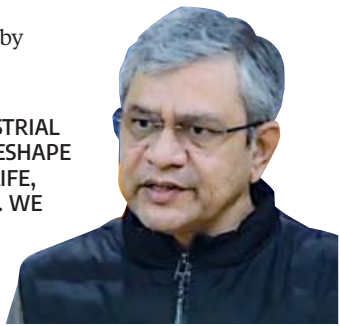
‘India to manufacture 3 nm chips by 2032’

Q&A With several semiconductor (semicon) manufacturing plants set to begin commercial production this year and a major push planned under the IndiaAI Mission, Union Minister for Electronics and Information Technology **Ashwini Vaishnaw** outlines the government’s strategy to position India as a key global player in an email interview with **Surajeet Das Gupta.** Edited excerpts:

You have said that by 2032, India will have enough capacity to be globally competitive in semicon manufacturing. What kind of capacity will India have by then?

The semicon industry is expanding rapidly, driven by demand from artificial intelligence (AI), electric vehicles, consumer electronics, and mobile phones. We have made a strong start with 10 units. Four plants — CG Semi, Kaynes Technology, Micron Technology, and Tata Electronics (in Assam) — will begin commercial production in 2026.



“AI IS THE FIFTH INDUSTRIAL REVOLUTION. IT WILL RESHAPE EVERY ASPECT OF OUR LIFE, SOCIETY, AND INDUSTRY. WE MUST HAVE SOVEREIGN CAPABILITY IN AI”

Ashwini Vaishnaw
Union Minister of Electronics and IT

Our design initiatives have worked well, with 23 startups involved. Talent development programmes have scaled up across 313 universities. Equipment manufacturers are also setting up plants in India.

Together, these factors are creating an ecosystem that will allow India to emerge as an important semiconductor player by 2028. The period after 2028 will mark the phase when semicon growth crosses a major tipping point. With talent, design, and manufacturing ecosystems in place, India will be among the major semicon players by 2032. We will be manufacturing 3-nanometre chips by then.

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‘Sovereign AI a national goal for India’

Many OSAT players are tying up with global partners or semicon companies to ensure that the capacity built in India is utilised. How will the government ensure India’s own demand is met by domestic OSAT and fabrication plants?

■ Every new industry faces a market-acceptance test, and our plants will be no exception. Their success will depend on their ability to produce high-quality products at competitive prices. We constantly remind them of this reality and nudge them in that direction.

Ashwini Vaishnaw, Union Minister for Electronics and Information Technology

Indian AI growth appears driven by announcements from global technology giants. Critics argue this does not benefit India, since patents and software control remain in the US. Countries such as South Korea, working with large firms, have committed $150 billion to build sovereign AI. How will India compete?

■ Sovereign AI is a national goal for India. Our engineers are developing models, working on chipsets, and focusing on applications. We need to be competitive across all five layers of the AI stack — applications, models, chipsets, infrastructure, and energy. India’s IT industry is pivoting to provide AI services globally. Twelve teams working with the IndiaAI Mission are developing foundational models. Several promising design teams are working on chipsets. Around $70 billion is being invested in infrastructure, and the recently enacted Sustainable Harnessing and Advancement of Nuclear Energy for Transforming India Act will support the provision of clean, sustainable energy. AI is the fifth industrial revolution. It will reshape every aspect of life, society, and industry. India must have sovereign capabilities in AI.

The PLI scheme for electronic components is gaining momentum. What level of localisation will this help achieve?

■ India’s supply chain will develop in a major way. The response to the Electronics Components Manufacturing Scheme has been phenomenal. We will be able to manufacture many components for export, and domestic demand for most components will be met by the time the programme concludes.

Electronics exports remain heavily dependent on smartphones and a single company, which accounted for 45 per cent of exports in November 2025. How will this base broaden, and where do you see promising areas of growth?

■ A lot more is happening in electronics manufacturing. While smartphone growth is encouraging, exports are also expanding in power electronics, medical electronics, industrial electronics, and consumer electronics. As the component ecosystem matures, this export base will widen further.