

# MGT 3700 - Introduction to Operations Management

## Chapter 5 – Service Operations



# Learning objectives

- ❧ Differentiate the **characteristics of a service organization** from a manufacturing organization.
- ❧ Explain the **elements of a service-product bundle**.
- ❧ Organize service offerings into the **service matrix**.
- ❧ Describe how '**customer contact**' effects the service delivery system.
- ❧ Design a **service recovery** and **service guarantee**.
- ❧ Evaluate the **role of technology** in service management.
- ❧ Examine **how globalization** has affected services.

# Disney – A ‘service’ experience

∞ What do you think of when you think of going to a Disney park?

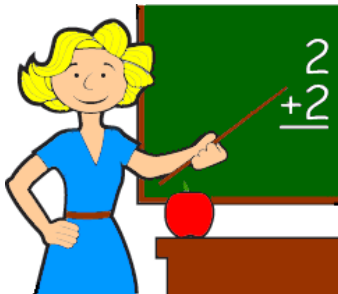


- ✓ 160 million visitors each year
- ✓ 12 theme parks
- ✓ Parks designed as **immersive sensory experience**
  - ✓ Ambient music, scents
  - ✓ Super clean
- ✓ Seamless use of **technology** – smart wristbands, etc.
- ✓ **Staff training**
  - ✓ **Support** experience
  - ✓ **Creativity** to solve problems

*Your turn:*

**What defines a service?**

☞ In small groups, articulate the unique attributes of a service?



# How do services differ from products?

## ∞ A service is **intangible**

- > **Cannot be transported or stored**
- > **Ownership is generally not transferred**
- > **No resale is possible**
- > **Does not exist before purchase**

## ∞ **Production and consumption occur simultaneously**

## ∞ **The buyer can perform part of the production process**

# Types of services

## **Act on person's mind**

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- Education
- Entertainment
- Therapy



## **Act on person's body**

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- Transportation
- Lodging
- Health Care



## **Act on belongings**

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- Auto Repair
- Landscaping
- Laundry



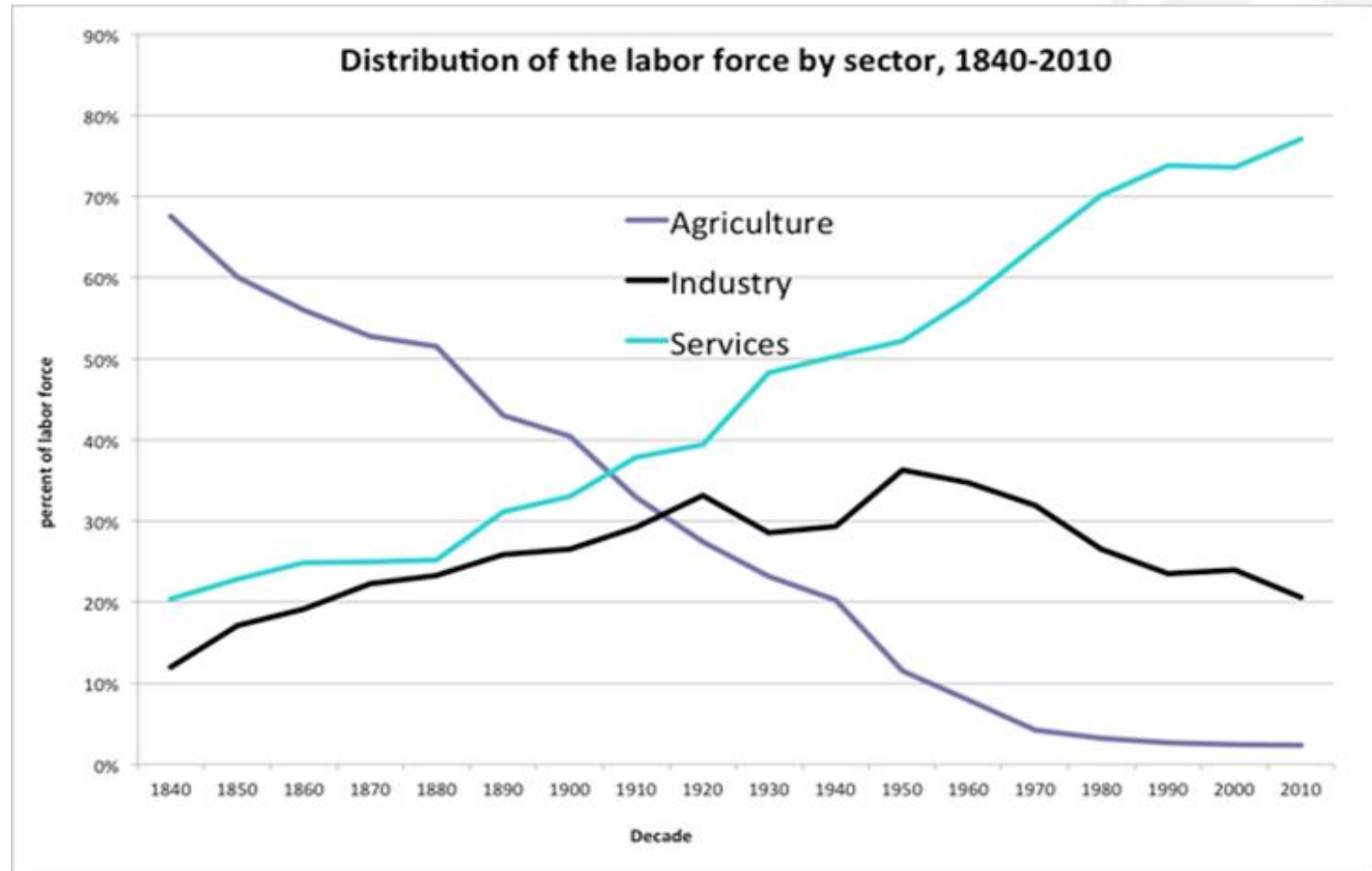
## **Act on information**

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- Insurance
- Investments
- Legal services



