

Supply chains need to develop immunity to natural disasters



Let me introduce you to a new concept, “supply chain immunity”. Immunity, not resilience. Resilience is often one of the first things to emerge in any debate on how we arrived at the point in which we are today in the Covid-19 pandemic, especially as it applies to supply chain management. [Supply chain resilience](#) generally means the ability to manage risk and be best positioned to respond and even gain advantage from disruptions. It also means [minimising damage](#) and the time taken to return to a normal state of operations.

However, is resilience really the right context here? After all, supply chain management is about getting things moving, and that applies not only to roads, airports, and ships, but to how we think about getting things to people. To create a supply chain capable of withstanding something as powerful as a global pandemic, our society and infrastructure need to be able to not only leverage what is already in place, but ask ourselves the question of what we would do if we could design an optimum supply chain from scratch?

So how do we make sure that, in a post-Covid world, we continue to not just optimise and design our supply chains based on lowest cost, but ones that do the least damage and have an ability to flex under pressure? Just like major hurricanes causes some trees to snap in two, while others are able to flex and only lose a few leaves, we need our supply chains to be able to bend and withstand the storms of major pandemics, weather disasters, and financial system implosion. Although many experts talk about creating [supply chain resilience](#), our position is that resilience is the equivalent of putting concrete around the trees and steel poles into their trunks to make sure they don't break before a hurricane! Resilience is the easy way out – it involves carrying a lot of wasteful inventory and redundancies in the supply chain. There is a better way – one that is determined through the laws of medicine applied to create supply chain immunity.

“...our supply chains need to be able to bend and withstand the storms of major pandemics, disasters and financial system implosion.”

Supply chain immunity is similar to the idea of your body's recognising invaders through its immune system. One's body has an "[innate immune system](#)" that it is born with, and which is active the moment you are born. The system recognises an invader, and goes into action immediately, and the cells surround and engulf the invader, and kill him. These cells are phagocytes. There is also another immune system, called the acquired immune system, which produces cells (antibodies to protect your body from a specific invader). These antibodies are developed by cells called B lymphocytes after the body has been exposed to the invader. After the first exposure, the immune system will recognise the invader and defend against it. This may often involve a period of illness, fever, extensive sleep, breathing difficulties, as the immune system harnesses all of the body's forces to defend and respond to the harmful invasive virus. This is what immunisation does: train your immune system to make antibodies to protect you from harmful diseases.

We have to establish supply chains with demand-sensing capabilities, that drive the people within them into action, to prepare and fight against the invader. And we need to train our national supply chain system on how to prepare for this response.

Supply chain immunity, in the case of massive disruptions of life-saving products and services, means the ability to survive, plain and simple. It is important, but many of us in the fight have noticed that the concept itself is not enough. We need the 'how', not just the 'what' in times of how to act in emergencies. We need to know how to prevent recent supply chain failures from reoccurring, should there be another pandemic or global event that affects all global supply chains. What we need is a **plan for ongoing and persistent immunity**.

Because of the rapid succession of events during the Covid-19 crisis, the need for real-time information has never been more obvious. People working at home must be able to see what is happening in their supply chains in real-time, and to collaborate with others to view data. They need to establish action plans to deal with new crises and disruptions in real time. We have seen some digital tools that have been adopted through the internet, but now more than ever, real-time responses to issues will separate the winners from the losers. As our global economy enters into what is most certainly going to be a global recession, it is useful to think about what we learned during this crisis, and what it means for the supply chains of the future.

