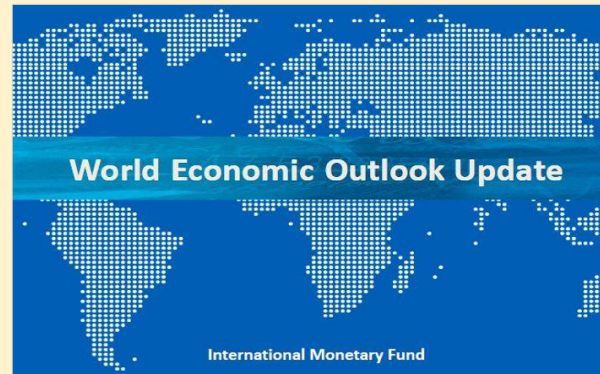


# Session 1- What is Supply Chain Management?



# Introduction to the Module

# Learning Outcomes

- Develop a systematic understanding of the relationship between strategic and operational supply chain management
- Demonstrate a critical awareness of the **implications and trade-offs of strategic decisions on supply chains** and how to manage associated risks
- Demonstrate systematic understanding of the relationship between **supply chain processes** and process improvement

# Let's Get to Know each other

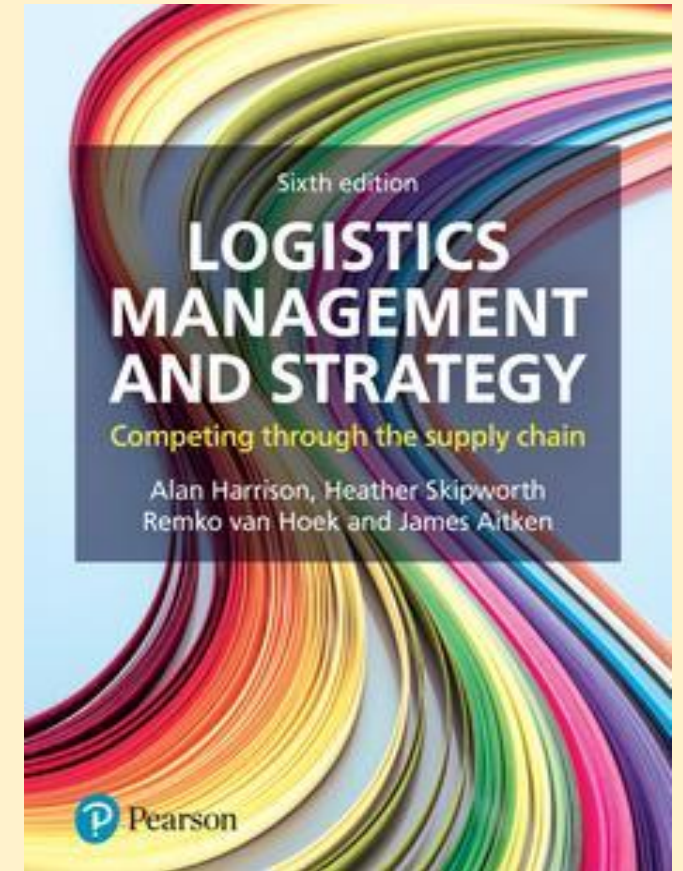
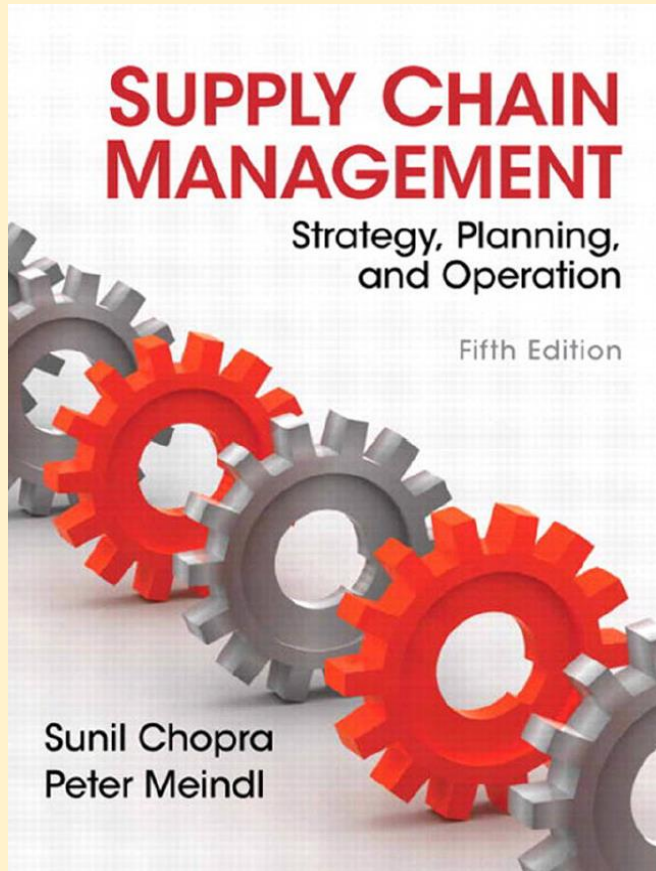
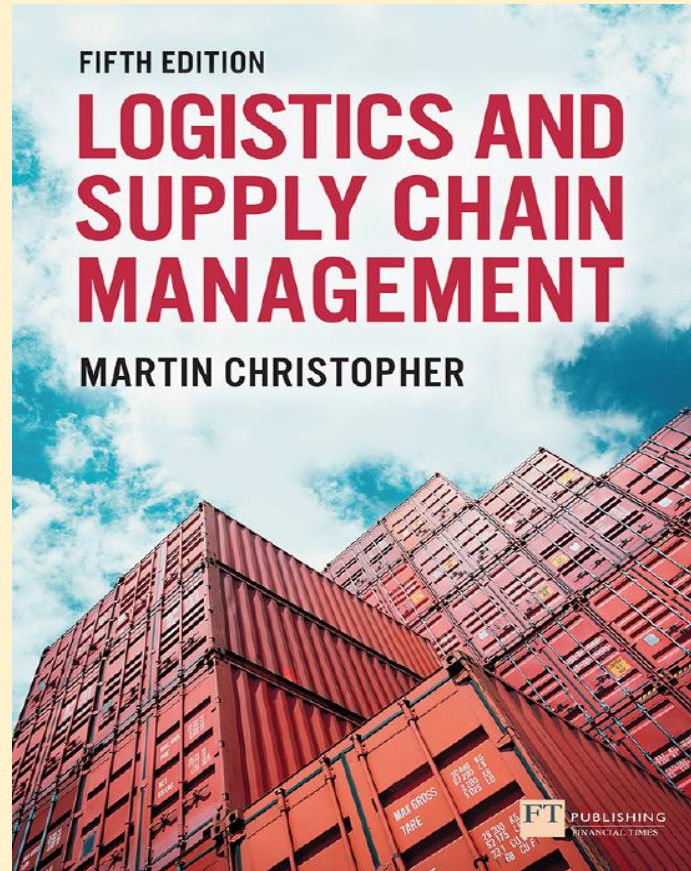
- Tells us about yourself:
- Current job- role
- Experience
- What do you know about the supply chain?

