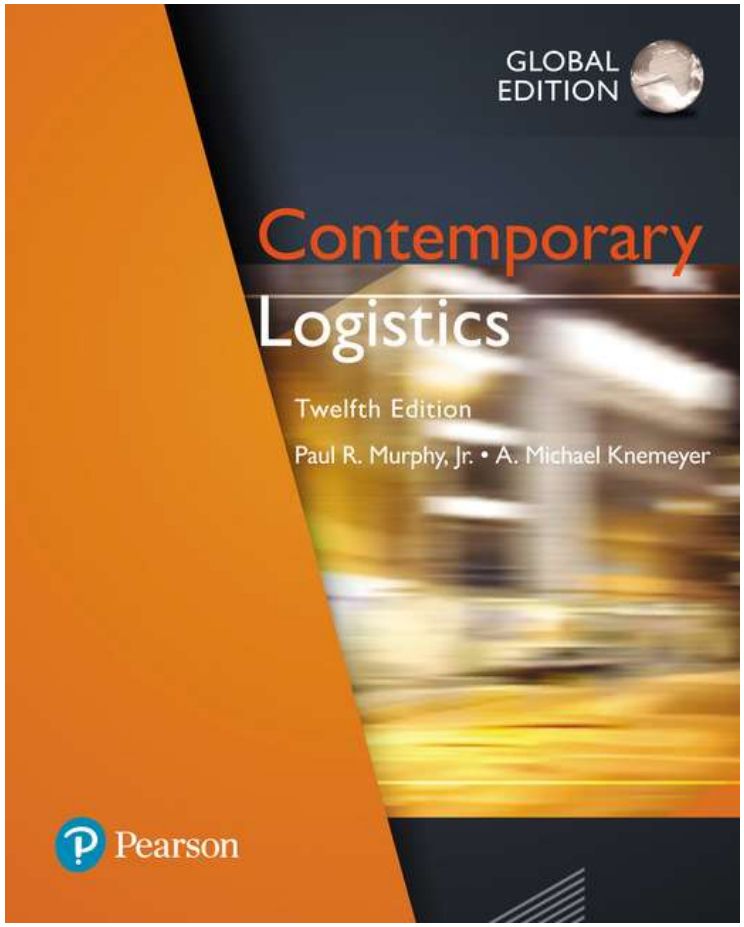
Contemporary Logistics

Twelfth Edition, Global Edition



Chapter 4

Organizational and Managerial Issues in Logistics

Practical Scenario

You are the Head of Logistics in a growing company.

How do you organize people, improve productivity, manage quality, reduce risk, and deal with returns?

Learning Objectives

4.1 To explain organizational structure for logistics

4.2 To compare traditional and modern organizational design for logistics

4.3 To identify productivity issues and improvement efforts in logistics

4.4 To discuss quality issues in logistics

4.5 To describe ways to manage theft and pilferage

4.6 To review the concept of logistics social responsibility

4.7 To articulate issues associated with reverse logistics

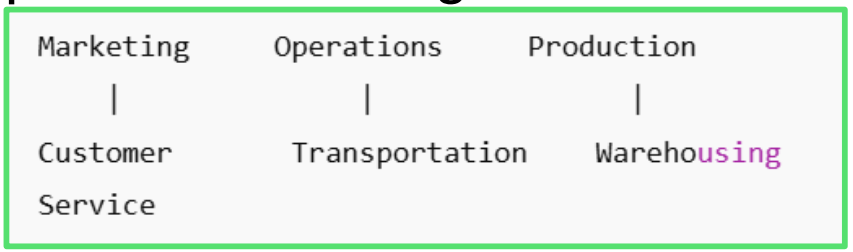
4.8 To report on programs designed to lessen the impact of terrorism on logistics systems

Organizing Logistics Within the Firm (1 of 8)

- Logistics organization: How a company arranges its people, roles, responsibilities, and decision-making to manage the flow of goods and information.
- Logistics organization in a firm depends on number of customers and their locations and the company size
- Two key organizational logistics topics
  - Organizational structure: *what tasks exist and who is responsible for them.*
    - focuses on how work roles and administrative mechanisms are allocated to integrate and control work.
  - Organizational design: *who has power and decision rights?*
    - detail reporting relationships in an organization.
    - who makes work-related decisions and the appropriate communication channels between workers and managers

Organizing Logistics Within the Firm (2 of 8)

