

India must build its own chip design cos: Cadence

Of \$10bn Kitty That India Has Kept For Chips, Around \$2bn Can Fund 5-10 Design Cos: CEO

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Anirudh Devgan is India-born global president & CEO of California-headquartered Cadence Design, the technical software company behind chips designed by almost all the top semiconductor and tech companies in the world — from Nvidia, TSMC to Qualcomm, Apple, Tesla, Google and Meta. Devgan says India has come a long way in its quest for semiconductors. He tells TOI in an interview that instead of focusing just on manufacturing investments, the country should work on incentivising product companies, which build IP within the country. Excerpts.

Can you tell us about the work that Cadence does in semiconductor industry?

Semiconductors can be very advanced, like the latest chip has 100 billion transistors. It's probably the most difficult thing humans have built. So, there is no way they can be designed by hand. The chips are designed by computers, basically by software. That's what we do. Almost all chips designed in the world design software. Cadence is in all geographies, we are in all market segments. All the major companies in the world are our customers, whoever is designing chips. These include Qualcomm, Broadcom, TSMC, Nvidia, Intel, Apple, Tesla, Google and Meta.

India has been pushing to get semiconductor companies come and invest here with a \$10 billion incentive package. We have got investments from American Micron and home-grown Tata group. Are we on right track?

India is starting bottom up. People like manufacturing as it's easy to understand. But, that's not necessarily the only way, because when you go to manufacturing, you ask somebody else to set up plants here, like a Micron or a TSMC. And

they're doing it, especially Micron. So, this is what I would call a bottom-up approach to semiconductors. But there's also a top-down approach, which I think can be even more effective. Because what you need is to control the product companies, not manufacturing. That's the head versus the tail, right? In my opinion, India should invest in product companies, design companies. The Indian market is huge. Rather than as-

dia will control much more of its destiny and wealth. And, it does not require that much investment. Of the \$10 billion that India has set aside for semiconductors, only around 20% (\$2 billion) can easily fund like 5-10 companies for design. And, half of them would be successful. If there is fund to invest, part of it should be used to create product companies. That will create the biggest impact. Of course, you can comp-

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— ANIRUDH DEVGAN |
GLOBAL PRESIDENT &
CEO, CADENCE DESIGN

can do their own manufacturing in India

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king multinationals to come here, there should be a focus on building indigenous product/design companies. The Indian govt, by matter of policy, can help set up product companies, which design chips for cars, phones or AI. And, then as they get bigger and bigger, they can do their own manufacturing in India. This has happened in other countries too.

Why are product companies important?

The real IP lies in product companies and there is no reason that India shouldn't have product companies. All the multinationals are designing in India. What we would like to see is Indian companies designing in India. In the beginning, they can manufacture in India or wherever, like Taiwan and Korea. And over time, as they get bigger, you will control. In-

vestment that with the bottom of manufacturing-driven. Manufacturing is great for supply chain, resilience, for national security, for jobs. But semiconductor manufacturing creates some jobs. But, design will create much more wealth and jobs. It requires govt investment and policy support.

What is the proficiency of Indians in chip design?

A lot of chips are already being designed in India, but they are for companies like Qualcomm, Broadcom, Nvidia, and Google. India has great designers, but they are designing for multinationals. There should be more indigenous companies (product companies) designing chips specific to the Indian market or for the world market. The talent exists in India to create chips for the world market.