Building supply chain resilience

QBE

Introduction

QBE specializes in business insurance. Our purpose is to create a more resilient future, to help customers become stronger, to embrace change and understand, manage and mitigate the risks in their supply chains.

Supply chain management is inherently complex, especially in an age of increasing geopolitical and financial uncertainty. While risk managers have been historic champions of supply chain risk management, it is now increasingly central to the needs of the procurement, operations and distribution teams. Finally, each business's leadership is likely to have strong views on costs and supply that affect how the chain is managed.

Companies often struggle to pull these strands together. In this guide we offer a clear way to understand and manage the risks in your supply chain in a cost-effective and sustainable way. Good risk management requires strong leadership. If your business has yet to analyze the weaknesses in its supply chain, this guide will show you how to protect your company, your customers and your future profitability.

> **“Uncertainty is an enduring characteristic of our current age.”**
>
> **Ben Cattaneo**
> Chief Risk Advisor, BT

The modern global supply chain

It has long been commonplace for firms to both source supplies from a network of global suppliers and serve their customers in a range of global markets. Driven by several factors, including cost optimization and specialization, this network of global supply chains has grown ever tighter with the advent of concepts such as Just in Time (JiT) production and multi-tier supplier management.

However, accelerated by the pandemic, the war in Ukraine and the fuel crisis, this complex web of suppliers has been under increasing threat. These disruptions have forced firms to carefully weigh the benefits of a global supply chain against the fundamental need to serve their customers. Increasingly, firms are looking for alternative approaches to ensure they can continue to source inputs, produce and deliver goods and services to their customers.

Whether through building greater redundancy into existing processes with higher inventory levels or adapting operations by reshoring production, most firms are starting to make significant changes to their global supply chains. As Adrian Simmonds, senior risk manager at QBE, says, the era of the “ever extending supply chain” is “more fragile than it’s ever been”.

Understanding supply chain risk

Very simply, supply chain risk is the uncertainty that exists in a firm’s ability to source materials for production and deliver goods and services to customers. Disruptions to supply chains can have a relatively minor impact, such as delaying a production schedule, as well as being catastrophic, such as the need to cease production due to a lack of raw materials.

With levels of uncertainty increasing, understanding what drives these disruptions and their ultimate impact on your business will be critical to your firm’s success. As Ben Cattaneo, producer of the podcast All Things Risk and chief risk advisor at British Telecommunications company, says: “Uncertainty is an enduring characteristic of our current age.” Understanding this uncertainty, its impact on your supply chain and how you can continue to operate through it has become a core competency in today’s business life.

Definitions

{Just In Time}

A management strategy that aligns raw materials orders from suppliers directly with production schedules. It has several the following characteristics:

- Daily or hourly deliveries of small quantities of parts from pre certified suppliers (so no inspections are required)
- The arrangement of the production area into flexible compressed work centres so goods can be handed off directly to the next work centre
- The use of rapid machine setups, so that production runs can be as short as one unit
- The cross-training of employees, so that they are certified to work on multiple tasks
- Production stops as soon as the immediate demand level has been fulfilled
- Immediate shipment of completed goods to customers as soon as an order has been fulfilled.

