Why German automakers have massive tech centres in India

As vehicles become more software driven, Indian talent is becoming critical

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The modern car is not just about engines, chassis and the fuel tank. It’s more-and-more a software product on wheels—software for driver assistance, for autonomous driving, for infotainment. And as that trend intensifies, India’s technology talent is becoming irreplaceable for global automakers.

The German ones have taken the most advantage of it. Bosch, Continental, Mercedes-Benz, and ZF all have large technology centres here doing cutting-edge work for their parent companies. But there are others too, notably Harman, Ford, General Motors, Volvo, Piaggio, Delphi, and Renault Nissan.

“Automotive is expected to be 50% software driven by 2025, from about 40% now,” says KS Viswanathan, vice president of Industry Initiatives at Nasscom.

The $50-billion Continental’s tech centre in Bengaluru supports R&D in all its automotive divisions. The centre, which started in 2000, is a global software centre of excellence, is the headquarters of its Software Academy, and is the Asia application hub for some markets and businesses. Mercedes-Benz R&D India is the biggest R&D operation of Daimler outside Germany. For Robert Bosch Engineering & Business Solutions (RBEI), 20,000 of the 23,000 employees globally are in India.

The country has a cost advantage. Nikita Goel of consultancy firm Zinnov, which closely tracks MNC tech centres in India, says if a good engineer in a niche skill commands a package of $200,000 in the US, a similar engineer could be hired in India for below $10,000. But there are more important reasons for choosing India. “We have a large, readily available talent pool. And along with it comes the hunger to make it big,” says Manu Sadana, MD of MBB.

Alexander Kloez, who heads Continental’s R&D centre in Bengaluru, says cost may open the door, but that is not all and it is not always sustainable. “In those centres, you are measured against the best, and so quality needs to be there. Besides, if you need 100 engineers, it takes time abroad. But if you want to scale from nothing to 500, India is the country to go to,” he says. Continental has about 4,000 people in Bengaluru working on areas such as advanced safety technologies, autonomous driving technologies, and connected mobility. The German firm recently unveiled a technology platform called transparent hood, which makes the bonnet transparent to allow a clear view of the terrain under the front of the car so that the driver is better aware. The technology related to processing data from the camera and the radar was built by the ADAS (advanced driver-assistance systems) team in India.

Every car that Continental services has a traffic signal recognition system provided by the team in Bengaluru. “For some products like these, the buck stops here,” says Kloez.

RHEI works on engineering of safety, infotainment and body electronics products in collaboration with centres in Vietnam and Mexico. “Every product that goes into cars and trucks has an engineer focused on India in areas of autonomous driving, driver assistance and electric vehicles,” says Dattatri Salasame, MD at RHEI, the largest software and technology centre of Bosch, outside of Germany. The unit also has a centre for artificial intelligence, one of the three in the world, the others are in Stuttgart and the Bay Area. It has 300 people and works on computer vision, and application of automation in domains like autonomous vehicles.

“We have a team of engineers who work closely with the business unit in Germany on a driver assistance programme which includes object detection on the platform,” says Jacob Peter Kilianath, senior VP at RHEI.

The Mercedes centre, one of the oldest of the auto tech centres in India, is involved with the entire development chain of making cars, trucks and buses, including aspects of mechanical engineering, body design, chassis development, content of electronic software, and advanced analytics. “If you drive on highways in California, there is some Indian software in it. If you drive electric in China, there is Indian software,” says Sadan.

MBBD has 8,000 people, with hundreds of mechanical engineers working on improving the design of the next Mercedes. Another hundred work on the electric control unit (ECU) which controls the door module, wipers, lighting, seat movement and clutch movement. The teams here work on the control unit for the electric drive-train of the EQA, the all-electric bus plying in Germany.

For every seat occupant in the Mercedes car line, the safety mandate is in India. The latest S-Class model has contributions from India such as the MBUX Interior Assistant (including gesture control), and the software algorithm development for driving assistance functions like emergency-stop-and-lane departure.

All these centres employ engineering undergraduates, post graduates, PhDs, and experts in Autosar software, cyber security and radio technology. Frank Stoy, driver lead at Zinnov, who says the centres are hiring many radar and lidar engineers because a lot of work has turned around vision technology and perception systems. Perception technologies enable vehicles to identify objects around and help understand the right way to respond. “Perception algorithms are being worked on by leveraging Indian talent in AI and computer vision,” he says.