

The high tech sector was amongst the earliest impacted by the Coronavirus with many factories in China shutting down for a prolonged period over the Chinese New Year. The interruption to component supply was subsequently superseded by concerns over consumer and business demand in the Western markets to which the virus has spread.

The impact of the shutdown on the sector included an increase in the cost of many components. Shortages followed the ramp up in production after the eventual return from the extended Lunar New Year. At the same time, stocks of other work-in-progress inventory had soared at some factories due to lower production output as companies struggled to fulfil orders, partly as a result of the lack of workers. The market environment has become complex and fast-moving.

At the same time as supply chain issues, the logistics industry was (and still is in some sectors) critically disrupted. The bottlenecks which were created by the cessation of passenger flights, the blanking of sailings and the disruption to domestic transport within China, has forced many high tech shippers to use air charters. Freight forwarder CEVA commented that it had moved 4,700 tons of air freight via 58 all-freighters. With air freight rates running high (some figures put the rates at four times the usual cost) this will have an inevitable impact on prices, costs and margins.

The reduction in air passenger service has also led to airlines such as IAG, Lufthansa, Delta and United Airlines using their passenger aircraft for charter flights whilst other airlines with freighter services have increased their frequency and range of destinations. Although high tech goods are not the only products being carried (other popular cargos at the moment include, of course, medical, humanitarian and pharmaceutical shipments), they certainly make up a significant proportion of the volumes.

The impact of homeworking

It has been estimated that at least 20% of the US population are now social distancing or in self-isolation at home, a situation mirrored in most of the rest of Europe, North and South America. This is putting a considerable strain on network infrastructure and ICT assets – AT&T has commented that wifi calling doubled in the early stages of the working-from-home directive and internet usage in the US rose by 40% in the first two weeks of the crisis. China's Cloud infrastructure investment occurred earlier at the beginning of the year, facilitated by service providers such as Alibaba, Tencent and Baidu.

There has already been a major investment in new servers, PCs and laptops to serve the demand for homeworking as well as peripherals including web cameras. Anecdotally, people are complaining that many of these products are impossible to get hold of – at least in the short term.

This demand has created a subsequent need for the upstream components which go into making these products, such as semi-conductor chips. At least for this type of component, the two major chip manufacturers, Intel and AMD, have gone on record as saying that they have plenty on hand to meet demand. This should mean that OEMs further down the supply chain shouldn't face bottlenecks although the extent of the demand and the stockpiling of chips by customers, worried about the possible disruption to supply, may change this outlook.

It is not just homeworking products which will enjoy a boom. As people are quarantined, expenditure on consumer electronics goods such as AR/VR headsets and game consols is forecast to rise significantly. Although these types of goods were impacted heavily by the disruption to supply in early 2020, volumes are likely to be substantially up over the year as a whole.

Ti Covid-19 Monitor: High Tech Supply Chain and Logistics Update

High Tech Company Updates



Networking hardware and infrastructure company, Cisco, stated that it was well-placed to coordinate its recovery efforts using well-established Global Business Resiliency (GBR) and Supply Chain Incident Management (SCIM) Processes. This includes insisting that suppliers have their own Business Continuity Plans in place to mitigate any impact on the supply chain.

As a consequence of the outbreak, the company's regular production plans were disrupted following the extension of the 2020 Lunar New Year holiday and subsequent regulations enacted to safeguard factories and workers in China.

Its suppliers' facilities have now resumed operations, though additional precautions are being taken as capacity returns to full production. Management said that it is, '...leveraging its global network and working aggressively to re-route orders, expedite alternative component supply, and bring up additional manufacturing capability in other regions.' Lead-times have been extended on products directly or indirectly affected by this disruption.



The outbreak of the coronavirus at the end of January impacted on the ability of Hewlett Packard's component suppliers to fulfil orders. In the first quarter of its financial year, commodity supply constraints meant that it was unable to meet all customer demand particularly in its computer and high performance computer businesses.