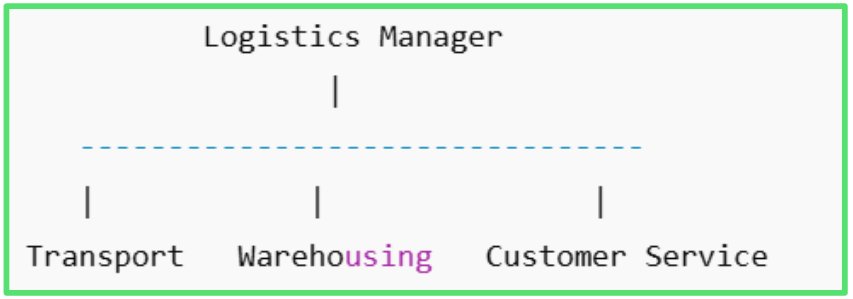
- Organizational structure for logistics focuses on work 'roles' are integrated and controlled
- Two basic structures include:
  - Fragmented logistics structure: Logistics activities are managed in multiple departments throughout an organization.



  - Unified logistics structure: Multiple logistics activities are combined into and managed as a single department

Fragmented:
- Conflicting goals
- Poor coordination

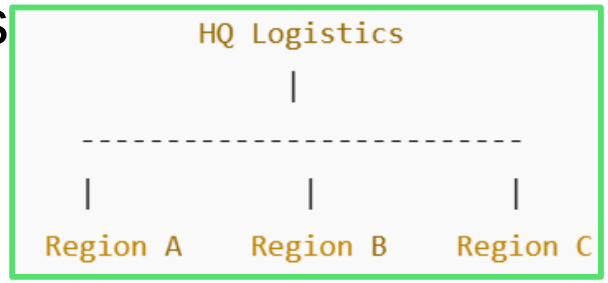
Unified:
- Shared goals
- Better coordination



Organizing Logistics Within the Firm (3 of 8)

Where logistics decisions are made?

- Organizational structure for logistics. Two basic structures for logistics department include:
  - Centralized logistics organization: Company maintains a single logistics department that administers the related activities for the entire company from the home office.
  - Decentralized logistics organization: Logistics-related decisions are made separately at the divisional or product group level and often in different geographic regions



Efficiency vs Customer responsiveness

Organizing Logistics Within the Firm (3 of 8)

Discussion:

Market Type	What it Means	Best Logistics Structure
Stable	Predictable demand	Centralized
Volatile	Unpredictable changes	Decentralized
Homogeneous	Similar customers	Centralized
Heterogeneous	Different customers	Decentralized

Would you centralize or decentralize logistics for an international e-commerce company? Why?

international e-commerce faces different customers and fast-changing demand, it needs centralized planning but local execution.
An international e-commerce company should adopt a hybrid logistics structure, centralizing strategic decisions to achieve efficiency while decentralizing operational decisions to ensure responsiveness to local market conditions.

Centralize at HQ: Logistics strategy, technology platforms, Global carrier contracts, Performance standards, inventory policies
Decentralize locally: Last-mile delivery decisions, Customer service responses, Local inventory adjustments, Handling returns

Organizing Logistics Within the Firm (4 of 8)

- Organizational structure for logistics: Job title or corporate rank (eg manager, director, vice president, chief ranks)
  - Leading-edge organizations tend to head the logistics department by senior-level personnel
  - Generally excluded from holding a “C-level” position

Discussion: Why do you think logistics is usually not a C-level position, despite its strategic importance?

- Three primary types of organizational design include:

Traditional

  - Hierarchical (functional): Top-down flow

Modern

  - Matrix: Cross-functional responsibilities
  - Network: Process philosophy focused on combining tasks into value-creating products and activities

Organizing Logistics Within the Firm (6 of 8)

- Organizational design for logistics: Network organizational design is manifested in terms of:

Relevancy	Responsiveness	Flexibility

  - Relevancy: How logistics decisions match current and future customer needs?
    - Refers to satisfying current and emerging customer needs
    - Facilitated by developing mutually beneficial relationships with key customers
    - The relationships should provide an understanding of customer needs and wants

Organizing Logistics Within the Firm (7 of 8)

- Responsiveness: *doing things quickly when conditions change*
  - Reflects the degree to which an organization can accommodate unique or unplanned customer requests
  - Achieved when appropriate decision makers are provided with both relevant information and the authority to address unique or unplanned requests.