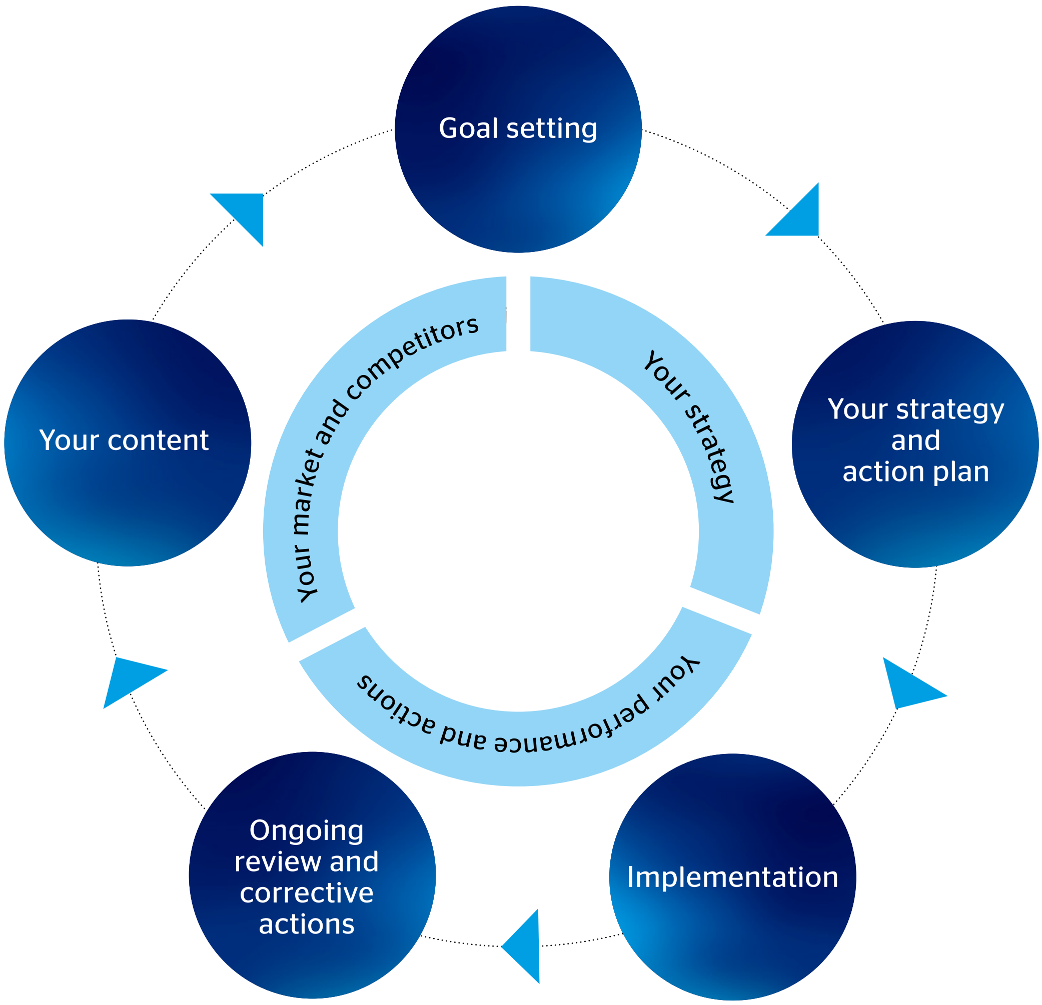
{Multi-tier supplier management}

A management strategy that employs a network of specialist suppliers of core components who in turn use a network of their own specialist suppliers. The goal is to increase specialization at the individual firm producer level thereby reducing cost and increasing quality.

Understanding the drivers of supply chain risk

The first step in understanding supply chain risk is to recognize the possible drivers of disruption. While any number of frameworks exist to describe a firm's macro landscape, the traditional Pestel (political, economic, social, technological, environmental and legal) framework does a good job at covering most of the possible considerations. It enables you to analyze your external environment and possible drivers of risk in a systematic and complete manner.

But as uncertainty increases, the frequency of this assessment needs to increase. Julia Graham, CEO of Airmic (UK association and representative body for risk managers) says that firms need to be "permanently Pestel-ing" for dynamic risk management and on top of the risks they face. Christopher Hess, partner with consultancy Hesmur, recommends incorporating a rich set of supply chain related information into your strategic and management reporting systems to enable you to continuously monitor your risk and commercial landscape. Not only will this help address any risks that may arise, but it will also help to navigate other areas of uncertainty as they occur.



Pestel framework

Political

Political factors play an important part across businesses and need to be analyzed in the context of the jurisdictions where you source your materials (and where your suppliers source their materials), where you produce your goods and services, and where your customers are located. These factors include political stability, tax policies and regulatory approaches. It is also related to the Legal category (see below), as this provides the tangible link between policy and how it's implemented.

Social

Social factors assess the core behavioural and demographic factors in a region. While buying behaviours can have upstream impacts on how you ultimately source and produce your products, social factors in your supplier's home markets can also have a significant impact. An aging workforce can make it more difficult for suppliers to produce their products, while increases in levels of education and training can have positive impacts.

