



Gies Business

BADM 567: Process Management

Module 4: Supply Chain Management

Gopesh Anand

Today's Session

SCM Issues in the News

Outsourcing and Vertical Integration

Bergerac Systems: The Challenge of
Backward Integration

Managing Supply Chain Risk

Triple Threat: Covid, Conflict, Climate



<https://news.un.org/en/story/2022/07/1122112>

https://youtu.be/pwafOKQ_szQ

Memory-Chip Makers Face a Prolonged Price Slump

I



By Jiyoung Sohn, Jan. 30, 2023

<https://www.wsj.com/articles/memory-chip-makers-face-a-prolonged-price-slump-11675081634?mod=djemalertNEWS>

Whole Foods Asks Suppliers to Lower Prices

I



By Jaewon Kang, Jan. 31, 2023

<https://www.wsj.com/articles/whole-foods-asks-suppliers-to-lower-prices-as-costs-ebb-11675115155?mod=djemalertNEWS>



Relevant Book

Arriving Today: From Factory to Front Door -- Why Everything Has Changed About How and What We Buy

by Christopher Mims

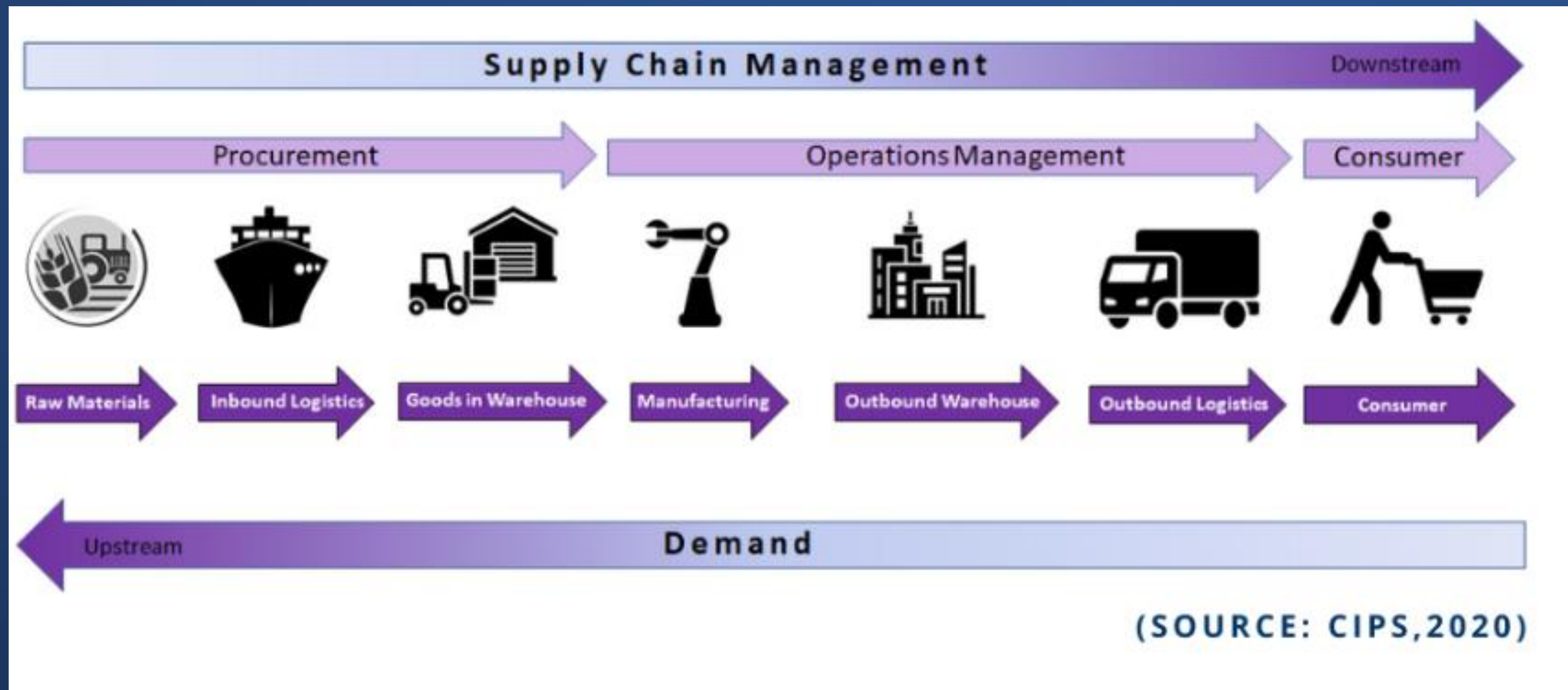


Documentary

Why Global Supply Chains May Never Be the Same

Released March 23, 2022

Supply Chain



Outsourcing

Passing on an organizational activity completely or partially to an external supplier

