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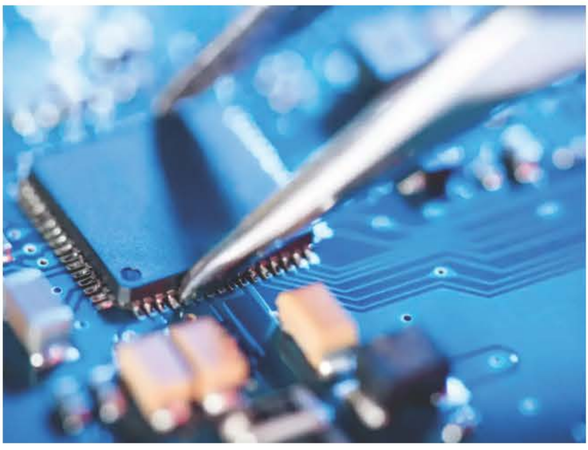
Semiconductors: How India can take a cue from Israel to build a vibrant chip ecosystem

Synopsis
The pandemic exposed the vulnerabilities in the supply chain, bringing chip manufacturing in sharp focus again. What can India do to up its game in chip design and manufacturing?



Industry body Indian Electronic and Semiconductors Association (IESA) pegged the Indian semiconductor market at $27 billion in 2021 and projected it to reach $64 billion in 2026.

The semiconductor industry in Israel has been a bedrock of innovation, growth and investments for decades, building up a strong ecosystem of companies within the country. Proof of this came earlier this year when US chip giant Intel announced plans to buy Israeli chipmaker Tower Semiconductor for $5.4 billion.

Citing Israel as an example of a country that doesn't have a local market but has still successfully produced many fabless companies, Ganapathy Subramaniam, Partner, Celesta Capital, points out that there is no requirement that the end customer for advanced semiconductor products must also be present in the place the products are being made. He made this comment in the context of India's plan to become a semiconductor-making hub.

"There is something more that exists in creating fabless production. China did it one way. It created local companies with the local market and then went abroad. We don't have that luxury in India today as electronics companies are not consuming the chips done by us. But, at the same time, there is the Israeli model which has successfully created fabless companies while the local market is almost non-existent," he said, while speaking at the recently held Semicon India 2022.

Affirming what Subramaniam said, Pradeep Vajram, Executive Chairman at AlphaICs Corporation, a fabless semiconductor company, said a local market might not necessarily help. Speaking more on the challenges for the industry, he said investment was a critical component for the semiconductor space. "It's a long-drawn process and very patient capital is required. In spite of that, I would say there are a handful of VCs who have been helping deep technology companies. We definitely need more of those to be successful. And the only way we can do that is by having a success story. Once the success story is there, I am sure many of the VCs would change how they invest in semiconductor companies," he says.

According to a Deloitte report, the global semiconductor chip industry is expected to reach approximately $600 billion in 2022. Industry body Indian Electronic and Semiconductors Association (IESA) pegged the Indian semiconductor market at $27 billion in 2021 and projected it to reach $64 billion in 2026.

Speaking more on why it has been an uphill task for the industry to scale up in India, Parag Naik, CEO of Saankhya Labs, a wireless communications software company, said evaluating technology as a business model was not simple. "If you are a deep tech player, you know the technologies. VCs in India may not have the operational experience. Another set of people are those who only invest in you when they have blind trust. But somebody has to take that initial risk and that is where the government must step in and create a fund. That will help to have a few success stories and then one will probably get a bigger ecosystem," he said.

Delving more on the approach that semiconductor companies in India should take to make the journey easier, Subramaniam said talent in business development should be sourced early on. "For a fabless company, we need to start thinking of including someone from business development way ahead in the cycle. And I see that in China. And we have invested in companies in China where one founding member would have been from Korea, one from Taiwan and together they give the right business inputs to the team. So just like the fabless companies in the US have large operations in India, the Indian team should also not hesitate to go and hire business resources whether it is from China, Korea, Taiwan or US." Such a strategy, he added, would only prove crucial in addressing a global market and articulating business aspects clearly. This, in turn, would be beneficial for VCs.

The IESA said India would account for $85 billion-$100 billion of the global $600-billion market by 2030. The time has come for the country to take huge strides in the fabless design space. The pandemic has shown more reasons why India needs to be atmanirbhar on this front.