

Supply Chain Redundancy: Building Resilience in the Face of Disruption

Welcome to Unit 4 of our AI for Logistics and Supply Chain course. Today, we will delve into the critical concept of Supply Chain Redundancy. As you know, disruption is a constant threat in today's globalized world. Supply chain redundancy is a proactive approach to mitigate these risks and build a more robust and resilient system.

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Recap: AI and Supply Chain Resilience (Unit 4)



1

1. Disruption & Resilience

We explored the nature of disruption in supply chains, analyzing its sources and its impact on business operations.

3

3. Key Strategies

We discussed a variety of strategies to strengthen supply chains, including diversification, agile planning, and risk mitigation.

2

2. Role of AI

We highlighted how AI technologies like machine learning and predictive analytics can be used to enhance supply chain resilience.



Guess the Topic: Can you identify the theme of this presentation?

What do you think we're going to discuss today? Take a look at these images and see if you can guess the theme!

What is Supply Chain Redundancy?

Definition

Supply chain redundancy refers to creating duplicate or backup elements within the supply chain to mitigate disruptions. It's about having alternative sources of materials, manufacturing facilities, or distribution channels.

Example

Imagine a company sourcing materials from a single supplier. Redundancy would involve having a second supplier in place, ready to step in if the primary supplier faces issues.



Benefits of Supply Chain Redundancy

Reduced Disruption Risk

Redundancy minimizes the impact of disruptions like natural disasters, supplier failures, or geopolitical events.

Increased Flexibility

Redundancy allows companies to quickly adapt to changing market demands and unforeseen circumstances.

Enhanced Cost Savings

In the long run, redundancy can actually save money by preventing costly disruptions and stockouts.



Real-Life Cases: Examples of Redundant Supply Chains



Manufacturing

Companies may have multiple production facilities in different locations to minimize risk of a single-site disruption.



Distribution

Multiple distribution centers across different regions ensure goods can be shipped quickly, even if one facility is affected.



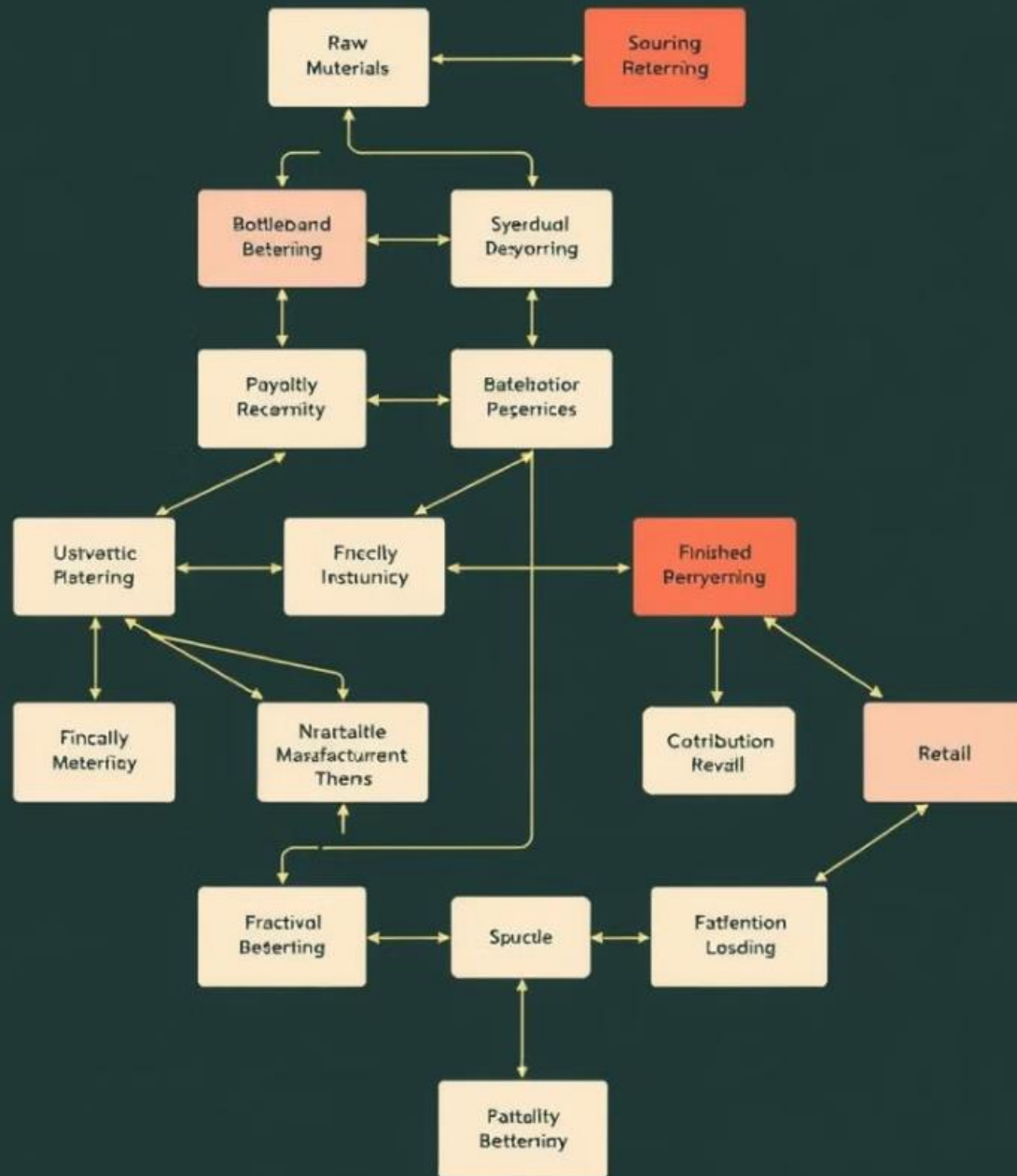
Logistics

Having multiple shipping routes and carriers minimizes the risk of delays due to weather, political unrest, or carrier issues.



