we are going to look at is the challenge of variable demand and constrained capacity. Now, the first question that we arise will be that demand variation is there in all businesses. So, we know that during Diwali there will be a higher level of demand for jewelry or for sweets or for clothing or for different types of gift items. So, what is so special in case of service, if there is demand variation? Demand variation is there, winter clothes are not demanded during summer.

So, demand variation in products, goods are there due to seasonality, there may be a higher level of demand for a particular type of product, which is a fashion product or a fair product. For a particular model of mobile phone, there may be many people may be queuing up and many, many people may not be able to get the first set of release and so on. So, variability of demand is there in all business. So, what is so special in case of service business, where we see this as a unique set of challenges?

What is different in service at the two remaining service characteristics? Those are inseparability and perishability. So, whether you are looking for a hair cut or you are wanting to see a movie or at a particular point of time or you are wanting to get your dental treatment, the service provider, the dentist or the movie projection or the physiotherapist or the saloon personal and you as a service consumer must be there at the same place within the same time and space frame work. So, this is the inseparability part,

as a result if the flight has already taken off and there were 26 vacant, that service opportunities gone, this we have discussed before.

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Therefore, if there is demand which is higher than the capacity that is available, the red zone that you see in this diagram in front of you, where the demand is there on top of the maximum available capacity. Then, that business opportunity for the service provider and the service consumption opportunity for the consumer gone forever, this is the perishable nature.

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DEFINING PRODUCTIVE CAPACITY?

- Productive capacity can take several forms in services
 - Time
 - People
 - Space
- Success in capacity-constrained business = use of productive capacity as *efficiently* and *optimally* as possible.

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So, as a result we cannot create inventory, which we can do in case of jewelry, which we can do in case of sweets, in case of gifts, in case of winter clothes versus summer clothes, we can manage our inventory, our stock to manage the variation in the flow. This stock and flow counter balancing is difficult in case of service, because service is inseparable, service is perishable.

So, we cannot store in most cases of course, now with technology we are able to create additional opportunities, we will discuss some examples. We are able to transform the service proposition itself and there by manage this huge level of demand or in a some cases, we are able to manage the demand itself with marketing strategies, also we will look few examples.

But, even to some extend we can address these challenges in general, the key challenge remains that the variable demand and constraint capacity is an unique set of challenges in service business. Important point to note that the capacity can take several forms in the service business, it could be in terms of time that means, a particular show or a particular concert, a particular class, so which is existing in a particular time frame at a particular space or in the same space. There may be six shows at an auditorium, but there may be none of the shows may have any extra seat available, they may be all full, if it is a very popular movie.

So, capacity can be in terms of time, capacity can be in terms of space, it can be a combination of the two and the third element people who provide the service or consumers, who needs to be there for the service to happen. So, there can be a mismatch between the availability of space in a particular set of time with respect to arrival of customers. So, the saloon may be line vacant during afternoon hours and may be 20 people are waiting in the evening hours.

So, time, people, space all three elements and other related elements, they all need to be managed to provide the optimum level of service. Now, this provision of the optimum level of service is the service business management challenge, where we are looking for both efficiency as well as optimality ((Refer Time: 09:48)). Now, what is this optimal concept as supposed to the maximum capacity concepts?

So, in this diagram as you can see there can be a maximum capacity in terms of the physical infrastructure, but there can be some other constraints due to the capacity of the

service people. So, there could be there is a possibility that theoretically 300 people can be feed in a restaurant in an hour, if you look at the number of seats and time it takes for each customer to consume the food provided including of course, the delivery time, etcetera.

Now, that maximum capacity, may be almost very close to the optimum capacity, so that means, the gap as you can see in this diagram ((Refer Time: 10:54)) between this maximum line and this green line, the optimal line this may be very narrow. In case of say fast food joint, because a lot of the services there are either of the self service type or provided by systems, where machines or automation play a big part.

But, there can be other types of service like fine dining, it is not only depended on the number of tables. It will be also depended on the kind of food ordered, the time it takes to prepare the different dishes, the availability of the number of chefs, the availability of the number of waiters and other types of servers, like stewards and ((Refer Time: 11:48)). And therefore, when we take all of these elements together, infrastructuredly the number of seat wise, the maximum capacity may not be the same ((Refer Time: 12:04)) as the capacity that we can provide for high quality level, because there are number of other elements involved.