Information + Authority → Responsiveness

Discussion: Why might a highly automated logistics system still be unresponsive?

- No decision authority
- Too many approvals

Organizing Logistics Within the Firm (8 of 8)

- Flexibility: Is an organization's ability to address unexpected operational situations
  - Predicated on avoiding early commitment to an irreversible course of action
  - Example: the postponement of assembly, labeling, and so on until exact customer requirements are known.

Discussion: Can logistics be efficient but not relevant? Give an example?

Efficient = low cost, fast, well-organized

Relevant = matches what the customer actually wants

Managerial Issues in Logistics (1 of 28)

Managerial issues in logistics are the ongoing challenges managers face once the structure is in place.

- Companies recognize that logistics systems must not only be organized, but they must also be managed:
  - Productivity
  - Quality
  - Risk
  - Sustainability
  - Complexity

Managerial Issues in Logistics (2 of 28)

If logistics costs increase but service stays the same, what managerial issue is this?

- Productivity:
  - Can be defined as the amount of output (work done) divided by the amount of input (labors)
  - Provides insight into the efficiency with which corporate resources are being **utilized**

Productivity tells us how well logistics resources are being used, but it does not tell us whether customers are satisfied.

Example: Warehouse A:10 workers1,000 orders/day

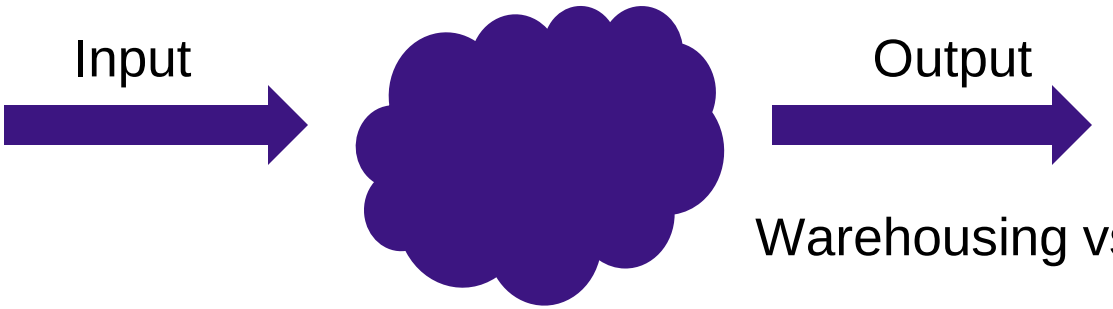
Productivity = 100 orders per worker

If the same 10 workers process 1,200 orders, productivity increases — even if cost stays the same.

Question: Can productivity increase while service quality decreases?

Managerial Issues in Logistics (3 of 28)

- Productivity
  - Three ways to improve productivity include:
    - Reduce the amount of input while holding output constant
    - Increase the amount of output while holding input constant
    - Increase output while decreasing input



Warehousing vs Transportation

Warehouses is about **labor efficiency**, while productivity in transportation is mainly about **asset utilization**.

Discussion : Which productivity improvement approach is most realistic in logistics operations, and why?

Managerial Issues in Logistics (4 of 28)

- Productivity
  - Labor productivity
    - Warehousing and transportation are heavily dependent on human labor
    - Human labor is an input (i.e., workers receive wages or salaries)
    - **Productivity** improvement efforts in logistics are often directed toward increasing the amount of output while holding input constant (workers resistant to suggestions regarding reduced wages or salaries)

Discussion:

Why do logistics firms prefer increasing output rather than reducing labor to improve productivity?"

Managerial Issues in Logistics (5 of 28)

- Productivity
  - **In asset productivity**, the concerns include:
    - Space utilization
      - Excess capacity (unused available space)
        - Can be unproductive as it may result in the purchase of additional equipment or facilities, which adds costs (input)
        - May not yield additional output resulting in a productivity decline
    - Improving the output from existing assets
      - Increases productivity as inputs remain constant, but output is increased

Logistics assets include:

- Warehouses
- Trucks
- Trailers
- Material-handling equipment

In warehousing, asset productivity is often measured through **space utilization**

Managerial Issues in Logistics (7 of 28)

- Quality
  - Logistics service quality
    - Relates to a firm's ability to deliver products, material, and services without defects or errors to both internal (production, sales) and external customers (end customers, retailers)[1]
    - Logistics quality means delivering the right product, in the right condition, at the right time, to the right place, consistently.
    - A logistics system can be productive but still deliver poor quality. Full trucks → late deliveries

Discussion: Which logistics quality failure annoys customers the most: late delivery or wrong delivery? Why?"

