

WHITE PAPER

Risk Management

Managing Risk in Turbulent Times



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Supply chains are more complex than ever. It is critical to know the risks and manage what you can.

Supply chains are becoming more complex. The more moving parts and variables in your chain, the greater the risks you face. And with so many organizations relying on global sourcing, the volatility in current events is making for unpredictable times.

At present we are facing numerous unprecedented upheavals. From the Covid-19 pandemic, to disasters caused by global warming, transport congestion, war and shortages of labour, key components and food, the challenges are coming fast and thick. Any one of these factors can upset your plans, prevent goods from reaching customers, and devastate your bottom line.

What's a supply chain operations manager to do? Getting your goods where they need to be, on time, and intact falls on your shoulders. In this paper we'll take a look at the turbulent state of the world and how it's impacting various aspects of supply chain management. Then we'll offer some best practices to help manage and control the risks you face.

What Is Supply Chain Risk?

Risks faced by supply chain managers come in many forms. They can be internal to the organization or external.

Internal risks include disruptions to internal processes caused by personnel changes, lack of contingency planning, insufficient cyber security precautions, failure to comply with regulations, or maintaining insufficient inventory. External risks take the form of failure to understand demand, interruption in the flow of raw materials, parts or finished goods, geo-political disruptions like war or

terrorism, issues with suppliers, and natural disasters. Additional perils include financial risks, such as unexpected cost increases, and reputational risks such as unethical actions or being found to use a supplier that engages in illegal or unethical behaviour. For the purposes of this paper, since we are focusing on supply chains, we will look primarily at the external factors that pose potential risk.

Any one of these potential dangers could significantly disrupt your supply chain, posing a threat to the bottom line, and potentially even the viability of your business. Recent survey findings suggest that supply chain disruption poses more substantive risk than competitive threats by a two to one margin.

The Risks We Face Today

The world is a chaotic place at the best of times. But lately it's been feeling out of control.

The pandemic continues to disrupt supply chains even as it has passed its peak. Chinese ports have been shut down as a consequence of the government's zero-Covid policies, slowing down an already clogged global shipping system. On the import side, North American ports struggle with a backlog of ships and the inability to move containers due to a shortage of drivers and port workers.

All this was made worse by the shift in shopping habits towards e-commerce, and the increase in demand for goods over services at the height of the lockdowns. Demand is easing now as people return to in person shopping and rising inflation curtails spending power.



Unpredictable Events

Who could have predicted a global pandemic? Nobody, really, although those with an eye on history could have told you we were due for one based on past experience and statistical analysis. Like any catastrophic event, the pandemic came as a surprise.

Similarly, although we know that global warming is creating more – and increasingly violent – storms, floods, and fires, predicting them is a developing science. We may get a short amount of warning, but factoring that into supply chain planning is impossible.

Take the flooding that cut British Columbia's Lower Mainland region off from the rest of Canada in the fall of 2021. The rainstorms were predicted, within a couple of days, but there was nothing that could be done with that amount of warning to prevent the catastrophic damage done to the rail and road infrastructure in the area.

These risks are just going to intensify as global warming continues to change our climate. Storms at sea will take out ships; fires will destroy property, factories and transport infrastructure; and more floods will hit agricultural and industrial lands.

Geopolitics

The risk of war and political upheaval has also been made crystal clear in recent months. The Russian invasion of Ukraine is the most disruptive international conflict the world has seen in decades. Russian oil fuels much of Europe, while Ukraine's grain feeds upwards of 400 million people, and together Russia and Ukraine are the world's dominant producers of barley and wheat, sunflower oil, and fertilizer. All of this has been disrupted by Russian dictator Vladimir Putin's attempt to control the Black Sea and destabilize Europe.

Supply lines can be physically disrupted by war or terror, and sanctions can make it impossible

to do business in a particular country. The sanctions against Russia are a perfect example. Over 1,000 international corporations have quit doing business in the country since the war on Ukraine began.