Environmental

Environmental factors include the physical impact of, and adaption to, climate change – for example, the ability of your suppliers to manage extreme environmental events and to change operations to address sustainability requirements. This is tied to the Social category as views evolve on the broader sustainability agenda and, in particular, the need for a "just transition".

Economic

This category measures the overall economic health of a region and how changes over time can impact your operations. It includes factors such as inflation, interest rates and exchange rates, as well as employment and the disposable income levels of potential customers. Understanding the economic health of your supplier network and the stability of particular players is vital.

Technological

This category analyzes the impact of evolving technology on your operations. It can include disruptive changes, such as the advent of new business models, for example, the "Netflix impact" on DVD players, and more evolutionary changes, for example, production efficiency increases through the use of robotics. It can also include the introduction of new risks, such as cyber exposures.

Legal

This category addresses the legal frameworks in the countries that you, your supplier and your customer operate. At its most basic level, it covers the strength of the legal system, the rule of law and the ability to define and enforce responsibilities via contract. It also covers such factors as employment regulations, competition and anti-trust laws, product regulations and intellectual property and patent laws.

Understanding the impact

Understanding the impact of different events and how your firm might be exposed to disruption is a key step in managing supply chain risk. This includes your primary suppliers and distributors, as well as your secondary and tertiary suppliers and beyond. In fact, many global firms actively monitor and manage fourth- and fifth-tier suppliers. For example, Coca-Cola actively manages its end-to-end supply chain, from suppliers of raw materials, to local bottling partners and their suppliers, to distribution partners. It not only proactively manages and mitigates any risks that may surface[1], but also uses this understanding to reduce its carbon footprint across the end-to-end supply chain.

While this level of understanding is increasingly commonplace in larger firms, many smaller businesses, put off by the complexity and cost, still do not have any information on their supply chain beyond the first or second tiers. The level of connectivity in global supply chains, however, means it is important for them to fully understand its impact on their operations.

Beginning with an understanding of its activities by profit and volume, a firm should assess how its customers would be affected by a disruption to the supply of a particular product or service. In addition, attention to seemingly minor inputs should also be given. As outlined in the case study below, even minor inputs can have a major impact on profitability, particularly when substitutes are difficult to source and the lack of supply disrupts production.

Regardless of the cause, these major events are more frequent than you would expect. QBE research shows that **firms can expect to encounter, on average, a significant supply chain shock once every four years[2].**

These shocks can take many forms, vary in both severity and global reach, and severely impact a firm's ability to produce its products or services, or get them to market. The impact of these shocks can be dramatic, with an average firm losing over half a year's net profit[3].

It's not just about managing supply chain disruptions

The choices firms make about how and who they do business with can have dramatic impacts on the firm's reputation as well as having significant financial consequences. A case in point is Boohoo (Davies, 2020), a clothing retailer, who in July 2020 saw £1.5 bn wiped off their market value after poor working conditions were discovered at one of their suppliers' facilities in Leicester, England.

Subsequent discussions with Boohoo discovered that they were not sure who was supplying all of their garments. Increasingly customers and investors are looking to ensure that both firms and their supply chain evidence an accepted set of environmental, social and governance standards that reflect the firm's environment and social consciousness. Understanding and managing supply chain risk need to reflect these aspects as well as preparing for and managing possible disruptions.

[1] 7 Amazing Things of Coca-Cola Supply Chain Management, ibottling.com

[2] QBE Research, Hesmur Research

[3] QBE Research, Hesmur Research

Case Study

How a fire on one production line in Japan cost the global auto industry $110bn

Microchips may not be the first thing you think about when you consider the car industry, but when an already stretched supply chain was hit by a fire at Renesas Electronics, which holds a 30% share of the automotive chip market, it cost the industry an estimated $110bn[4].

The fire occurred in the N3 Building (300mm line) of Renesas' Naka factory, located in Hitachinaka, Ibaraki prefecture, on 19 March 2021[5]. The production lines affected produced microcontrollers, primarily used in monitoring engine performance, managing steering or automatic windows, and in sensors used in parking and entertainment systems. While Renesas worked to shift production to alternative facilities and had production back to 100% of the pre-fire level by 24 June[6], the impact on the industry was far-reaching.

