WHITE PAPER

THE 6 GLOBAL SUPPLY CHAIN THREATS INFLUENCING YOUR PLANS

Abstract

The pandemic put supply chain risks on the corporate radar. Now, with war in Europe, that big bright blip will remain on our screens for some time. Yet, the war is only the latest in a series of factors that have changed supply chains for the foreseeable future. Many are already experiencing difficulty, but we can also embrace the challenges and use them to undertake a highly constructive and valuable supply chain risk assessment.

This paper provides some baseline thinking that you can use to develop your own supply chain risk scenarios, which are the starting place for a risk management strategy. The 6 key themes outlined here are not predictions. Rather, these threat sources will give a starting point for developing supply chain scenarios. They are in no particular order, as these might vary across different organisations

Infosys™
Portland

Introduction

Supply resilience comes through preparedness, so assessing resilience to specific sources of threat not only prepare an organisation for specific eventualities, but it can also make them holistically better prepared for any eventuality. If nothing else in 2022 is certain, you can expect it to be filled with volatility, uncertainty, complexity, and ambiguity.

These global threat sources have been selected given their relevance, and their impact will have a ripple effect across economy – few, if any, organisations can avoid exposure.

1 The European conflict

As we look on from the other side of the world at the evolving European conflict, it can be easy to feel distanced from the direct impacts. However, oil and gas prices have already shown volatility, with high oil prices raising the spectre of increased shale oil production in the US, while OPEC has ruled out opening the taps. But the real eye-opener, from a supply resilience perspective, is the lack of visibility organizations have of the suppliers' suppliers. They are another layer down, beyond the sight you have of your day-to-day contacts.

For example, Volkswagen has flagged production delays of electric vehicles as a shortage of critical electrical inputs from Ukraine bites operations[1]. Moreover, further semiconductor chip production issues have been flagged, as a significant proportion of the global supply of a number of ultra-pure gases used in the chip manufacturing process come from Ukraine. This will place even greater pressure on an already stressed industry. Other rare metals in the technology supply chain come from Russia, with sanctions expected to prevent trade.

Additionally, the Trans-Siberian Railway, which had transported between 800,000 – 1,000,000 containers between Europe and Asia throughout 2021, will be effectively shut down by sanctions[2]. This volume, which had been rapidly growing due to burgeoning sea freight prices, will go back into the already stressed maritime industry, driving up shipping prices further and lengthening existing delays.

Once again, the world scrambles to find alternate sources after the fact. Some freight businesses in Australia are already asking what can be done about high fuel prices. This comes several months after oil futures, which could have provided a treasury-based risk buffer, have priced in the risk of sanctions on Russian oil exports.

Technology shortages may cause reduced productivity while higher prices on commodities, such as LNG and rare metals, may provide a windfall for other producing economies. Either way, the interconnectedness of supply chains has been presented in stark light, and organisations would be well advised to understand their upstream exposure to the region.

Of course, the war in Europe is only going to compound disruptions that have arisen from the pandemic. None of these has abated and will remain threats for the foreseeable future.

[1] https://europe.autonews.com/automakers/vw-halts-ev-production-germany-ukraine-crisis-hits-supplies
[2] https://theloadstar.com/shippers-with-an-eye-on-tougher-sanctions-cancel-china-europe-rail-bookings/

2 A destabilised Chinese production environment

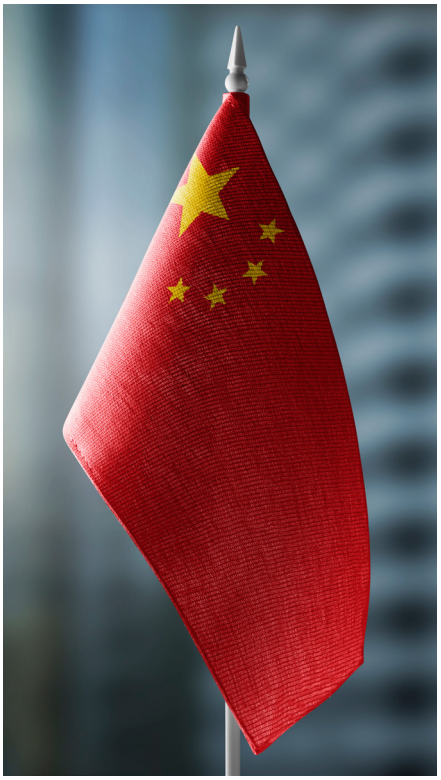
The red flags are up for China, so to speak. There has been a lot of commentary about supply chain resilience being achieved by reducing dependency on China, through alternative low-cost country sourcing, near-shoring, and onshoring.