So, our aim is to see how we can reduce this gap between the optimal level and the maximum level, the more we can do that better it is. And obviously, we want to manage this variation as you see this peak and trough, so that if there is a some kind of an average demand level. Then we want that average demand level to be as close to the optimum demand level as possible and we also want to reduce the gap between the optimal level and the maximum level. So, these are kind of..

And obviously, we do not want this, the trough and we even if it has to be there to some extent, we would like to raise this level, so that it is as minimal as possible. So, there are these three challenges, reduce the occasions of low utilization as much as possible, bring the optimum level as close to the maximum level as possible and see that the average level of demand and optimal level of demand are as close to each other as possible. Obviously, there are two sides to the equation, one is the demand side and another is the capacity side.

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ADDRESSING PROBLEM OF FLUCTUATING DEMAND

Two basic approaches of which most firms use a mix of:

- **Adjust level of capacity to meet demand**
 - Need to understand productive capacity and how it varies on an incremental basis
- **Manage level of demand**
 - Use marketing strategies to smooth out peaks, fill in valleys
 - Inventorying demand until capacity becomes available

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And we have to either adjust the capacity to meet this variable demand or we have to manage the demand itself by shifting it in time, shifting it in space or create some kind of notional inventory. Like for example, the dentist capacity can be better utilized if appointments are fixed, if people are gainfully engaged during a certain waiting period. So, that as soon as one patient is done, the next patient is ready to meet the doctor or when the doctor is taking a break, there are other activities that are performed by medical assistants.

Or we create some kind of a process line, where while one patient is being attended by the doctor for the most critical part, which may be the intricate part of the root canal operation. Other patients are getting ready, they are cleaning activities, they are pain killer injection activity, these are may be already in the process and we can there by splitting the capacity creating parallel lines of activity. We can manage to handle an optimum level of patients, higher number at good satisfaction level.

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So, let us look at some interesting ways in businesses which are very grown to perishability like the airline, where if the flight takes off with more empty seats, it is a loss that goes straight into the financial results. It cannot be recovered, even if the next flight goes full, because we want all flights to go full. So, therefore, if one flight has left half empty that is a permanent impact on the financial results of the airlines.

Now, what the airlines have done therefore, and this is one of the standard techniques we can use in many businesses, particularly in those business where the infrastructure investment is a high cost, like an airline costs in millions of dollars, crores of rupees and where it is possible to create some supplementary enhancing services by which we can charge different prices. And what we can create different buckets of demand. So, we call this rate fencing and creating buckets of demand.

So, in this diagram you see how the airlines a, they create different times of seats. So, the business seats may take this space of two or three economy seats, but the business seats can fetch double or triple the revenue compare to an economy seat or an excursion economy seat. So, there by reserving certain capacity with certain as you can see stretchable seat and other food and beverage service etcetera, you can create a much higher level of revenue for a particular part of the capacity in the same flight.

So, it is the same flight offering the same core service of a flight from Delhi to London, but within that same flight we can have pockets of much higher revenue by enhancing

the service or providing some additional service. Creating different demands streams, but different revenue streams, but look at how the capacity also is flexible, these seats are all like cartridges, most of these seats are readily pluggable or you can easily pull them out.

So, by creating different pitches; that means, the distance between seats and by plugging in different kinds of seats, airlines often vary the capacity distribution among economic loss or excursion economy, prime economy business and first. So, if there a more first class seats are in demand very good. So, they can increase the number of first class seats or business class seats reducing the number of economy seats.

If there is a low level of demand for the business class seats, they can out some of the business class seat areas and plug-in or sometimes just change the service level and often them to economy passengers. Sometimes a buffer is kept, where if there is an over flow or if higher level of demand from the economy then you shift them to the... So, quasi business buffer area, but the seats are business type and they can be easily either provided with upgraded additional services like better food, beverage and other facilities like movie etcetera.

Or if it is now catering to the overflow from the economy seat, you can provide them the economy level of service and manage to optimally utilize the capacity. So, by creating split facilities, airlines create the flexible capacity in many of the so called multiplexers in further movies. Earlier there was to be fixed auditorium showing one particular movie for in the same frame of time in a particular frame of time.

Now, they have multiple screens and in many of these cases these part auditorium with different screens, they have flexible capacity. So, if there is a particular movie in very high demand then auditorium one and auditorium two maybe combined offering a bigger facility or maybe part of the auditorium two facility can be added to the auditorium one and for 2, 3 weeks when that movie will be at speak demand level, you are offering a bigger facility.

Or more easily movies may start in audio one which has a much higher number of seats and after two weeks when the demand short of papers, you can move it audio two and bring in audio one the next movie which is at a much higher level of demand again and another example of splitting the same facility with different kind of offerings and different kind of rates and creating flexible capacity within the same over all capacity.