Outsourcing can be offshore or onshore

Barthélemy, J. (2003), "The seven deadly sins of outsourcing", *Academy of Management Executive*, Vol. 17 No. 2, pp. 87-100

Gottfredson, M., Puryear, R. and Phillips, S. (2005), "Strategic sourcing: from periphery to the core", *Harvard Business Review*, Vol. 83 No. 2, pp. 132-139.

Venkatraman, N. V. (2004), "Offshoring without guilt", *MIT Sloan Management Review*, Vol. 45 No. 3, pp. 14-16

Gray, J. V., Skowronski, K., Esenduran, G., & Johnny Rungtusanatham, M. (2013). The reshoring phenomenon: what supply chain academics ought to know and should do. *Journal of Supply Chain Management*, 49(2), 27-33.

Harrigan, K. R. (1986). Matching vertical integration strategies to competitive conditions. *Strategic Management Journal*, 7(6), 535-555.

Vertical Integration

Bringing in, part of the supply chain, into your own company

Forward integration

Bringing into the company, activities from lower levels of the supply chain.

Example: Amazon using its own trucks instead of UPS

Backward integration

Bringing into the company, activities from upper levels of the supply chain.

Example: Netflix producing its own movies

Bergerac Systems

The Challenge of Backward Integration



Poll Question #1 - True/False

Bergerac's customers are mainly laboratories that do testing for veterinary clinics.

How is this relevant?

Related Recent News: Handheld Ultrasound

Sound Technologies and GE HealthCare
Announce Collaboration to Bring Vscan Air to
Veterinary Practices Across the United States

January 26, 2023



Thank you, Christine Liautaud, for sending this story

<https://investor.gehealthcare.com/news-releases/news-release-details/sound-technologies-and-ge-healthcare-announce-collaboration>

<https://soundvet.com/ultrasound/vscan-air/>

Nature of Bergerac's Products



Ultimate Customers: Pet Owners

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Zefir

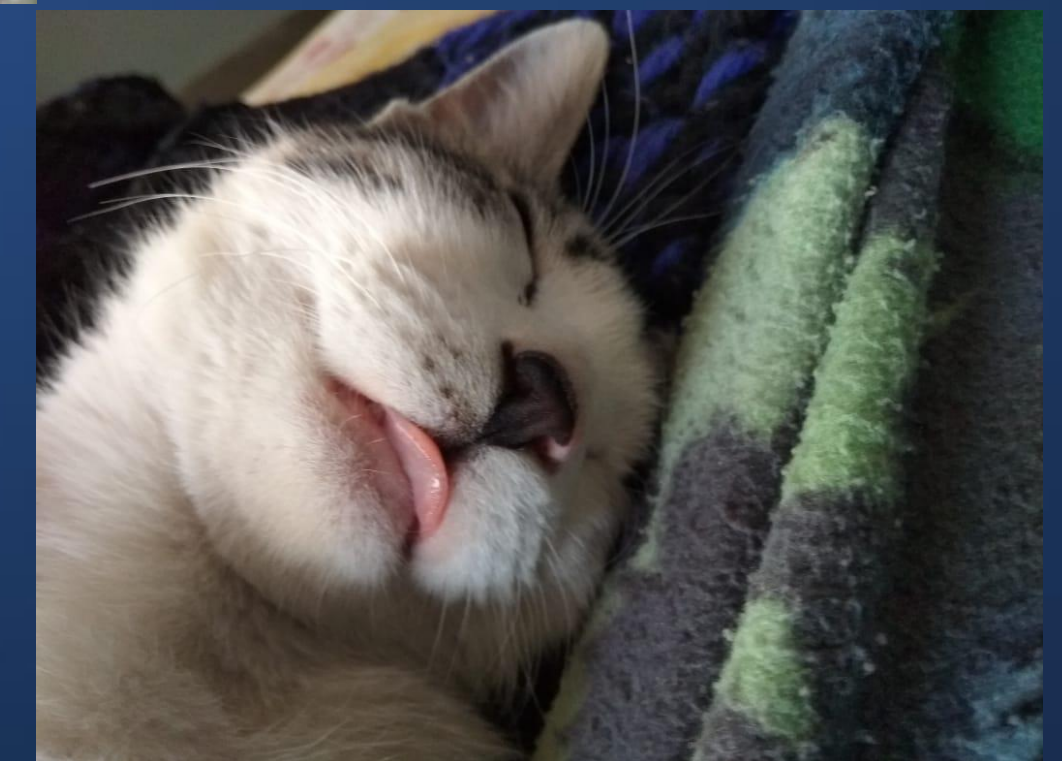
Thank you, Kaylin



Lizzie



Mini



Thank you, Rahul

Poll Question #2 - True/False

The market for Bergerac's products is relatively unchanging.