Assessment

# Assessment: Presentation and Assignment

- There are two parts:
  - 1. 010 Groupwork and individual business presentation video (40%)**
    - Based on the Beer Game simulation.
    - Develop a presentation for the Board of Directors to explain the strategy used and how it impacted on supply chain performance
  - 2. 011 Individual Coursework - 3000 words (60%)**
    - Using the case study you will develop a written consultancy report that provides an analysis of the issue that organization faces, to establish a global supply chain strategy and showing how they could be implemented through a project plan

# Key Text



# Global Outlook

- Current Global Supply Chain Crisis
- Future Implications for the Global Supply Chain



# How the Supply Chain Crisis Unfolded

**The pandemic sparked the problem.** The highly intricate and interconnected

**A reduction in shipping.** With fewer goods being made and fewer people with

**Demand for protective gear spiked.** In early 2020, the entire planet

**Then, a shipping container shortage.** Shipping containers [piled up in many](#)

**Demand for durable goods increased.** The pandemic shifted Americans'

**Strained supply chains.** Factory goods [swiftly overwhelmed U.S. ports.](#)

**Labor shortages.** Businesses across the economy, meanwhile, struggled to

**A lasting problem.** Businesses and consumers reacted to shortages by

ordering earlier and extra, especially ahead of the holidays, but that has

placed more strain on the system. These issues are a [key factor in rising](#)

[inflation](#) and are [likely to last through 2022 — if not longer.](#)

# Pandemic- Impact on Global Supply Chains

bbc.com/news/business-58266794

## Chip shortage: Toyota to cut global production by 40%

3 days ago | Comments



GETTY IMAGES

Toyota is to slash worldwide vehicle production by 40% in September

cnbc.com/2021/06/15/china-covid-cases-causing-higher-shipping-costs-delayed-goods.html

**BREAKING** Biden says U.S. has 'long way to go and a lot could still go wrong' in Afghanistan evacuation

MARKETS BUSINESS INVESTING TECH POLITICS CNBC TV WATCHLIST PRO

WORLD ECONOMY

## Another shipping crisis looms on Covid fears in southern China

PUBLISHED MON, JUN 14 2021-9:01 PM EDT | UPDATED MON, JUN 14 2021-9:21 PM EDT

Weizhen Tan @WEIZENT

SHARE f t in

**KEY POINTS**

- Businesses and consumers are bracing for another shipping crisis, as a virus outbreak in southern China disrupts port services and delays deliveries, threatening to drive up costs again.
- "The disruptions in Shenzhen and Guangzhou are absolutely massive. Alone, they would have an unprecedented supply chain impact," said Brian Glick, founder and CEO at supply chain integration platform Chain.io.
- Waiting times for vessels to berth at the Yantian International Container Terminal in Shenzhen have "skyrocketed" from an average waiting time of 0.5 days to 16 days, according to Shehrina Kamal at Everstream Analytics

# Apple's nightmare before Christmas: supply chain crisis delays gift deliveries

Nikkei Asia [Apple Inc](#) [+ Add to myFT](#)

## Apple's nightmare before Christmas: supply chain crisis delays gift deliveries

Two years of lockdowns, chip shortages and energy cuts have finally caught up with the iPhone maker



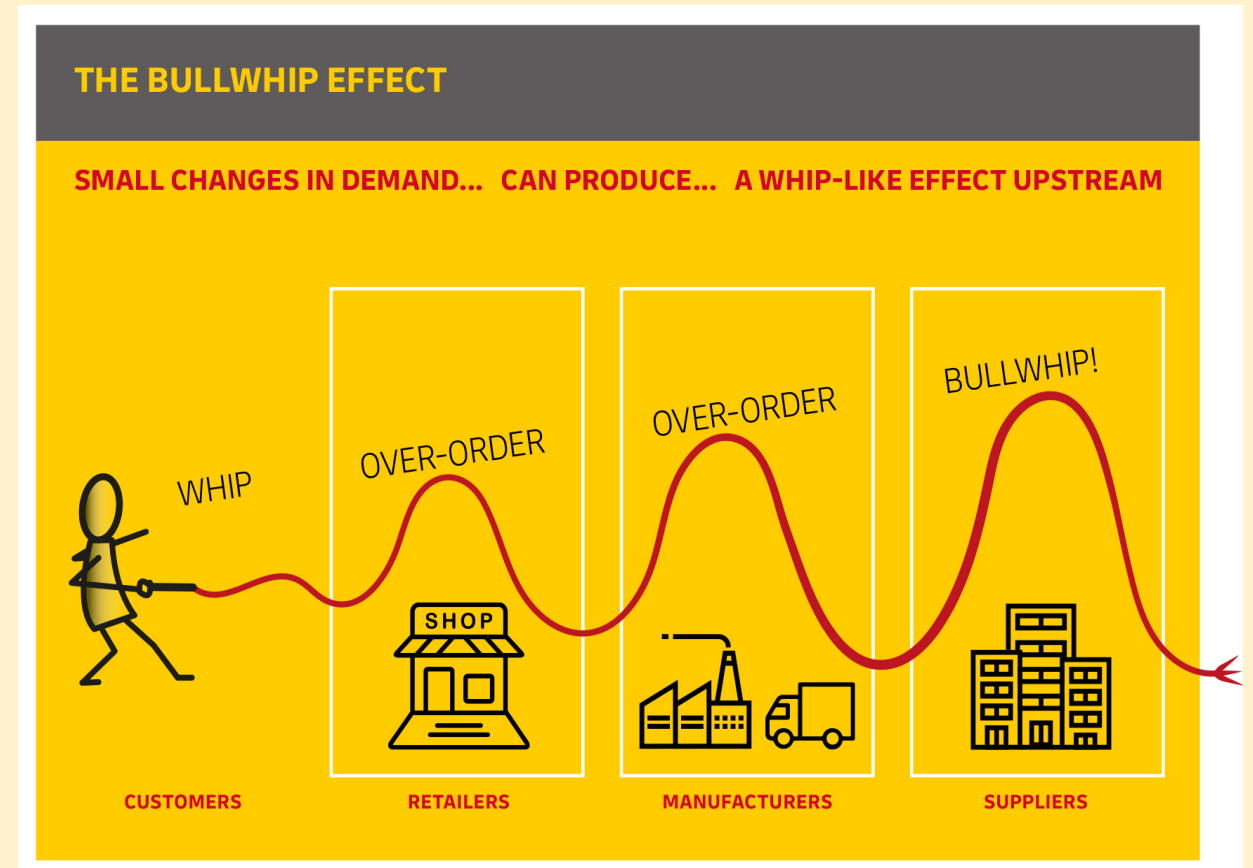
Pandemic lockdowns, energy restrictions and chip shortages across Asia have led to an ongoing supply chain crisis, causing delivery delays for many electronic gifts this festive season © Hiroko Oshima

# IMF World Economic Outlook October 2022



# Global Supply Chain Disruptions and Inflation

- Due to the global nature of supply chains, even a relatively small demand shock to a critical sector can propagate into a larger supply/demand disruption.
- This mismatch between supply and demand puts upward pressure on prices



# Is there an end in sight to supply chain disruption?

The Big Read Supply chains

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## Is there an end in sight to supply chain disruption?

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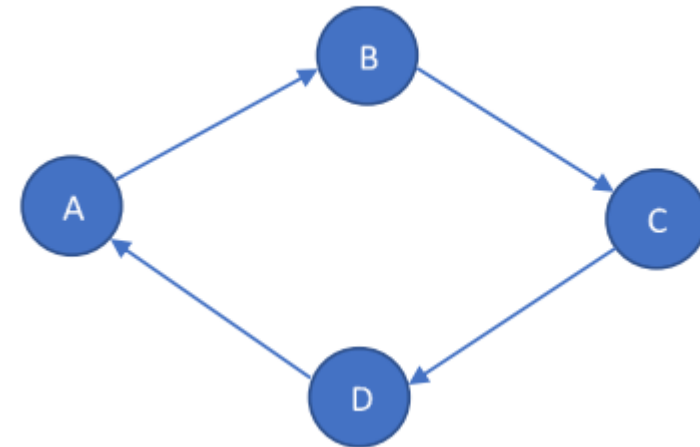
The delays created by the pandemic are likely to continue in 2022, say shipping industry experts



# Disruptions Occurring in Circular Flows of a Supply Chain Network

- Circular flows exist in real world supply chains but are often unknown or hidden to supply chain managers.
- These circular flows exist **when a Tier 2 supplier is also a Tier 3 (or higher) supplier** in the supply chain network.
- Additionally, a circular network can occur **when a supplier is also a customer** in the same network

**Circular linkages example in a supply chain network**



# Ripple effect and Supply Chain Disruption

- The ripple effect occurs when a disruption propagates through the SC,
- Rather than remaining localized or being contained to one part of the SC
- Cascades downstream and impacts the performance of the entire SC



# Policies to Boost Resilience: Insights from a Pandemic

- **Diversification:**

- Countries could diversify their suppliers of intermediate inputs internationally
- Sourcing them in more equal amounts across countries

- **Substitutability:**

- This refers to how easy it is in the production process for a producer to switch inputs from a supplier in one country with those from another country

[IMF World Economic Outlook April 2022- Global Trade and Value Chains in the Pandemic](#)

