

INNOVATION AT TATA MOTORS

Cutting edge auto technologies are core to the company's new product development processes. The Tiago car and Signa range of trucks represent the most advanced vehicle architecture for passenger and commercial vehicles developed in India today. Our new concept cars Hexa and Kite, and the Nexon SUV showcase the innovative capabilities built up by the company.

Innovation Plus

For years, Tata Motors has consciously worked to embed innovation deep in the organisation's culture. Today over 4,500 engineers and scientists work to push the edges of innovative thinking in the company's R&D centres in India, UK and South Korea. The impact of this focus on innovation is most evident in the company's expanding portfolio of products.



Engineered for the customer

Customer centricity is at the heart of several of our technology innovations. For example, the Zest, Bolt and Tiago cars now offer customers the convenience of the multi-drive option – where the customer can choose between three different drive modes depending upon whether they need more power, higher fuel efficiency or a blend of both. The new engines, Revotron and Revotorq, which have pushed the envelope for Indian diesel and petrol cars were developed in the company's R&D centres at India and UK. Our commercial vehicles are engineered to offer customers the ideal mix of power, fuel efficiency and lowest cost of ownership. Technologically, they have advanced to offer fleet owners the fingertip convenience of nationwide networking and telematics through the Tata Fleetman telematics systems.

The organisation's ability to develop new mobility solutions extends to the defence sector. Tata Motors designed and developed the Kestrel, a futuristic combat vehicle, along with the Defence Research and Development Organisation. The amphibious and wheeled infantry combat automobile was developed in a record period of 18 months.

Green technologies

Sustainability is one of the organisation's pillars and also the heart of the innovation programme – an example of this is the intensive work being done on alternate fuels. Tata Motors has developed hydrogen fuel cell technology that can power both passenger and commercial vehicles to reduce dependency on fossil fuels. This technology was developed with support from the Government of India's Department of Scientific and Industrial Research.



The hydrogen fuel cell technology works by combining compressed hydrogen with oxygen to generate electricity in the fuel cell. This charges a battery that powers the motor, with water vapour being the only emission. This futuristic technology turned heads when it was showcased at the Auto Expo 2016 on the Magic Iris Ziva, our popular last mile passenger transport vehicle.

Tata Motors has already developed next-gen clean, green fuel based commercial vehicles, such as the Magic Iris Electric, a zero-



emission commercial passenger vehicle which uses solar energy for supplementary charging, and the hybrid Starbus, a clean fuel solution for public transport.

Culture of innovation

Innovation at Tata Motors goes deep beyond product and technology to encompass other aspects of operations such as marketing and customer service. The Madeofgreat campaign that roped in football legend Lionel Messi as a brand ambassador for Tata Motors cars created waves around the world. Another case in point is the path-breaking T1 racing championship event that multiplies the excitement of Formula1 racing with the raw power and force of truck engines.

Our customers get the benefit of the Tata Motors' creative approach at various touchpoints. For example, the Tiago offers a virtual test drive app that uses motion and gesture recognition technology to give the user a virtual on-road driving experience, while also showcasing the car's noteworthy features.

India's first service app –Tata Motors Connect – gives our customers a stress-free driving experience by connecting instantly to the dealer and workshop network through GPS navigation. VTabs is another new service-related application that tracks vehicles that come in to our service centres through RFID readers; this helps reduce time taken for servicing, thus directly benefiting our customers.

Innovative thinking percolates through the organisation in many ways. Our people engage with each other through creative

Environmental innovation

Our subsidiary Jaguar Land Rover has placed its focus on environmental innovation at the centre of its business vision. As the UK's biggest investor in automotive R&D, Jaguar Land Rover has developed a range of solutions to reduce the carbon footprint of vehicles and improve air quality while maintaining the performance and refinement standards expected by customers.

Other advances include enhancements to the customer value proposition, such as the InControl Touch Pro infotainment system. This already leads the industry and Jaguar Land Rover was the first to launch the UK's real-world testing of connected and autonomous vehicle technology.

Innovation is clearly the best platform to handle challenges from transformative technologies powered by new entrants such as Apple and Google.

platforms such as the enterprise social networking tool Yammer, informal networking sessions, learning sessions and webinars, etc.

At Tata Motors, we constantly strive to offer the best vehicle experience to our global customers. Innovation is one of the drivers of this journey.