While the reported impact of the fire varied, most automotive producers saw major impacts to production as a result of the chip shortages. This included reductions in overall production, the need to prioritize production of more profitable models and even the redesign of components. There was also a significant impact on profitability, with one producer reporting a 50% drop in profitability in Q2 2021 – a direct result of the chip shortages. This impact is still being felt through 2022.

50% drop in profitability in Q2 2021

[4] Global chip shortage: Mercedes CEO on 'COVID whiplash' | CAR Magazine

[5] Notice Regarding the Semiconductor Manufacturing Factory (Naka Factory) Fire | Renesas

[6] UPDATE 10 - Notice Regarding the Semiconductor Manufacturing Factory (Naka Factory) Fire: Production Capacity Recovery Status | Renesas

> “
> Digitalization is an important accelerator in supply-chain operation, but it doesn’t change physical delivery.
> ”

Tania Bensoussan-Arthur

QBE practice lead Europe – Marine & Specie

The impact of digitalization

The digitalization of supply chain activities has had a significant impact across a number of axes. It has increased integration across counterparties and the speed at which business can be conducted. It has also improved the information and insights that can be gleaned from a firm’s supply chain relationships and enabled better decision-making across the network. However, while past supply chain digitalization has focused on cost reduction and process and efficiency, firms need to make sure that future efforts capture information to support a robust understanding of the end-to-end network and identification of risks as they arise.

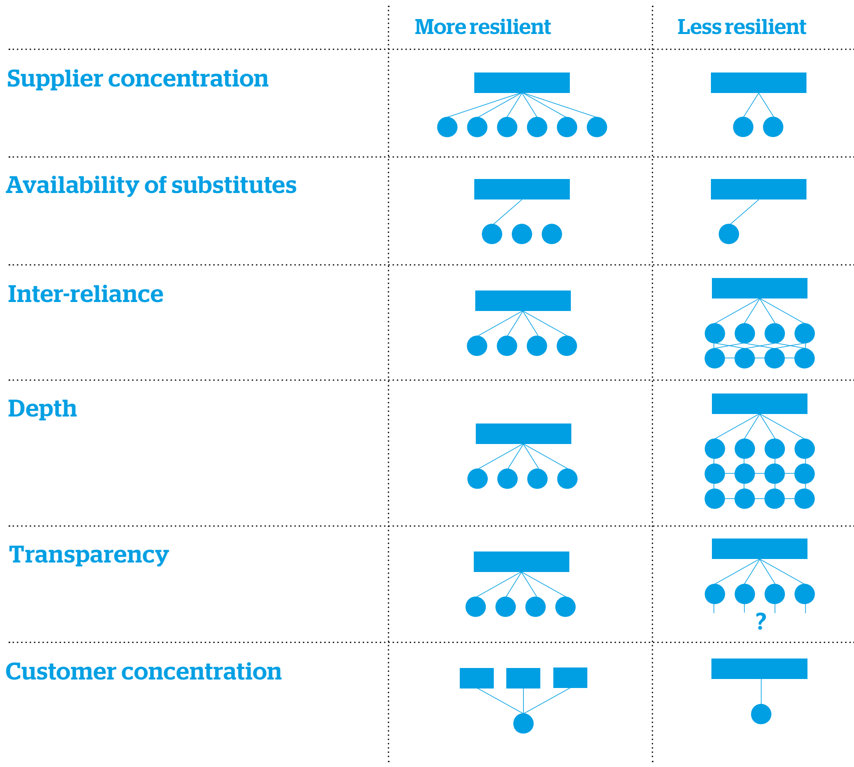
Tania Bensoussan-Arthur, QBE practice lead Europe – Marine & Specie, says: “Digitalization is an important accelerator in supply chain operation, but it doesn’t change physical delivery.” Firms can order supplies and track them electronically, but in most cases these goods still need to be physically delivered. Digital tools help in managing and understanding supply chains, but don’t eliminate the fundamental risk drivers.