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MANAGING CAPACITY

- Enables more people to be served at same level of capacity
- Stretch and shrink:
 - Offer inferior extra capacity at peaks (e.g., bus/train standees)
 - Use facilities for longer/shorter periods
 - Reduce amount of time spent in process by minimizing slack time
- Adjusting capacity to match demand
 - Rest during low demand
 - Cross-train employees
 - Use part-time employees
 - Customers perform self-service
 - Ask customers to share
 - Create flexible capacity
 - Rent/share facilities and equipment

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So, by this way we are able to serve by the stretch and shrink mechanism, the outer structure may remain the same. But, within that we have different levels of services or facilities for longer and shorter periods or reduce the amount of times spend in process by creating some additional process streams as we discussed in case of the cataract operation or dentist processes, we can adjust capacity to match demand.

Sometimes we can create a close, ((Refer Time: 23:49)) you know this diagram that we had seen before that we can use innovative approaches to match the demand gap between the optimal level and the maximum level by those adjusting capacity which is all these thing cross train employees, use part time employees or ask customers involves customer's to do part of the process or add some facilities which can be rented or shared and so on.

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MANAGING DEMAND

- **Take no action**
 - Let demand find its own levels
- **Interventionist approach**
 - Reduce demand in peak periods
 - Increase demand when there is excess capacity
- **Inventorying demand until capacity becomes available**
 - Formal wait and queuing system
 - Reservation system

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So, of course, therefore, if there is a demand variation one approaches we do nothing we accepted as a fact of life and, but that is not very effort able these stage. So, we have to therefore, do certain other take some other actions. So, now, we can look at what actions can we take on the demand side. So, we want to reduce the demand during peak period and bring it to the lean period. So, restaurants off an do it by declaring appears, where the lean period you get some better rate compare to the peak period.

Alternately you can actually charge some premium for the peak period, so movie also often to do that, that the during the week end of the release of the movie. So, Friday, Saturday, Sunday you charge higher and customer's are ready to pay that, people who are eager to see it during those first two three days, they prepare to pay higher price or you can create a tatkal ticket, where somebody who are to travel tomorrow can pay higher and get those seats if there available vacant.

So, these are where you can actually either charge premium or you can try to give intensive for the lean period both are managing demand. Or we can actually create a appointment system reservation of time or we can have a queue these are all managing the demand in a way creating some temporary inventory in the service system was normally it is perishable. So, reservation system, appointment system, queue system these are all examples of managing demand.

You can also look at this managing demand in combination with process changes. For example, as you all of you know that all airlines one due to check in two hours before the flight time, what they are trying to do is they know that the arrival of customer's will be varying with time. So, they create a buffer time zone, so that customer's can arrive over a span of one hour. So, the flight is taking off at 11 AM they want customer's to checking by 9 AM, some customer's will checking at 9 AM, some will arrive at 9.30. So, up to 10'o clock is a time when they will gather customer's and store them.

Because, as you know after you check in outside then you go through security and go to the gate, where again there is a pooling people are waiting. So, what you want is that at a 11'o clock when the flight is ready to board or maybe 22.11 the flight is ready to board by that time all the plane passengers at there at that point of time. So, you do not have along boarding gap you are not waiting that aircraft which is the most it is time is most expensive not waiting for passengers to arrive.

So, you insist that checking is two hours before, so the people can arrive between 9 and 10 and then they can travel to the gate between 10 and 10.40 and all will be ready to board at 10.40. So, that within 20 minutes we can load the aircraft and in the main time luggage's have been loaded, so at 11'o clock the flight can take off. So, these are preprocessing creating different streams. So, that by managing queues by managing multiple process steps, where able to create a match between capacity and demand.