Product Innovations

Smaller, simpler devices

Home visit market

Projected Sales Outlook for Cartridges?

Current: 4.7 million

Expected annual growth rate of 10%

In five years, 7.5 million

Incorporating growth in market share, so 15%

In five years, 9.4 million

Describe Bergerac's Operations and Supply Chain **I**

Located in Parsippany

HemaVue and OmniVue instruments

- Single-source suppliers

Proprietary single-use animal-specific cartridges

- Injection molded plastic – base and cover

- Chemical reagents in multiple chambers

Poll Question #3 - True/False

Bergerac is considering integrating a chain of veterinary clinics into its existing business.

What are their options?

Poll Question #4 - True/False

Acquiring GenieTech will not be adequate for fulfilling current demand.

The Numbers

	GenieTech	In-House
Molds of 10 units	8	4
Cycle Time (Seconds)	75	70
Cycles per 8 hour shift	384	411
Parts per shift	30,720	16,457
Cartridges per Shift (Cover + Base)	15,360	8,229
Machine up-time	90%	95%
Cartridges per Shift	13,824	7,817
Annual Cartridge Capacity	10,368,000	5,862,857
Based on 3 shifts * 5 days * 50 weeks		

What Other Aspects of Acquire vs In-House Should Bergerac Consider?

Acquiring requires integration of GenieTech

Acquiring will result in over-capacity while In-House will need to be expanded soon

In-House requires specialized knowledge in injection molding

In-House brings in newer machines – better yield

Poll Question #5 – Multiple Choice



What do you recommend?

- Acquire GenieTech
- Build In-House Capacity
- Other

Make vs Continue to Buy

Making will create co-location or captive supplier (Hershey, Pennsylvania)

Will making get rid of unreliable delivery?

Framework

Make	Buy
Tacit knowledge – Hard to communicate and requires doing	Codified knowledge – Can be communicated easily through words and diagrams
Unique research and development (R&D) for specific use of a company	Common research and development (R&D) with uses for many companies
Weak protections for intellectual property (IP)	Strong protections for intellectual property (IP)

Theory: Transaction Cost Economics

Hayes, R., Pisano, G. P., Upton, D. M., & Wheelwright, S. C. (2005). Operations. *Strategy and Technology: Pursuing the Competitive Edge*, New York.

Williamson, O. E. (2008). Outsourcing: Transaction cost economics and supply chain management*. *Journal of supply chain management*, 44(2), 5-16.

Middle Road



Modify Buying Arrangements

Make some, buy some

Supplier partnerships and contracts

Cover the raw material risk for the suppliers

Build Relationships

Reduce supplier base and deepen relationships

Provide continuous feedback at all levels

Share information systematically

Involve suppliers in quality management

Supply Chain Design

Supply Uncertainty	Demand Uncertainty	
	Low (Functional Products: groceries, food)	High (Innovative Products: fashion goods, computers)
	Low (Stabilized Processes)	Responsive
	High (Emerging Processes)	Agile

Fisher, M. L. (1997). What is the right supply chain for your product?. *Harvard business review*, 75, 105-117.

Lee, H. L. (2002). Aligning supply chain strategies with product uncertainties. *California management review*, 44(3), 105-119.

Managing Supply Chain Risk

Sources of Risk

Natural disasters

Transportation disruptions

Political disturbances

Others...

