



# Managing demand and capacity

# Objectives



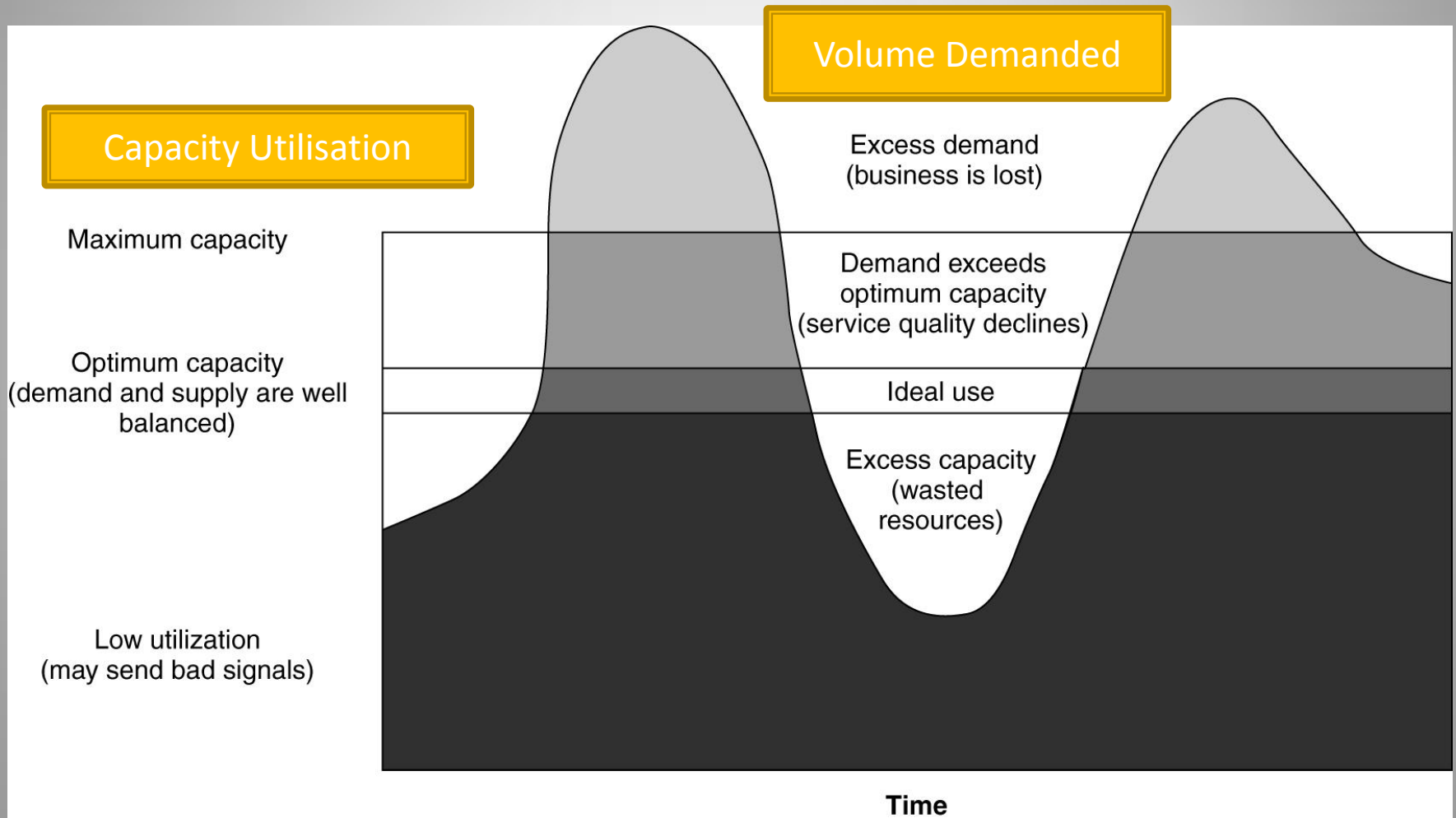
- Demonstrate the benefits and risks of yield management strategies in forging a balance among capacity utilization, pricing, market segmentation, and financial return.
- Provide strategies for managing waiting lines for times when capacity and demand cannot be aligned.

