



IIT ROORKEE



NPTEL ONLINE
CERTIFICATION COURSE

SUPPLY CHAIN ANALYTICS

Network Design in Uncertain environment and flexibility

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Outline

- The Impact of Uncertainty on Network Design Decisions
- Discounted Cash Flow Analysis
- Representations of Uncertainty
- Evaluating Network Design Decisions Using Decision Trees
- AM Tires: Evaluation of Supply Chain Design Decisions Under Uncertainty
- Making Supply Chain Decisions Under Uncertainty in Practice
- Summary of Learning Objectives



The Impact of Uncertainty on Network Design

- Supply chain design decisions include investments in number and size of plants, number of trucks, number of warehouses
- These decisions cannot be easily changed in the short- term
- There will be a good deal of uncertainty in demand, prices, exchange rates, and the competitive market over the lifetime of a supply chain network
- Therefore, building flexibility into supply chain operations allows the supply chain to deal with uncertainty in a manner that will maximize profits



High speed and low cost supply chains have been important drivers for companies.

- ✓ these supply chains work perfectly in steady conditions since the entire supply chain is focused on economies of scale, delivering quick supply for the least amount of money
- X these supply chains are not able to react on sudden changes in demand

Flexibility in Supply Chain

- **Adaptable:** Adjust the supply chain's design to meet structural shifts in markets, modify supply network strategies, products and technologies
- **Alignment:** Create incentives along the partners within the supply chain for better overall performance
- **Agility:** The ability of a supply chain to respond to short-term changes in demand or supply quickly and handle external disruptions smoothly

THANK YOU

