

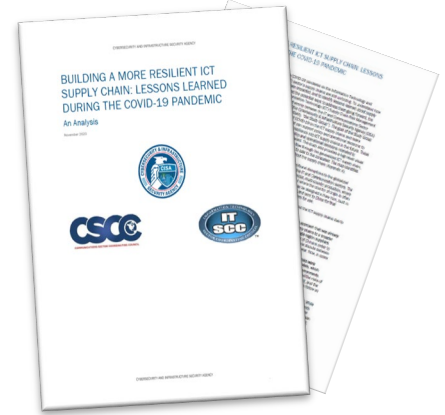


DEFEND TODAY,  
SECURE TOMORROW

# BUILDING MORE RESILIENT ICT SUPPLY CHAINS

## OVERVIEW

The COVID-19 pandemic affected global supply chains, and those impacts on the information and communications technology (ICT) supply chain are still being felt today. The Cybersecurity and Infrastructure Security Agency’s (CISA) ICT Supply Chain Risk Management (SCRM) Task Force completed a [Lessons Learned During the Covid-19 Pandemic Study](#). This study uncovered the impacts of COVID-19 on ICT supply chains and provides practical recommendations that can support organizations and businesses of any size with operational decisions and understand the impacts of an adverse event on their supply chain, so that changes can be made to strengthen resilience now and in the future.



## LESSONS LEARNED DURING THE COVID-19 PANDEMIC

This report identifies three key issues that impacted the ICT supply chain due to the pandemic, including:

1. The need to diversify supply chains across a broader array of locations and away from single regions and sources,
2. The difficulty companies experience in delivering customer orders on time because of their reliance on lean inventory models, and
3. The difficulties companies face in understanding their junior-tier suppliers and locations.

This report includes reviews of several surveys and studies on these important issues, speaks on the profound disruptions to the globalized model of supply chains, and provides examples and recommendations that can strengthen and build resilience in ICT supply chains.

3 Key Issues	COVID-19’s Impact on the ICT Supply Chain
Diversifying the Supply Chain	The pandemic has underscored the need for an approach that was already underway in recent years: diversifying supply chains to a broader array of locations and away from single source or region suppliers.
Lean Inventory Models	Lean Inventory Models provided great efficiency and cost effectiveness in normal environments but faltered when the marketplace deviated from the norm.
Understanding Junior-Tier Suppliers and Locations	Corporations know who they directly purchase equipment or components from (their tier 1 suppliers), they often can lack transparency about their second and third tier suppliers and beyond.

## RECOMMENDATIONS TO BUILD SUPPLY CHAIN RESILIENCY

The pandemic continues to be a wake-up call for many companies. This report provides recommendations on how companies can make shifts in their supply chains to mitigate future risks and enhance ICT supply chain resilience.

**Proactive Risk Classification:** Companies may want to deploy a systematic classification of risks, continually analyze developments and events that are happening around the world and undertake the development of a related response strategy to improve supply chain resilience strategically.

**Map the Corporate Supply Chain:** Production and supply chain team members can review each product's bill of materials to determine if critical inputs are sourced from single source, single region suppliers, or if there is a lack of available product substitutions. Understanding the structure of upstream supply chains can allow a purchaser to evaluate if an evident vendor may have upstream supply chain risks and if multiple vendors may all share the same supply chain risks. Developing a detailed map of junior-tier suppliers is a critical step to detect hidden relationships that can create a lack of resiliency. Companies can work with their tier 1 suppliers to create transparency as the suppliers can have the same concerns about their own vendors.

**Broaden Supplier Network and Regional Footprint:** Companies can create more resiliency and redundancy in their networks by dual sourcing supply from multiple or lower-risk regions. This can reduce the risk that a natural disaster or event can create a chokepoint that slows down or stops the entire supply chain. Companies should identify and vet backup vendors and work with them in advance to bring them up to speed so that when a crisis does hit, the supplier is ready to step in to reduce supply chain disruptions. While this can be a costly and time-consuming proposition, the ability to move production across suppliers, vendors, factories, and countries as needed will allow an organization to return to normalcy quicker after an event.

**Potential Development of Standardized Mapping and Other Illumination Tools:** The ICT sector may benefit from the development of standardized approaches to supply chain mapping. This would place appropriate focus on sub-tier suppliers or logistical bottlenecks that are critical, would care for legitimate vendor concerns about being pressed to provide proprietary information, and would settle on common formats for providing maps and other information.

**Work to Hold Buffer Amounts of Inventory:** Companies should explore holding more buffer inventories and work with their suppliers to hold inventory at their warehouses through a Vendor Managed Inventory system. ICT manufacturers should continue to work to utilize meaningful metrics such as, orders delivered complete, accurate and on-time, as well as time related metrics like days of inventory and cycle time.

**Plan Alternatives in Logistics and Transportation:** To reduce the impacts of transportation and logistics issues, companies can engage in scenario planning for different types of events and map out the alternatives that can allow for the supply chain to be brought back online.

## RESOURCES

- ICT Supply Chain Risk Management Task Force: [CISA.gov/ict-scrm-task-force](https://www.cisa.gov/ict-scrm-task-force)

