

SEMICONDUCTORS

India and Thailand jockey for spot on Asia's chipmaking map

Asian rivals roll out red carpet for global investments in local industries



Indian Prime Minister Narendra Modi speaks at SemiconIndia 2023 in the western state of Gujarat on July 28. (Photo by Ryosuke Hanada)

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BANGKOK/MUMBAI/HANOI -- The full-fledged entry of India and Thailand into the race for semiconductor-manufacturing investment has symbolized the flurry of activity to redraw the industrial map in Asia.

At the opening of SemiconIndia 2023 industry event in late July, Indian Prime Minister Narendra Modi **played up the strengths** his country has to offer the global chip industry.

"Who can be a more trusted partner than the world's largest democracy?" he asked in a speech.

As the U.S. and China wrangle over controls on transfers and exports of advanced semiconductor technology, India has been angling for opportunities to benefit from major players reorganizing the supply chain.

In 2021, Modi's cabinet approved a 760 billion rupee (\$9.14 billion at current rates) program to support domestic semiconductor and display manufacturing.

U.S. chipmaker Micron Technology said in June that would build a factory in Indian state of Gujarat, with production slated to begin in 2024. Taiwan's Hon Hai Precision Industry, or Foxconn, **is reportedly teaming up** with American chipmaking equipment maker Applied Materials to produce such machinery in the state of Karnataka.

Deep-rooted concerns persist about India's infrastructure, such as electricity. Foxconn **has scrapped a separate** semiconductor tie-up in India, underscoring the industry's mixed feelings.

But the fact that American players are setting up shop in India shows that "the tide has changed," **according to Noboru Yoshinaga**, executive vice president at Japanese chipmaking equipment maker Disco.

Ashwini Vaishnaw, India's minister of electronics and information technology, **told Nikkei in July** of plans to draw semiconductor capacity into the country and develop the local industry.

"What is important is we must have a few initial successes so that the [lessons] can be used for the subsequent projects," Vaishnaw said. He cited India's wealth of semiconductor-designing engineers trained by the country's institutes of technology.

India is deepening its partnership with Japan, which has companies strong in front-end processes and chipmaking equipment. The two governments signed a memorandum of understanding in July on promoting semiconductor supply chain cooperation.

Antoine Huchez, growth strategy senior manager at U.S. consultancy Frost & Sullivan, says that India has strong ambitions to draw chip projects and that the country has a large margin for growth.

In Thailand, Narit Therdsteerasukdi, who is in charge of foreign investment policy as secretary-general of the Board of Investment, has called semiconductors one of the most critical goods.



Narit Therdsteerasukdi, secretary-general of Thailand's Board of Investment, said that the automobile industry will help to attract the semiconductor industry, in Bangkok in May. (Photo by Ken Kobayashi)

The Thai government has expanded corporate tax breaks that chip companies stand to benefit from. A company upstream in the supply chain that enters Thailand is now exempt from corporate taxes for up to 13 years, for example, where once the break ran for only up to eight years.

Thailand is keenly focused on drawing companies that engage in front-end processes, such as designing semiconductors and etching wafers. These processes are considered more technically advanced than back-end processes, which include dicing and packaging chips.

For years in the global semiconductor industry, Taiwan, South Korea, Japan and other places in East Asia have typically handled the front-end processes, while Southeast Asian countries host plants for the back end. Now chip giants are starting to adjust amid tensions between the U.S. and China.

India and Thailand are among a collection of governments that have become well attuned to the shifting stances of the chip companies. Narit said Thailand is seen as a neutral country to take refuge from the Sino-American tensions. Companies from Japan, the U.S. and South Korea have entered talks toward investing in Thailand, Narit said.

The BOI has held discussions with Taiwan Semiconductor Manufacturing Co. with the aim of having the world's leading foundry expand into Thailand, according to Thai media. Narit declined to elaborate on the subject.

Thailand is also developing a local industry bringing together electric-vehicle assembly plants and suppliers. EVs are expected to contain more semiconductor devices than gasoline-engine cars, so a local EV sector would give Thailand an advantage in wooing capacity.

Singapore and Malaysia have both gotten a head start in drawing fabrication facilities. In Singapore, which has developed its semiconductor industry since the 1960s, GlobalFoundries of the U.S. preparing to begin operations in September at a \$4 billion fab it built there.

The Singaporean government helped GlobalFoundries acquire land. Applied Materials and French player Soitec have moved to expand capacity in the city-state as well.

For Malaysia, German giant Infineon Technologies said Aug. 3 that it would spend **about 5 billion euros** (\$5.45 billion) to expand existing facilities. The investment will go toward making next-generation silicon carbide power semiconductors.

For back-end processes, Intel is investing 30 billion ringgit (\$6.49 billion) over 10 years through 2031 in Malaysia.

Elsewhere, Vietnam has production and research facilities for such top players as Samsung Electronics and Intel. Prime Minister Pham Minh Chinh has issued an order to train 30,000 to 50,000 engineers in semiconductor and digital transformation.

When U.S. Treasury Secretary Janet Yellen visited Vietnam in July, she told Chinh that Washington looks to collaborate with Hanoi on semiconductor fabrication. The U.S. plans to bring Vietnam into its "friendshoring" orbit. Chinh said semiconductors are a priority for Vietnam's development strategy.

"Asia is now seeing a melee" in the competition to draw semiconductor businesses, said Daisuke Yokoyama, an advisory director for KPMG.