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# Production Systems

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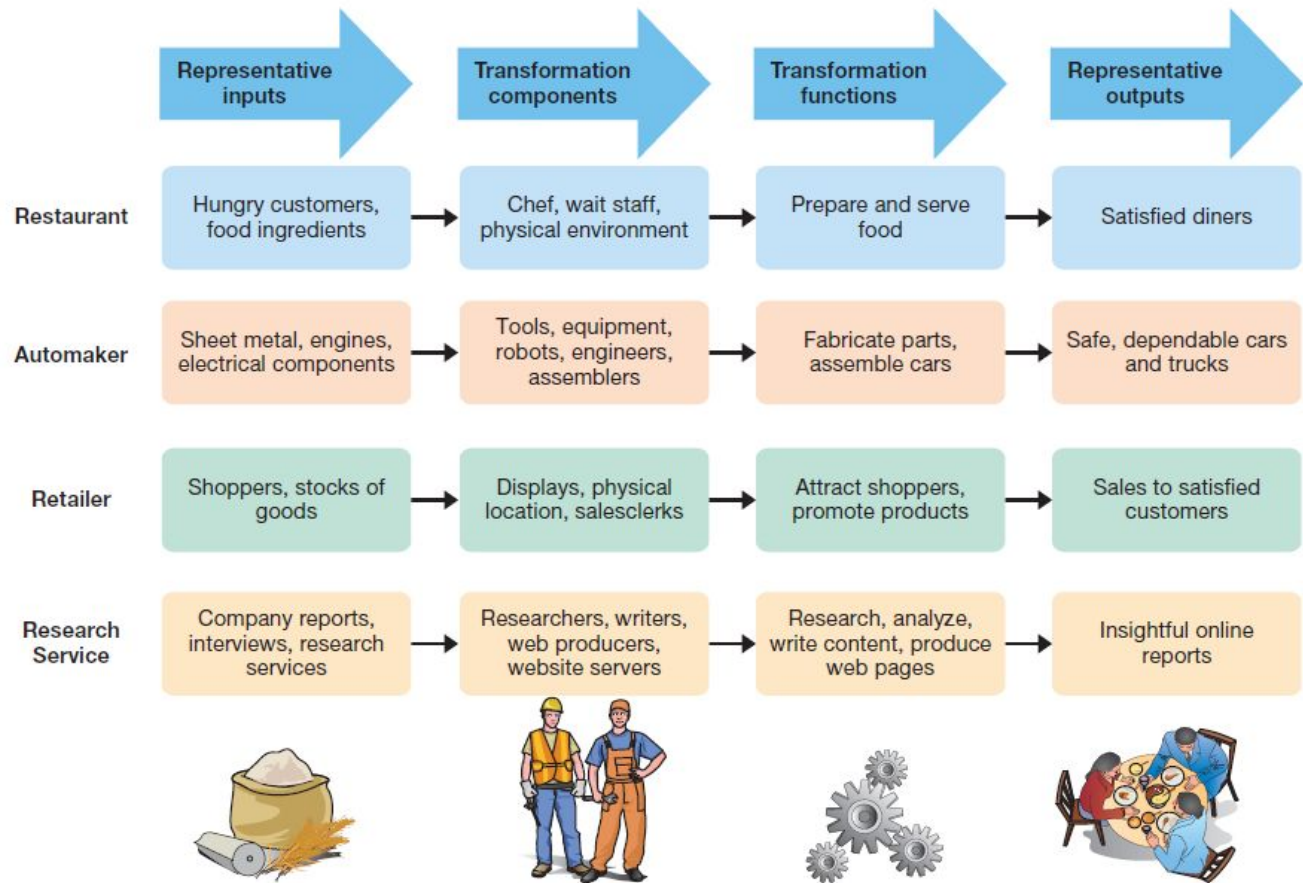
# Learning Objectives:

1. Describe the *value chain* concepts and discuss the controversy over offshoring
2. Define *supply chain management* and explain its strategic importance
3. Identify the major production types and operations management

