

Project Risk & Supply Chain Risk

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Lecture 6



PMG 663

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جامعة الجميع الذكية
EVERYONE'S SMART UNIVERSITY

In today's connected and digital world, supply chain risk mitigation can be difficult due to globalization and potential cyber interference. That said, there are measures you can take to reduce your business' exposure to risk:



3- Improve your cyber supply chain risk management. For many businesses, the Internet of Things and other digital technologies play a major role in optimizing supply chain operations, but they also leave businesses exposed to cybersecurity threats, such as malware, ransomware, phishing, and hacking. Environmental risks can further compound these vulnerabilities. To strengthen your cybersecurity defenses, try implementing the following supply chain risk management strategies:



Supply Chain Risk Management Strategies

Improve your cyber supply chain risk management

- ❖ Establish compliance standards for all third-party vendors, including manufacturers, suppliers, and distributors.
- ❖ Define user roles and implement security controls to restrict who is able to access your system and what level of clearance they've given.
- ❖ Perform a thorough vendor risk assessment prior to signing any contracts.



Supply Chain Risk Management Strategies

- ❖ Implement data stewardship standards that define who owns certain data and what they're to do with that data.
- ❖ Provide comprehensive training for all employees about cybersecurity protocols.
- ❖ Implement a software solution that provides you with total visibility into your supply chain, so you can quickly identify unusual activity.
- ❖ Work with vendors in your supply chain network to develop a unified disaster recovery plan to ensure business continuity.



- ❖ Establish backup controls to safeguard your data backups.
- ❖ Regularly update your company's anti-virus, anti-spyware, and firewall software solutions, as well as look into more advanced cybersecurity measures, such as DNS filtering and network access control.



4- Looks for ways to improve supply chain visibility. More information can be beneficial, and a better understanding of all parts of your supply chain can alert you to issues before they become problems .

A greater visibility into your supplier's financial stability can assist you with selecting partners. Certain major credit rating agencies offer predictive financial stability reporting on thousands of potential suppliers in order to reduce the external business risk that comes with dealing with third-party vendors. Although this won't help you with existing vendors, it can help you develop more secure business relationships and reduce your vulnerability to supply chain risk .

Look into technology that will allow for greater product and shipment visibility so you can keep your customers updated on delivery times and/or take actions earlier to avoid costly delays and missed customer expectations. Service portals, IoT sensors on containers, automated reports on inventory levels, and more can help keep you informed and updated in real time. This is especially vital during the “last mile” of delivery, where 3rd party services can take over and you can lose insight over that stretch of the customer journey experience.



5- Track the right freight carrier metrics. Manufacturers need to achieve dependable delivery to clients to build their reputation, while retailers rely on merchandise arriving at the right place at the right time in order to make selling windows. Regardless of where you are in the supply chain, it's important that you partner with a freight carrier that can deliver consistent results. Unfortunately, not every carrier is up to the challenge, and even a single late delivery can disrupt your entire supply chain. When evaluating new freight carriers — or even re-evaluating your current freight carrier — be sure to consider the following metrics to support supply chain risk management:



- ❑ Transit Time: This refers to the number of hours or days it takes for a shipment to arrive at the customer's location after leaving your facility.
- ❑ Number of Stops & Average Stop Time: The more stops a freight carrier takes in route to delivering a shipment, the longer it will take your product to reach your customer. Even if a route only includes a few stops, a long average stop time could still jeopardize on-time delivery and disrupt your supply chain. These metrics are important to monitor for the sake of supply chain efficiency.

[**Note:** It's important to look for a low number of stops and low average stop time while still being mindful of drivers' legally regulated hours of service.]



- ❑ Average Loading Time: This refers to the amount of time it takes to load a carrier with freight, as well as fill out any necessary paperwork, once it has arrived at the loading dock. Like the previous item on this list, this is a key indicator of supply chain efficiency.



- ❑ **Route Optimization:** It's important to consider how field carriers optimize routes for fuel usage and travel time because these have a direct effect on supply chain costs and efficiency. If a business has its own fleet, it can monitor this metric closely; if it partners with a third-party carrier, it can monitor this metric through costs charged for shipping.



- ❑ Maintenance Schedule: A freight carrier with a consistent maintenance schedule is less likely to break down, which can prevent unnecessary supply chain disruption.