# The service economy is growing





# Service economy - Growth

OCCUPATION	GROWTH RATE, 2021-31	2021 MEDIAN PAY
<a href="#">Nurse practitioners</a>	46%	\$120,680 per year
<a href="#">Wind turbine service technicians</a>	44%	\$56,260 per year
<a href="#">Ushers, lobby attendants, and ticket takers</a>	41%	\$24,440 per year
<a href="#">Motion picture projectionists</a>	40%	\$29,350 per year
<a href="#">Cooks, restaurant</a>	37%	\$30,010 per year
<a href="#">Data scientists</a>	36%	\$100,910 per year
<a href="#">Athletes and sports competitors</a>	36%	\$77,300 per year
<a href="#">Information security analysts</a>	35%	\$102,600 per year
<a href="#">Statisticians</a>	33%	\$95,570 per year
<a href="#">Umpires, referees, and other sports officials</a>	32%	\$35,860 per year
<a href="#">Web developers</a>	30%	\$77,030 per year

Source: Bureau of Labor Statistics, 2023



# Getting services right

## Listening to customers

Understanding customer expectations – what they want and how they want it – sometimes *implementing changes quickly*

## Working cross-functionally

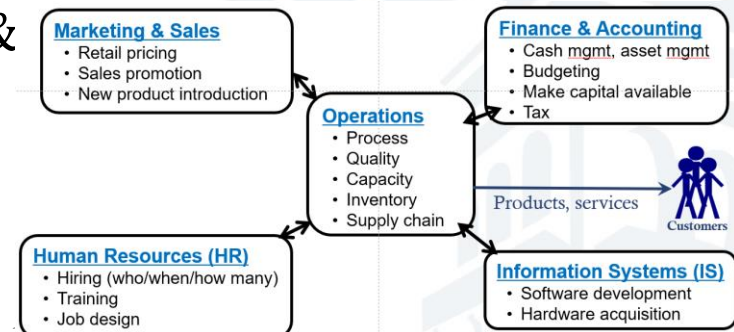
**Operations** – creates and delivers service