# Supply chains: companies shift from 'just in time' to 'just in case'

The Big Read **Supply chains**



+ Add to myFT

## Supply chains: companies shift from 'just in time' to 'just in case'

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Businesses exposed by pandemic shortages and shipping bottlenecks are being forced to rethink their operations

**Brooke Masters** in London and **Andrew Edgecliffe-Johnson** in New York DECEMBER 20  
2021

 103 

# Apple Finds new Contract Manufacturers

## Foxconn's biggest Chinese rival wins premium iPhone contract

Luxshare Precision has capitalised on outbreak of worker protests at Taiwanese competitor's factory



## Apple to start making MacBooks in Vietnam by mid-2023

iPhone maker aims to have 'out of China' production alternatives for crucial products



# Car Manufacturers diversify suppliers

Supply chains

[+ Add to myFT](#)

## Carmakers quietly cut ties with China in supply chain shake-up

---

International groups are sourcing parts from other markets as fears rise of breakdown in relations with Beijing



# TSMC diversification of its production facilities

## TSMC triples Arizona chip investment to \$40bn

US president hails Taiwanese chipmaker's second plant as boost for the country's manufacturing



## Chipmaker TSMC in talks with suppliers over first European plant

Company to send senior executives to Dresden early next year to discuss potential factory project in Germany

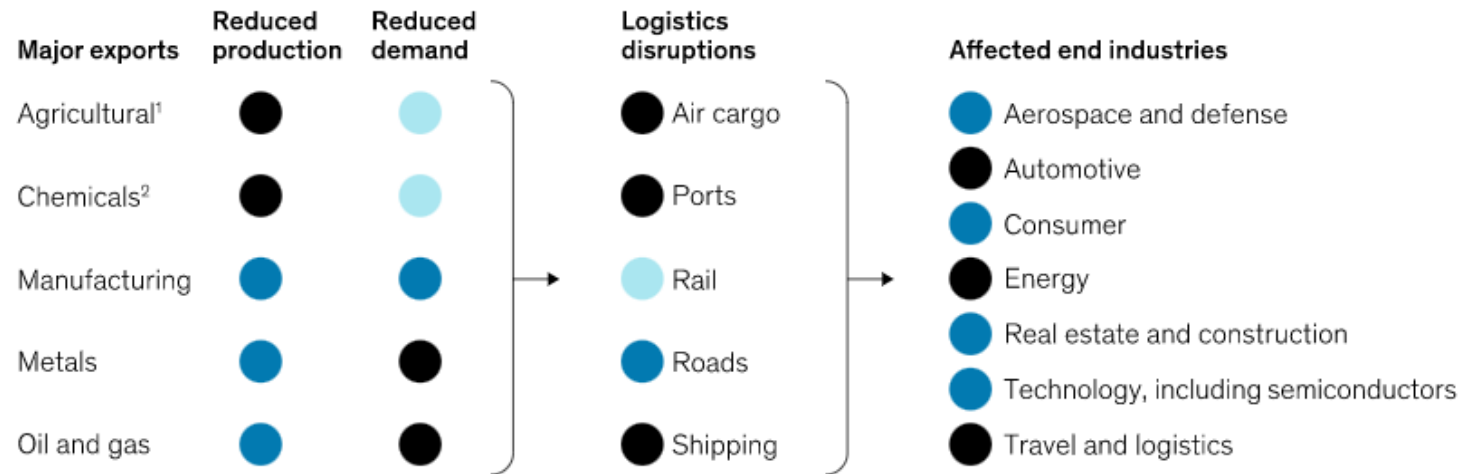


# How Ukraine war may impact supply chains

The Ukraine–Russia conflict is having a major impact on supply chains in five key sectors.

Major exports and potential impacts in Ukraine and Russia

- Large impact in most scenarios
- Impact in specific scenarios or regions
- Low impact in most scenarios



<sup>1</sup>Only agricultural production, ie, crops.

<sup>2</sup>Includes agricultural chemicals and fertilizer inputs.

Source: McKinsey Resilient Operations Center

McKinsey  
& Company

# Recovery time

## Recovery time by scenario:

supply chain disruptions could take up to 24 months to ease in a protracted scenario, versus approximately 12 months in the ongoing impact scenario.

### Disruption

#### Logistics disruption



#### Materials shortages



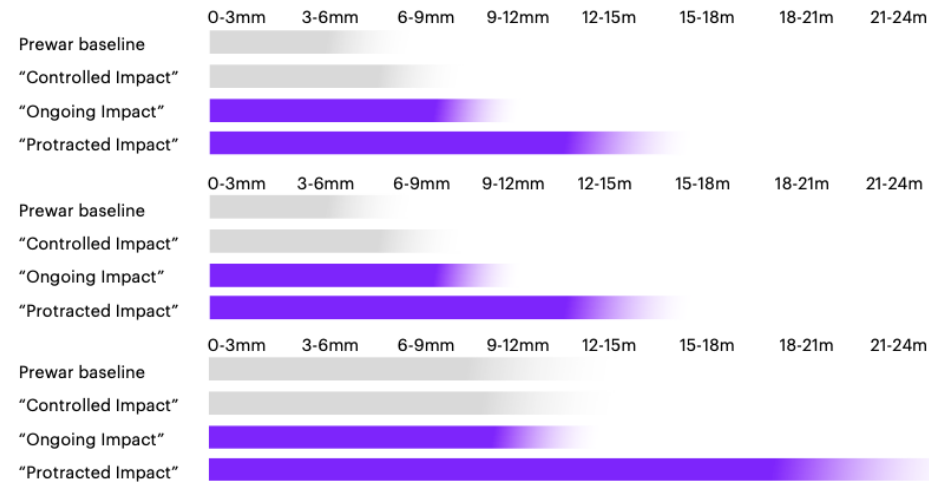
#### Energy prices



#### Labour and skill shortages



### Recovery time



- Labor and skills shortages will remain a long-term, structural issue for European economies across all scenarios.
- That said, these labor shortages will be rather less acute over the next 18 months in the "protracted impact" scenario, given the weaker outlook for economic activity.



# PWC The Long View 2050- Before Pandemic Forecasts

[www.pwc.com](http://www.pwc.com)

The World in 2050

***The Long View***  
How will the global  
economic order change  
by 2050?



# Activity: What are the Challenges for SC in 2023 in the context of a Changing World Economic Order?



- Identify some challenges
- Discuss how these challenges are impacting your organizations

What is SCM?