Implement a logistics contingency plan. Similar to an emergency response plan, it's imperative that retailers and manufacturers have a logistics contingency plan in place to ensure business continuity in the event of supply chain disruption. The need for a solid contingency plan — or, preferably, multiple contingency plans — has become especially pertinent in light of the COVID-19 crisis, which caused supply chain disruption on a global scale. Some tips when creating a contingency plan for supply chain risk mitigation:



- ❑ Map out your supply chain to get a clear understanding of which entities are most vulnerable to risk.
- ❑ Perform a full assessment of suppliers based on factors such as political risk, geographic risk, and economic risk.
- ❑ Diversify your supplier network so that you aren't reliant on a single supplier.



- ☐ Audit logistics providers based on their disaster plans
- ☐ Establish a crisis response team to make critical decisions in the event of an emergency.
- ☐ Develop solid communications channels so that your employees know what their responsibilities are in the event of supply chain disruption.



7- Conduct internal risk awareness training. Management isn't the only area of your organization that can assist in supply chain risk mitigation. In fact, building a risk-aware culture requires buy-in at all levels of your business. The easiest way to achieve this is to conduct risk awareness training for your entire workforce. Training curriculum should include the following:

- ☐ Common supply chain management risks and challenges
- ☐ Risk management best practices
- ☐ Computer and internet best practices to improve cybersecurity awareness
- ☐ Supply chain risk assessment software training to encourage end user adoption



8- Consistently monitor risk. This might seem like a given, but consistently monitoring supply chain risk factors really is the key to protecting your operations. Many organizations assume that they're secure once they've implemented a supply chain risk mitigation framework, but the work doesn't stop there. Every level of the supply chain should be carefully observed for potential risk indicators. The easiest way to do this is to invest in a scalable digital retail solution that automates monitoring for various aspects of your supply chain. This will not only provide you with security and peace of mind, but also valuable intel into how you can streamline business operations.



9- Use data to model key risk event scenarios. Imagine being able to predict a risk event well before it ever happens. Technology hasn't brought us there just yet but, thanks to data science, predictive analytics, and data modeling, we've come pretty close. Big Data has opened up a world of opportunities for businesses, including using data science and predictive analytics to create advanced models for potential risk event scenarios. By using data models to forecast what could potentially happen during a worst-case scenario, you can develop more comprehensive contingency plans that will better prepare your business for if and when disaster strikes. Curious about how this "intelligent" supply chain works?



10- Consolidate your data for easy access. Too many solutions in your software ecosystem can gum up the works, especially if you store business data in multiple disparate systems. In order to make it easier to leverage data science, predictive analytics, and data modeling, invest in a comprehensive retail solution that keeps all of your data within a single, centralized, and well-organized repository.



Why are today's supply chains so vulnerable?

- Widespread adoption of 'lean' practices
- The move to off-shore manufacturing and sourcing
- Out-sourcing and reduction in the supplier base
- Global consolidation of suppliers
- Centralised production and distribution

All of which combine to make supply chains vulnerable to disruption



“The entire Japanese vehicle industry ground to a halt following an earthquake that stopped production of piston rings for engines provided by Riken, the industry leader in the domestic market.

Toyota, in particular, was forced to stop operations at all 12 of its domestic plants.”



“A fire at a key Philips semiconductor factory in 2000 caused a worldwide shortage of the radio frequency chips used by both Nokia and Ericsson. Nokia immediately lined up another source and redesigned other chips so they could be produced elsewhere. However, Ericsson responded more slowly and lost an estimated \$400 million in mobile phone handsets.”



“Yesterday it emerged that ice-cream supplies may run short because Unilever’s only UK factory, based in flood-stricken Gloucester, has been closed for the past ten days.

The company usually manufactures five million ice-creams and lollipops a day at the plant. It has stocks in freezers but it could be days before normal production resumes. Industry insiders predict that there will now be an ice-cream war as rival brands attempt to exploit Unilever’s predicament and gain market share.”

The Times, 31 July 2007



Supply chain risk is systemic

The biggest risk to business continuity may lie outside the company in the wider supply chain