Supply Chain

Challenges and Limitations of Redundant Supply Chains



1

Cost

Redundancy can be expensive to implement and maintain, requiring additional infrastructure and resources.

2

Complexity

Managing multiple suppliers, facilities, and distribution channels can be challenging and require sophisticated coordination.

3

Coordination

Ensuring effective communication and collaboration between different parts of the redundant supply chain is crucial.

Designing an Optimal Redundant Supply Chain

1

Risk Assessment

Identify the most likely disruptions that could affect your supply chain.

2

Redundancy Strategy

Decide where to implement redundancy: suppliers, manufacturing, logistics, etc.

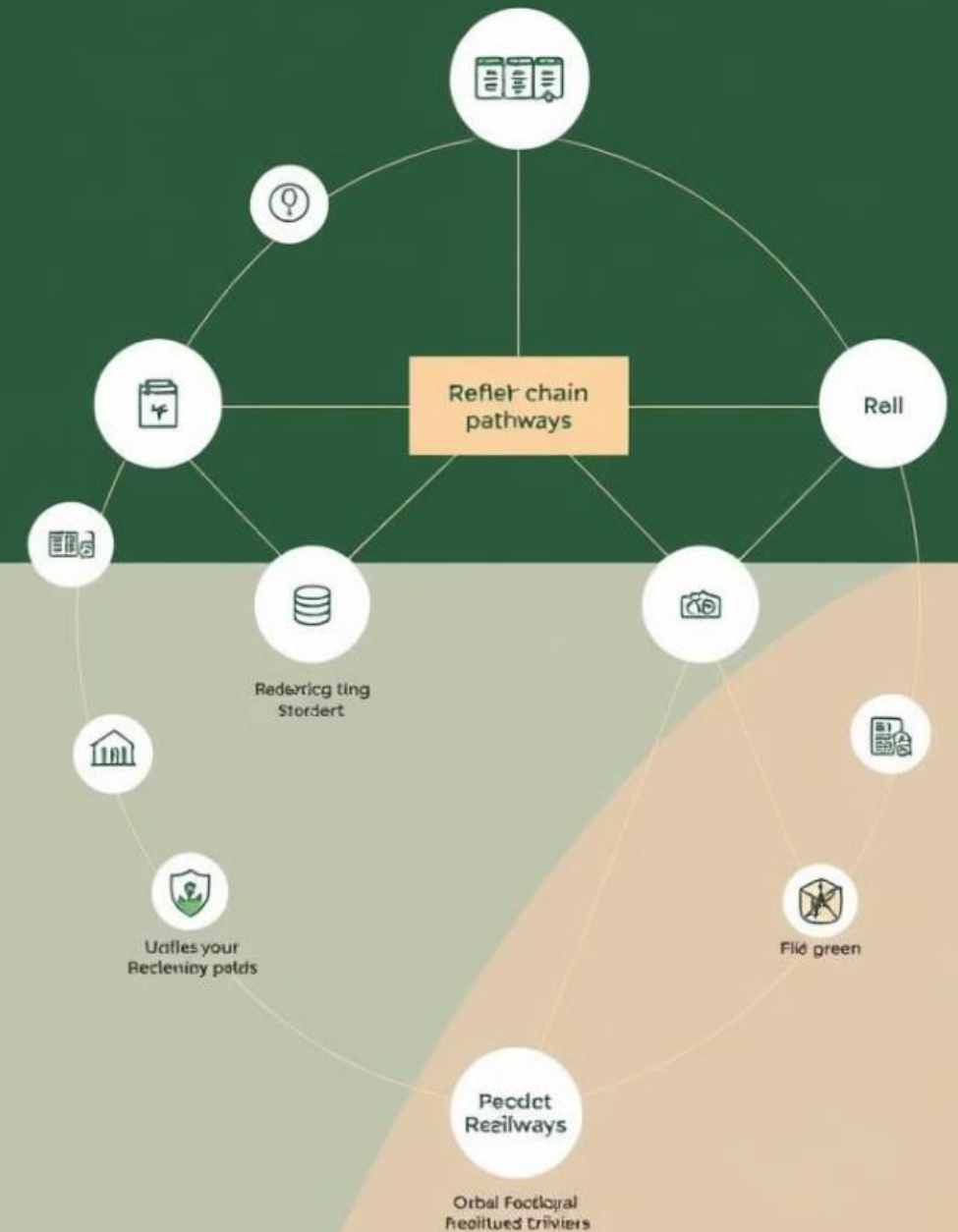
3

Cost-Benefit Analysis

Evaluate the potential costs and benefits of each redundancy option.

Supply Chain

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Check Your Understanding: Quiz on Supply Chain Redundancy

1

Scenario

Imagine a company relying solely on a single supplier for a critical raw material.

2

Question

What are the risks associated with this situation, and how can redundancy mitigate them?

3

Answer

This situation poses a significant risk if the supplier faces disruptions. Redundancy through alternate suppliers helps mitigate this.

Summary and Key Takeaways