**Marketing** – understand customer preferences

**Human Resources** – supply labor to match needs

**Finance** – funding service delivery

**IT (MIS)** – support (hardware & software) service delivery



# Creating a Service

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# Creating a service



# The service package (What)

# The 'service package' (What)

Example: Quick oil change

## Goods Content

- Oil/filter
- Other parts



## Access or Location

- Commuting
- Drive-thru



## Explicit Services

- Oil change
- Optional services



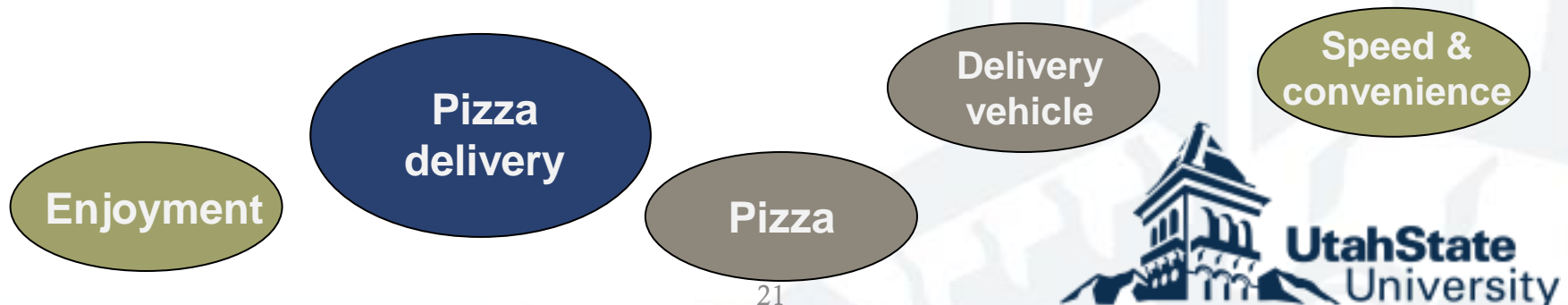
## Psychological Benefits

- Confidence
- Convenience

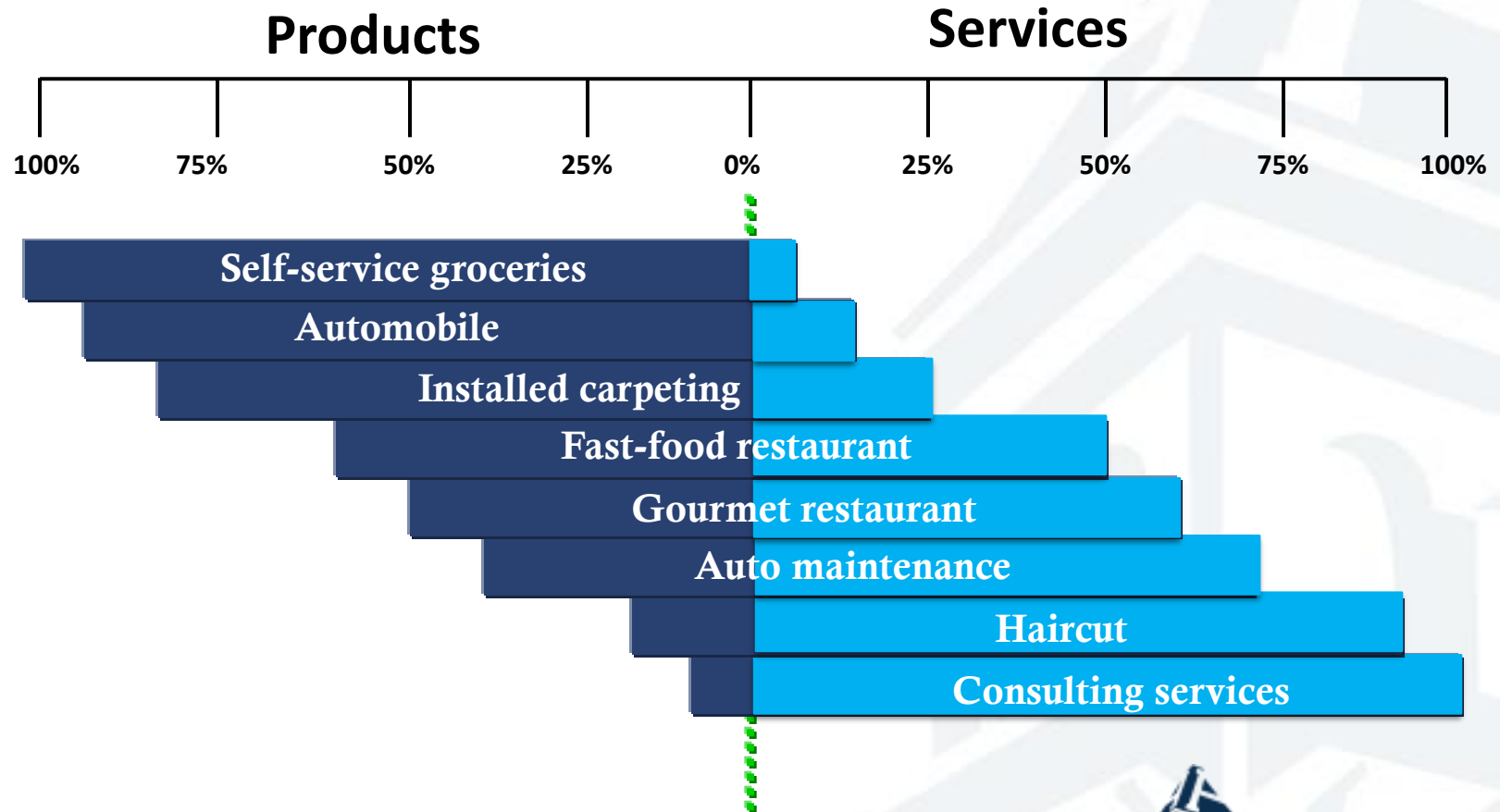


# The service package

- ∞ Physical goods - facilitating goods
  - > used during service or received by customer
- ∞ Service - explicit service
  - > what the provider does for customer
- ∞ Psychological benefits - implicit service
  - > how customer feels after service



# The product-service bundle





## *Your turn*

# Adding services to existing products

**Servitization** – A ‘business model’ that involves **offering a combination of products and services**, rather than just selling products.

**Identify situations where services are expanding** to increase the value-added experience for customers (ex. groceries)

- ❧ Home monitoring (lights, temp, security)
- ❧ Transportation (rental bikes, scooters, cars)
- ❧ Music (Spotify)
- ❧ Television/Movies (Choose your own)
- ❧ Airlines (from Travel Agents to do-it-yourself)