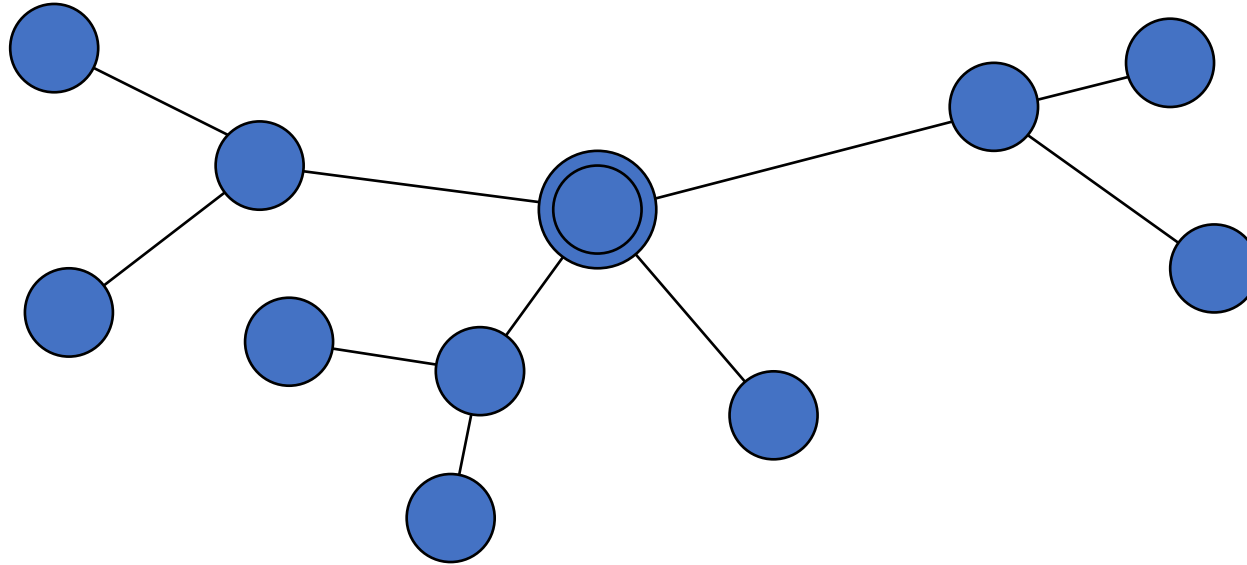
The complexity and inter-connectedness of modern supply chains increases their vulnerability to disruption

Environmental risks are outside our control, but systemic risk is created through our own decisions



There are two generic categories of supply chain risk

Supply chains comprise nodes and links



Nodes – organisational risk

Links – network risk



Supply Chain Risk Management

“The identification and management of risks within the supply chain and risks external to it through a coordinated approach amongst supply chain members to reduce supply chain vulnerability as a whole”.

“Avoiding the loss of customer confidence and the erosion of shareholder value resulting from supply chain disruption.”

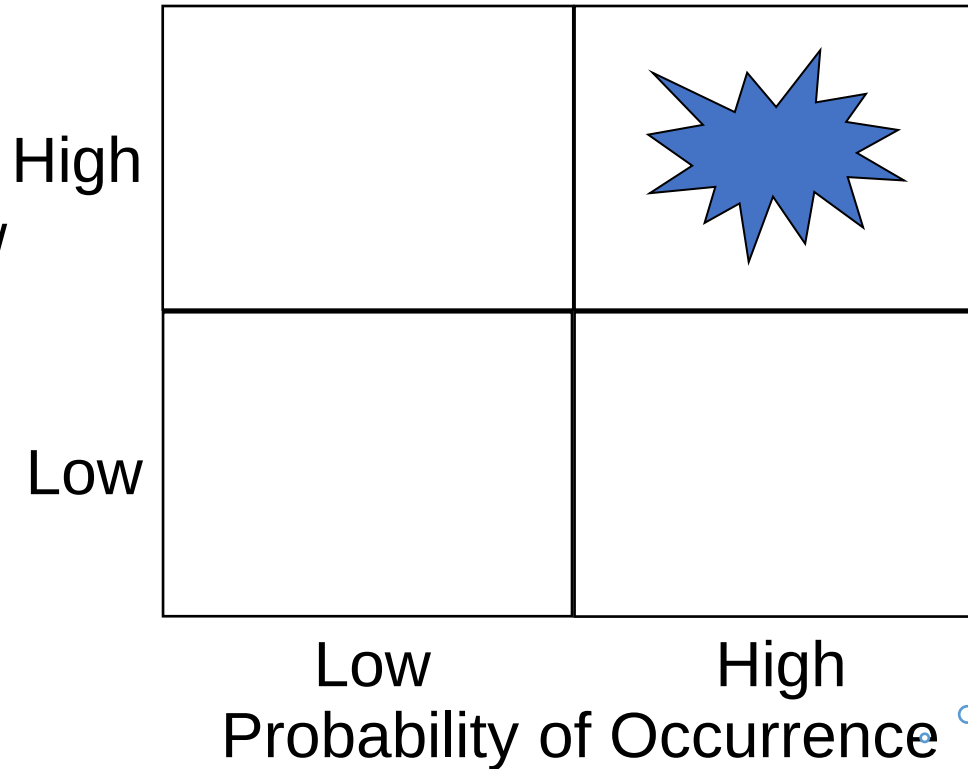


Risk = probability of occurrence x consequences



The risk management challenge

Consequence/
Impact
عاقبة / تأثير



إحتمالية
الحدوث

- Where can we reduce the probability?
- How can we reduce the consequence?