For example:

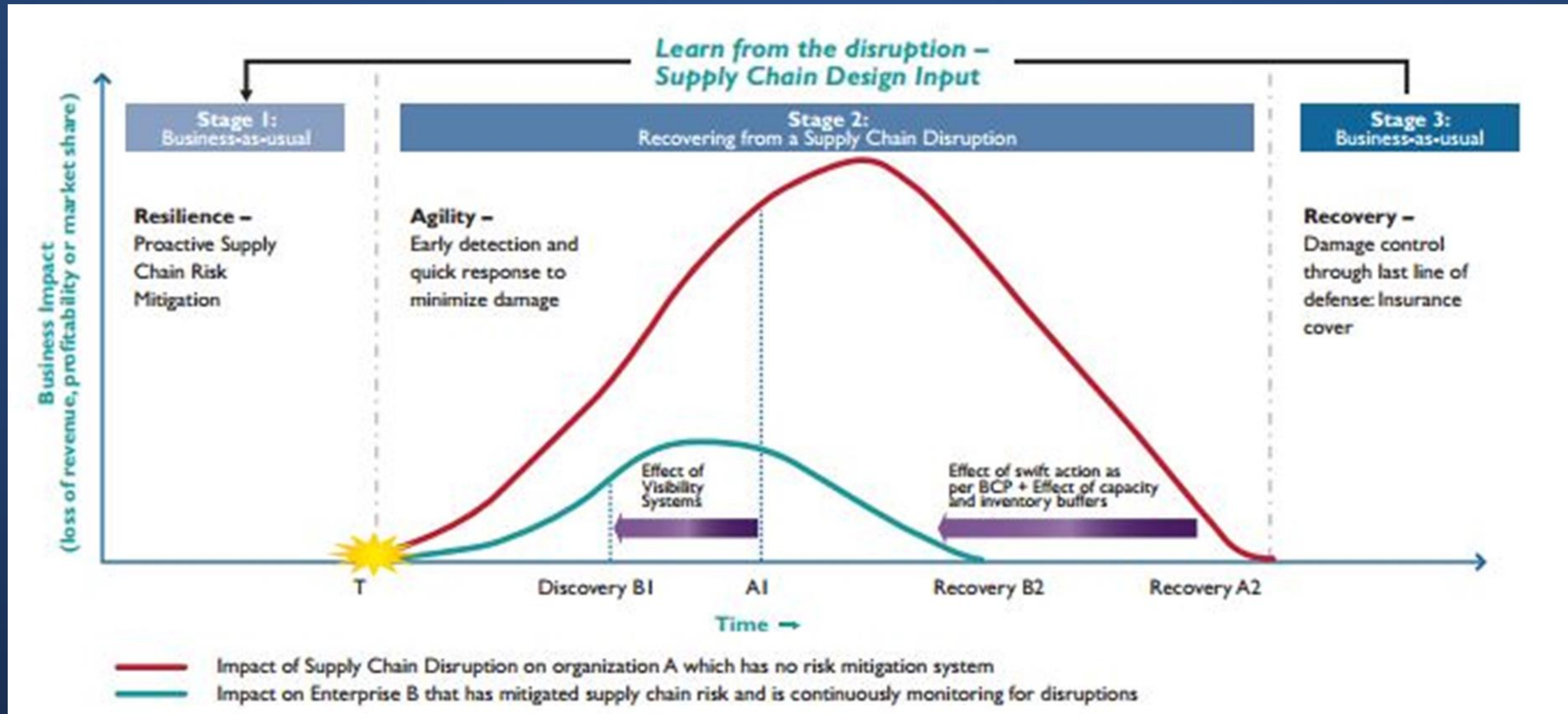
<https://www.cbsnews.com/news/suez-canal-ship-stuck-ever-given-unstuck/>

Supply Chain Resilience

Ability to quickly respond to unexpected disruptions in supply or demand, either natural or manmade.

Examples: strike, recession, sudden price change, natural disaster, manufacturing failure, unexpected demand.

Risk Mitigation Systems



Steps Toward Supply Chain Agility



Educate and protect employees

Plan around absenteeism and closures

Focus on immediate suppliers (tier 1) first

Explore alternative supply sources

Increase agility in scheduling

Map Your Supply Chain

- Start with bill of materials of top five products
- Focus on key components
- Drill down to their component suppliers – all the way down to raw materials vendors
- Include information on alternate sites of the supplier for same activity or product

Preparing For Future Disruptions

- Transparency
- Data
- Investment in employees
- Reward more than cost efficiency
- Conduct stress tests
- Push for uniform regulations

FDA, EPA, OSHA, IPR

Technological Developments

<https://youtu.be/VdFx2R6diMk>

Blockchain – connecting flows of inventory, information, and money

Big Data – large data sets

Internet of Things – everything connected to the internet

Artificial Intelligence – intelligence exhibited in machines

Machine Learning – AI application for learning from data

Sharing Economy – Economic system that shares assets and services (e.g., Airbnb, Crowdfunding)

Looking Forward

Process Improvement

Information about Timed Quiz/Exam on
Canvas - Module 4

Thank you!