# Managing Demand and Capacity



- Perishability – implications for demand and supply
- Present the implications of **time, labour, equipment, and facilities constraints** combined with variations in demand patterns.
- Strategies for matching supply and demand through:
  - (a) shifting demand to match capacity or
  - (b) adjusting capacity to meet demand.

# Variations in Demand Relative to Capacity



Source: C. Lovelock, "Getting the Most Out of Your Productive Capacity," in *Product Plus* (Boston: McGraw Hill, 1994), chap. 16, p. 241.

# Alternative supply and demand outcomes



Supply	Relationship to demand	Issues
Greater than maximum supply	Higher demand than maximum available supply	<ul style="list-style-type: none"><li>• Customers turned away</li><li>• Lost business opportunities</li><li>• Resources under great pressure</li><li>• Service quality suffers</li><li>• Crowding</li><li>• Staff and facilities overtaxed</li><li>• Customers seek competitors' offerings</li></ul>
Maximum supply	Higher demand than optimal supply levels	<ul style="list-style-type: none"><li>• All customers serviced</li><li>• Excess pressure on all resources — facilities and staff</li><li>• Queuing and long waits</li><li>• Crowding</li><li>• Service quality suffers</li></ul>

# Alternative supply and demand outcomes (cont.)



Supply	Relationship to demand	Issues
Optimum supply	Demand and supply are well balanced	<ul style="list-style-type: none"><li>• Resources utilised at an ideal rate</li><li>• Productivity ideal</li><li>• Service quality delivered</li><li>• No delays</li><li>• Pleasant amount of crowding</li></ul>
Less than optimum supply	Lower demand than optimal supply levels	<ul style="list-style-type: none"><li>• Resources (staff/facilities/equipment) under-utilised</li><li>• Productivity decreases</li><li>• Profitability suffers</li><li>• Customers receive excellent individual service</li><li>• Customers have full use of facilities</li><li>• No waiting</li><li>• Lack of customers could create negative image or atmosphere</li></ul>



# Understanding Capacity Constraints and Demand Patterns

## Capacity Constraints

- Time, labor, equipment, and facilities
- Optimal versus maximum use of capacity

## Demand Patterns

- Charting demand patterns
- Predictable cycles
- Random demand fluctuations
- Demand patterns by market segment

# Constraints on Capacity



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<b>Nature of the Constraint</b>	<b>Type of Service</b>
<b>Time</b>	Legal Consulting Accounting Medical
<b>Labor</b>	Law firm Accounting firm Consulting firm Health clinic
<b>Equipment</b>	Delivery services Telecommunication Network services Utilities Health club
<b>Facilities</b>	Hotels Restaurants Hospitals Airlines Schools Theaters Churches

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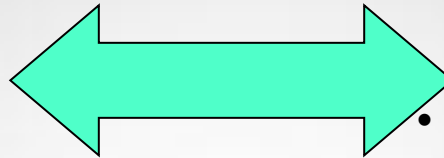
# Strategies for Shifting Demand to Match Supply



## Demand Too High

### Shift Demand

## Demand Too Low



- Use signage to communicate busy days and times.
- Offer incentives to customers for usage during nonpeak times.
- Take care of loyal or “regular” customers first.
- Advertise peak usage times and benefits of nonpeak use.
- Charge full price for the service—no discounts.

- Use sales and advertising to increase business from current market segments.
- Modify the service offering to appeal to new market segments.
- Offer discounts or price reductions.
- Modify hours of operation.
- Bring the service to the customer.

# Activity # 1



List down five different service brands practicing strategies to shift demand for both: High demand and Low demand situations.