China also poses a huge question mark over global trade. Its pressure on Taiwan, a tiny country with huge global importance thanks to its dominance of the semiconductor manufacturing industry, is leaving the already short supply of chips in doubt. The potential for another conflict that will inevitably involve Western countries is growing by the day.

A new government anywhere can mean regu President Biden illustrate this. Suddenly the message from the White House was "Buy American" to the apparent detriment of Canadian suppliers.

Supply Shortages

The global shortage of semiconductor chips has been making the news for almost two years. With the rebound of the automotive market in 2020, car manufacturers found they couldn't renew their contracts with the chipmakers. Production had been allocated to electronics manufacturers who had seen a boom in demand during the pandemic lockdowns. This inability to get supply was made worse by a couple of fires at semiconductor plants, along with shutdowns in Texas due to freezing conditions in February 2021.

All these disruptions made a perfect storm for the chip industry, which will likely be struggling to catch up for years to come. While the auto manufacturers were the hardest hit, this shortage has global implications for healthcare, advanced computing applications and numerous other industries.

This is just one example of a critical component made scarce due to numerous factors, yet it illustrates how a combination of catastrophic events – fires, the pandemic, and bad weather – and poor foresight can result in widespread effects.



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“we also have a confidentiality and security team, which is made up of key personnel whose responsibility is to discuss security issues, review concerns, and follow the progress on all security-related activities within the company.”

She says it’s important to ensure any supplier with access to data takes the same approach. She also notes it’s critical to ensure your own staff are educated about avoiding social engineering attacks like phishing emails. But, she warns, don’t make security too complicated or staff will look for ways around it, leaving you open to breaches.

- Marie Couture
Security Analyst at C3 Solutions.



Price Shocks

Although they usually occur in conjunction with other issues, sudden price increases constitute a major risk for supply chains. During the pandemic, the cost of shipping a forty-foot container across the Pacific tripled, topping US\$20,000 at one point. These price increases were not easily foreseen, and put many companies in a bind as they struggled to absorb the cost or risked losing customers.

Now, it's the sudden increase in the cost of fuel causing disruption. The soaring cost of diesel, driven largely by the war in Ukraine, and increased demand for transport, is driving trucking and airfreight rates up. In the past year gas prices have jumped by more than 50%, fuelling inflation and increasing logistics costs.

Security Concerns

Another growing area of concern is security. Theft of goods and equipment is a troubling reality in supply chain operations, and cyber attacks are becoming all too common. Cargo theft spiked during the pandemic, as stranded containers made easy pickings for enterprising thieves. **Cyber crime was up by more than 15% in 2021 over 2020, with attackers increasingly favouring small and medium businesses** along with critical infrastructure and supply chain targets.

Assessing Risk

The level of exposure will surely be different for each type of risk, so it is critical to understand how each might potentially affect your operations. There is no substitute for taking the time to look at each link in your network and think about how it could be affected by any of the type of contingencies explored above.

This is not an easy task. The scope and number of risks is vast. Then you have to factor in their probability. How can you know when a catastrophe will happen?

How can you guess when a supplier's employee will make a critical error or accidentally breach security? It's not possible to know everything.

There will be challenges related to gaining visibility into the entire chain. There can be hundreds of suppliers involved in the creation of complex consumer and industrial goods, making it next to impossible to pinpoint each and every one. For any item, it will definitely take time to build the list of suppliers, from raw materials to finished product.



Depending on the complexity of your networks, the assessment may require the assistance of an outside organization that specializes in such research. It will be worth the investment, however, if your assessment and planning prevent disruptive supply chain interruptions.

Risk Management Strategies

Once you understand the scope and nature of the risks facing your operations, you should take action to manage and reduce them. Managing risk can be as simple as keeping an eye on developments, to as complex as completely overhauling your supply chain.