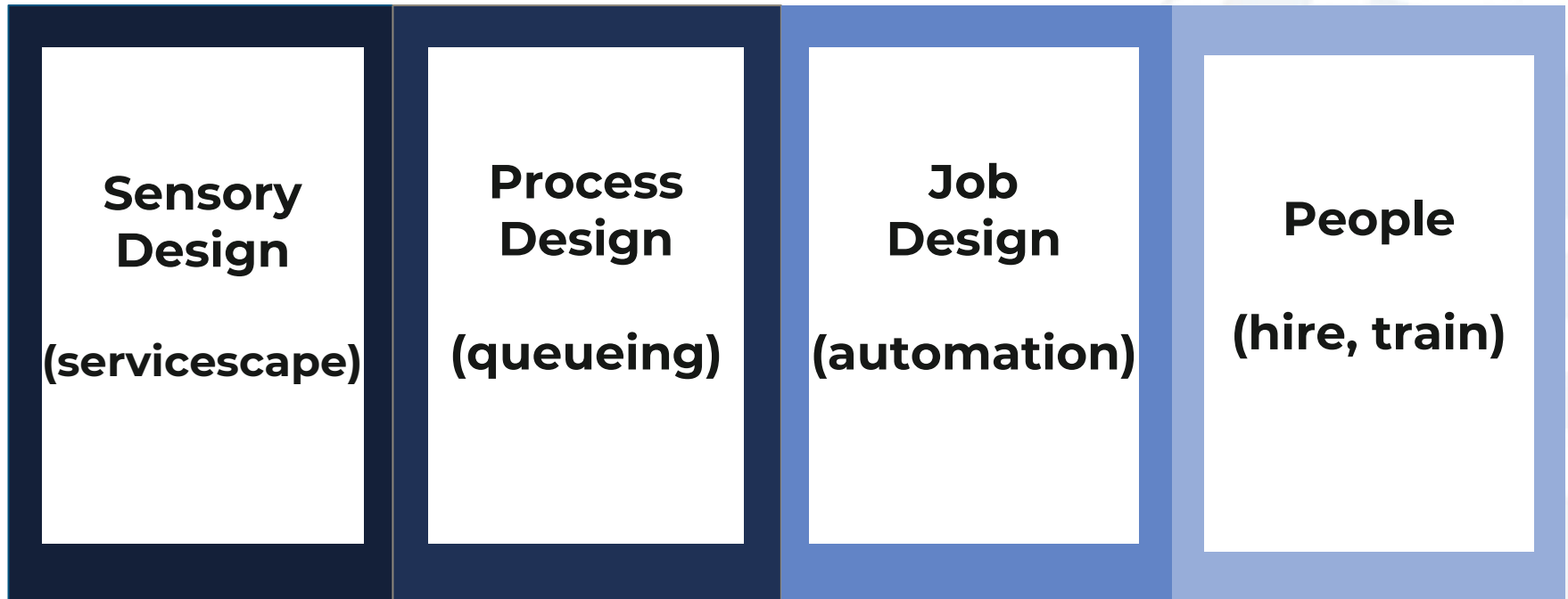
**Article** – “[Anything-as-a-service](https://www.oracle.com/industrial-manufacturing/anything-as-a-service-across-manufacturing/)”

(<https://www.oracle.com/industrial-manufacturing/anything-as-a-service-across-manufacturing/>)



# The service delivery system (How)

# The 'service delivery system' (How)



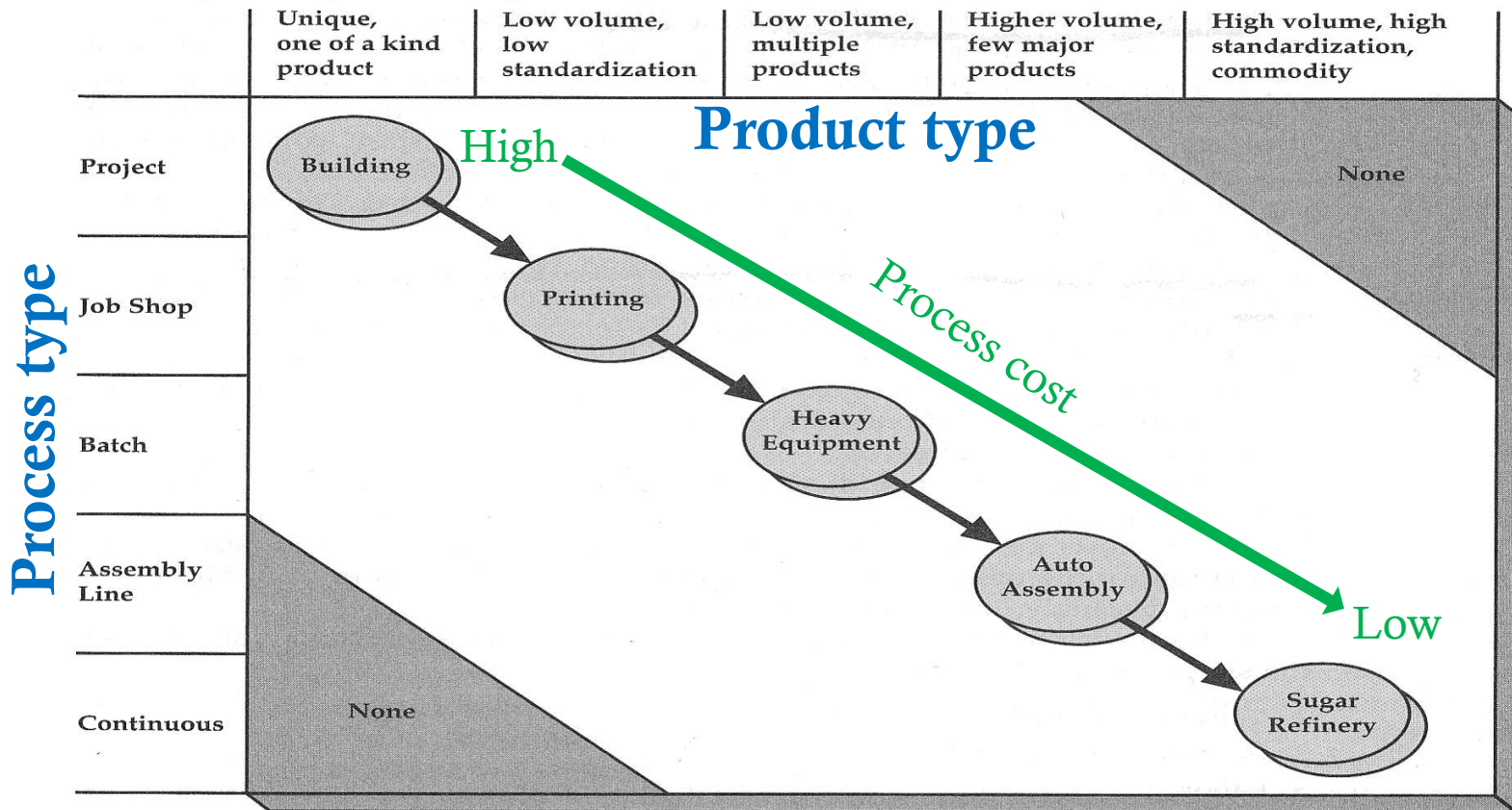
**Integration of Operations, Marketing, Human Resources**