# Adjusting demand to meet supply



Relevant marketing elements	Strategies for adjusting demand to meet supply	Tactics for high demand	Tactics for low demand
Distribution	Modify location of service delivery	<ul style="list-style-type: none"> <li>• Get consumers to come to service facility (if applicable)</li> </ul>	<ul style="list-style-type: none"> <li>• Bring the service to consumers</li> </ul>
Service product: core and supplementary elements	Vary the service offering	<ul style="list-style-type: none"> <li>• Modify service offering to help facilitate extra demand</li> <li>• Reduce augmented service elements</li> </ul>	<ul style="list-style-type: none"> <li>• Modify the service offering to appeal to different market segments</li> <li>• Increase augmented service elements — value add by developing complementary products</li> </ul>

# Adjusting demand to meet supply (cont.)



Relevant marketing elements	Strategies for adjusting demand to meet supply	Tactics for high demand	Tactics for low demand
Process of service delivery	Modify the process of service delivery	<ul style="list-style-type: none"> <li>• Use a reservations system to help manage high demand</li> </ul>	
Price	Differentiate on price  Use creative pricing	<ul style="list-style-type: none"> <li>• Increase price to match demand</li> <li>• Charge full-price</li> </ul>	<ul style="list-style-type: none"> <li>• Offer discounts and price reductions</li> </ul>
Promotion	Use the promotional mix to shift service usage	<ul style="list-style-type: none"> <li>• Advertise busy times</li> <li>• Offer incentives to use low demand periods</li> <li>• Advertise benefits of non demand usage</li> </ul>	<ul style="list-style-type: none"> <li>• Advertise to stimulate demand during slow periods</li> </ul>

# Strategies for Adjusting Supply to Match Demand



## Demand Too High



## Demand Too Low

- Stretch time, labor, facilities and equipment.
- Cross-train employees.
- Hire part-time employees.
- Request overtime work from employees.
- Rent or share facilities.
- Rent or share equipment.
- Subcontract or outsource activities.

- Perform maintenance, renovations.
- Schedule vacations.
- Schedule employee training.
- Lay off employees.

# Activity # 2



List down five different service brands practicing strategies to **adjust capacity** for both: High demand and Low demand situations.

# Adjusting supply to meet demand



Relevant marketing elements	Strategies for adjusting supply to meet demand	Tactics for high demand	Tactics for low demand
Facilities	Create flexibility in facilities	<ul style="list-style-type: none"> <li>• Rent additional space</li> <li>• Share facilities</li> </ul>	<ul style="list-style-type: none"> <li>• Decrease space</li> </ul>
Equipment	Create flexibility in the service product	<ul style="list-style-type: none"> <li>• Hire/outsources/rent additional equipment</li> </ul>	<ul style="list-style-type: none"> <li>• Hire/outsources/rent current equipment to other service providers</li> </ul>
Labour	Create flexibility in labour capability	<ul style="list-style-type: none"> <li>• Employ casual or part-time staff</li> <li>• Cross-train employees</li> <li>• Increase staff working hours/ encourage staff to work overtime</li> <li>• Ask staff to specialise in one job role</li> <li>• Utilise third parties/outsources</li> <li>• Reduce interaction of staff with customers</li> </ul>	<ul style="list-style-type: none"> <li>• Ask staff to work in varied job roles</li> <li>• Schedule vacations</li> <li>• Reduce staff working hours</li> <li>• Lay off staff</li> <li>• Plan for staff training</li> </ul>

# Adjusting supply to meet demand (cont.)



Relevant marketing elements	Strategies for adjusting supply to meet demand	Tactics for high demand	Tactics for low demand
Time	Create flexibility in the process of service delivery	<ul style="list-style-type: none"><li>• Extend hours of operation to accommodate demand</li><li>• Increase customer participation in the process of service delivery</li><li>• Develop a peak operating procedure</li></ul>	<ul style="list-style-type: none"><li>• Reduce hours of operation</li><li>• Schedule down time for maintenance</li></ul>