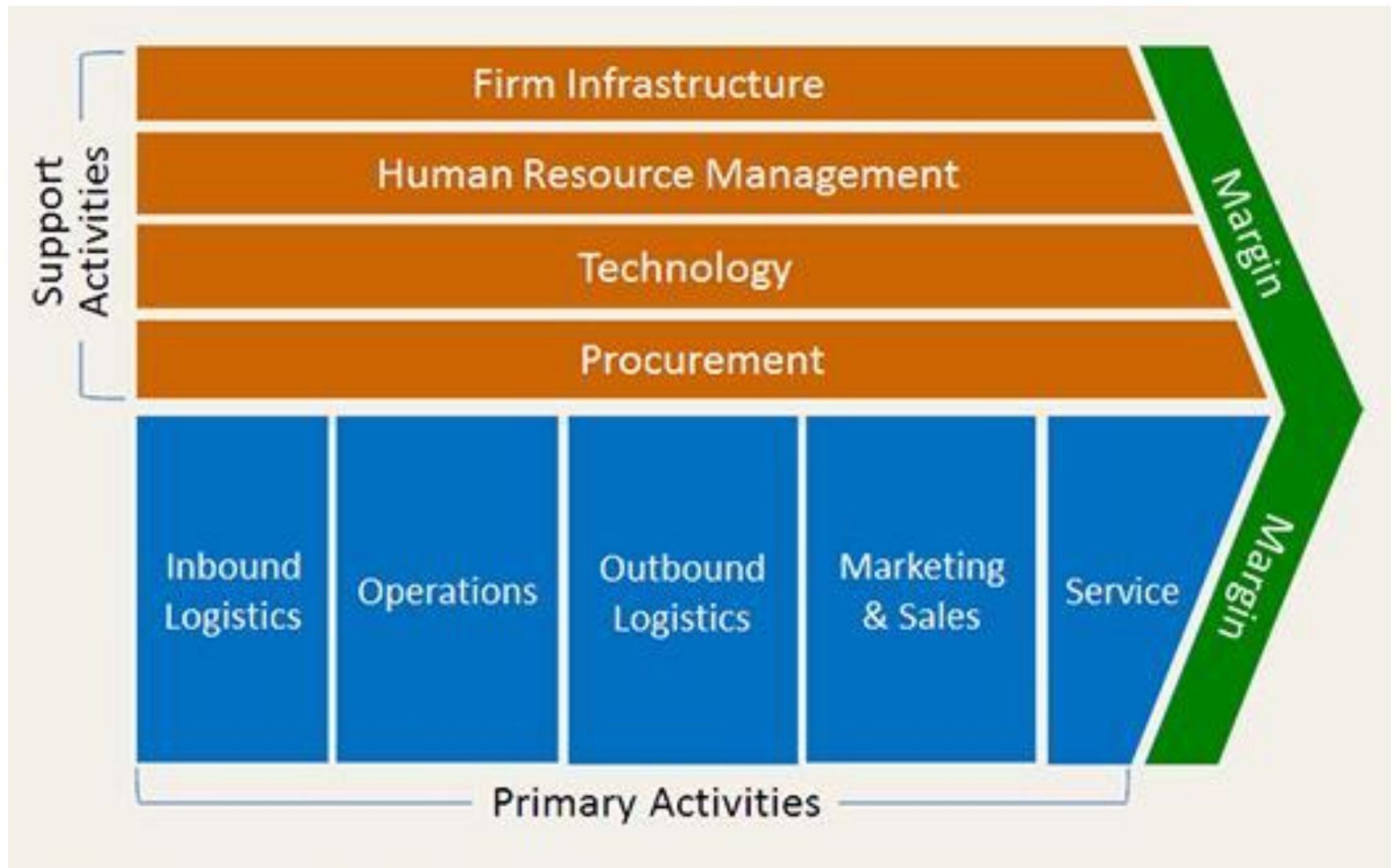
# Value Chain

## Value Chain

All the elements and processes that add value as raw materials are transformed into the final products made available to the ultimate customer



# Porter's Value Chain



# Outsourcing

## Outsourcing

Contracting out certain business functions or operations to other companies

## Offshoring

Transferring a part or all of a business function to a facility (a different part of the company or another company entirely) in another country

## Advantages

- Speed
- Flexibility
- Opportunities to access talents and technologies
- Cost reduction

## Disadvantages

- Lack of control
- Offshoring controversy

Trump: 'We can't continue to allow China to rape our country'



# The Offshoring Controversy

## Arguments for Offshoring

## Arguments Against or Concerns About Offshoring

Stakeholders who benefit

Argument

Stakeholders who suffer

Argument



Shareholders

**Responsibility to shareholder interests:**  
Companies that engage in offshoring say they have a duty to manage shareholder investments for maximum gain, so it would be irresponsible not to explore cost-saving opportunities such as offshoring.



Workers

**Loss of well-paid U.S. jobs:**  
Opponents of offshoring say that companies are selling out the U.S. middle class in pursuit of profits and pushing a trend that can only harm the country.



Consumers

**Lower prices for U.S. Consumers:**  
For goods in which labor represents a significant portion of production costs, dramatically lowering labor costs lets a company lower its prices to consumers.