# Product-Process matrix



**FIGURE 4.5** Product-process matrix.

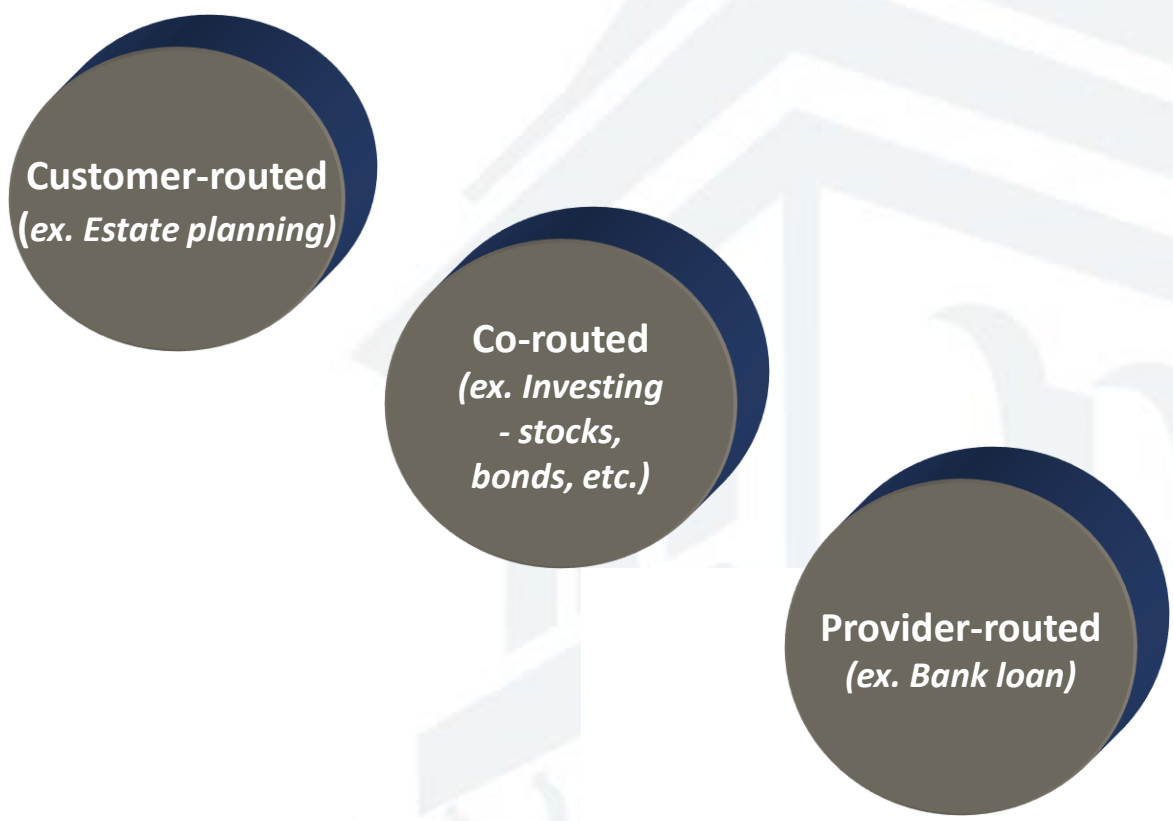
Source: Adapted from Hayes and Wheelwright (1979).



# Service-Process matrix

## Customer wants and needs (Service Package)

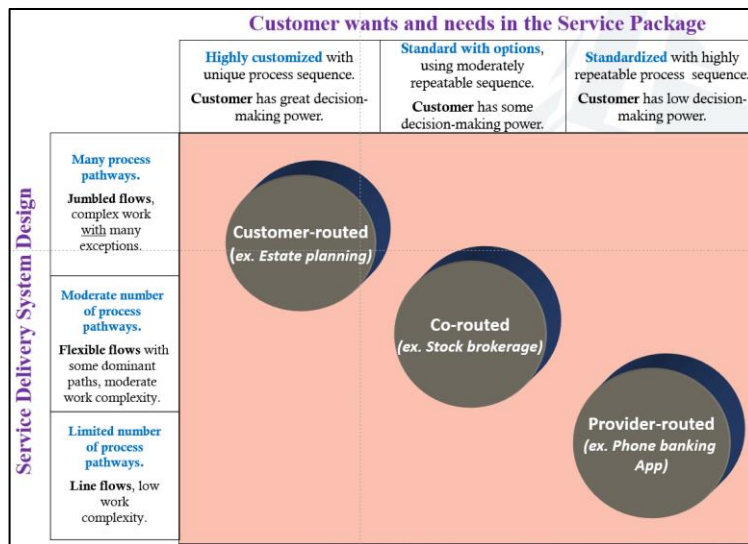
## Service process (Service Delivery System)