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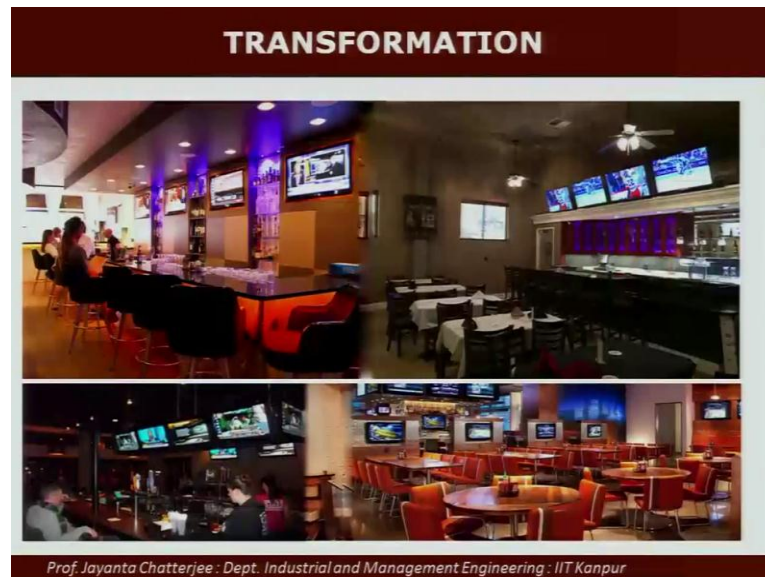
MARKETING MIX ELEMENTS TO SHAPE DEMAND PATTERNS

- Use price and other nonmonetary costs to manage demand
- Change product elements
- Modify place and time of delivery
 - No change
 - Vary times when service is available
 - Offer service to customers at a new location
- Promotion and Education

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Of course, when we want to do splitting of capacity as I was discussing about the airlines, economy sheet, business sheet it has to go hand and hand with price or what we call rate fencing.

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Sometimes we can also do it by changing the product elements, this is a interesting example at one time develop many people interested to see the Olympics games or Wimbledon games or many other sports events. And obviously, if a particular test match often between India and Pakistan or Australia and England and you could not get a ticket then you loss the opportunity or if you are not present during the Olympics event of swimming which you are interested in, you loss the opportunity.

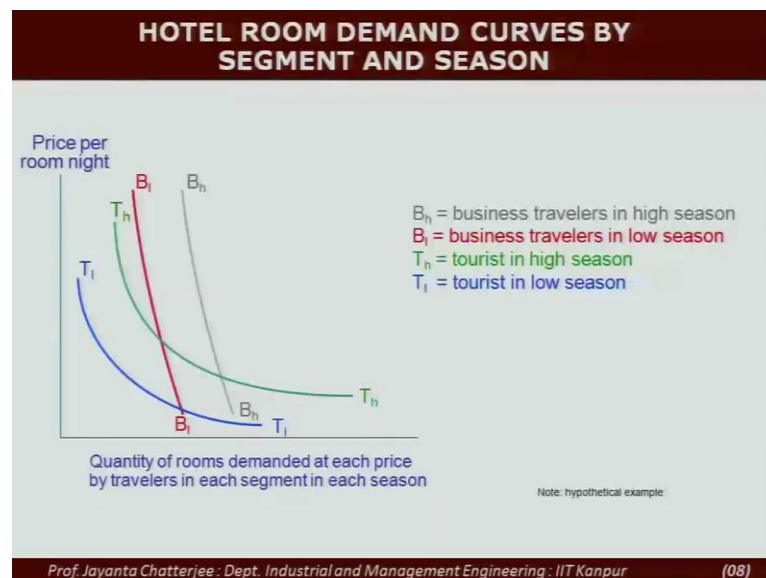
Now, this is a particular situation where the demand for our strips capacity ((Refer Time: 30:31)). So, this is where actually the red part is much bigger and it was always difficult to match this peak demand with respect to capacity available, because if you created a huge stadium to meet that peak demand, rest of the air it will be lying vacant. So, it will be there was big gap between peak and trough. So, this is an interesting example, where information and communication technology particular TV and internet streaming at that facilities have change the nature of the game all together.

Now, extensive very good television coverage or on the net coverage is available and facilities like sports bar or sports pops or sport restaurants have been created. Very large number of people that over flow in a big hump of extra demand people are diffused

across these various kinds of entertainment centers very large screens show you the same game with an added advantage of front along with friends in sort of private space with additional entertainment facilities like food, beverages, etcetera.

And so as a result today large number of people, millions of people enjoy the same game event and the games are lot more money by sponsorship by television add, gaps and on the whole therefore, more people at satisfied and more service providers or more entertainers or enriched. So, it is a good win, win situation created by transforming the service itself.

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So, let us summaries we can therefore, in the same hotel by creating rate fencing and we will discuss this again when you discuss service pricing the other being. And because the different types of demands have different elasticity. So, business travelers for example, they are not so much affected by pricing. So, there is less elasticity of demand there, so more or less the demand will be study almost parallel to the y axis.

On the other hand, in case of the economy demand a huge variation can be created by providing incentives and this is a topic which we will discuss in greater detail when we discuss a pricing that how these capacity management and price management can work together.