With the ongoing restrictions on the export of chip technology from the US to China, combined with the energy shortages, property sector-driven debt headaches, and inflationary pressures, there is a real threat that the Chinese production environment could become destabilised. This is a rare economic red flag, acknowledged by the Deputy Governor of the People's Bank of China, Liu Guiping, in an address to the Global Asset Management Forum in Beijing in late 2021.

Destabilisation however, doesn't mean a spectacular collapse – far from it – but it does have important and far-reaching ramifications. Much of the low-cost supply that organisations enjoy in developed economies comes directly from China, as well as a great deal of the goods that have been underpinning healthcare systems throughout the pandemic.

Destabilisation in China can manifest as temporary production shutdowns driven by electricity supply issues, capacity reductions due to changing demand profiles, or privately owned industrial property insolvencies and disputes. Regardless of the trigger, the impacts are much the same, with volatile supply, lengthy order delays and significant price increases.

Secondary threats flow from supply volatility, as organisations place larger orders to secure supply, creating a bullwhip effect and placing more stress on an already failing international logistics network. Organisations will be best prepared when they consider how this bullwhip might impact their suppliers.



3 Unilateralism

Governments globally are now seeking to become less dependent on sources around the world that they consider risky and are endeavouring to improve domestic supply to ensure greater resilience in the future.

While the emergence of strategic alliances, such as 'The Quad' of Australia, India, Japan, and the US, may seemingly contradict a shift toward unilateralism, the reality is that it is possible for the two to coexist. Countries can still seek to be more independent regarding critical supplies, while also cooperating on peace and security initiatives with like-minded nations.

The issue with unilateralism is that there will be winners and losers. Most obviously, wealthy nations with the capacity to develop critical supply independence will generate jobs and increase domestic cash flow, while those traditional manufacturing centres will lose volume.

What may be less obvious is the impact on nations with less capacity to generate critical supply independence. As the market for critical commodities becomes more diffuse, the economic scale enjoyed by traditional manufacturing centres reduces, capacity is taken offline or diverted, production efficiency is reduced, competition increases, and costs go up.

Again, those wealthier nations that can't develop supply independence will be able to absorb cost increases and pass these through to end-users.

However, the threat of unilateralism is biggest to second-tier manufacturing centres in developing economies that are pushed out on price and forced to reduce production. The secondary threat then – somewhat ironically – is that these second-tier production centres are also large suppliers to developed economies, with consumer electronics, machinery, textiles, and more, all impacted.

4 Digital dependence & cyber vulnerabilities

We understand that every threat is also an opportunity, but we think far less about the fact that every opportunity can harbour a threat.

In the instance of supply resilience, organisations are focussing on improving supply chain visibility, enabled by the ingestion of real-time or near-to-real-time data from a variety of sources, such as subscription services, open- and deep-web, proprietary (customer and supplier) sources and IoT sensors throughout their networks. These valuable information sources also represent potential attack surfaces from which an organisation can be exploited, through ransomware for example, which has seen a 311% increase in the value of cryptocurrency ransom payments between 2019 and 2020[3]. Cybercrime has become an industry.

As organisations increase systems and data integration within their supply chain, they increase their dependency and inherit a large chunk of this cybersecurity risk. Even upstream suppliers, without direct data integrations, can cause physical supply chain disruptions while systems are offline following an attack.

The challenges of online commerce are persistent and cannot be solved easily. Avoiding exposure is effectively impossible, and the value of upstream data integration is too great to miss. Organisations have no choice but to plan for resilience to cyber-based disruptions.