Managerial Issues in Logistics (8 of 28)

- Quality
  - Quality in logistics involves trade-offs
    - If inferior logistic service quality, customers may perceive lower value
    - If superior logistic service quality than expected or required, organization may be adding unnecessary cost
  - Organizations must try to match the quality levels of the logistic services they provide with the expectations of their customers and the landscape in which they operate

Discussion: Logistics quality must match customer expectations — not exceed or fall below them.

Managerial Issues in Logistics (9 of 28)

- Quality
  - Vendors are expected to have quality programs
  - Vendors can demonstrate commitment to quality to potential buyers through achieving and maintaining quality program certification
    - ISO (International Standards Organization) 9000 certification is an example of a quality program certification

Managerial Issues in Logistics (10 of 28)

- Quality
  - ISO 9000
    - Is a set of generic standards used to document, implement, and demonstrate quality management and assurance systems
    - Is applicable to both manufacturing and service firms
    - Standards are intended to help companies build quality into every core process in each department
- 9000 does not guarantee perfect quality — it guarantees **consistent processes.**
- To obtain ISO 9000 certification, organizations must document their processes, train employees, and demonstrate continuous improvement

Managerial Issues in Logistics (11 of 28)

- Quality: ISO 9000
  - Firms demonstrating commitment to quality through **training, reviews, and continuous improvement** achieve initial ISO 9000 certification
  - Once certification is obtained, audits are conducted annually, and organizations can be recertified every three years
  - **Certification is credited with**
    - an increase in customer service
    - improved order accuracy
    - enabling enhanced costs analysis

Managerial Issues in Logistics (12 of 28)

- Quality
  - Six Sigma
    - Is a quality-focused methodology that emphasizes the virtual **elimination of business errors**
    - Area covered under a normal curve is by six standard deviations is 99.999998 percent
    - Approach suggests that there will be 2 defects, deficiencies, or errors per million units
    - Can be applied to various logistics activities such as order packing

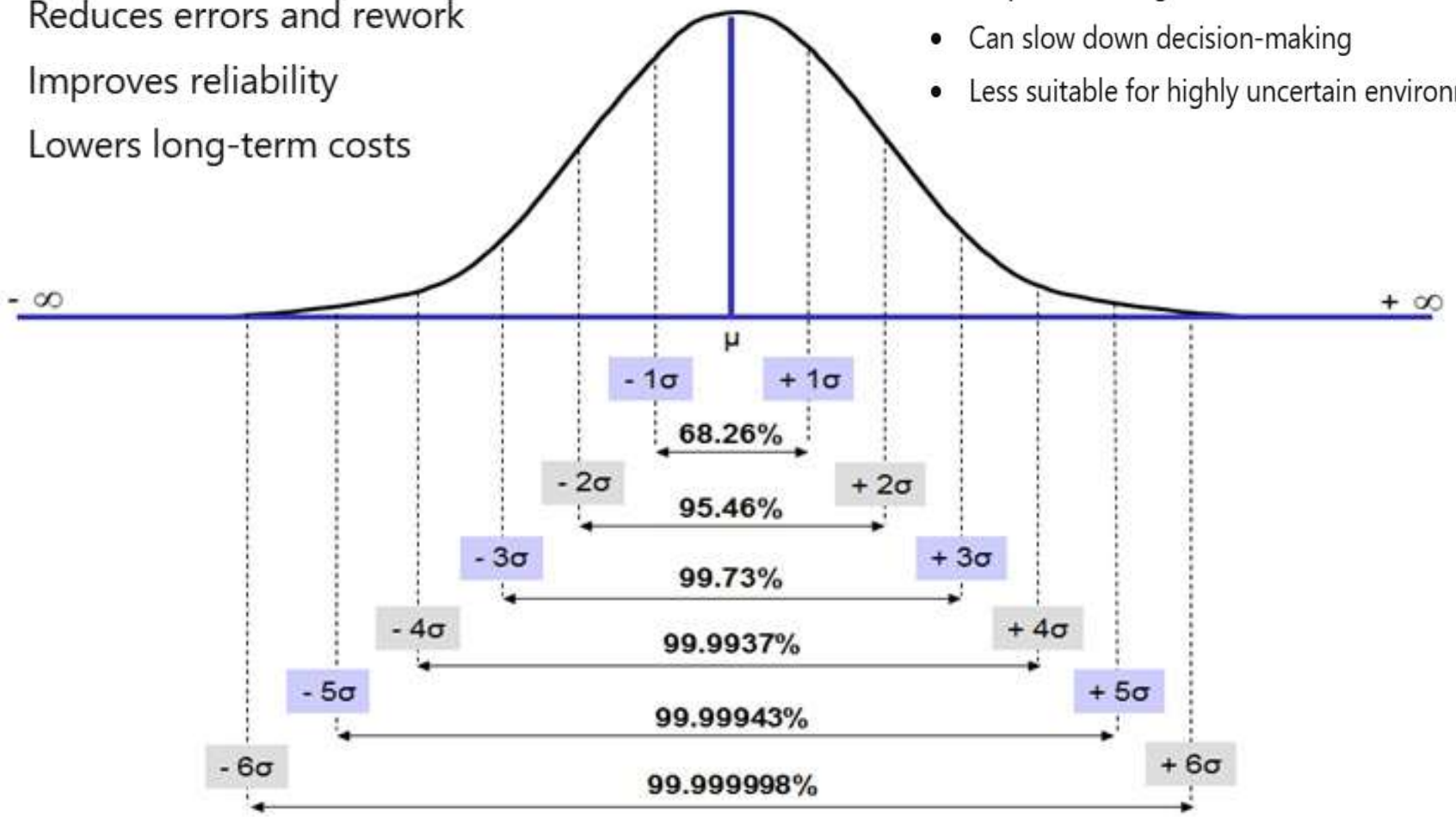
"ISO 9000 focuses on having consistent processes.
Six Sigma focuses on **eliminating errors within those processes.**"

