

Here is Your Supply Chain Bulletin

February 11, 2022

As we welcome a new calendar year, suppliers are managing ongoing raw material shortages and capacity constraints in assembly and test as well as wafers, both internal and from foundries. Additionally, global supply chain disruptions continue into CY2022 with the rapid spread of the Omicron variant of the coronavirus causing labor shortages, plant closings and freight delays.

Suppliers continue passing price increases along, due to their added costs for constrained raw materials and capacity challenges. While suppliers tended to raise prices across entire portfolios during CY2021, increases have slowed somewhat during the first quarter of CY2022. As the market remains constrained, we have not experienced much reduction in semiconductor lead times.

Suppliers also continue to struggle to perform to confirmed delivery dates, including with orders placed at published lead times. Many suppliers are focused on improving short-term visibility for their order confirmations — specifically targeting a 3 to 6 month window.

Capacity & Lead Time Issues

- ST Micro is predicting a constrained market for the balance of 2022
- MCUs continue to be the most constrained technology with NCNR becoming the standard for almost all devices
- On Semi and Infineon have continued with a trend of order decommits with push-outs to early 2023 in many cases
- Raw material shortages are affecting products of all types with certain metals and plastics in constrained situations
- MCU remains one of the most constrained product categories with LTs quoted 52+ weeks for many companies and on allocation for others.
- Both Molex and Phoenix Contact lead-times have been affected by a shortage of resin for connectors/headers

In reviewing many supply chain publications, below are some general predictions for 2022:

Supply Chain Predictions for 2022

Many remain optimistic that things will start to show signs of improvement throughout 2022, unfortunately, the manufacturing sector is still dogged by supply chain pandemonium right now. Faced with this serious issue, manufacturers are looking to learn from these problems and transform their supply chains to become more competitive, resilient, and efficient.

Here are some predictions for supply chains in 2022. They encompass what is wrong with the supply chain, but they also provide indications regarding how manufacturers can improve and cope better with instability.

Continued Supply Chain Instability

Supply chain chaos has challenged manufacturers—and will continue to do so. During the past two years, the continuous onslaught of disruptions has wreaked havoc with supply chains and manufacturers' ability to organize logistics. **Ernst & Young** claims that Covid-19 did not break supply chains; it simply accelerated and magnified pre-existing problems. The causes of supply chain instability include overreliance on overseas manufacturing, dependence on low inventories and too much reliance on 'just in time'. In 2022 and in the future, manufacturers will likely employ multiple supply chain strategies that take advantage of digital supply networks and data analytics, meaning they can respond more flexibly to disruptions. Moreover, the growing demand for electronic products puts pressure on manufacturers who were previously able to predict consumer demand. Increased demand was exacerbated by the shortage of shipping containers and the huge backlogs in US ports. Add to this people across the world were thrown into multiple lockdowns and working from home which has now become the new norm. This shift in working practice has resulted in a heavy reliance on technology solutions for businesses. The complexity of transportation will most likely continue through 2022 as more cargo ships need to be built (which can take up to three years), there are continued driver shortages, and the US must address congestion issues in its ports. The global complications from high demand outpacing supply, coupled with rising costs of raw materials and freight, unfortunately mean that higher costs will continue to be passed on to customers in the short to medium term.

Price Increases

In 2021, raw material and component prices increased dramatically. Quite rightly, customers wanted to know why—especially when certain manufacturers were increasing unit pricing by 20, 30, and sometimes even by 50%. Based on various sources, the average component increase currently sits at approximately 7.5% and that figure does not include the eye-watering price increases associated with having to procure devices on the broker market. It is likely that despite component manufacturers' best efforts to keep costs to a minimum, customers will continue to see increased prices throughout 2022 for the following reasons:

Global scarcity of silicon

When the pandemic hit, companies reduced their purchase orders of silicon, but the demand for silicon today is far higher than it was pre-pandemic. Rapidly supplying an increased demand is not easily achieved as there is a shortage of manpower in both production and transportation. The result of the above is an increase in cost, and this is true for raw materials generally, not just for silicon.

