

Do you have a startup or a
business idea related to
Connected Transport?



THE IGNITION LAB 1.0
A Contest for start-ups
focused on Connected Transport

Apply Now

Tweets by @AutoTechReview1



Home > December 2015 > Less In Manufacturing, More In R&D Is Our People Policy

LESS IN MANUFACTURING, MORE IN R&D IS OUR PEOPLE POLICY

Written by **Arpit Mahendra** | 16 December 2015 | Published in December 2015 (Interview)



Tweet

Tightening legislations are forcing vehicular technology to undergo a major refinement process, pushing the boundaries of engineering. While this presents an excellent opportunity for suppliers to create sustainable growth, Indian suppliers haven't held a significant role here. Some companies though are making an effort to change this trend. One such company is Spark Minda, Ashok Minda Group. We recently interacted with Hardeep Singh Arora, Group Chief Technology Head in order to understand if the company is really making a difference by taking part in innovation that not only caters to the Indian market, but also global ones.

With a Mechanical Engineering background, specialising in tools engineering, and a career spanning more than 30 years in R&D, Hardeep Singh Arora carries a rich experience in new technology introduction and development. His association with Spark Minda Group exceeds 25 years and he has been instrumental in bringing Minda Corporation Ltd's Security System Division, amongst the Top 3 globally in the two-wheeler segment. With a sizeable number of patents filed under his leadership, the company commands global leadership in some of its key products. As Group Chief Technology Head, he now spearheads technology development at a group Level, and guides the engineering teams of various businesses on technology development.

ATR _ Tell us about the Ashok Minda Group's approach to technology, both for conventional products and future products.

HARDEEP SINGH ARORA _ We are present in multiple product areas and have various divisions, all of which we map as technological trends. One step is to map the competition globally, both for products on sale and those being developed. The other step is to look at in-house innovation since we have separate technology cells for each product division. While we have a team to take care of requirements for ongoing supply agreements with customers, there's a separate team within this set-up focusing only on developing new technologies based on upcoming trends.

Can you give us an example of such home-grown innovation?

In the two-wheelers security systems area, we've developed a magnetic lock, also known as the magnetic module. This technology offers a high increment in safety against a small uptick in price. Till a few years back, this technology primarily resided with the Japanese companies. Since we were already present in the ASEAN markets such as Vietnam at that time, we were feeling the lack of this technology, which was already accessible to OEMs there.

This is the stage where the technology cell was called in to develop this technology. Thereon, it has been a successful journey for us and today we have the largest variety of magnetic modules in the world. The magnetic module is fitted on top of the ignition lock and has a shutter module, which restricts the access of the key to the lock in case of a wrong key, significantly lowering the chances of tampering with the lock. This in simple words means that one can't open the lock with a duplicate key unless it has the required magnetic

IN THIS ISSUE

COVER FEATURE

- [Hardware And Software Security In Infotainment Systems](#)
- [A New Approach – Connected Cockpit Multi-Domain Controller](#)
- [Agile Methods In Software Development For HMI, Graphics](#)
- [Connected Infotainment As A Key System In Electrical Mobility](#)

TECHNOLOGY

- [Two-Stage Supercharging With A Scroll-Type Supercharger And An Exhaust Gas Turbocharger](#)
- [Fiat Abarth – Italian Recipe Tweaked For Indian Taste](#)

INTERVIEW

- [Less In Manufacturing, More In R&D Is Our People Policy](#)

NEW VEHICLE

- [Honda CBR 650F – Treading The Middle Path](#)

GUEST COMMENTARY

- [Disruptive Innovation](#)

NEWS

- [News & Events](#)

EDITOR'S DESK

- [Curbing Pollution](#)



FEATURES

Toyota Prius
Yamaha R3 - Hits & Misses
Internet of Cars – Making Cars Smarter

More >

RECEIVE OUR LATEST NEWS

Enter your email address



module. As per the regulatory requirement, there needs to be 1,000 combinations for the ignition key but this magnetic module increases the combination count by 24 x, translating into 24,000 combinations and hence a far more safer system.

We also have 2 Track Keys having 3,000 combinations, so coupling the magnetic module with this system increases the combination count to 72,000, further reducing the chances of theft.

What is the degree of innovation that you've brought into an existing technology?

We alone have 11 patents in this area today, compared to the roughly 12 patents globally held by multiple companies at the time we forayed in this area. As a result, we command large business in ASEAN region as well as India, with a local market share of about 70 % in scooters.

What about the keyless technology, which is now finding increasing acceptance in two-wheelers after four-wheelers?

The keyless technology is more popular with Europeans since their customers are more sensitive towards comfort than a low-price tag. The Japanese, on the other hand, were catering to markets with a higher price-sensitivity and hence the different approach in technology. Starting from premium vehicles, this technology is now available in many mass-segment vehicles as well. We are the first company to have developed this technology in India and are now in advanced discussions to supply European customers.

What's the potential for this technology in India?

This is expected to become the norm in coming years since usage of the key will reduce gradually in favour of consumer convenience.

Of the two technologies that we've discussed so far, have you been aided by any technical collaboration?

The magnetic lock has been developed entirely in-house and on the electronic side, we've developed the immobiliser ourselves. For the hands-free system, we have a technical license agreement with an Italian company. Since electronics is a relatively new and growing area for us, this collaboration will help us come up the learning curve quicker.



