



← **Raghav Gulur, head, Continental Tech Centre India**

demand and requirement in India in future," says Jnaneswar Sen, sr. vice president - marketing & sales, Honda Cars India Ltd.

Besides automobiles quite a few players in the transport industry, including Airbus, are looking at India as a promising destination for research and development. Airbus India Engineering in Bangalore employs 350 local engineers working in engineering design and innovation, with the number working directly or indirectly on Airbus programmes touching 5,000. The cumulative turnover of Airbus generated work in India tripled over the last three years to about € 250 million in 2013; expected to grow significantly in the next 10 years.

Component Makers

Tech centres of MNC vehicle manufacturers and suppliers will support Indian component manufacturers involved in OEMs' domestic programmes and



← **Peter Tyroller, member of the Bosch board of management responsible for Asia Pacific**

in sourcing as well. Some centres may assist them in testing and validation, says Tyagi.

Batra opines that these centres can play an important role by using frugal engineering concepts for emerging Indian and other markets. "There are many models for conducting research and when it takes the shape of collaboration between an OEM and supplier, it becomes symbiotic. This leads to sharing of risks and costs between the component supplier and the OEM, thus a win-win for both. Also, when a new vehicle is developed and adapted for international markets it has to comply with global norms for emissions, and other regulations; this also leads to research and development related components for the purpose," opines Lakshman.

Continental's Tech Centre in India works on a variety of locally and globally relevant projects with affordable and safe mobility being two of the key focus areas, according to its head Raghav Gulur. A good example of a localised product is the 'Fuel Supply Module' designed for Tata Nano. In terms of software it is adopting the platform approach for both gasoline and diesel to address shorter cycle time demands of customers. The centre also deploys off-the-shelf electronics platform, which is scalable to provide quick and accurate solutions locally. Similarly, an IP free hardware and software platform solution is developed for the BRIC market.

Recently, Bosch opened a new research centre in Bangalore. The Research and Technology Centre (RTC) will focus on the development of connected technologies for the internet on all services. Other focal points will be methods and tools for efficient design of software-intensive systems, as well as image processing. One example of the effectiveness of localisation is the two-wheeler engine management system planned for the Indian market, which is now available

in Europe.

Mahmood Ashraf, general manager, Bangalore Tech Centre, Faurecia Emissions Control Technologies, says, "We see huge potential in the commercial vehicle segment in India with our strategic alliance with Cummins. Being part of global R&D, our centre is well-knit within and is an integral part of the knowledge pools and product expert teams that the company has within it globally. As far as market readiness for India, as it scales up the emission norms, Faurecia R&D centre is ready in its resources and technological know-how. No challenge is a challenge really, for the centre in this context."

A key contribution of Meritor's technical centre has been its understanding of local customers and applications, says Thimmaiah NP, MD and CEO, Meritor HVS India. Examples of localising global products for regional needs include upgrading the 1497 axle with increased life, performance and weight optimisation; launch of hub reduction axle, twin-speed axle, drive and drive steer axle for 6x6, 8x8 and 10x10 military applications; and development of axles for LCVs.

Centre of Excellence

Continental's TCI is being developed as a 'Centre of Competence' for developing the Anti-lock Braking System (ABS) for two-wheelers. To improve safety of motorcycles, the centre is expanding its range of Electronic Braking Systems (EBS) by introducing one-channel ABS for smaller motorcycles and scooters. It can be customised for various control strategies in different vehicles including racer bikes, cruisers, sports bikes, scooters or mopeds. In addition, in the software development space, "we are establishing a 'Centre of Competence' for software engineering, platform development and testing centre for Asia for specific domains," Gulur says.

On the other hand, BTC is becoming the centre of excellence for LCV-range axles and has developed the smallest



◀ **Mahmood Ashraf,**
general manager,
Bangalore Tech Centre,
Faurecia
Emissions Control
Technologies

axle in the Meritor portfolio. It is also the 'Aftermarket Engineering Centre' for re-engineering and will become a centre of excellence for bearing and seal testing.

Peter Tyroller, member of the Bosch board of management responsible for Asia Pacific, says, "India is currently home to our largest software engineering centre outside Germany, and at this new facility, some of the top technical talent in the country will work in close collaboration with the academic community." Building up engineering competence allows Bosch to do two things. First, it is able to develop tailor-made solutions for the local market in an approach what it calls 'local for local.' An example of this is the new electro-hydraulic hitch control for the Indian tractor market, which was developed in cooperation with local farmers. Second, it is increasingly harnessing local expertise for the development of cutting-edge innovations for the global market – 'local for



◀ **Thimmaiah NP, MD and**
CEO, Meritor HVS India

global,' he adds.

Ashraf says, "We have a Faurecia Centre of Excellence certified expert in the field of Computational Fluid Dynamics (CFD) at our centre. Today we are capable of designing the product from concept to virtual validation through finite element analysis, CFD and acoustical simulation."

Partnership

Why are tech centres in India without partners unlike Indian component manufacturers having tie-ups abroad with local partners? Aulbur says these centres typically work on proprietary information and core technology for the parent company. While engineering services are bought locally, the key plan is to keep valuable and relevant information in-house or, in some cases, get it back from suppliers. That is why partnering is the second-best option for many players. Lakshman says ownership of technology and uncertainty are certain inhibitors for collaboration while Tyagi views confidentiality as preventing collaboration with local companies.

Challenges

The single biggest challenge for the tech centres, according to Lakshman, is the absence of an ecosystem to mitigate the risks associated with R&D. Aulbur says tech centres did face challenges in the early days of providing employees a clear and significant career growth path. They were often not integrated into the global engineering environment and worked as an internal 'supplier' who is constantly benchmarked against external service providers, and so on. "Today, many centres are sizeable with over 1,000 employees. Besides size, they also grant access to proprietary technology, which is less often seen in engineering service providers."

"India will continue to play a key role for the Bosch Group, even if the next few years present a few challenges, given the recent drop in

automotive sales within the country," affirms Tyroller.

One of the challenges is the high attrition rate. As the industry expands in size, with new R&D centres in place, it will be a challenge to retain skilled personnel considering the rising demand for such experienced engineers. Secondly, the difference in time zones could be a challenge, especially in areas where collaboration is required with the original R&D unit, informs Kirloskar. The main challenge for these centres is the aspiration aspect, in terms of their capability to grow as an end-to-end service provider, asserts Tyagi. "Engineers working in these centres are not satisfied with the nature of work they do. It is more of job work and the complete operational picture is seldom known to them," he adds. The challenges, Batra explains, are more internal - integrating teams here with their parent centres, attracting and retaining talent, and convincing decision makers at headquarters on the capabilities accessible in India.

"The cost of financing is one of the highest in the world in India; the industry-academia collaboration is weak and we still have to strengthen the relationship between OEMs and component suppliers for a symbiotic relationship. Also the auto component industry comprises largely small and medium enterprises and they are challenged by their capacity to either undertake research or even absorb technology," Lakshman adds.

Industry is united in stating that the way forward for Indian OEMs and suppliers is to invest time and money in research and development, to evolve from 'print to part' to 'concept to part.' While this is easier said than done, the challenge is to mitigate risk when cost of finance is prohibitively high. The government has some schemes to support this; however, it is minimal when compared to the demand. **ACI**