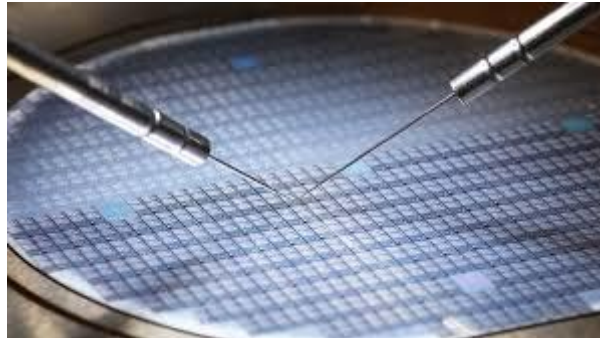# Resilience and demand will reboot the semiconductor industry in 2020 and beyond

Unless we are planning to go back to the cave age, which by the way is a terrible idea since caves typically are bat habitats, I believe that industry demand and human resilience will push the semiconductor industry to reboot as soon as possible.

Yes, there has been a setback of unimaginable proportions, yet the way I see it industry will take a hit, but will stay standing. What's more, the semiconductor industry will work towards building a robust contingency code into its DNA and we will see a lot of innovation in the days ahead.

This is an imperative, not an option and here's why...

Several touchpoints
Semiconductors play an important role in almost every industry, either directly or indirectly. They support healthcare and medical devices, telecommunications, aerospace equipment, national security systems, finance, transportation, energy, agriculture and manufacturing and are the key components of technologies that drive infrastructure such as water systems, energy grids and communications. From being used for temperature sensors used in air conditioners, to rice cookers, to CPUs, to PCs, to smartphones, to wired and wireless communications, to digital cameras, to televisions, to washing machines, to refrigerators, to LED bulbs, to bank ATMs, to trains, to the internet, to servers, to televisions, to satellite systems, to advanced medical care systems, automated vehicles, and other industrial applications, semiconductors are used almost everywhere where precision engineering is integral.

It therefore stands to reason that all these industries will be in a hurry to catch up where they left off almost four months ago, before the pandemic struck and industry came to a standstill.

Having said that, even in my most optimistic vision, I think the semiconductor industry will experience a setback of about half a year. We stand now, where we were in December 2019. Since the crisis is nowhere near over and we are dealing with loads of 'new normals', we need draw up a map of where we want to go and how we plan to get there, even if the skies seem cloudy right now and it might rain on the way!

A bird's eye perspective

A few personal insights here, based on decades of market understanding, studies, surveys, reports and one on one conversations with industry leaders and decision makers:

- South Korea and Taiwan have not suffered noticeable manufacturing loss
- USA is asking for the semiconductor industry to be declared as essential infrastructure' and/or 'essential business'
- China which accounts for almost 50 per cent of the world's consumption of semiconductors took a knock for a whole quarter, but has started operations again
- Board level design and software development work had slowed down while people adjusted to the new normal of working from home, but in China as well as India, this is picking up
- There have been disruptions and delays in the supply chain in the case of design and development for Chip Package and Chip Test from China and Electronics System design and manufacturing in China and India
- The world over, companies will delay planned hardware upgrades and other long-term migration projects
- There will be increased server demands and a strong uptick in video streaming and conferencing as more people work from home Demand for enterprise IT and enterprise cloud solutions is expected to remain stable
- Consumers will upgrade their private IT infrastructure to support their work or home-schooling activities
- There will be an increase in video streaming across many networks
- In areas that have not launched 5G networks, telecom providers will postpone investments and focus on improving their existing networks to accommodate rising data traffic instead

Hit the road running

In the near term, semiconductor manufacturers need to do more than merely handle operational challenges during the economic downturn, if they want to emerge stronger post the COVID-19 crisis. To begin with, they must assess the potential risks and vulnerability of today's electronics and semiconductor value chain model. The semiconductor industry must consider transforming its global supply chain model to ensure fool proof business continuity plans in the future. Many companies have geographically concentrated manufacturing to realize the benefits of favourable incentives, tax structures, low-cost labour, and synergies with both suppliers and customers. In the long-term, these companies should consider examining their supply chain strategy and operating model to address the risks of geographical concentration and lack of resiliency. These companies must develop domestic or alternate self-sufficiency models.

In the last few decades, there's been a complete transformation in the value chain offerings, both for Indian companies and also for global entities operating out of India. India has been making valuable contributions in terms of highly skilled and experienced manpower, cutting-edge technologies and next-generation architectures that are of prime interest to the semiconductor industry. This is the time to put these strengths to good use.