As a company, how many such agreements or collaborations are you associated with?

In total we have three joint ventures. For instrument clusters, we have a JV with Stoneridge, US, while for four-wheeler security systems, we have a JV with Vast. We also have support of Furukawa for wiring harness and connectors. Beyond this, there's the earlier mentioned technical agreement with an Italian company.

What are the key technology areas that would take centrestage in your R&D department in the next few years?

Safety and emissions are going to be the key areas of focus for us. The first aspect is to look at the legacy business and spot the opportunities arising out of new legislations. An example is our division focusing on sensors. The market for sensors is presently small in India but is poised to take-off soon and attain a size of ₹ 2,300 cr from the present ₹ 700 cr in just about five years. Hence, we've identified some key sensors, which are related to the new and upcoming regulatory requirements.

Can you give us some examples?

These would include sensors for electronic fuel injection systems, anti-lock braking system and the likes. With the technology that we possess collaboratively with Furukawa, we're confident of making the most of the growth in this sector.

That's about the legacy products. What about the future line-up?

We are well aware of the opportunity presented by electronics and hence are already working on sensors for future systems such as collision prevention. Building on from here, as we talk of autonomous driving, there is massive growth to be exploited in sensors as every system will need them to collate data. Even in India, the

scope is good since partially-autonomous driving in the form of auto-braking and similar systems will gain popularity.

Keeping this in mind, we're setting up an electronic competency centre in Pune through an investment of ' 30 cr and have already hired an expert in this area to lead the centre. This centre will also cater to the existing products in addition to its core job of looking at new innovations aimed at the discussed technical areas. Beyond offering support for hardware and software, this centre will also have its own testing centre, saving us time since most companies use ARAI infrastructure for the same.

When is this centre expected to go live?

We're targeting April 2016, and construction is already underway.



In advanced technical areas such as active safety and powertrain, would your approach be limited to supplying sensors or progressing to a system level capability eventually?

Our focus is to be a system supplier and that goal is helped by the fact that we have a good sensor business, which can also support our legacy business. In the area of safety and emissions, we've identified some key technologies that offer good growth potential and here we'll be a system supplier and not just for part/s. We're working on these right now and hence can't divulge more information but soon we'll make an announcement about it.

Any products that you've already developed based on expected growth and not customer orders only?

We've already developed a configurable cluster and multimedia cluster and are through with the prototype and testing phase. We're now offering the same to OEMs.

But the same is being offered by global suppliers too.

Yes, our global competitors too offer similar products/ technologies but we're different not just in terms of design, hardware and software but more critically on the cost front. We strive to reduce the cost without adversely affecting the quality or performance of the product. This requires us to look beyond the product and into the entire system involving the product and eliminating any inefficiency. For example, most large global suppliers offer digital clusters for four-wheelers but we're offering the same for two-wheelers at a competitive price, which in turn gives more consumers access to the benefits of this technology. In addition, we're better positioned to customise products for local conditions and demand.

How much do you invest in R&D and what's the scale of the set-up?

Our R&D is separate for each business division with their individual technical centres, which in turn house a new technology cell, the role of which was mentioned earlier. Presently, we have more than 300 engineers and plan to increase this number considerably in the coming time. Of the total revenues, we invested 0.83 % in R&D last year and plan to increase this number to 1-1.25 % in the next two to three years and to two per cent in the next five years.

As a company, R&D is very important to us and we've always strived to reduce the number of people in manufacturing and increase the count in R&D. This works hand-in-hand since quicker development of an optimum product line contributes in reducing manufacturing time and eventually needs lesser people to do the same job. Hence, we're not just looking at product innovation but process innovation as well and are introducing more automation. This is done in-house and we make our own manufacturing machines, also helping us protect our intellectual property rights (IPR).

Give us a status of the number of patents you've filed so far.

We already have applied for 60 patents, of which 25 have been granted and in the next two to three years we plan to increase the count of patents applied for to more than 100, testifying our focus on innovation.

Text: Arpit Mahendra

Photo: Spark Minda

Note: "If you want to post anonymously, please tick the 'post as guest' box and then use a pseudonym for your name and email."

0 Comments AutoTechReview

Login

Share

Sort by Best



Comment input field

ALSO ON AUTOTECHREVIEW

WHAT'S THIS?

Honda's New I-Dtec Engine – Unconventional & Futuristic

1 comment • 7 months ago

RETRODYNAMIC — State of the Art - Novel InFlow Tech - Featured Project Development; / ·1; ...

Volvo Buses To Begin Exporting Into Europe

1 comment • 5 months ago

Rohit — I love volvo

Machine Learning In Automotive Data Potential, Analytics Power

1 comment • 7 months ago

— This is a very wonderful idea for someone to know especially if their skills and studies were ...

Suzuki Gixxer SF – New Clothes, Or Much More?

1 comment • 6 months ago

Sathish Narayan — At what rpm did you manage to clock 136 on the meter plz!?

Home News Archives Videos

Newsletters Photo Gallery About

Advertise with Us Events Subscriptions

Latest Issue Vehicle Reviews Contact Us

Follow us [social media icons]

Powered By ATZ