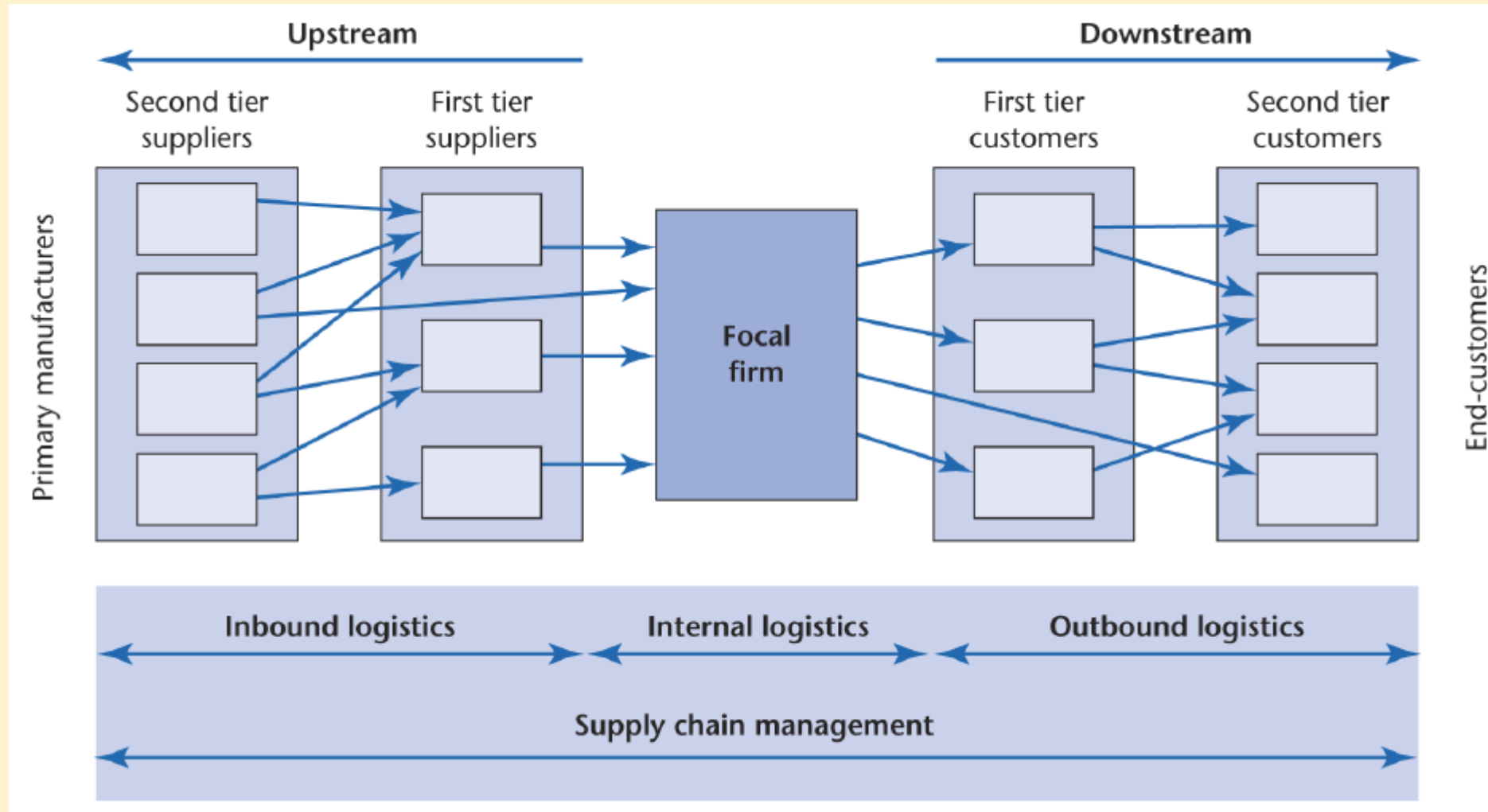
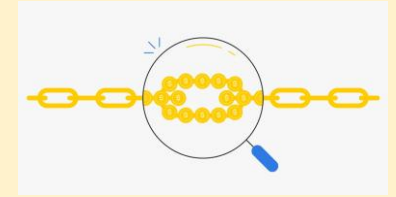
# What is a Supply Chain?

- “The management of **upstream** and **downstream relationships** with suppliers and customers in order to deliver **superior customer value at less cost**.....” (Christopher, 2016, pp. 3)
- “A **network** of connected and interdependent organisations mutually and co-operatively **working together** to control manage and improve the **flow of materials and information** from suppliers to end users.” (Christopher, 2016, pp. 3)

# What is a Supply Chain?

- **Customer** is an integral part of the supply chain
- Includes movement of products from suppliers to manufacturers to distributors and information, funds, and products in both directions
- May be more accurate to use the term “supply network” or “supply web”
- Typical supply chain stages: **customers, retailers, distributors, manufacturers, suppliers**
- All stages may not be present in all supply chains (e.g., no retailer or distributor for Dell)

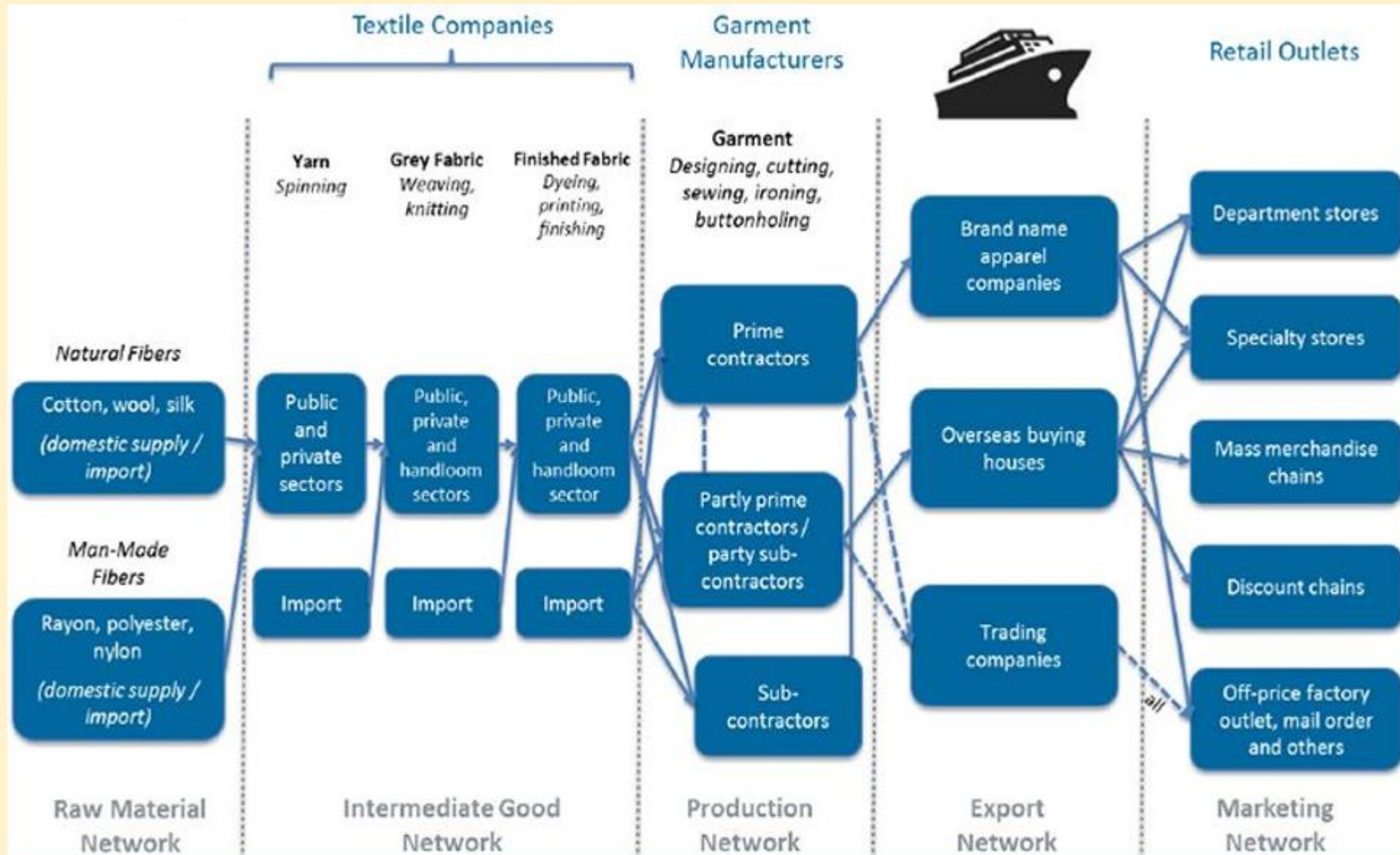
# Supply Chains only as strong as the weakest link



# Supply Network

- The supply chain is tiered, in that inbound and outbound can be organized into groups of partners:
- **Purchasing and supply:** dealing with a focal firm's immediate suppliers (upstream).
- **Physical distribution:** the task of distributing products to tier 1 customer (downstream).
- **Inbound logistics:** links between the focal firm and its upstream suppliers.
- **Internal logistics:** planning and control of material flow within the boundaries of the focal firm.
- **Outbound logistics:** links between the focal firm and its downstream customers.