Organizations around the globe are reassessing their supply networks in the face

Cultivating good relationships with your local suppliers will help keep you in the loop should a disruption be looming. Making it a habit to stay in touch with the companies you rely on will allow you to be ahead of the game if they experience supply or production disruptions of their own.

of the risks we mentioned above, and others. Here are some of the tactics you might consider adopting for your company:

Managing Suppliers

Relying on suppliers in far-away places is risky. Yet despite these risks, many companies count on just one major supplier or market for a majority of their inputs. But now, following the shocks to global trade, organizations are recognizing the need for alternatives. This may mean cultivating new suppliers and diversifying the regions in which supply is sourced. Adding new suppliers will allow you to maintain production or sales in the event that a catastrophe shuts down operations for a company, country or region that you rely on.

Closer to home, cultivating good relationships with your local suppliers will help keep you in the loop should a disruption be looming. Making it a habit to stay in touch with the companies you rely on will allow you to be ahead of the game if they experience supply or production disruptions of their own. A quick chat now and then will give you a lot of information that you can act on, and besides, building a good relationship is always a smart business practice.

Nearshoring or Adjusting Sourcing

Another response to the problem of remote suppliers is to bring procurement home.

Many companies are adopting nearshoring strategies, in which they find suppliers closer to or in their home country. While in the past “least-cost” procurement usually meant buying components or raw materials from cheaper, remote countries, now the cost transportation, plus delays in delivery, and the risk of supplies being cut off completely, mean that buying local can ultimately be cheaper.

Manufacturing is also being brought home. A recent study demonstrated that for US

manufacturers, shifting production closer to home can net significant savings as well as reducing risk. The semi-conductor industry is a good example here, with chip maker Intel moving as fast as it can to develop new production capabilities in the United States.

Building Redundancy

Always have a plan B. This is especially important for transportation. When containerships are routinely stuck at anchor awaiting a berth, your shipments can be delayed in transit for months.

You need a backup plan. This may mean keeping safety stock on hand, a situation that runs counter to the just-in-time supply model we are all used to. It could also mean costing out alternatives like using airfreight instead of ocean for intercontinental moves, or moving to rail from truck or vice-versa.

Monitoring Global Events

Paying attention to the news can pay big dividends if you have a plan in place that guides your organization’s reaction to events. If you don’t have the time, many organizations offer alert and update services that you can use to keep on top of changes in your operating environment. From regulatory compliance, to political risk monitoring, to keeping an eye on port congestion and capacity availability, you can find the information you need.

Industry groups like freight forwarders and modal transportation representatives are great sources of insight. Examples include IATA, The Canadian International Freight Forwarders Association (CIFFA), the railway association, and the Global Shippers Forum. They have their finger on the pulse of both local and global events as they unfold, and usually have free newsletters you can subscribe to.

Companies are now able to collect data from a multitude of sources – suppliers, customers, transportation partners, warehouse management systems, GPS tracking systems, global news reports – and deploy new technologies like artificial intelligence (AI) to catch early warning signs, develop tactical plans, or test alternative action plans in the face of potential disruptions.

Updating Technology

Digitization is a hot topic right now, and for a good reason. **Digital processes can move faster than any human to keep up with events, and keep you organized, on time and in command of your data.** Software rarely makes mistakes, and offers a huge array of different services to keep you on top of your supply chain.

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Using the right technology can help provide the transparency needed to assess risk and contingency options, and improve the effectiveness and efficiency of collaboration with suppliers. It can also ensure that your entire supply chain operation is running as efficiently as possible, thus reducing the risk of slowdowns and disruptions as close to home as your own warehouse.

Software applications that allow you to improve communications are a perfect example of the kind of technology currently being employed to reduce risk. Having the capability to instantly know where shipments are and when they'll be arriving takes the guesswork out of scheduling operations, and allows precise deployment of personnel where and when they are needed.

Take the example of a busy distribution centre, with potentially hundreds of loads coming and going on a daily basis. Every one of those trucks has to be scheduled with a time at the dock for loading or unloading, and people have to be on hand to do the work. By deploying software such as **C3 Reservations** dock scheduling you automate the process of reserving times for all those trucks. What used to be an error-prone, risk-inducing manual process now becomes a seamless, smooth system of communication between the carrier and shipper.