Shareholders

**Hidden costs and risks:**  
Critics and some insiders say the real savings are not as great as proponents claim and that some companies fail to adequately analyze the costs and risks. Says J.Paul Dittman of the University of Tennessee, "Many firms are rethinking the mad rush to outsource . . . the long supply lines, incredibly volatile fuel costs, exchange rates, the geopolitical risks have all come home to roost."



Shareholders

**Lack of choice in competitive industries:**  
Given the pricing advantage that offshoring can give U.S. companies, as soon as one company in an industry does it, the others are put under pressure to lower their prices—and offshoring might be the only way for some to lower costs enough to do so.



Shareholders

**Business agility and responsiveness:**  
When companies rely on operations halfway around the world, marketplace trends and customer service matters.



Shareholders

**Support for local customers around the world:**  
Some companies say that as they expand into other countries, they have no choice but to hire overseas employees in order to support local customers.



Shareholders

**Knowledge transfer and theft risk:**  
By hiring other companies to perform technical and professional services, U.S. companies transfer important knowledge to these other countries—making them more competitive and potentially depleting the pools of expertise in the United States. Offshoring can also increase the risks of product piracy and theft of intellectual property.



U.S. economy

**U.S. competitiveness:**  
Proponents say that offshoring is crucial to the survival of many U.S. companies and that it saves other U.S. jobs by making U.S. companies more competitive in the global marketplace.



U.S. economy

# Supply Chain Management

## Supply Chain

A set of connected systems that coordinates the flow of goods and materials from suppliers all the way through to final customers

## Supply chain management (SCM)

The business procedures, policies, and computer systems that integrate the various elements of the supply chain into a cohesive system

## Goal

Getting the right materials at the right price in the right place at the right time for successful production



# Supply Chain Systems

## **Inventory**

Goods and materials kept in stock for production or sale

## **Inventory Control**

Determining the right quantities of supplies and products to have on hand and tracking where those items are

## **Procurement**

The acquisition of the raw materials, parts, components, supplies, and finished products required to produce goods and services

## **Lead Time**

A period the elapses between placing the supply order and receiving materials

# Production and Operations Management

## **Production and Operations Management**

Overseeing all the activities involved in producing goods and services

## **Productivity**

The efficiency with which an organization can convert inputs to outputs

## **Lean Systems**

Systems (in manufacturing and other functional areas) that maximize productivity by reducing waste and delays