# Challenges and Risks in Using Yield Management



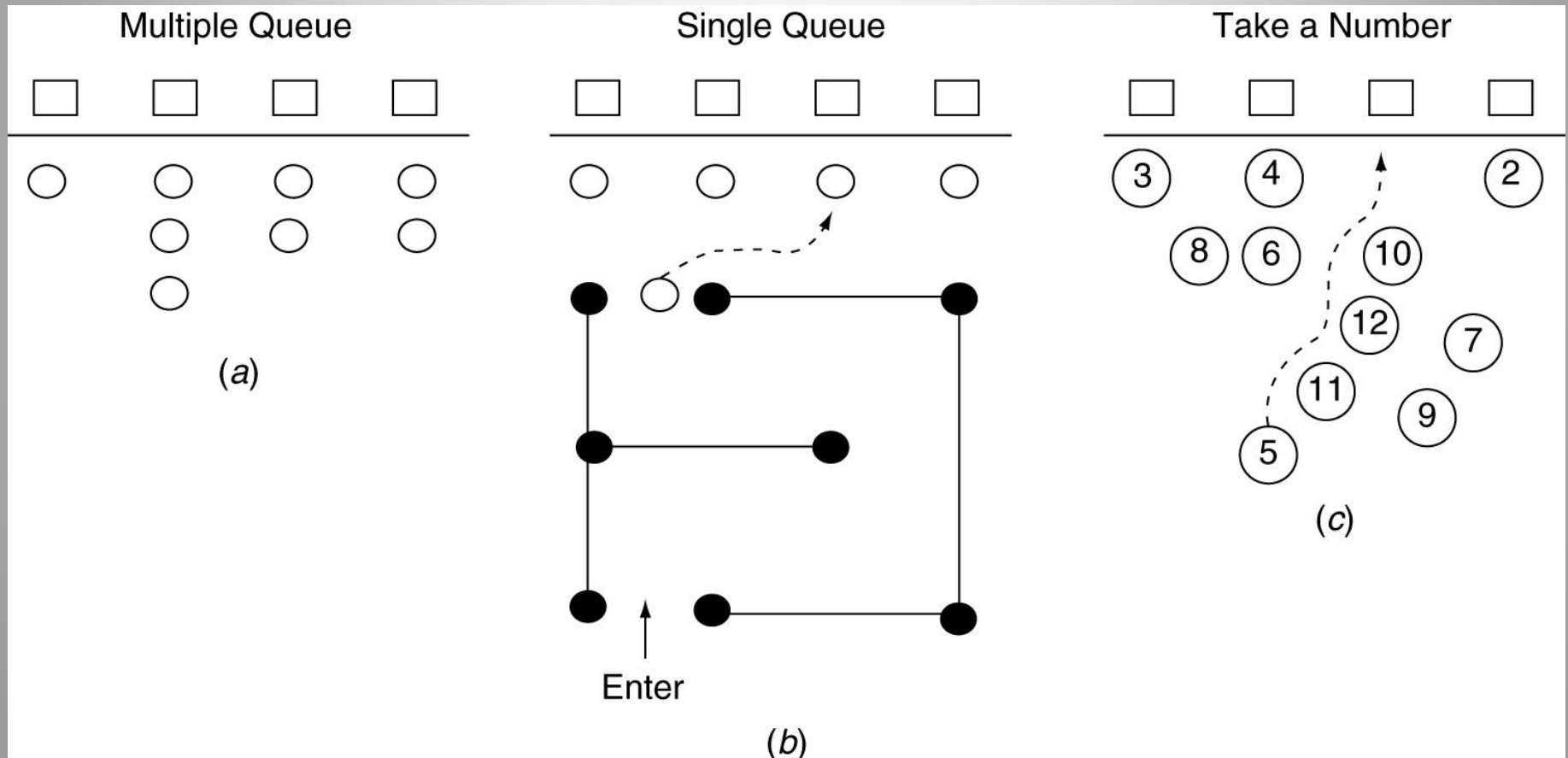
- Loss of competitive focus
- Customer alienation
- Employee morale problems
- Incompatible incentive and reward systems
- Lack of employee training
- Inappropriate organization of the yield management function

# Waiting Line Strategies



- Employ operational logic
  - modify operations
  - adjust queuing system
- Establish a reservation process
- Differentiate waiting customers
  - importance of the customer
  - urgency of the job
  - duration of the service transaction
  - payment of a premium price
- Make waiting fun, or at least tolerable

# Waiting Line Configurations





# Issues to Consider in Making Waiting More Tolerable (Maister, 1986)

- unoccupied time feels longer than occupied time
- preprocess waits feel longer than in-process waits
- anxiety makes waits seem longer
- uncertain waits seem longer than known, finite waits

# Wait times (cont.)



- unexplained waits seem longer than explained waits
- unfair waits feel longer than equitable waits
- the more valuable the service, the longer the customer will wait
- solo waits feel longer than group waits