	<p><b>Highly customized</b> with unique process sequence. <b>Customer</b> has great decision-making power.</p>	<p><b>Standard with options</b>, using moderately repeatable sequence. <b>Customer</b> has some decision-making power.</p>	<p><b>Standardized</b> with highly repeatable process sequence. <b>Customer</b> has low decision-making power.</p>
<p><b>Many process pathways.</b> <b>Jumbled flows</b>, complex work with many exceptions.</p>			
<p><b>Moderate number of process pathways.</b> <b>Flexible flows</b> with some dominant paths, moderate work complexity.</p>			
<p><b>Limited number of process pathways.</b> <b>Line flows</b>, low work complexity.</p>			

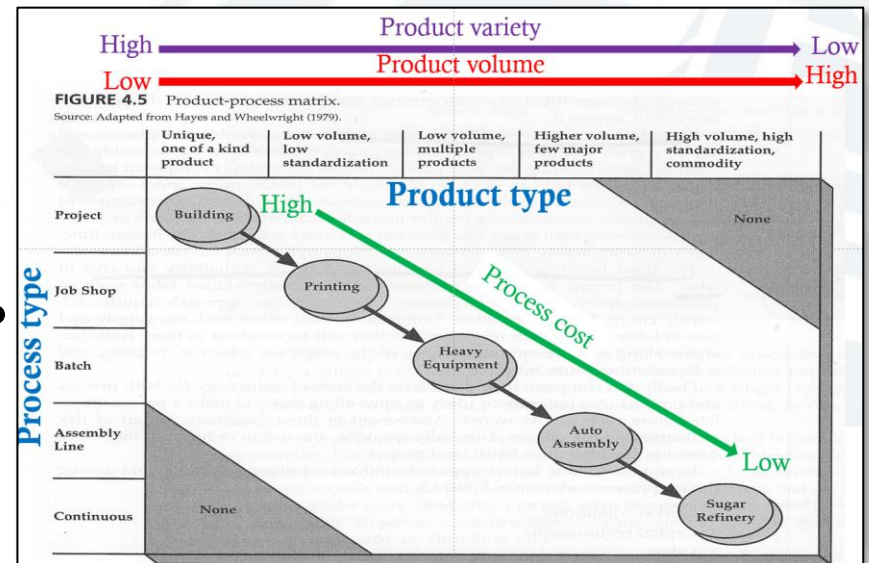
## *In-class exercise:*

# Service-process matrix vs. product-process matrix

☞ How does the 'service-process matrix' compare with the 'product-process matrix', i.e., what is **similar** and what is **different**?



vs.