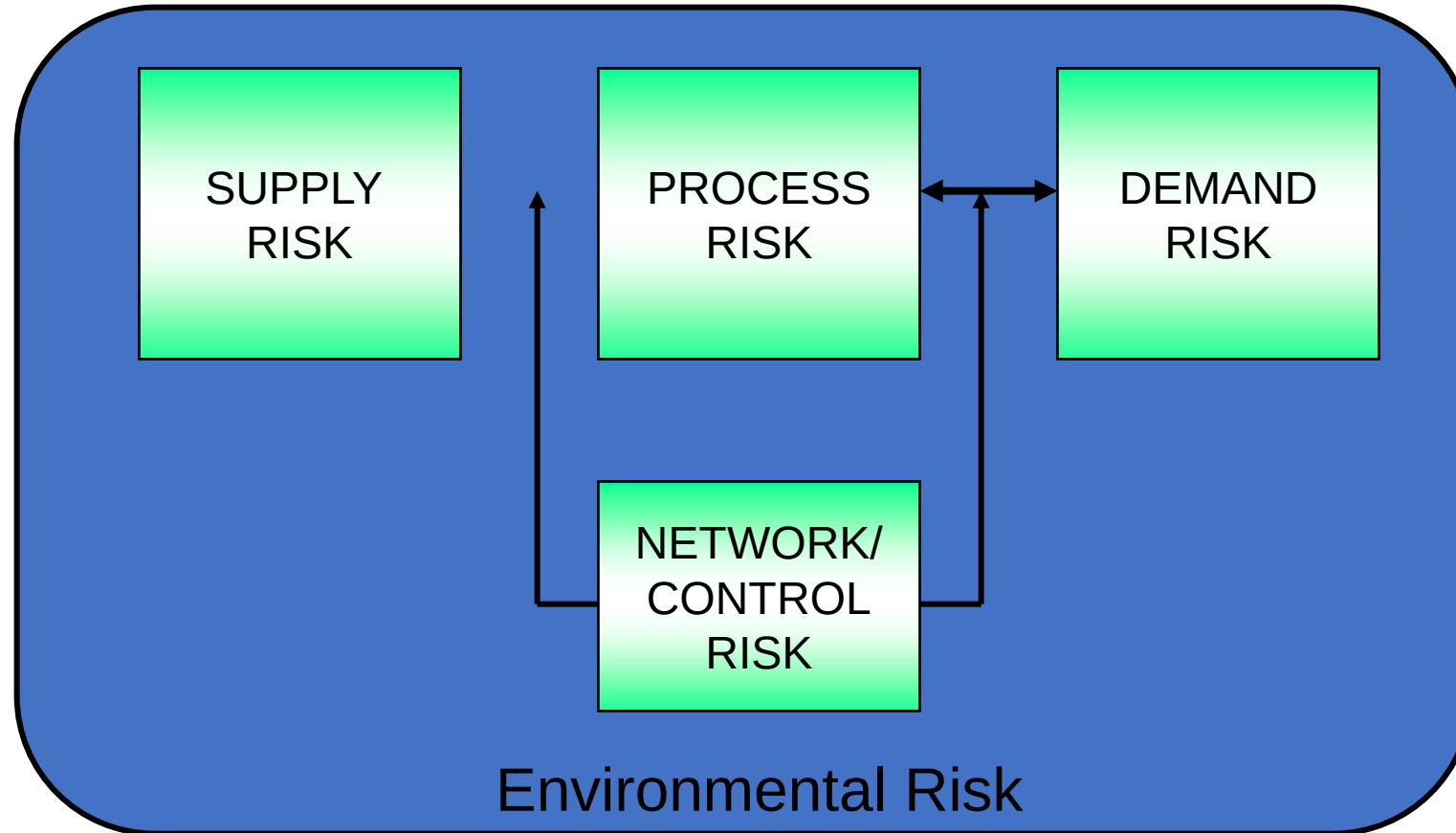


The five sources of risk

- Supply risk
- Demand risk
- Process risk
- Control risk
- Environmental risk



Location of risk in the supply chain



The five sources of supply chain risk

Demand Risk

- Loss of major accounts
- Volatility of demand
- Concentration of customer base
- Short life cycles
- Innovative competitors