One of the problems which HP faces is the complexity of its upstream supply chain which relies on even the most basic of components. Management commented, 'We have a daily process with each of our suppliers that we manage very, very tightly...some of those, the suppliers, are dependent on other suppliers...as you can imagine, that supply chain is a little bit longer with the tier two, tier three suppliers that provide low-level components to build the printed circuit board.'

Management also mentioned there were short term opportunities as customers have asked for expedited shipments to meet demand for homeworking.



The outbreak of the virus in China caused substantial problems for Apple. Units of its smartphone were in short supply for a number of weeks in stores throughout the world and its stores in China were shut until March 13th. Outside China, all its stores are now shut.

Foxconn, its major assembly partner in China, paused all production in early February. It was working at 50% capacity in mid-February and has now stated that its factories will return to full production by the end of March. Elsewhere in Asia, Apple's suppliers in Malaysia, which manufacture chips and circuit boards, have been affected by the government's lockdown. The company also has suppliers in South Korea and Europe. Even if production continues at these factories, charter air freight will be required due to the cessation of air passenger services. In general, it is believed that the company is experiencing difficulties in sourcing many of its components and that a return to normal operations is not expected until mid-April.

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JABIL

Jabil, the manufacturing services company, announced that its revenues were impacted in the first quarter by what it termed 'supply chain inefficiencies'. Demand for its products had been good at the beginning of the crisis, showing that at that time the issue was a problem with supply not consumer confidence in the West. However, as with all manufacturers, its factory shutdown during the Lunar New Year lasted longer than had been anticipated. In the post-holiday period, output ran at 30-40% which increased to 80% by the end of February. Management commented that its inventory levels had surged by 13 days (to 70 days). As its factories had reduced output, inbound materials had built up. They also believe that in the near future inventory will build up at all stages of the supply chain as customers become more risk averse and less lean.

lenovo

Coronavirus has impacted on Lenovo's supply chain as well as the demand for its products in China. Its own factories, as well as those of its suppliers, were affected with lack of supply leading to an increase in the price of components. Its badly affected factory in Wuhan was focused on the production of smartphones. However, to compensate for the closure of this plant, Lenovo was able to switch output to its facility in Brazil which has since supplied South and North America. Likewise, it has been able to switch production of PCs from other affected Chinese factories to Japan, Mexico and the US, showing the benefits of having a diversified production and supply chain base.

Management also stated that they had identified that Coronavirus was a threat at an early stage and so had managed, to some degree, to build up supplies of components (such as memory) at its warehouses, pre-crisis. This allowed it to continue manufacturing when its factories finally came back on line. At the core of its competitive advantage is the company's ability to be flexible in its manufacturing strategy. For one product, when it realised that chips from one supplier would not be available, it was able to switch to another supplier and still meet its production and sales targets. Although this sounds simple, in a high tech production environment this is a challenging and complex management and design task.



Intel had suffered from shortages at the end of 2019 which resulted in problems in supply even before the onset of Coronavirus. However, the latest statement by management suggests that it is coping well with the crisis, operating on a 'relatively normal basis' despite a factory in Dalian (northern China) and test facilities in Chengdu. A letter to customers suggested that it was maintaining a 90% on-time delivery rate due to its diverse supply and manufacturing chains and a Pandemic Leadership Team which it established 15 years ago.



Intel's major competitor AMD meanwhile commented that, '[it] expects the impact from COVID-19 in the first quarter to be modest.' It seems the biggest threat to both companies will be the likelihood of a post-Coronavirus recession impacting on structural demand for high tech products.

CONCLUSION

In the next few months volatility will continue to be a huge issue for the sector. Whilst parts of the market will see a downturn, others related to homeworking and consumer electronics will see a surge in demand. These variations will result in a 'bullwhip' effect throughout the supply chain creating stress on inventories, suppliers, OEMs as well as on the logistics sector. Unless there are further outbreaks of the disease in China, supply will stabilize. What is less clear is what impact Coronavirus will have on business and consumer confidence in the medium to long term, critical questions for the highly cyclical, seasonal and fragile high tech industry.

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