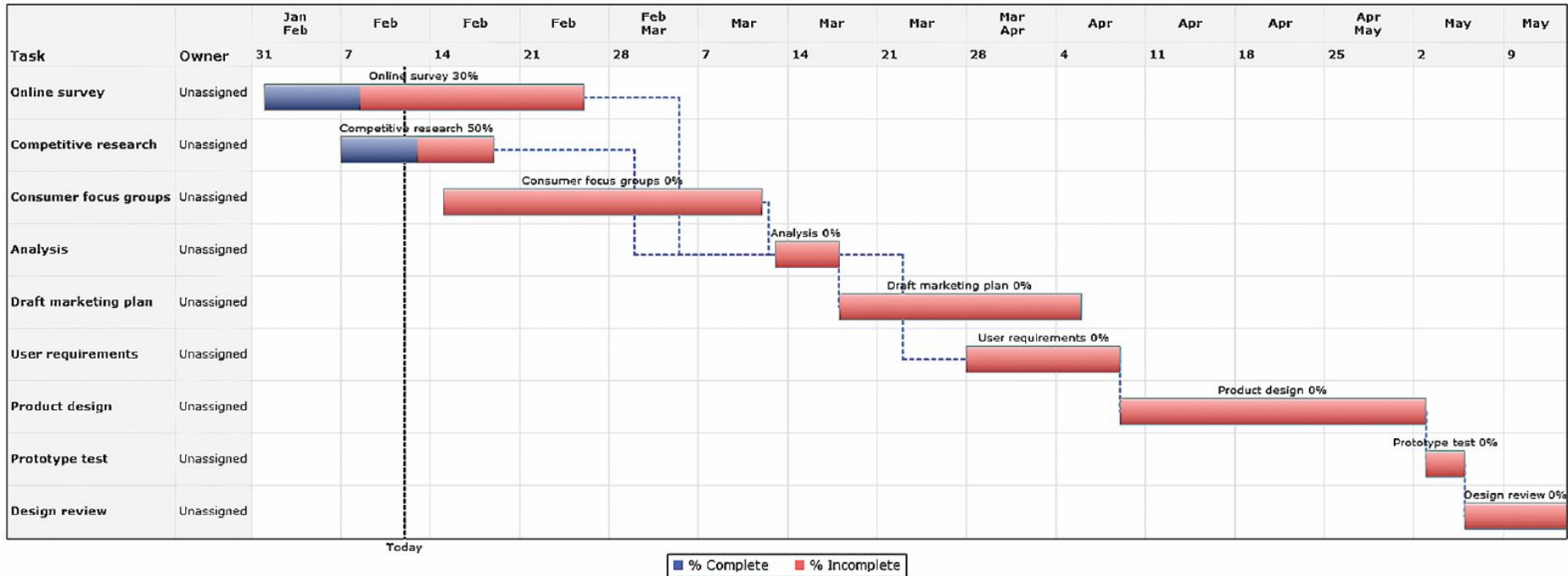
## **Just-in-Time (JIT)**

Inventory management in which goods and materials are delivered throughout the production process right before they are needed

JIT → Inventory = “0”

# Gantt Charts for Project Management

Open Tasks From 02/01/2011 - 05/13/2011



# Types of Production

## Mass Production

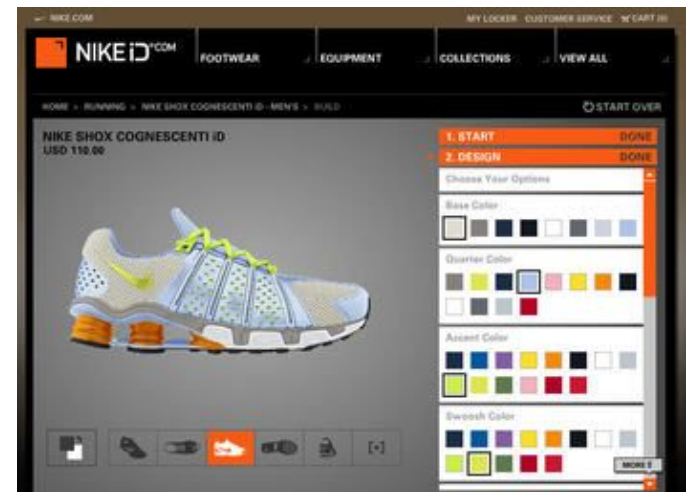
The creation of identical goods or services, usually in large quantities

## Customized Production

The creation of a unique good or service for each customer

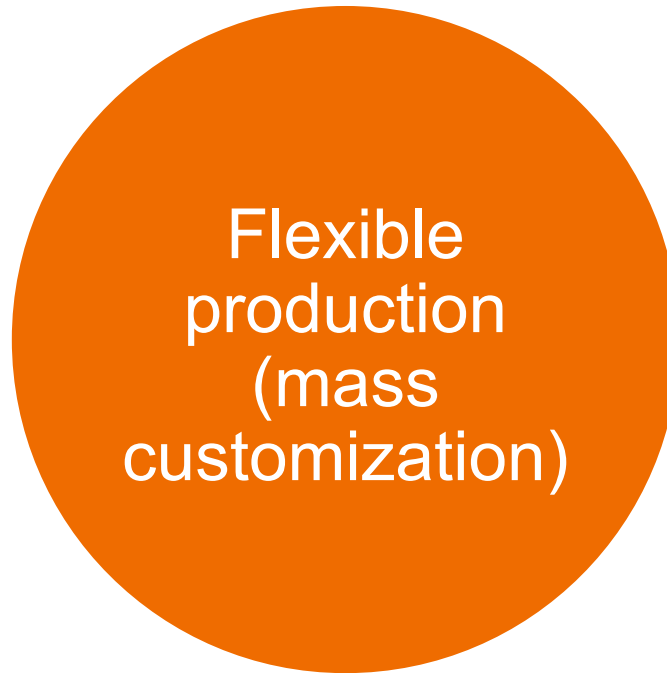
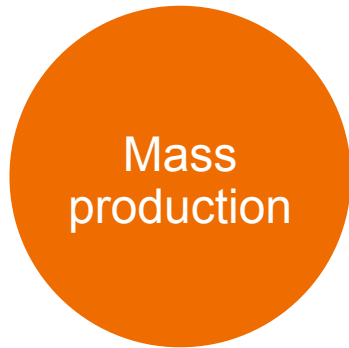
## Mass Customization

A manufacturing approach in which part of the product is mass produced and the remaining features are customized for each buyer



# Types of Production (cont'd)

Customized product



Postponing the task of differentiating a product for a specific customer until the latest possible point in the supply network

Standardize product