# Typical Supply Chain- Apparel



# Supply Chain Operations Reference Model (SCOR)





# A Behind the Scenes Look at Starbucks Global Supply Chain



<https://www.youtube.com/watch?v=EIYNhGbOTOQ>

# Discussion

- Using the Apple iPhone:
- Let's Discuss the **Typical Supply chain for the iPhone**
- Use the **SCOR model**
  - **Source**- where/who do they source parts from
  - **Make**- where do they assemble the final product
  - **Warehousing**- where are the warehouses located
  - **Distribution**- what channels are used to get the product to the customer

# i Phone X

## PARTS AND PROFITS

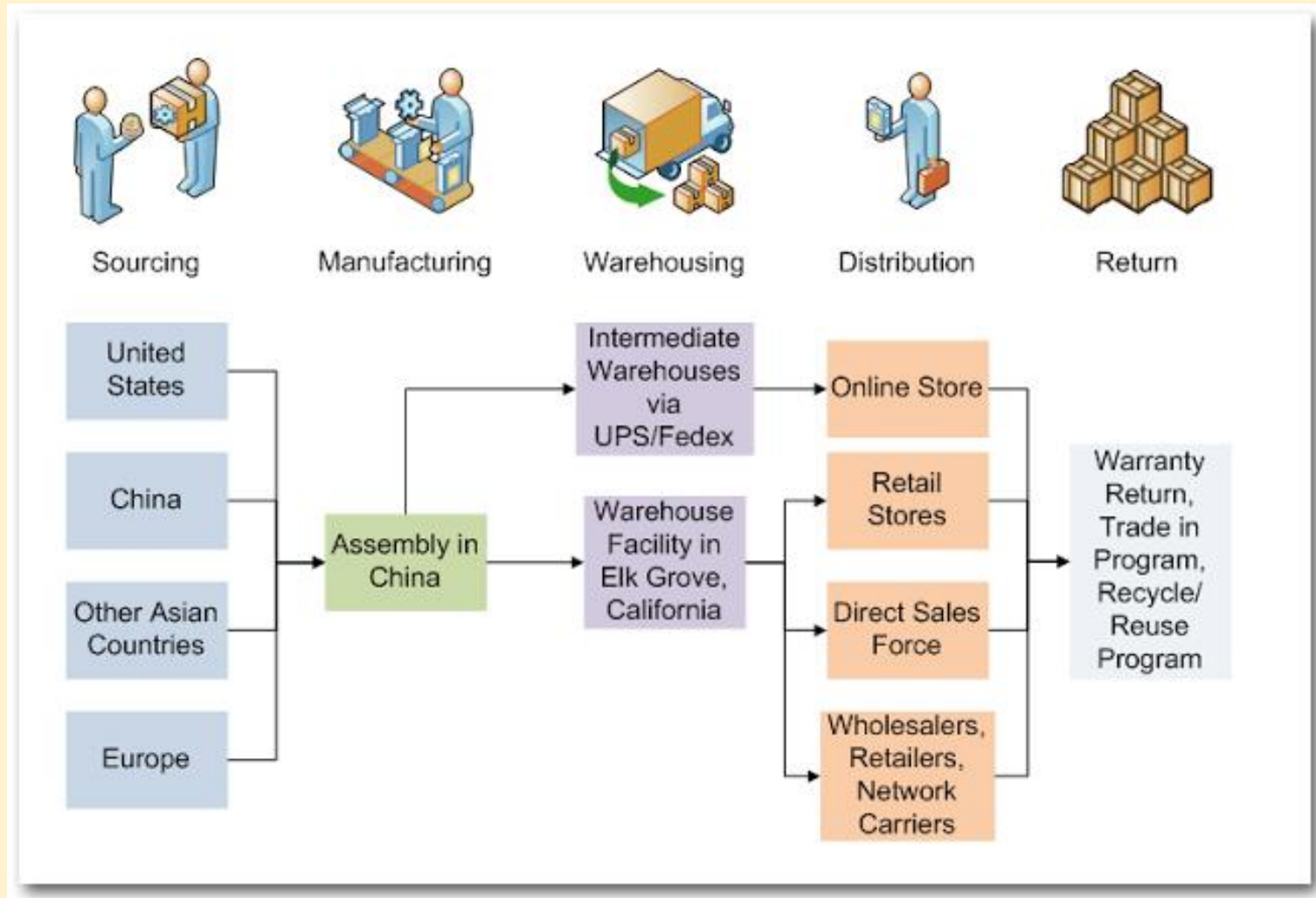
Key suppliers for the iPhone X

T Taiwan U U.S. S South Korea C China J Japan A Austria H Hong Kong Sw Switzerland



Sources: Companies, Bernstein Research

# Apple's Supply Chain



[https://www.supplychain247.com/photos/is\\_apples\\_supply\\_chain\\_really\\_the\\_no\\_1\\_a\\_case\\_study/1](https://www.supplychain247.com/photos/is_apples_supply_chain_really_the_no_1_a_case_study/1)

# Supply chain management Defined

(CSCMP 2022)

- Encompasses the **planning and management of all activities** involved in:
  - sourcing and procurement,
  - conversion, and
  - all logistics management activities.
- Importantly, it also includes **coordination and collaboration** with:
  - channel partners, which can be suppliers, intermediaries, third party service providers, and
  - customers.
- In essence, supply chain management **integrates supply and demand management** within and across companies.

# Objective of a Supply Chain

# The Objective of a Supply Chain

- Maximize overall value created

*Supply Chain Surplus*

*= Customer Value – Supply Chain Cost*

# Customer Value Ratio

- Christopher (2016) cites the Customer Value ratio (Johansson et al, 1993).
- Customer Value =

The functionality, performance and technical specification of the offer.

The availability, support and commitment provided to the customer.

$$\frac{\text{Quality} \times \text{Service}}{\text{Cost} \times \text{Time}}$$

The customer's transaction costs including price and lifecycle costs.

The time taken to respond to customer requirements.



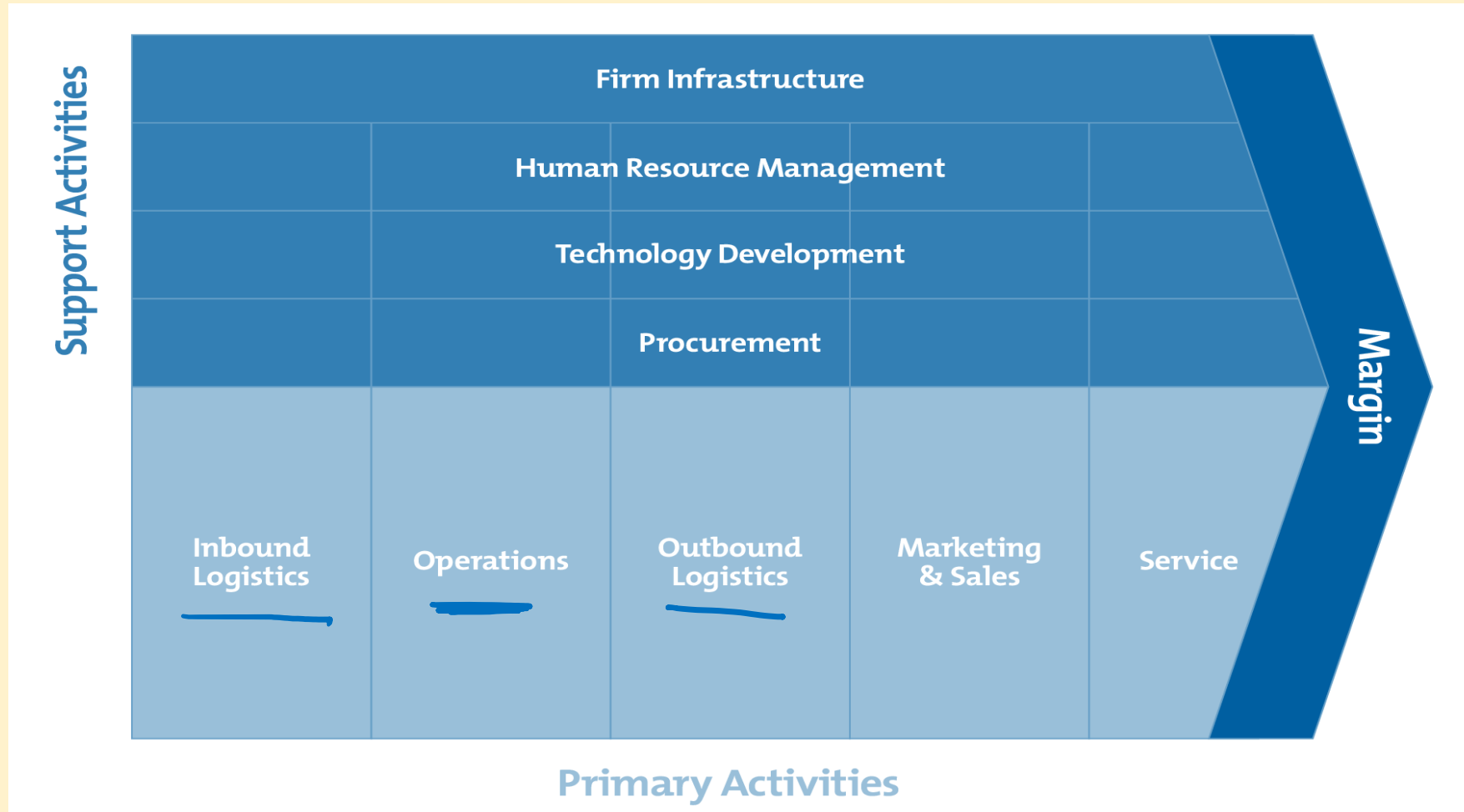
# So What is Value?