Digitalization has also introduced a new set of risks that need to be understood and managed. These cyber risks can impact your firm directly, but become amplified the more firms are integrated with their supplier networks. With cybersecurity, there is a clear case of only being as strong as the weakest link. Firms need to ensure that all parties in their network are adhering to the same robust set of cybersecurity protocols. Another manifestation of cyber exposure in the supply chain is on the payment side of the procurement cycle. Practices such as invoice spoofing and fake boss impersonations to obtain false payment, together with business email compromise and email spoofing to misdirect electronic fund transfers via push payment fraud, are all challenges regularly encountered in the payment process.

Other points to be aware of when analyzing your network

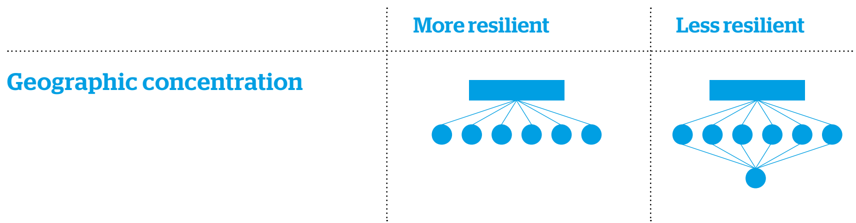
Supplier/distributor structure and concentration

Limiting the list of suppliers can help make networks easier to manage and more cost-effective, but it also exposes the network to risk. This is also true of the structure of your supply chain, how connected it is and how reliant on other inputs it might be. Understanding your supplier and distributor concentration and the structure of your supply chain is critical to preparing alternates and contingency plans.



Geographic concentration and reliance

Many sector supply chains hold significant geographic concentrations, often without this being immediately visible. While final assembly and distribution may be regional, looking further up the value chain can highlight significant issues. For instance, in the pharmaceuticals industry, while the manufacturing of end products often occurs regionally, at least 50%[7] of all active pharmaceutical ingredients used in production in Europe are produced in India or China.



[7] Source: Charles River Associates

Inventory levels
Historically Just in Time inventory concepts have focused on improving the efficiency and cost-effectiveness of the extended supply chain. More recently firms have realized that this efficiency can come at a cost that far outweighs the benefits when exposed to even minor disruption.

Understanding the likelihood, and impact, of disruptions in your supply chain is a key input to determining optimal inventory levels. This includes both major components and raw materials, as well as any tools or other minor inputs.

Inherent vulnerabilities in your supply chain
Every sector will have supply chain risks inherent to the type of goods or services they produce. This could involve spoilage in the food and agriculture sectors to raw material concentration risks in mobile communications technologies. While these risks will likely be front of mind for supply chain managers, it is also important to understand the inherent risks to upstream and connected suppliers.

Understand transportation methods and routes
Firms should understand not only who and where their suppliers are, but also how the supplies are getting to their destination. While these materials are often still the responsibility of the supplier until received, this is a poor consolation if these materials are critical to the ultimate delivery to your customers. Staying close to your carriers and those of your suppliers can help identify when issues arise and alternative methods or routes may exist. The six-day blockage of the Suez Canal in March 2021 is a case in point.

Supplier financial position
With most of the focus on physical threats to the supply chain, the importance of the financial health of the network should not be forgotten. With today's interconnected supply chains, the failure of one participant can have a dramatic impact on everyone else, both up and downstream. We explore this topic in more detail here.

> “With uncertainty of supply, investing our working capital in increased inventory levels has become of paramount importance to ensure we can continue to service customer demand.”

Thomas Kercher

CEO of Jomicom Partners, a sustainable engineering consultancy, and managing director at FeBeSol, a European PV installer

Managing supply chain risk

Understanding your supply chain and vulnerabilities is the first step in managing supply chain risk and building greater resilience into your network. Couple this with the active monitoring of these risks and the state of your network and you have a powerful tool to prepare for, and react to, any threats that may appear.

The next step in managing your supply chain risk is preparing your business to deal with any disruptions that may occur.

Business as usual

Increasingly firms are viewing the management of supply chain risk not as an exceptional business continuity event, but instead part of "business as usual" in today's environment. Rather than a theoretical planning scenario for what could happen, supply chain risk management has become a "real" and tangible part of operations.

