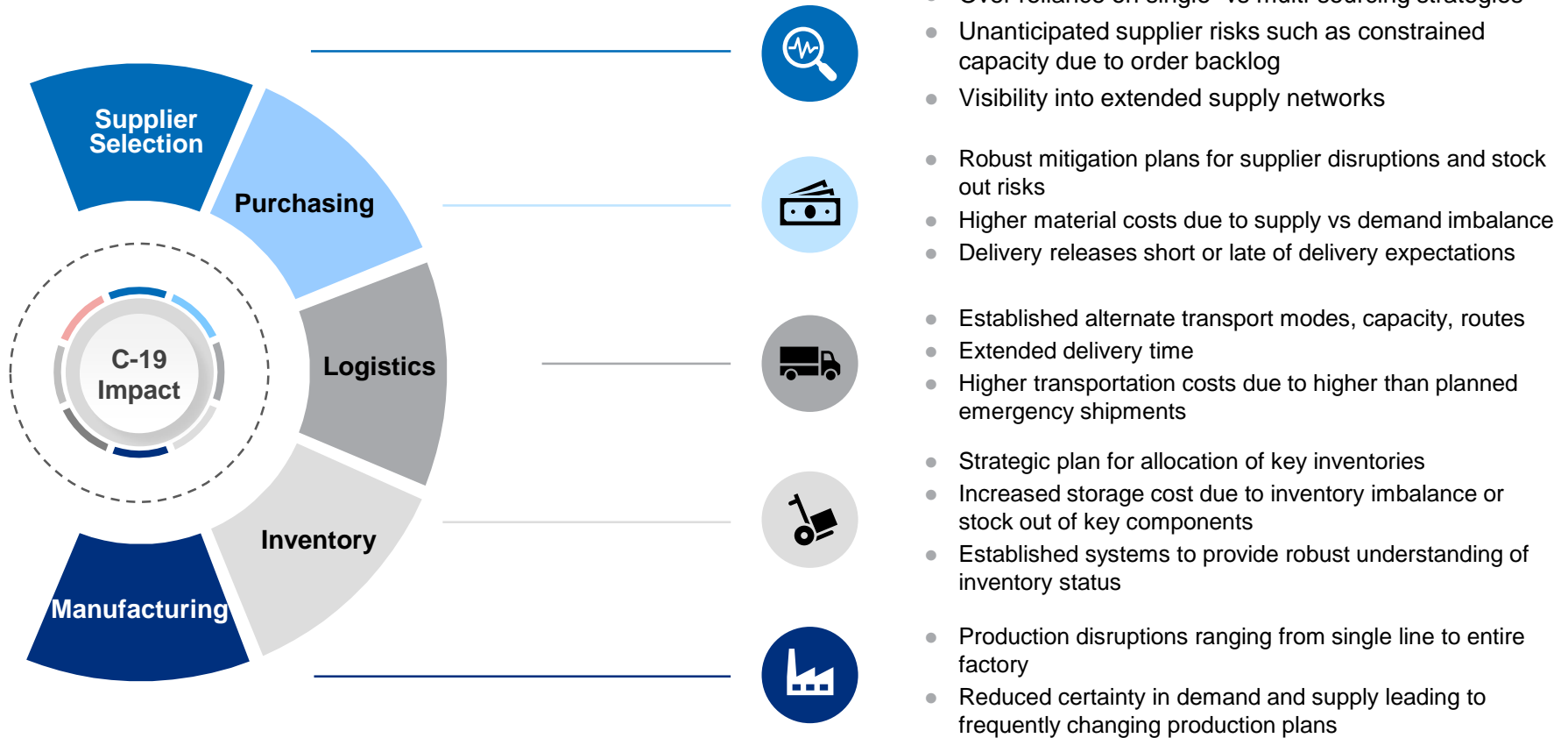


Covid-19 has exposed weaknesses in globalized supply chain strategies, particularly those overly reliant on low cost countries

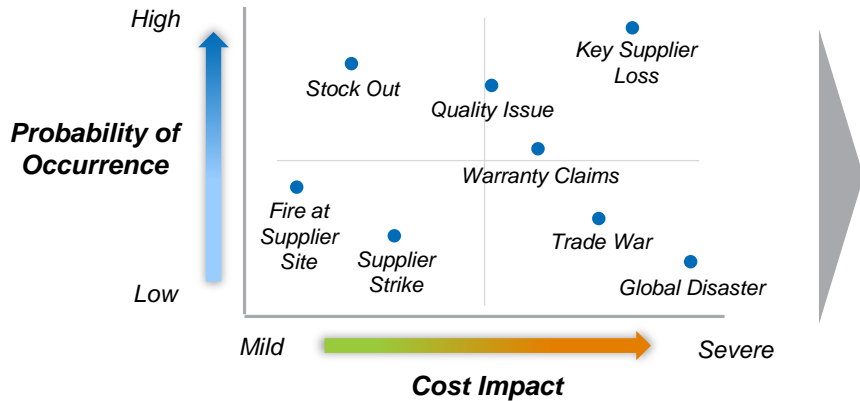
C-19 challenges to offshored supply chains



Gaps in low cost country (LCC) supply chain strategies may eliminate or reverse offshoring cost savings

Current global “pause” provides an opportunity to refine off-shoring strategies to better protect material cost savings

Holistic view of supply chain costs beyond material cost is critical



- Significant unplanned supply chain disruption costs are not limited to times of global disaster or to LCC dependent strategies:
 - Fukushima Daiichi nuclear accident impacted Japanese manufacturing
 - Trade wars imposed tariffs on goods imported to the United States from European countries as well as China
 - Emergency airfreight to cover quality rejections of delivery of critical parts
 - Increase in warranty claims following change in or re-launch of production facilities without sufficient visibility and communication into supply chain

Key considerations for protecting LCC material cost savings

Supplier Selection	Purchasing	Logistics	Inventory	Manufacturing
<ul style="list-style-type: none"> • Capture holistic picture of supplier risks <ul style="list-style-type: none"> – Political – Environmental – Social • Map extended supply network for key components • Establish transparent and proactive supplier communications 	<ul style="list-style-type: none"> • Align KPI's to incentivize protecting total cost, not just material cost • Multi-sourcing demand allocation for key parts • Incorporate a suitable supplier monitoring system • Evaluate mitigation plans effectiveness 	<ul style="list-style-type: none"> • Root cause or trend analysis of expedited shipments and costs • Create mitigation plans for potential logistics disruptions <ul style="list-style-type: none"> – Modes – Routes – Capacity • Establish pre-booked logistics options 	<ul style="list-style-type: none"> • Strategic inventory allocation to maximize cash flows • Identifying additional emergency warehousing options • Ensure proper storage methods for prolonged warehousing of critical inventories 	<ul style="list-style-type: none"> • Ensure flexibility and efficiency in: <ul style="list-style-type: none"> – Frequent changes in production plans – Workforce deployment • Clearly link extra costs back to landed cost <ul style="list-style-type: none"> – Rework costs – Increased overheads due to reduced production volumes

Revisiting supply chain strategies with informed decision making and balanced internal communications will help in minimizing gap between planned and actual landed costs during supply chain disruptions