- Today's customers demand:
  - High quality products
  - Quick response times
  - Excellent service
  - Low prices
- Combined – these result in VALUE being created

# How to add a margin of Value?

- Customers don't buy products, they buy benefits'
- To increase value, an organisation must do one or more of the following:
  - Increase benefits without increasing price
  - Decrease price without decreasing benefits
  - Increase benefits whilst reducing price
- **Margin= Value Created– Cost of Creating that Value**

# Value Chain Model



# Primary Activities

- **Inbound logistics**

- Receiving raw materials and/or partly finished goods; storing them; and transferring them to the manufacturing section

- **Operations**

- Producing finished goods from raw materials and/or partly finished goods

- **Outbound logistics**

- Storing finished goods and then distributing them to customers

- **Marketing and sales**

- Promoting the firm's products; soliciting orders from prospective customers

- **After-sales service**

- Maintaining the value of the product to the customer after it has been delivered

# Support Activities

- **Firm infrastructure**

- General management; accounting and finance; legal department; health and safety; etc.

- **Human Resource Management**

- Recruiting; training and developing; appraising; career planning; etc.

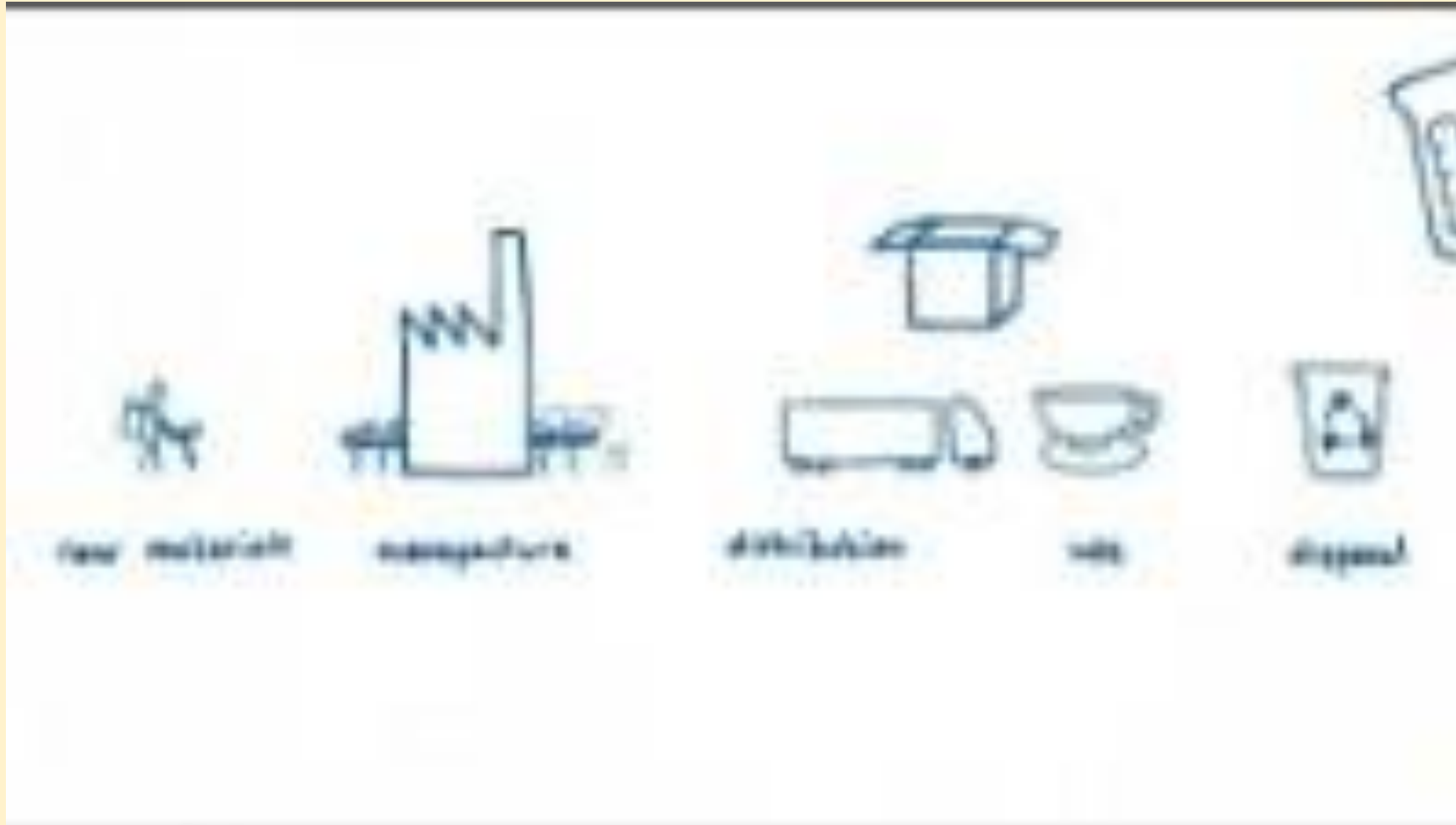
- **Technology development**

- Research and development, relating to both products and processes

- **Procurement**

- Acquiring the goods and services that the firm needs in order to operate effectively; applicable to both primary and support activities

# Sustainability at Unilever - The Value Chain



<https://www.youtube.com/watch?v=cpYhgqPRivw>

# Supply Chain Costs

- Customer the only source of revenue
- **Sources of cost** include:
  - flows of information,
  - products, or funds between stages of the supply chain
- Effective supply chain management is the management of flows between and among supply chain players to maximize total supply chain surplus

# Supply Chain Costs

- Example: a customer purchases a wireless router from Best Buy for \$60 (revenue)
- Supply chain incurs costs (information, storage, transportation, components, assembly, etc.)
- Difference between \$60 and the sum of all of these costs is the supply chain profit
- Supply chain profitability is total profit to be shared across all stages of the supply chain
- Success should be measured by total supply chain profitability, not profits at an individual stage



# Group Activity-

## Supply chain Surplus- Bottle Water

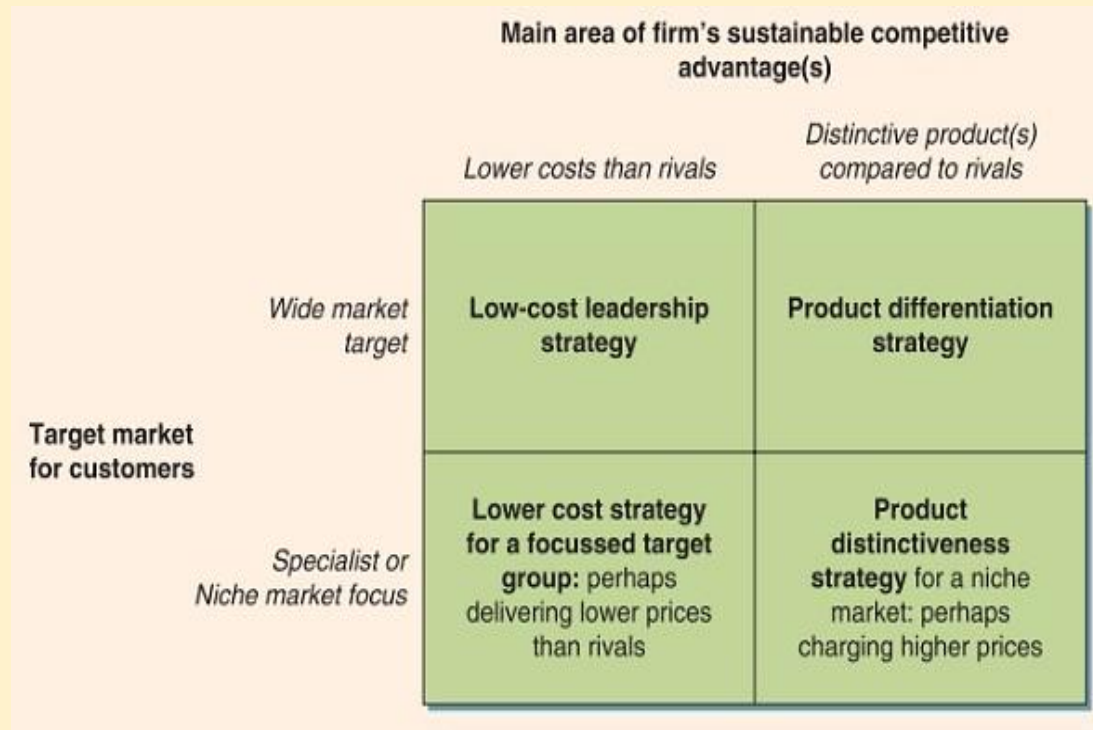
- **Make a list of Supply chain costs** incurred to deliver to customer:
  - information, storage, transportation, components, assembly, etc
  - Think of the Value Chain Activities
  - Think of the Supply Network
  - What do you think is the SC cost of a 250 ml bottle of water?
- Journey of the Bottle Water