Strengths

- Reduces errors and rework
- Improves reliability
- Lowers long-term costs

Limitations

- Requires training and investment
- Can slow down decision-making
- Less suitable for highly uncertain environments



Managerial Issues in Logistics (14 of 28)

- Lean → speed & waste reduction
- Six Sigma → accuracy & consistency

- Quality: Lean Six Sigma
  - Quality-focused approach that integrates **Six Sigma** with the **Lean principle**
  - Integrates goals and methods of these two approaches in pursuit of quality
  - Recognizes that firms cannot focus only on quality or speed
  - Emphasizes an organizational focus on improving quality as it relates to responsiveness

Lean (Speed) + Six Sigma (Accuracy)

↓

Lean Six Sigma

Managerial Issues in Logistics (13 of 28)

- Quality: Six Sigma
  - Benefits
    - Reduced costs
    - Reduced errors and waste
    - Reduced cycle time
  - Drawbacks
    - Cultural resistance
    - Investing required resources (both human and money)….. Training costs
    - Management commitment

Managerial Issues in Logistics (16 of 28)

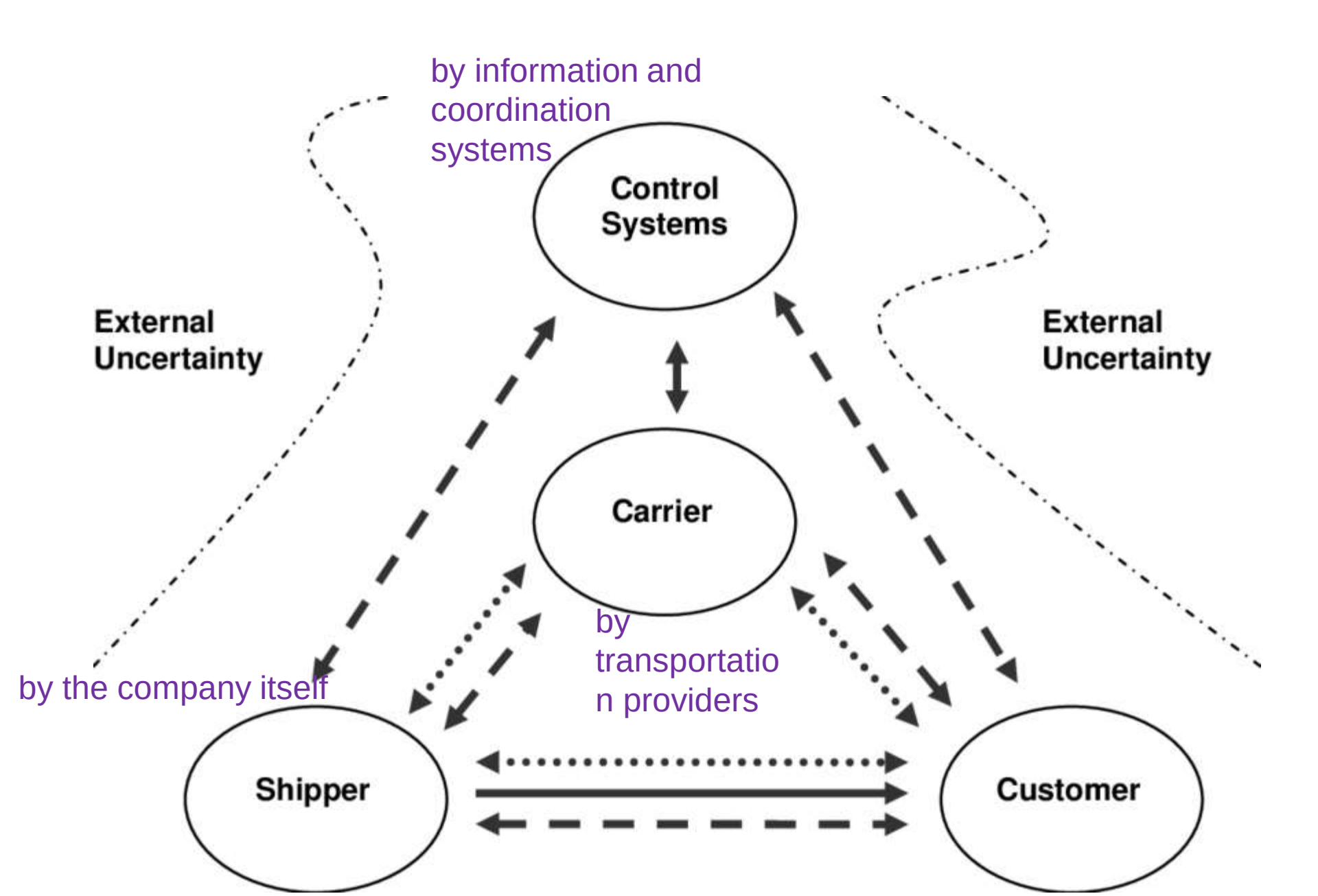
- Risk
  - Disruptions that could lead to interrupt the flow of goods and cause losses for firm.
  - **Types of Logistics Risk**
    - Regularly occurring (or operational) risks (e.g., variability in demand or potential for a damaged shipment (goods))
    - Catastrophic risks (e.g., earthquakes or terrorist attacks)

Discussion :
Is a damaged shipment always a transportation problem?”

Managerial Issues in Logistics (17 of 28)

- Risk
  - Logistics uncertainty **pyramid model**
