When will the global chip shortage end?

What do cars, laptops, cellphones, and other electronic gadgets have in common? – they all run on chips.

Most if not all of the latest electronic gadgets are made of computer chips or semiconductors. These diminutive and rarely talked about pieces made of silicon are the building blocks of the modern world. As the world continues to go digital, processes are automated, and operations become more efficient, we have become increasingly more reliant on electronic components moving forward.

Manufacturing, automotive, and the rest of the major industries are scrambling for parts and always hunting for electronic components they require to keep production lines moving. The global chip shortage caused many factories to pause production or pivot operations to properly allocate resources while finding solutions to mitigate challenges in their supply chains.

There is no clear timetable as to when the shortage will end. Industry experts predict things will hopefully normalize by mid-next year, while others say we will only see significant improvements by 2023.

Let’s take a closer look at what caused this and how your businesses can adjust during these trying times.
The Global Chip Shortage Explained

Why is there a global chip shortage?

We have to look at several factors that created this shortage tsunami that blindsided everyone. We have broken them down into the following: supply, demand, unfortunate events, and poor decision-making.

Surge in Demand

When Covid-19 restrictions rolled out worldwide, stay-at-home mandates were the norm to prevent the transmission and spread of the virus. Everyone shifted to work from home setups, businesses went online, and messaging applications were downloaded immediately. Consequently, demand for additional electronic gadgets skyrocketed. People upgraded their laptops, purchased new desktops, more tablets, etc., to meet the requirements of the current situation.

This bottlenecked supply chains, as retailers did not prepare for the sudden increase in demand for new requirements. Add the existing projects in their pipelines, and you have the perfect recipe for a global semiconductor disaster.

Bad Luck

Aside from facing COVID-related challenges, some of the biggest foundries in the world were hit by a series of unfortunate events that disrupted their production process even more.

On March 19, an electric overload burned down 600 square meters of the Renesas plant in Naka, one of the most prominent players in the global chip market. It destroyed 23 machines and rendered other areas in the facility temporarily unfit for use.

The plant was running to total capacity again by June, but the damage has been done.

In Taiwan, the worst drought in recent memory threatened to make the chip shortage even worse. Producing chips require tremendous amounts of water, which the drought is making impossible to do. In Texas, winter storms forced some of the country’s only chip plants to stop production.

Still, there are only a handful of big chip manufacturers globally, making the semiconductor industry more vulnerable.
Global Chip Shortage and the Automotive Industry

Another interesting story is the ongoing shortage in the automotive industry.

The initial stages of the pandemic saw a steep decline in the demand for new cars, prompting car manufacturers to scale down production. Because of this, chipmakers shifted their plants to focus on other clients with increased needs, especially consumer electronics.

However, economic and lifestyle changes boosted car sales and demand for more cars, plus the allocation for soon-to-be-released electric vehicles during that time, and manufacturing lines started getting clogged. The problem is that foundries have already adjusted their processes and could not react in time to meet the automotive industry's needs, leaving carmakers in a supply hole.

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With the changing economic landscape and evolving consumer behavior, industries will continue their path of digital transformation. This means that the demand for semiconductors will increase. This prompts chipmakers and governments worldwide to work hard in closing the gap.

TSMC, the world's leading semiconductor foundry, has pledged to invest $100 million to increase capacity over the next three years. Samsung and SK Hynix have teamed up with the South Korean government and spent $451 billion for the same venture.

Members of the European Union have their plans as well. The UK government is yet to reveal what they are precisely, but the idea is to help the local chip sector grow its capacity in their supply chains.

Both private and public sectors are determined to end the chip shortage. However, many challenges (policy making, local and international covid restrictions, etc.) need to be addressed before things get going.

Industry experts were optimistic at first, expecting the chip supply to recover by the end of 2021. Historically, demand for semiconductors declines every fourth quarter of the year, which should give chipmakers a chance to catch up.

That is not the case so far. It appears that the decrease in demand is not big enough for foundries to make a significant dent in the current imbalance.

They were forced to revise their initial opinion, and they now fear that the chip shortage could last until next year, maybe even until 2023.
Looking Forward

Many analysts say that this was a ticking bomb waiting for the opportune time to explode. Foundries have been working at maximum capacity over the years. Plans to build new foundries are on their way, but it takes time to build, test, and have them run at full steam.

The pandemic plus miscalculated projections led to the crisis we face today. We didn’t plan well enough, and we didn’t make the right decisions to keep things going as the whole shuts down, and our movements became limited.

The demand for electronic products inevitably grows as dictated by Moore’s Law, and foundries have no choice but to play catch up.

During these challenging times, it isn’t easy to look for safe and reliable sources of electronic components. As we continue to find more ways to produce more chips, businesses and supply chains can rely on solutions provided by companies like Chip 1 Exchange. Chip 1 Exchange has the expertise and the reputation of being your best choice in times of need.