Raw materials

Limited availability of raw materials means that prices have been sharply increasing. The situation caught many businesses unawares and many suffered falls in profit last year as a result. Business has been seriously affected, and 2022 is likely to see companies employ several tactics to respond to the lack of raw materials, including ensuring supply at the best price possible by analyzing the supply chain in greater detail and building up stocks. However, the most likely outcome is that price increases will be passed on to consumers.

Freight and packaging cost increases

The reasons for increases in packaging involve the state of the global economy as well as specific characteristics of the packaging industry. Here are some principal factors that are contributing to packaging cost increases:

1. Inefficiencies in the market
2. Lack of capacity investment
3. Price of paper and materials
4. Very high demand
5. Stockpiling
6. Labor costs
7. General increases in overhead costs
8. Cost of transit

In terms of freight cost increases, prices continue to be increased and transit times are still volatile due to ongoing pandemic-related delays, huge demand for freight from Asia to the US, and a lack of capacity. Despite the fall in rates in November 2021 due to the end of the peak shipping season, port congestion has not allowed prices to be eased. The Chinese New Year celebrations in February 2022 will also delay any reduced cost.

Capacity Constraints

Even in the good times, companies can suffer from the demand for their products or services exceeding their ability to deliver the product. However, in 2022, the return to business as usual after a turbulent two years means many companies will face capacity constraints—or an inability to meet demand—caused by a shortage of materials, lack of staff, lack of transport options and cash flow issues.

The main causes of capacity constraints in 2022 will be:

- Raw material shortages

- Logistics and transport capacity
- Planning constraints
- Equipment capacity
- Production line capacity

Capacity constraints have been particularly prominent in the electronic vehicle manufacturing industry, for example, as shortages of raw materials have led to shortages of specific semiconductor chips. In 2022, expect to see more companies making moves like Tesla did last year when it began construction of its Arizona chip factory site. Measures such as these, while effective long-term solutions, will not reduce capacity constraints—or costs—in the foreseeable future.

Careful Planning of Purchase Orders

To address supply chain uncertainty, throughout 2021 component manufacturers and franchised distribution partners were recommending customers increase demand visibility and schedule purchase orders for material several months in advance (minimum) to help secure stock. This request is here to stay, and the aim is to avoid customers receiving products later than expected due to the extended lead times the market is now facing. Put simply, if you are in a queue, there is a possibility you will get some stock, but without any firm orders in place, your chances of securing stock are slim to none. And even if you do commit upfront, there's still no guarantee your demands will be met in full when it comes to certain devices and manufacturers. 2022 will see everyone in the system having to plan far further ahead than in pre-pandemic times. Additionally, several manufacturers are stipulating that new orders are subject to non-cancellable, non-returnable, or non-reschedulable clauses putting additional pressure on OEMs and their EMS partners.

Supply Chain Digital Transformation

From sourcing raw materials to transporting the final product to the end-user, manufacturers have a long road ahead of them. The good news is that most OEMs and EMS providers are aware of the problem and have (finally) accepted it's not going to change within a matter of months. As a result, many are working hard to adapt to the new environment and trying to make steps forward. Manufacturers acknowledge their need to develop an end-to-end strategy that optimizes the supply chain and makes the delivery process (inbound and outbound) as efficient as possible. Digital transformation is at the heart of this transformation as manufacturers seek to cut supply chain costs not product quality. This is only possible through smart analysis using digital solutions that make manufacturers more resilient and allow them to be more agile and employ better risk management. The solutions do this by giving manufacturers what they need—data.

Conclusion

The manufacturing industry has suffered over the past two years, but Covid-19 only weakened pre-existing supply chain fault lines. In 2022, we will see

manufacturers attempting to futureproof the industry by addressing supply chain problems to make it more resilient to any future shocks.

WE ARE HERE TO HELP.

During times like this, it is highly recommended to extend order coverage as much as possible to identify supply chain issues early on, when mitigation is still possible.

We may recommend changes in purchasing volumes and forecasts to mitigate risk.

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