    - Established to **identify sources of uncertainty** that can affect the risk exposure for logistics activities
    - Identifies several types of uncertainty including shipper, customer, carrier, control systems, and external

The logistics uncertainty pyramid shows different sources of uncertainty that affect logistics performance, arranged from internal to external.



Managerial Issues in Logistics (18 of 28)

- Risk
  - Terrorism is an example of catastrophic risk
  - Terrorism can be defined as “an illegal use of or threat of force or violence made by a group or individual against a person, a company, or someone’s property with a goal of menacing the target, often grounded in politics or ideology.”[2]

[2]Terrorism, *The American Heritage® Dictionary of the English Language*, 4th ed. (n.d.). Retrieved from Dictionary.com website: *http://dictionary.reference.com/browse/terrorism.*

Managerial Issues in Logistics (19 of 28)

- Risk
  - Creation of the Department of Homeland Security (DHS)
    - Federal agency
    - Goals
      - To prevent terrorist attacks in the U.S.
      - To reduce the vulnerability of the U.S. to terrorism

Managerial Issues in Logistics (20 of 28)

- Risk
  - The 22 separate government entities incorporated into DHS include:
    - Transportation Security Administration (TSA)
      - Transportation Worker Identification Credential (TWIC)
    - Customs and Border Protection (CBP)
      - Container Security Initiative (CSI)
      - Customs Trade Partnership Against Terrorism (C-TPAT)
      - Importer Security Filing (ISF) rule, also known as “10+2”