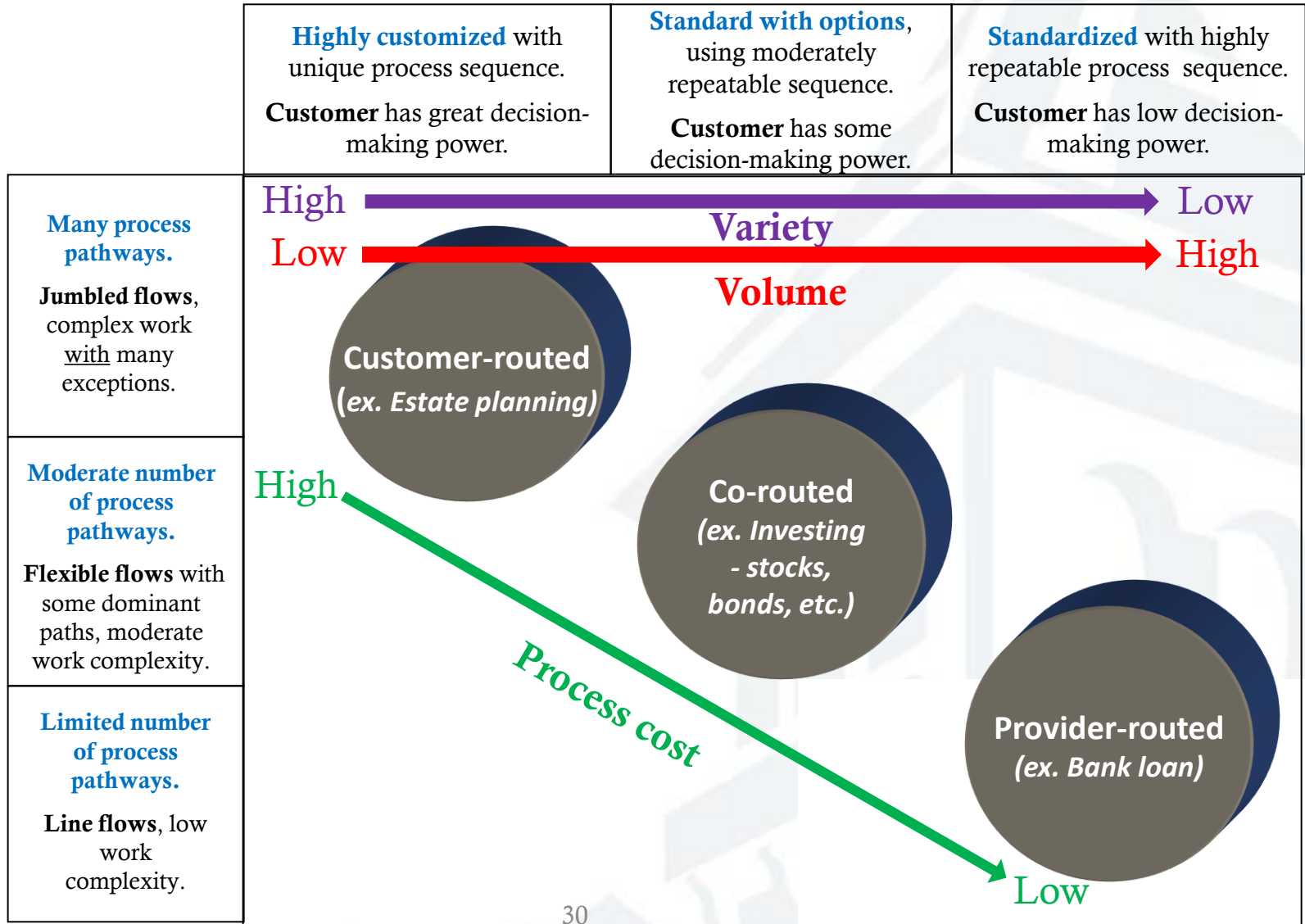




# In-class exercise:

Process Type → Service Delivery System

Product Type → Service Package





# Customer contact

**Definition** - Extent of interaction between service organization and customer



# Customer contact

Process efficiency =  $f$  (degree of customer contact)

## Low customer contact

- **Higher efficiency** process
- **Lower sales** opportunity
- Workers with **technical skills**
- **Focus on routing** methods
- **Automation**

Ex. Bank loan, store purchase (on-line or in-person), annual doctor visit, golfing

## High customer contact

- **Lower efficiency** process
- **Higher sales** opportunity
- Workers with **diagnostic skills**
- **Focus on client** mix
- **Client/worker teams**

Ex. Estate planning, home purchase, surgery, cruise

Balancing sales opportunity and production efficiency

# Self-service

What are some self-service examples? What do you think about this approach to service?

- ∞ Customer contributes “**free**” **labor** right when needed!
- ∞ Customer has “freedom” to **self-design experience**
- ∞ **Reduces social pressure** for some customers
- ∞ Technology-supported: **Kiosks!**
- ∞ **Process design considerations**
  - > Design service process for **simplicity** and customer satisfaction
  - > Difficult for some complex services



# Technology for services

What are examples of service companies that exist because of technology?



*Hospitality company without hotels*



*Transportation company without cars*



*Media company that creates little content*



*Used car company where customers shop online*



*Global retailer without retail stores (mostly)*

C2C example: **Rover**



# Technology and digitization are transforming service supply chains

## What unique opportunities/benefits does service technology create?

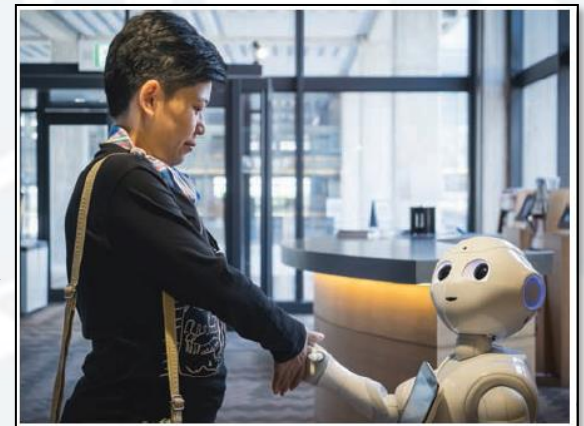
- ∞ Opportunities for **self-service**
- ∞ **Remote access** (e.g., consulting projects and business meetings without travel)
- ∞ Support **underserved populations** (e.g., telehealth)
- ∞ Supports a '**sharing economy**' (ex. rent out your car, apartment, bike, internet service)
- ∞ Provides a **labor substitute**— reduces cost & adds capacity
- ∞ Situations where **human touch less preferred** (e.g., handling food, hazardous materials, medical work)

# Technology – artificial intelligence

How do you think AI will transform service delivery and capability?

- ∞ **Routine AI** – repetitive tasks
  - > Ex. Conversational phone bots provide customer service
- ∞ **Analytical AI** – problem solving and learning
  - > Ex. Sports data analytics for player recruiting decisions
- ∞ **Intuitive AI** – think creatively
  - > Ex. Help doctors diagnose patients
- ∞ **Empathetic AI** – respond emotionally
  - > Ex. 'Bot Pepper' welcomes and amuses

Japanese bank customers →



# Globalization of services

## Outsourcing

- Outside firm performs activities such as workforce recruiting, payroll, accounting, and call center functions

## Offshoring

- Export of service activities to other countries

### *Advantages:*

- Lower costs
- Focus on core competencies

### *Disadvantages:*

- Coordination costs
- Loss of direct control



# Queueing for services

A key requirement to deliver a quality service is managing the queue.