Elevating the importance

Another interesting shift has been the steady increase in seniority of those responsible for managing supply chain risk. This increase in seniority has also seen a shift of the roles closer to the core operations functions. Historically a procurement manager may have been responsible for managing supplier interactions as an input to the operations process, whereas now we are seeing procurement directors or even chief supply chain officers working closely with their operations colleagues to ensure the integrity of the overall process.

Embedding the thinking

Most firms are also using a variety of tools and techniques to prepare for uncertainty and the potential disruptions to supply chains. These include codifying crisis management processes and building "playbooks" to map out how firms should respond to different events and who needs to be involved. Beyond these specific actions, firms are also building into their processes the ability to react to and address unexpected shocks as they occur.

What boards need to know about supply chain risk?

As importance of supply chain risk management has increased, so too has the need for boards to ask the right questions to ensure these exposures are understood and appropriately mitigated. These questions need to start with the basics of understanding the extended supply chain and distribution network then move to understanding the related risks and potential mitigating actions. A few sample "starter" questions are outlined below.

How well do we understand our supply chain and distribution networks?

> Do we know all of our suppliers/distributors and have they been recently reviewed against our supplier and ESG policies?

> Do we know where and how they produce their good or services?

> Do we understand who their suppliers are (and their suppliers' suppliers)?

> How often is this understanding updated?

How well do we understand the risks to our supply chain and distribution networks?

> Are there any structural risks to the supply chain (see above)?

> Do we have geographic concentrations to be aware of?

> What is our/our suppliers' approach to inventory management? How long could we manage through a disruption?

> Are we aware of the ESG related factors in our supply chain? How do we monitor/validate these factors?

> Do we monitor the financial health of our suppliers and distributors?

How well prepared are we to deal with issues if they do occur?

> How do we approach/prepare for crisis situations?

> Have we prepared playbooks for identified scenarios?

> What is our risk culture and ability to deal with uncertainty?

> How prepared are we are we to deal with significant disruption in terms of inventory levels and financial reserves?

Understand your risk culture

Your ability to address crisis situations is more than the sum of the information you have gathered and the plans you have put in place. It is how your teams view risk and deal with uncertainty and crisis situations. Building a robust risk culture, with high levels of risk intelligence at an individual and enterprise level, can help you do this.

Building a more resilient enterprise

Above all, most firms are now working to build greater resilience into their overall operations to be able to weather whatever shocks this period of extended uncertainty throws at them. Whether this is increasing inventory levels to deal with uncertain supplier deliveries, or building alternative supplier networks or redundancy in production capabilities there has been a clear move from Just in Time to Just in Case. See our checklist later in this document for ways to minimize your exposures and prepare for potential shocks.

Insurance protection for your business

Even after you have understood your supply chain and built approaches for addressing the related risks, there will be some exposures that are too great to address alone. Insurance protection can help address these exposures and should be viewed and managed as an integrated part of your overall plan. When developed in conjunction with your risk management strategy and your insurer, a holistic approach can be developed that helps you address whatever disruptions may arise.

This holistic approach is critical to ensure you are aware of what is covered by your insurance and which risks you are choosing to address directly. Working with your insurer to understand these inclusions and exclusions will not only inform your own risk management plans, but also ensure there are no surprises should an incident occur.

The sections below consider the types of insurance coverage which can form part of your risk management plans. The final section looks at how you can use contracts to eliminate some supply-chain risks completely.

Property and business interruption insurance

Every business should have a good property insurance policy that includes business interruption coverage. A key consideration is how long you are covered after an interruption, which is reflected in the maximum indemnity period you choose. Is there enough time – in the worst case – to source critical machinery, to rebuild from scratch on your current site or to relocate and start operations elsewhere? In addition, you should consider if you are covered for interruptions caused by the failure of your own suppliers. The key coverages to address this risk are called contingent business interruption and contingent extra expense. This insurance reimburses an organization for lost profits and extra expenses resulting from an interruption of business at the premises of a customer or supplier. The contingent property may be specifically named, or the coverage may blanket all customers and suppliers. Coverage is usually triggered by physical damage to customers' or suppliers' property or to property on which the insured company depends to attract customers. The type of physical damage must be the same as insured under the controlling policy. While this coverage can be purchased, it is coverage that is generally offered with a specified sub-limit and the amount of contingent business interruption insurance which can be purchased is limited. As such, mitigation using risk management strategies like partnering with additional third-party vendors or re-shoring some of your suppliers is highly recommended, so insurance is truly acting as a stop-gap for this business critical risk.