"We need to deal with our inability to diversify our supply base"

This is unlike any other global recession or disaster we have ever experienced in the past, although our prior hypothesis, that we have been leading up to this moment, can be examined in the context of our historical record of supply chain and global disasters. The earthquake in 1995 in Kobe, Japan, primarily affected first-tier supply chains. Next was the 2008 economic crisis, and procurement executives began to have more of a macro view of their supply chains, to understand that events that were not in our direct line of sight could lead to some very severe consequences. The next major event was the Thailand floods, which led to significant shortages of hard disk drives, given that 80% of these devices were manufactured in Bangkok, resulting in a multi-quarter event. Next, the Fukushima earthquake, tsunami, and nuclear disaster affected multiple tier 1, tier 2, and tier 3 suppliers in the electronics, automotive and semiconductor supply chains. This led to the recognition that visibility tools were needed to drive multi-tier insights, as well as deep supply chain mapping. Despite these events, it was clear that organisations even today have very little visibility beyond their tier 1 suppliers, and are unsure of what the impact of Covid-19 will do to their supply chains in both the near and longer terms.

What is remarkable about the Covid-19 pandemic is that it is hitting all manufacturing sectors, in every part of the world, at the same time. Data provided by Resilinc shows that supply disruptions are occurring in every industry, and there is relatively little visibility of what is the condition of suppliers in this situation. It is a startling event, not a one-off, that is likely to drag on for a year or more, resulting in parts shortages, workforce outages, transportation disruptions, capacity under-utilisation, and massive slowdowns, as well as hoarding on the part of consumers and healthcare systems. A quick scan of the news reveals partially-filled shifts, empty airplanes, reduced airlift resources (due to no passengers), and the recognition that any uptick in economic activity is going to be very slow in occurring. This may very well result in multiple bankruptcies across many sectors, particularly small and medium enterprises. Any business without 6 to 12 months of cash on hand will likely not survive. For instance, in China 65% of small and medium companies have [less than two months](#) of cash. The fall in demand for these businesses is demand that is lost forever, and since demand is perishable, these losses will never be recouped. If there is a long recession on the tail of the Covid-19 crisis, many of these smaller companies will run out of cash.

There is a strong message here for larger companies to rethink their position relative to smaller suppliers in light of this fact. One of the most important things companies can do right now to keep their supply chains intact is to "pay it backwards". It's like the charitable concept of "pay it forward," but in supply chains, it is important to pay it backward, meaning you have to take care of the suppliers that are feeding your supply chain. People need to understand just how fragile a time we are living and doing business in. Supply chain executives should be careful to pay attention to the ability of these small players to survive a crisis like this. With little to no income for weeks and months on end, it doesn't take long for these businesses to go under. So, as this lockdown continues, we are going to start seeing more companies going out of business, which will weaken the entire supply chain ecosystem. We are looking at a potential coral reef moment – where the failure of a small segment of the reef ripples to destroy the whole system.

In the middle of a crisis, it is difficult for many executives to think about a recovery. However, we need to play for a recovery, because recoveries always come, and the slower they are in coming back, the more damage is done to the global economy. In 2008, the stimulus of many governments worldwide allowed stock markets to bounce back in six months, but the national economy in the U.S. and Europe did not recover until about 18 months later. While we are in the middle of the epidemic, now is the time to have the conversation about what went wrong, what is going wrong. We need to enhance the power of sourcing, fix problems with upstream suppliers around single sourcing, and deal with our inability to diversify our supply base. We have in a sense become trapped into our current suppliers in distant countries. When exports are restricted, many firms are powerless to recover, as no other sources of supply have been established.

The pandemic has indeed put a spotlight on the vulnerabilities that are inherent in global supply chains. Many have now called for a "post-Covid" economy. What will this future economy look like? An implicit assumption in the press is that Covid-19 caught everyone by surprise and that executives foolishly ignored the risks of outsourcing to China, and are now paying the price. However, noted scholars and epidemiologists have been warning of the threats of pandemics since the SARS virus. The pundits would further posit that in their pursuit of low-cost production, global corporations made naive assumptions that nothing could disrupt them. The tariffs imposed by governments were simply a passing political inconvenience, while Brexit restrictions would somehow be negotiated away with Brussels in subsequent years. Here we offer an alternative viewpoint: *the major disruptions of the global economy, including Covid and its after-effects, are a function of events that are indeed part of the natural evolution of supply chains.* If this is the case, and you buy into this hypothesis, then what we need is to develop supply chains that are immune to the natural disasters that befall them.



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