## Arrivals

Customers  
requesting  
service

How frequently does  
a customer arrive for  
service?

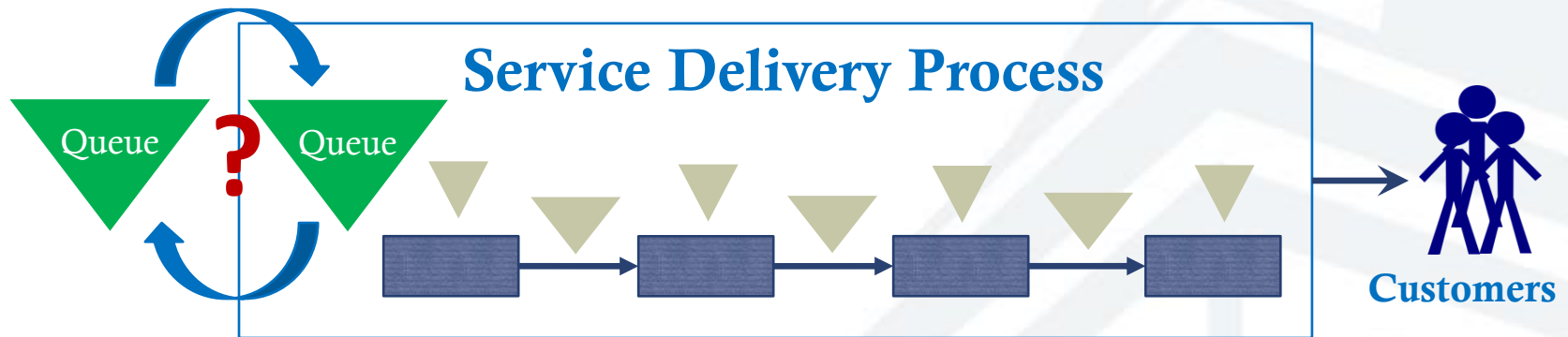
## Servers

Operating system  
(sometimes a  
worker) that  
provides service

How long does it  
take to serve one  
customer?

# Managing queues

What are the **advantages** and **disadvantages** of managing the queue 'inside' or 'outside' of the process?



**Inside** Think urgent care or emergency room

- > **Secure the sale** ..., but need to **manage the 'wait'**
- > **Wait time is now known** (Little's Law) ... customer knows when they will experience the service

**Outside**

- > Can **triage** (think hospitals) or **prioritize** customers
- > **Customers can renege** (leave)

# The service experience

# The service experience

Live **interaction between customers and service system** (operations, marketing, and human resources carried out in real time).

**The Customer Experience  
is a function of ...**

Service  
Quality

Customer  
Variability

Service  
Recovery

# Variability introduced by customers

- ∞ **Arrival** - Uncertainty in when they arrive to consume service.
- ∞ **Request** - Uncertainty in what they ask for in service-product bundle.
- ∞ **Subjective preference** - Uncertainty in preferences in how service is carried out.
- ∞ **Capability** - Uncertainty in ability to participate in service.
- ∞ **Effort** - Uncertainty in willingness to perform needed actions.

# Manager's tool: Service recovery

Recovery from a service failure ...

- ❧ **Failures are inevitable → Prepare** for recovery so there is a process to follow
- ❧ Take **swift** and **appropriate** action to compensate for service failure

Fly in customer's soup → New bowl of soup + free dessert!



# Manager's tool: Service guarantee

Defines the service promise and payout for failure

## ∞ Benefits to customer

- > Promise of service to be delivered
- > Payout to customer if promise not delivered



*30 minutes  
or it's free!*

## ∞ Benefits to organization

- > Focuses on customer
- > Sets clear standards for employees
- > Encourages customer feedback
- > Promotes customer understanding of service expectations
- > Builds customer loyalty



*On time, or it is free!*



***Your turn:***

## **Creating a service**

∞ In **small groups**, review the lecture materials and list all of the 'levers' for creating an optimal service experience, ex. short queues.



**The customer experience**

***Your turn:***

## **Creating a service**

- ❧ Create a **service package** that meets/exceeds customer expectations
- ❧ Choose the **correct service process** ('service matrix')
- ❧ Choose the correct amount of **customer contact**
  - > Consider self-service options
- ❧ Push **standardized/less-important processes** to the 'back office'
- ❧ Use **technology** effectively
- ❧ Consider **outsourcing/offshoring**
- ❧ **Manage the queue**
- ❧ **Plan for failures** (service recovery process)
- ❧ Consider a **service guarantee**

## *In-class exercise:*

### Case study - Sage Hill Inn & Spa



In small groups, read the Sage Hill Inn case and answer the following questions.

1. Define the '*service-product bundle*' provided to guests (tangible services, intangible services, facilitating goods).
2. Using the 'service blueprint' (flowchart), list 10 **possible service failure points** (and the associated customer expectations).
3. For each potential service failure point, determine whether it is (a) **self-service** or a **service provided by the hotel** and (b) **high-contact** or **low-contact**.
4. For each potential service failure point, **generate one idea** to help **ensure success**.

# Summary

- ✓ Differentiate the **characteristics of a service organization** from a manufacturing organization.
- ✓ Explain the **elements of a service-product bundle**.
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- ✓ Design a **service recovery** and **service guarantee**.
- ✓ Evaluate the **role of technology** in service management.
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