Product liability

Product liability insurance is usually provided as part of a Commercial General Liability policy. Product liability insurance covers against third-party bodily injury or property damage as a consequence of some defect in the product sold or manufactured. In essence, it protects against most quality issues including faulty components provided by those in your supply-chain (not including pure financial loss). If you are the wholesaler or retailer of a faulty product, actions brought against you for faulty products which result in bodily injury or property damage are also covered by your product liability insurance. What is important to keep in mind is that the trigger for coverage under your product liability coverage is bodily injury or property damage incurred. As a manufacturer, you may also want insurance to cover the cost of getting back under your control a defective product which has the potential to cause possible bodily injury or property damage. Your standard product liability insurance does not cover this exposure, but this is exactly what product recall insurance is there for.

Whether you are the manufacturer, wholesaler or retailer, whenever possible, you want the insurance company to be able to subrogate against the company responsible for the faulty component or product. As such, it is good to keep in mind that your ability to subrogate against a supplier will depend both on your contract with that supplier as well as the geographic location of your supplier. If your supply chain depends on new and developing economies, it can create a greater insurance risk as it can be more difficult for the insurance company to subrogate the loss to the at fault party. More information on contracts and the transfer of risk will follow in the next section.

As a retailer and/or a manufacturer, you must ensure that your product is fit for purpose and safe to use. You must either ensure that your supplier has quality assurance procedures or test the product yourself to see that it complies with local safety standards. Consequently, it is critical to keep up to date with legislation affecting your business and pass this information on to your suppliers. Work with them to meet the standards you need, rather than trusting them to know what is required, especially if they are based abroad.

Contracts and the transfer of risk

As well as using insurance, businesses can protect themselves from supply chain risk by carefully structuring contracts with their suppliers. The legal protection offered by the right contract is critical for anyone with extended or international supply chains.

You can pass responsibility for product-related supply chain risks to those who produce the raw materials or parts. This is done through a so-called vendor indemnification clause, under which the supplier agrees to take responsibility for all third-party claims, liabilities, losses, damages, suits, expenses and legal fees arising out of any harm caused by their product. It is also possible to insist that your supplier is responsible for ensuring that labelling, instructions and the product itself comply with regulations in the area where you plan to sell the finished product. In a complex supply chain, this can help to cut your exposure to risk.

Not everyone will be able to insist on this sort of contract – it is much easier for larger companies – but it is worth considering as a protection against suppliers' failure further up the chain.

Including a "best efforts" clause that lets you move without penalty to an alternative supplier in certain circumstances is also advisable.

Finally, instead of an indemnity clause, you can ask your suppliers to make sure that they have the right insurance cover. This is relatively new, but increasingly it is possible to require a supplier to take out their own insurance, which provides cover for the importer. This ensures that you will be able to make a claim if the product causes damage or harm, without going through the international courts.

Shipping and transport risk

Another area of risk is what happens when raw materials or finished goods are shipped to you, or from you to your buyer. When goods leave the factory, they are often still your responsibility until they are sold. Conversely, responsibility for the safety of your raw materials may rest with you even when they are in transit from your supplier.

Responsibility for goods in transit is determined by a set of internationally recognized rules called Incoterms (international commercial terms).

What to do when the worst happens?

With the increased uncertainty in global markets, firms need to be prepared to address whatever shocks are thrown at them. This is where your homework in understanding your supply chain and the related risks, scenario planning outcomes and practicing crisis management procedures will stand you in good stead.

But even with the best preparation, shocks will arise that weren't expected or impact your business in unexpected or significant ways. This is where the act of preparing for multiple scenarios rather than "fighting the last war" will help your teams assess the situation, diagnose the problem and develop the most appropriate course of action. This should be done closely and in partnership with your insurance company. They are most likely to appoint a third-party loss adjuster and between them will probably have a good deal of useful experience about how to minimize business interruption. Use their skills and advice, and work together to find ways to get stock to your customers. Take your ideas to them and listen to them. Involve your broker, too.