# Supply Chain and Competitive Advantage

# Effective logistics and supply chain management → Major source of competitive advantage

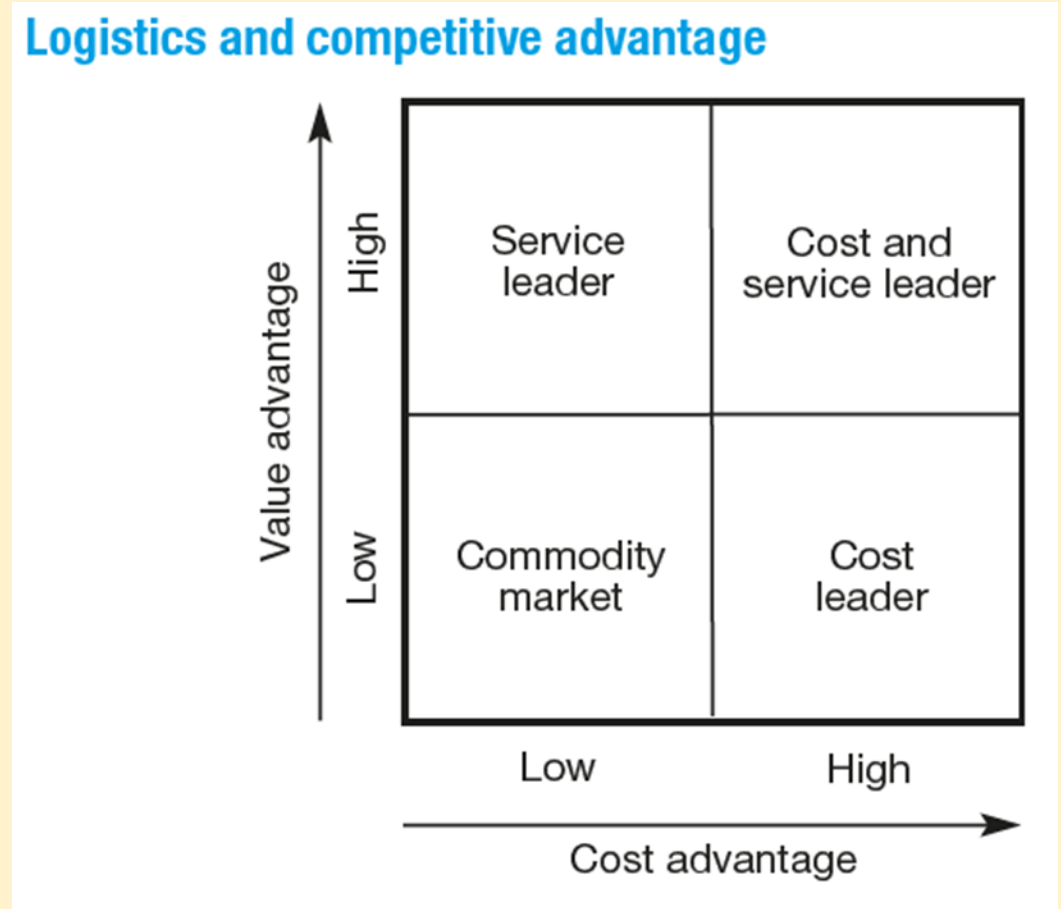
## Porter's Generic Strategies



# Logistics and Competitive Advantage

Christopher (2015)

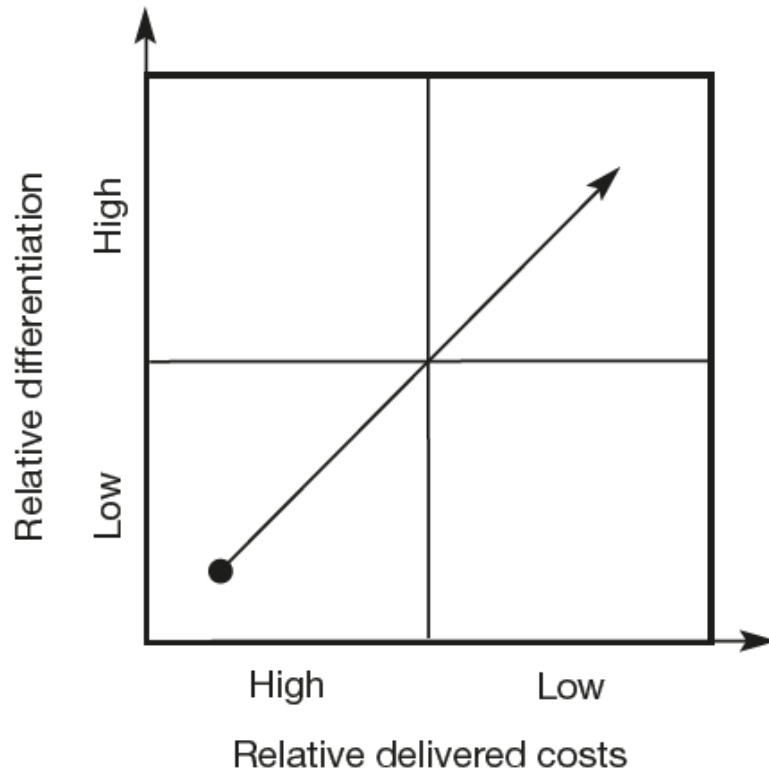
- The most profitable competitor in any industry sector tends to be the:
  - lowest-cost producer or
  - the supplier providing a product with the greatest perceived differentiated values.
- Put very simply, successful companies either have:
  - a **cost advantage** or
  - **value advantage**,



Source: Christopher (2016)

# So what is the Challenge?

## The challenge to logistics and supply chain management



- Those organizations that will be the leaders in the markets of the future will be those that have sought and achieved the twin peaks of excellence they have gained both:
  - **cost leadership and**
  - **service leadership**

Source: Christopher (2016)

# How Amazon Delivers Packages So Fast



<https://www.youtube.com/watch?v=91jKeKuUaDM>

# Masters of Supply Chain

# Gartner 2022 Supply Chain Top 25

Rank/Company	Rank/Company
1. Cisco Systems	14. Walmart
2. Schneider Electric	15. HP Inc.
3. Colgate-Palmolive	16. Diageo
4. Johnson & Johnson	17. Dell Technologies
5. PepsiCo	18. Inditex
6. Pfizer	19. BMW
7. Intel	20. AbbVie
8. Nestlé	21. Siemens
9. Lenovo	22. AstraZeneca
10. Microsoft	23. General Mills
11. L'Oréal	24. British American Tobacco
12. The Coca-Cola Company	25. Alibaba
13. Nike	

[gartner.com](https://www.gartner.com)