Table 4.1: Timeline for Presenting Electronic Advance Manifest Information

Inbound to the United States	
Mode	**Timeline**
Air and courier	Four hours prior to arrival in the United States, or "wheels up" from certain nearby airports
Rail	Two hours prior to arrival at a U.S. port of entry
Ocean vessel	24 hours prior to lading at foreign port
Truck	Free and Secure Trade (FAST): 30 minutes prior to arrival in the United States; non-FAST: one hour prior to arrival in the United States
Outbound from the United States	
Mode	**Timeline**
Air and courier	Two hours prior to scheduled departure from the United States
Rail	Two hours prior to the arrival of the train at the border
Ocean vessel	24 hours prior to departure from U.S. port where cargo is laden
Truck	One hour prior to the arrival of the truck at the border

Source: Erlinda Byrd, "Rules for Improving Cargo Security," *Customs and Border Protection Today,* March 2004.

Managerial Issues in Logistics (21 of 28)

- Risk
  - Theft is another logistics risk issue that confronts many managers
  - Theft (stealing) can be defined as the taking and removing of personal property with the intent to deprive the rightful owner of it.[3]

[3]www.m-w.com/dictionary

Managerial Issues in Logistics (22 of 28)

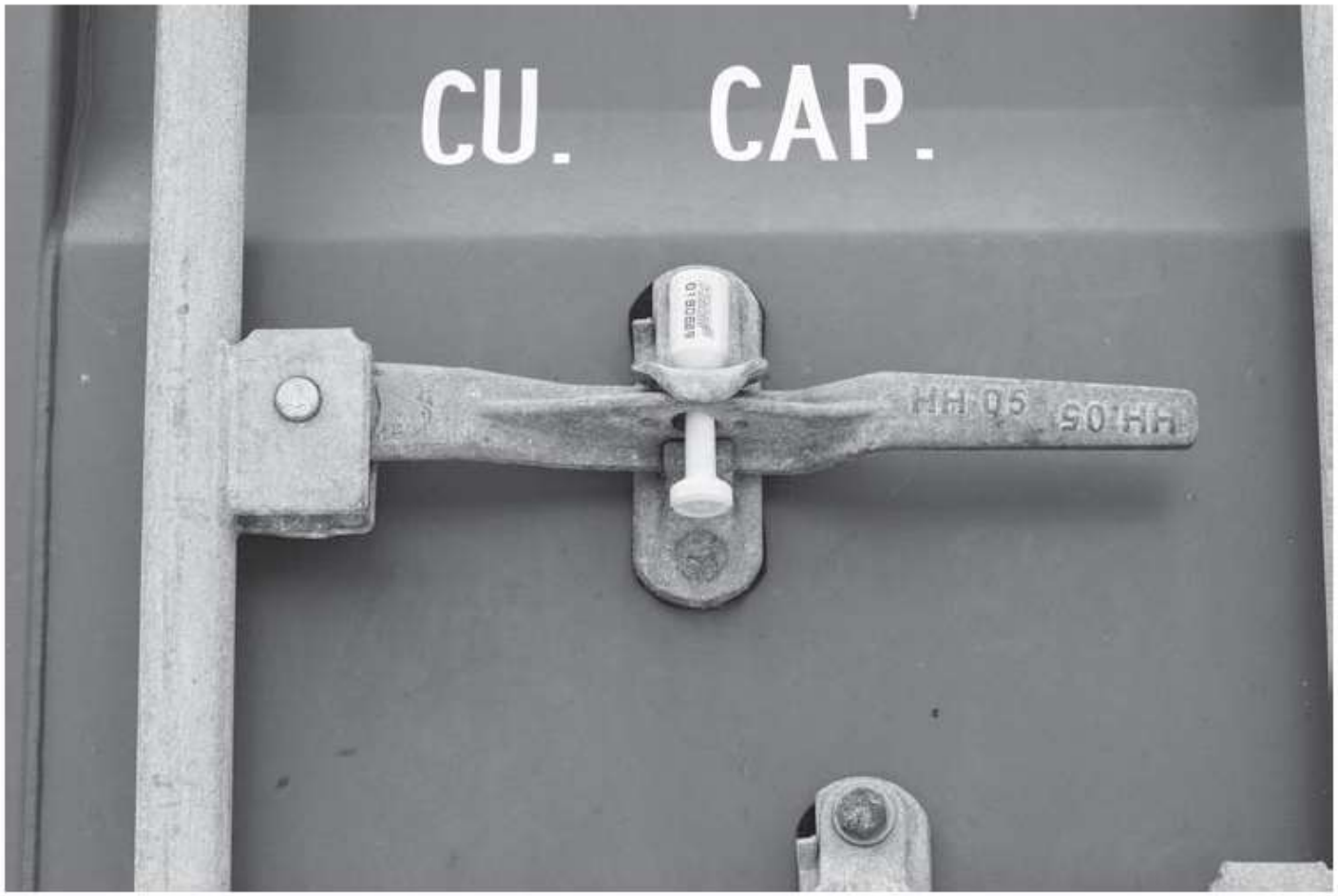
- Risk
  - Thoughts regarding theft
    - Insurance companies may reimburse for loss, but time and costs tend not to be covered
    - Theft results in the planned flow of goods being interrupted, which can lead to stockouts
    - Theft can factor into facility location decisions