5 Economic disparity

One of the most enduring impacts of COVID-19 will be an economic disparity. Developing economies with poor health infrastructure will suffer intergenerational prosperity impacts because of the pandemic. Poor infection control and low vaccination rates, driven by poor supply and distribution arrangements, as well as cultural issues, combine together to negatively impact workforce at scale.

Aside from the obvious production issues of factory closures or reduced staffing, many seafarers are drawn from developing economies. At the same time, border closures have prevented the repatriation of seafarers for lengthy periods, contributing significantly to the sea-freight risks that have impacted consumers and businesses in developed economies.

Reduced productivity at a nation-state scale can have a significant impact on those economies and that impact invariably ripples throughout supply chains around the globe.

[3] https://www.financemagnates.com/cryptocurrency/news/2020-brought-a-311-increase-in-crypto-ransomware-attacks-chainalysis/https://www.scmp.com/economy/china-economy/article/3163584/china-

6 Commodity volatility

In the push for unilateralism, we also see a drive to secure the supply of critical commodities. Commodity volatility in 2022 will be driven by the identification of commodity types critical to large economies. This will be followed by a reactionary rush, not only to secure supply but to trade on the windfalls of demand – a type of global panic buying.

As buyers and traders lurch from one commodity to the next, the only outcome can be volatility.

Smart traders are the only ones that benefit from commodity volatility, and from a supply chain perspective, as the price of raw goods fluctuates, the production of finished and unfinished goods will also fluctuate.

Realistically, production is often capped by demand rather than capacity. So, while we are not likely to see increased production when input commodities are trading low, we are likely to see reduced production when input commodities are trading high. This will result in lumpy production causing uneven supply, prompting buyers to place large orders to secure their own production inputs, thereby increasing the amplitude of the bullwhip effect once again. When the bullwhip cracks – even after commodity prices stabilise – the impacts will echo around the globe for months.

What to do with these risks?

It is easy to look at these threat sources and reach one of two conclusions: either they are too big to assess their impacts, or we are all just fated to be passengers.

Yet, despite being framed at the global level, these threat sources can be very instructive, and can help individual organisations think through how they are positioned and how they can respond. Developing these broad global threat sources into scenarios that provide a greater degree of relevant context for an organisation can form the basis of resilience assessments.

Consideration of these threats can prompt the identification of new and emerging risks that an organisation needs to monitor and adapt to. It can aid the development of business continuity plans. It can even identify entirely new risk mitigation strategies that an organisation did not previously have visibility of.

The value and utility of scenario planning to supply resilience cannot be underestimated. Such planning helps maintain the reliability of organisations, ensuring strategic and customer objectives are met, provides a source of competitive advantage, and drives market capitalisation.

About Author

Simon Coates

Director, Infosys Portland

Simon has over 25 years of operational and strategic Supply Chain experience in the UK and Australia. As a supply chain executive, Simon has achieved significant cost, customer service and working capital improvements in blue chip Australian businesses covering industrial gases, FMCG, retail, automotive and pharmaceutical.

Kieran Heinze

Senior Manager, Infosys Portland

Kieran is Infosys Portland's Supply Chain Risk Practice Lead and brings 20 years of supply chain risk management experience from industry and consulting. He began his career as an Officer in the Australian Army, designing, implementing and operating High Reliability international supply chains into disaster areas and conflict zones with extreme risk profiles. After leaving Defense, Kieran continued to design and implement international greenfield supply chains throughout Africa, the Middle East and Southeast Asia for mining and resources clients, and United Nations peacekeeping and peace monitoring missions, increasing his focus on international trade and commercial supply chain risk outcomes.

Over the years Kieran has developed and applied an increasingly sophisticated suite of risk tools and methodologies to client supply chains, incorporating High Reliability Organisational theory, Scenario Planning, Reliability Engineering, Machine Learning and genetic optimisation, to deliver adaptive supply chains enabled by real time predictive and prescriptive risk analytics in the 'Age of Supply Chain Risk',

Kieran seeks to push the boundaries of thought leadership to drive innovation and challenge the supply chain industry to earn its place in the C Suite. Kieran is a recognised industry expert in Supply Chain Risk, speaking before a range of professional bodies and forums, and lecturing supply chain risk to Postgraduate courses at the University of Queensland.

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