Network/Control Risk

- Asymmetric power relationships
- Poor visibility along the pipeline
- Inappropriate rules that distort demand
- Lack of collaborative planning and forecasts
- Bullwhip effects due to multiple echelons

Supply Risk

- Dependency on key suppliers
- Consolidation in supply markets
- five sources of supply chain risk arising from off-shore sourcing
- Potential disruption at 2nd tier level
- Length and variability of replenishment lead-times

Process Risk

- Manufacturing yield variability
- Lengthy set-up times and inflexible processes
- Equipment reliability
- Limited capacity/bottlenecks
- Outsourcing key business processes

Environment Risk

- Natural disasters
- Terrorism and war
- Regulatory changes
- Tax, duties and quotas
- Strikes



The five sources of supply chain risk

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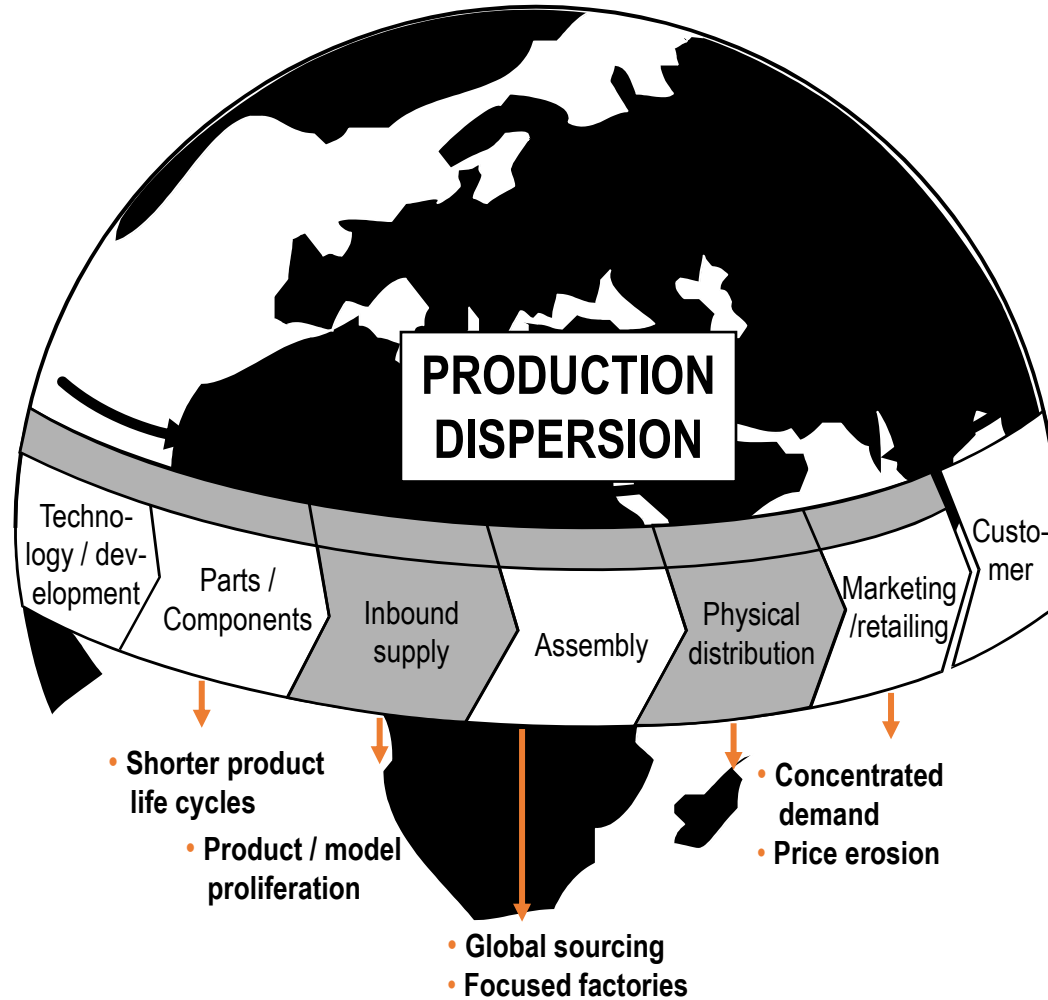
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The challenge of global logistics

PRODUCT
LINE DIVERSITY



MARKET
CONCENTRATION