Freight train looting

Managerial Issues in Logistics (23 of 28)

- Risk
  - Thoughts regarding pilferage (employee theft)
    - Transportation and warehousing operations are particularly vulnerable to pilferage
    - Managing pilferage begins with the hiring process
    - Zero-tolerance pilferage policy
    - Keep goods moving through the system
    - Recent increase in pirate attacks

Figure 4.1: Shipping Container Locking Handle with a Uniquely Numbered Customs Seal



Source: Philip Cridland/Alamy Stock Photo

Managerial Issues in Logistics (24 of 28)

- Sustainability
  - Logistics social responsibility
    - Corporate social responsibility issues that relate directly to logistics

Managerial Issues in Logistics (25 of 28)

- Sustainability
  - Logistics social responsibility
    - Potential dimensions include:
      - Environment
      - Ethics
      - Diversity
      - Safety
      - Philanthropy
      - Human rights
      - Others

Managerial Issues in Logistics (26 of 28)

- Sustainability
  - Reverse logistics
    - Is the process of managing return goods
    - Exceeds $100 billion in U.S. alone
    - Can be four to five times more expensive than forward logistics
    - Process can take 12 times as many steps as forward logistics

Managerial Issues in Logistics (27 of 28)

- Sustainability
  - Reverse logistics
    - Reverse logistics process focuses on:
      - Why products are returned
      - How to optimize reverse logistics
      - Whether reverse logistics should be managed internally or outsourced to a third party[4]

[4]John Paul Quinn, "Are There Ever Any Happy Returns?" *Logistics Management*, June 2005, 63–66.

Managerial Issues in Logistics (28 of 28)

- Complexity
  - Network complexity
    - Is the growing number of nodes and the associated changes to the links in logistics systems
  - Process complexity
    - Centers on the haphazard development of processes, additions and modifications to processes over time, and/or changing process requirements
  - Range complexity
    - Centers on the implications associated with the increasing number of products that most companies continue to face in an effort to differentiate themselves with their customers

Key Terms (1 of 3)

- “C-level” position
- Centralized logistics organization
- Container Security Initiative (CSI)
- Customs Trade Partnership Against Terrorism (C-TPAT)
- Decentralized logistics organization
- Excess capacity
- Fragmented logistics structure
- Importer Security Filing (ISF) rule

Key Terms (2 of 3)

- ISO 9000
- Lean Six Sigma
- Logistics service quality
- Logistics social responsibility
- Logistics uncertainty pyramid model
- Malcolm Baldrige National Quality Award
- Pilferage
- Productivity
- Reverse logistics
- Sharing economy

Key Terms (3 of 3)

- Six Sigma
- Tachograph
- Theft
- Transportation worker identification credential (TWIC)
- Unified logistics structure

Activity 1

Task 1

Select ONE peer-reviewed journal article that:

- Is **published in 2020 or later**
- Is **directly related** to the logistics topics studied this week (e.g. logistics organization, productivity, quality, risk, security, sustainability, reverse logistics)

- **Summarize the article** by clearly explaining (no more 2 pages):
  - The research problem or objective
  - The context (industry, country, or supply chain setting)
  - The key findings or arguments

Task2 (no more 2 pages**)**

Identify and critically review FIVE (5) discussions covered in this week's lectures, explaining their relevance to logistics management.