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Dealing with global supply chain breaks

Businesses need to adopt appropriate strategies to deal with the unprecedented impact of Covid-19 on global supply chains

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The global pandemic caused by the Covid-19 virus has impacted all aspects of global supply chains; from the supply of raw materials and the availability of labour to the transportation of goods and the operation of retail channels.

In Singapore, the coronavirus has threatened the security of the country's food supplies, as well as the city-state's ability to carry out its role as a key hub in the global supply chain, where it helps to ensure a smooth flow of goods manufactured in Asia to the rest of the world.

According to Shantanu Bhattacharya, Professor of Operations Management at the Singapore Management University (SMU) Lee Kong Chian School of Business, to mitigate this disruption, businesses need to incorporate risk assessment and planning, and risk identification in their business continuity plans (BCP) when designing their supply chains.

One good example of effective BCP can be seen from the impact of a fire that broke out at the New Mexico factory of Philips in 2000 on Nokia and Ericsson. Both companies sourced for components from the Philips facility. While Ericsson did not have adequate measures in place, Nokia had the foresight and made alternate supply arrangements for their components. As a result, Ericsson lost a significant proportion of their capacity for the year.

"Risk assessment and planning, and the subsequent risk identification actions have to study the mission critical components of the product lines of firms, identify bottlenecks that could disrupt production, and then design contingent risk mitigation and control strategies if the forecasted disruptions occur," said Prof Shantanu.

Focusing beyond procurement risk

Prof Shantanu observed that businesses tend to focus on managing risks in procurement, but take a more lax approach to risk when it comes to the manufacturing and logistics functions of the supply chain.

"The management of procurement risk is clearly important: a single car has more than 30,000 components, and the lack of just one component is sufficient to disrupt the production of the car! However, we observe that firms understand this risk better, but are not positioned well for risks outside the procurement function," he said.

The focus on procurement arises from the fact that most global supply chain disruptions are local in terms of source. When a tsunami hit parts of Japan in 2011, it significantly impacted the operations of automobile manufacturers globally. However, since only Japan-based suppliers were affected, many automobile manufacturers managed to source critical components from suppliers with operations in other countries.

However, the disruption caused by today's coronavirus is different. Not only have suppliers been globally impacted, but so has the availability of labour, transportation, warehousing and delivery.

"Local disasters have reasonable solutions that can be found post-crisis. However, global disasters impact all suppliers, and result in a competition for resources globally," said Prof Shantanu.

As such, dual sourcing is no longer an effective risk mitigation solution as customers all over the world are competing for a finite, disrupted supply.

Mitigating disruption

To deal with disruption on the scale that the world is witnessing with the Covid-19 outbreak, firms need to first have a clear idea of their inventories of finished goods, intermediate components and raw materials, advised Prof Shantanu.

To do so, they need to have an effective track and trace system to have clarity on which components are running out, and to build reserves of such components. Manufacturers must communicate frequently with stakeholders down the supply chain to have this visibility of component inventory at all levels.

Companies will also need to have flexible manufacturing capabilities and capacities, and ensure that their suppliers have adequate levels of safety stock. Manufacturers with flexible supply chains and flexible contracts with their suppliers will be able to manage their level of inventories more effectively.

For instance, global fashion brand Zara has a well-known supply chain that has design libraries for different customer preferences with local procurement. The company observes early demand for product categories, picks designs from their library that are close to best-selling ones, then ramps up production for these categories with materials that can be sourced quickly. This design method of supply chains can respond effectively when demand for certain items fall and that for other items increase.

Some companies design products with a common core that can be used in multiple products, and postpone the customisation to the last minute.

During times of volatile demand, the common core can be used for only those products whose demand has increased.

In light of the current situation, Prof Shantanu urged firms to undertake appropriate risk management strategies to shield their supply chains from the fallout of the coronavirus. "It is safe to say that the world has not seen any disruption of this scale before, hence, the response of global supply chains to this pandemic is critical. Without a coherent and coordinated response, the reverberations on global supply chains could continue for years."

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