A close working relationship with your insurer before and during a crisis will help ensure that everyone is bought into the plans that come together. If the worst happens, work with your insurance company to make the best of the situation. Use their experience and remember, they are on your side.

Checklist for minimizing your exposure and preparing for shocks

Open communication lines with suppliers

Having an active dialogue with your suppliers is the best defence for unexpected shocks to the network. Whether this is informal or systematic, such information could prove invaluable by providing advance warning before shocks appear.

Work with your insurance company

Discuss your approach to supply chain risk management and your crisis management plans with your insurance company.

Work with them to understand your exposures and coverage, and what will happen in the event of a disruption.

Take the long-term view

Uncertainty, and the resulting potential for business disruption, has become the norm rather than the exception. Taking the long-term view and working with suppliers through difficult periods will only strengthen your network over time.

Focus on your risk culture and your ability to deal with uncertainty

Understand your risk culture.

Use this understanding to build your firm's risk intelligence and ability to deal with uncertainty.

Minimise your exposure to shock

1. Financial precautions
Ensuring you and your suppliers have sufficient coverage and/or resources to weather a business failure in your network.

2. Balance Just in Time with Just in Case
Ensuring that the cost of disruption is factored into your inventory planning.

3. Manage your cyber exposure
With cyber risks growing, ensuring that your exposures are managed and minimized is critical.

4. Understand supplier alternatives (optionality)
Building relationships with a wider set of suppliers/distributors to ensure redundancy in the event of shocks.

5. Explore regionalization
Implementing greater regionalization, particularly in areas that address customer requirements and the wider resilience agenda.

6. Be nimble
Be prepared to adjust production and reroute distribution in the event of shocks.

7. Building resilience into production
Ensuring resilience in production capabilities, whether at the plant level or more broadly via multiple sites.

8. And finally, be prepared
The greatest way to minimize shocks to your supply chain is being prepared for the worst. Whether you have the resources in place for full redundancy or not, the act of scenario planning different events will mean that when the shock occurs you will be prepared to act.

Conclusion

With uncertainty increasing, the need to actively manage supply chain risks has moved from a prudent step to take to a regular aspect of running your business. No longer just about efficiency, well-designed supply chains and distribution networks need to ensure that resilience and robust risk management are core design principles. With the interconnected network ever increasing, this robust design needs to go well beyond your direct suppliers and distributors. And when a crisis does occur, ensuring that your teams have the preparation and capabilities to face it head-on will make all the difference.

Understand

The time spent mapping, understanding and monitoring your supply chain can help prevent issues before they occur and will give you a significant head start when they do.

Train

Bringing supply chain risk management closer to the core operations and training your teams to address crisis situations can prevent issues from impacting the business and lessen the impact when they do.

Prepare

Scenario planning a range of possible events and preparing playbooks of responses will not only help you prepare for the events you plan for, but also give your teams the structures to respond to unexpected ones.

Involve

Your supply chain is by its nature a network. Involving your network in both the planning and responses to crises that do occur is critical. As a key partner in helping you to manage supply chain risk, your insurance company should be part of this discussion.

> Crisis is no longer a binary state, it is a constant.

Julia Graham

CEO, Airmic

Thank you to the following experts who gave their time and shared their expertize on supply chain risk management with the authors of this report:

Julia Graham, CEO, AIRMIC

Ben Cattaneo, Chief Risk Advisor, BT

Thomas Kercher, CEO, Jomicom Partners

Christopher Hess, Partner, Hesmur

Adrian Simmonds, Senior Risk Manager, Risk Solutions, QBE European Operations

Deborah O'Riordan, Senior Risk Manager, Risk Solutions, QBE European Operations

Tania Bensoussan-Arthur, Practice lead Europe – Marine & Specie, QBE European Operations

QBE Services Inc.

Bay-Adelaide Centre
333 Bay Street, Suite 520
Toronto, Ontario, M5H 2R2
Canada
tel +1 416 682 5930
QBEcanada.com

467205/2211