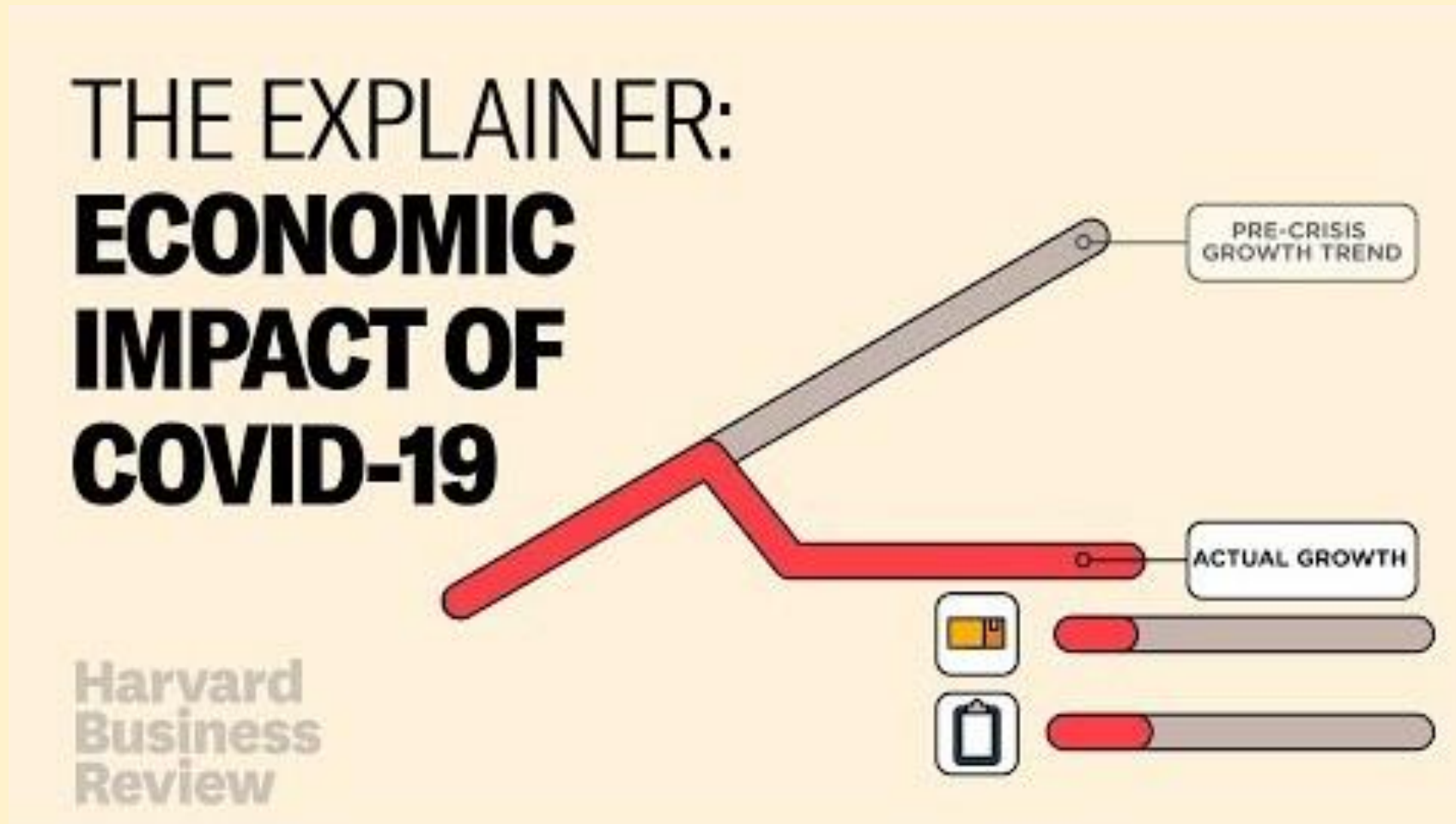
Source: Gartner  
© 2022 Gartner, Inc. and/or its affiliates. All rights reserved. PR\_1819304

**Gartner**

- What have these companies done differently?
- Can these be grouped into these areas?
  - Quality
  - Service
  - Cost
  - Time



# Harvard Business Review: Impact of Covid 19

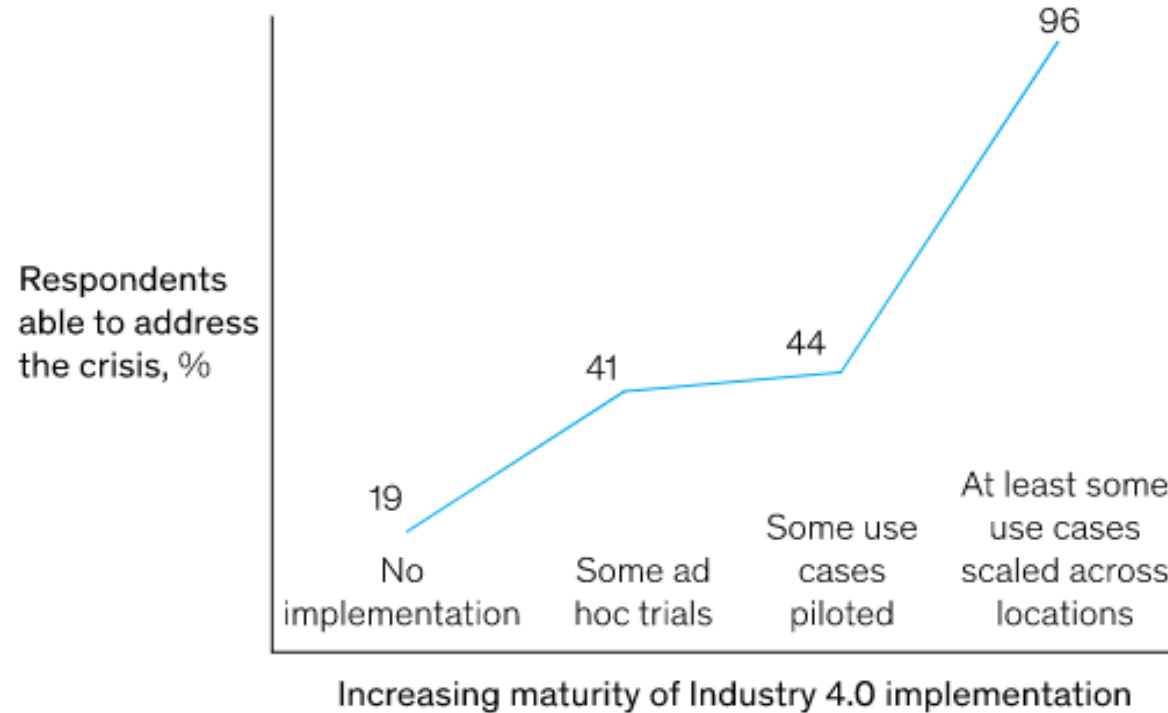


<https://www.youtube.com/watch?v=RK2IfGPSq00>

# Current Implications on SCM

- **Scenario planning** is crucial for recovery
- Leading companies are defining scenarios to **predict how markets will recover**
- With a focus on accelerating competitiveness in the recovery curve,
- While also building in **risk-mitigation strategies**
- Leaders need an **agile, or adaptive, strategy** that allows the supply chain organization to sense and respond to changes in the business context as they happen.
- They also need to **think long term and forecast for the upturn.**

## Companies whose Industry 4.0 implementation is more mature reported a stronger ability to respond to the COVID-19 crisis.



## How has your perception of Industry 4.0's value changed since the pandemic?

Respondents, %

Industry 4.0 is more valuable

65

Industry 4.0's value is unchanged

23

Industry 4.0 is less valuable

12

# How UPS Is Using Big Data To Transform Package Deliveries | NetNet | CNBC



[https://www.youtube.com/watch?v=PSNlr1EMu\\_I](https://www.youtube.com/watch?v=PSNlr1EMu_I)

# Guiding Principles for Supply Chain Manager

- Manage the 4R's (Christopher 2016)

## Responsiveness

ability to respond to customers' requirements- Agility

---

- Customers want shorter lead times, they are also looking for flexibility
- Must be much more demand-driven than forecast-driven

## Reliability

consistently supply the right product at the required time

---

- Achieved through re-engineering the process
- Reducing process variability

## Resilience

cope with unexpected disturbances

---

- Managing the critical nodes and links of a supply chain
- Importance of strategic inventory
- Selective use of spare capacity

## Relationships

management of relationships across complex networks of companies

---

- Seeking mutually beneficial, long-term relationships with suppliers
- Search for win-win solutions based upon mutuality and trust
- Integrate planning of production and deliveries