Likewise, adding an extra communications piece to this means you can have real-time updates to the information provided by the truck driver. That way you will know exactly when he is going to arrive, and can automate gate processes, as well as directing him to the correct dock door. **C3 Hive is a visibility tool** that provides this visibility, further reducing the likelihood of congestion and errors in receiving deliveries and organizing outbound loads.

It's solutions like these that make digitization a critical piece in reducing supply chain risk. The more connected we are along the chain, with communication moving freely among partners, the better equipped everyone is to address challenges. The previously unforeseen event is now predictable, and the truly unpredictable disaster can be managed when everyone is talking.

Improve Security

Security risks are on the rise. As noted above, it's not only physical threats like theft and piracy, but cyber attacks that need to be addressed.

Physical security can be managed by adding digital visibility tools – GPS tracking devices, for example – to assets like containers, along with tamper-proof seals and locks. Working with terminal operators and forwarders to know where your containers dwell is also critical, as backlogs have meant the extensive use of off-site storage, where security may not be well established. Thieves have easier access and plenty of time when a storage area is not well monitored, so do your due diligence and ensure your assets and inventory are protected.

On the digital side, security is paramount. According to C3 Solutions security analyst Marie Couture, hackers are constantly and actively looking for targets. "We rely on an efficient supply chain and hackers know that. Attacking the supply chain is a good way to disrupt the whole economy," she notes. Couture offers a couple tips on the



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*- Marie Couture,
Security Analyst at C3 Solutions*

best ways to ensure your company doesn't become a victim of supply chain cyber crime.

With the increasing reliance on digital tools it's critical to ensure that the ones you rely on are built with security from the ground up. Couture cites C3 Solutions' approach, which is not only about the software – which is built using foundational concepts of information security – but also the company's operating philosophy. In addition to regularly training staff on proper data hygiene measures and security protocols, “we also have a confidentiality and security team, which is made up of key personnel whose responsibility is to discuss security issues, review concerns, and follow the progress on all security-related activities within the company.”

She says it's important to ensure any supplier with access to data takes the same approach. **She also notes it's critical to ensure your own staff are educated about avoiding social engineering attacks like phishing emails. But, she warns, don't make security too complicated or staff will look for ways around it, leaving you open to breaches.**

And with the chaotic nature of supply chain operations lately, she notes that software updates may not be getting done in a timely manner. “Not doing your update as soon as possible contributes to users and companies being vulnerable to those software breaches. The moment the patch is issued, then it's known that the software has this specific vulnerability, and it's going to be easy for hackers to look for companies that haven't updated their software and that are still using that version that contains the flaw, and they are going to exploit it,” Couture says.

Her third tip is to move away from unsupported legacy software. “It's old and outdated and it's maybe no longer supported by the company, or maybe the company that made the software doesn't exist any more. That makes the software being highly at risk of being breached because there are no new patches being issued.”

Planning

All of these considerations need to be built into a comprehensive risk management plan. Once you have a risk assessment, you need to develop a plan of action to ensure business continuity in the face of each one.

It's not a theoretical exercise. It will require conversations with front-line workers, suppliers, transportation providers and software makers to figure out when a risk becomes a threat and what the specific consequences will be if no action is taken. Then build scenarios detailing what should happen to prevent those consequences from becoming reality.

Building Resilience

Ultimately, you will never be able to eliminate risk from your supply chain operation. There will always be external factors beyond your control that threaten to disrupt your operations.

However, you do not need to be a bystander as events ruin your business. By being aware of your entire supply chain and analyzing the factors that affect it, you can plan to minimize the effects of disruption.

As a supply chain operations manager you are likely good at planning. It's what you do, after all. Hopefully, the threats we've outlined here are already on your radar, and the responses that we've outlined here are part of your toolkit.

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