



Supply Chain Resiliency

Audit Insights

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Semiconductor Supply Chain Resiliency: Key 2021 Audit Considerations

2020 was a challenging year for companies across the board, seeing many of their key operational areas impacted by the COVID-19 pandemic. For a mature semiconductor industry, which faces ongoing pricing pressures, increasingly nationalistic trade policies, and tempered long-term growth forecasts, disturbances of any kind present an even greater challenge.

The severe early pandemic disruption to global supply chains forced semiconductor executives to take a hard look at their organizational models and these reactions, together with the demands of work and at-home education, assisted the industry to exit 2020 in a resilient manner with global semiconductor revenues rising 6.5% to \$439bn.



Semiconductor companies are not alone in this; the pandemic has triggered an across the board reassessment of supply chain resiliency—from businesses to governments—to ensure they are prepared for future crises. President Joe Biden recently announced a supply chain review after the ongoing pandemic sparked a number of shortages across critical industries, expressing particular concern about semiconductor supply chain issues.

Against this backdrop, KPMG recently published its Global Semiconductor Industry Outlook, which delivers key findings from a survey of semiconductor executives who have firsthand experience with the impact of COVID-19 on the global supply chain. Three key areas Audit Committees and investors should consider in the year ahead are:

1. Inventory Strategy

COVID-19 has led to supply chain disruptions across nearly every industry with the automotive industry a key example. Many carmakers have faced semiconductor shortages, and some have even been [forced to shut down](#) production lines. Why? Automakers have historically relied on just-in-time inventory and with early COVID shutdowns and then demand rising faster than expected in 2H20, the ability to source sufficient volumes of the semiconductor content needed could not be ramped fast enough. It is important for companies to weigh the benefits of "just-in-time" versus "heavier assets-on-hand" inventory approaches. The geographical diversity of supply chains is an important consideration, with more flexible

supply chains, and ones that can be adaptable to geopolitical changes, becoming increasingly more successful. Entities should reassess the need for redesign or introduction of micro supply chains for critical components rather than applying one size fits all supply chain procurement models.

- **Inventory completeness vs excess.** Many entities already outsource the manufacturing/assembly of their products or key components to third-party suppliers, many of whom are in low-cost manufacturing countries. Depending on the arrangement, inventory that is held at the supplier location or in transit could become “accounting inventory” on the books, and verifying the completeness, existence and accuracy of this inventory could present audit challenges. Alternatively, operations which elect the “heavier assets-on-hand” approach to address just-in-time requirements open themselves up to greater risk of excess or obsolete inventory.

2. Tariffs

Minimizing leakage from a margin point of view is essential, and tariff management should be a key consideration in any modern supply chain design. Reducing costs and risks associated with rising trade and tariffs across the supply chain is crucial. In the semiconductor industry, for example, some manufacturers have made significant supply chain changes, including sourcing chip content from different geographies, to optimize operations in the current high-tariff environment.

Additionally, nationalist technology and trade policies—particularly by the U.S. and China—may add cost pressure and supply chain complexity. Governments have grown increasingly protective of homegrown intellectual property, especially as it relates to sensitive technology sectors such as 5G and others. With growing frequency, export controls and sanctions are tools to restrict foreign access to advanced hardware, software, and technical data. These controls present significant compliance and operational challenges, and effective management is key to maintaining a market edge.

3. Digital Transformation

The COVID-19 pandemic has accelerated the digital transformation in many industries, while it slowed it down in others. It forced many manufacturers and suppliers to update their systems and operating models due to remote workforces and the need to become more efficient and cost effective.

It’s imperative that companies are fully aware of the practices of suppliers, producers, vendors, and partners across the entirety of their supply chain to ensure they meet various compliance requirements.

As the KPMG Semiconductor Outlook highlights, “semiconductor companies had to re-trench during the early days of the pandemic and focus on immediate supply chain and other business continuity issues. This may have been done at the expense of longer-term digital optimization investments that have a longer payoff period.”

Regardless of how an industries’ – or an organization’s - digital adoption fares during the pandemic, building new or leveraging existing digital capabilities, and understanding digital capabilities across the supply chain will help better prepare manufacturers for the next crisis.

Additional Resources

- Press Release: [New KPMG Global Semiconductor Outlook shows 79% of leaders predict industry-wide profitability will continue to increase](#)



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