Tata Elxsi explores CV electronics market

Infotainment, telematics and safety could prove to be triggers for an unprecedented level of electronics to feature in commercial vehicles. Tata Elxsi seems determined to propel and ride this new wave.

Story Shubham Sinha

The degree of electronics featuring in Indian commercial vehicles has been limited thus far. It is only in the last few years that power windows and air conditioned cabins have been introduced, when these features had been the norm in the passenger vehicle segment for over two decades now. As for telematics, only a few large fleet operators use them. However, Tata Elxsi - which provides services like embedded product software, systems...
design, industrial design, animation and visual effects as well as system integration – believes that the CV industry will use a greater quantum of electronics going forward. The rising surge of competition could be a key driver. Anil Sondur, Vice President – Transportation Electronics & Industrial Design at Tata Elxsi says ‘New entrants will deploy electronics to gain a competitive edge. The incumbents may also be expected to respond in kind.’

Therefore improvements are expected in the areas of safety, infotainment and telematics. ‘Telematics is not a very complicated area. It basically involves enabling mobile connectivity into commercial vehicles for better fleet management,’ articulates Sondur. Vehicle tracking may be the most obvious purpose for telematics, but maintenance and support services along with user specific customisations may be undertaken within the bounds of the same technology. ‘Customised services may be as simple as taking the driver to his preferred dhabha, when he approaches/crosses a particular area. Globally, Automated Telematics Units (ATUs) incorporate features like geo-position fencing, road and traffic information as well as other location based applications,’ elaborates Sondur.

If telematics is on the move, infotainment seems to have an exciting future too. Elxsi develops user interface (UI) for LCD displays, touch screen panels and key pads for the instrument cluster. ‘Current infotainment systems basically involve a CD player with a two-line dot matrix display panel. But, change will come in the shape of 8-inch LCD screens with touch responsive capabilities. These displays will be compatible with USB and Blue Tooth, allowing the driver to connect smart phones to the system.’ By integrating a personal Google Android or iPhone device to the vehicle, the driver will be able to use the head unit to access relevant data. The head unit can also be connected to the internet, thereby creating an option to feed various applications into the in-cabin head unit. The same screen can also display metrics about the performance of the engine and other aggregates/systems. ‘The set up can work like a full diagnostics system. It will be capable of informing the driver well in advance about components that may need service in the near term,’ informs Sondur. The same application can also facilitate remote driver-vehicle interaction.
Tata Elxsi cannot reveal names of its clients due to non-disclosure agreements (NDAs). But Sondur lets us know that Tata Elxsi is the software development partner for a major Infotainment Head Unit (IHU) supplier based in USA. This IHU finds end application in trucks meant for the US as well as Canada. This unit helps pair iPod devices to the head unit for music, along with driver navigation functions. Safety is addressed by connecting rear view cameras to the IHU. ‘Recently, we have started working on developing a new Head Unit in which applications will be Android-based. We have also modified the existing user interface by developing new HMI screens which are easily customisable,’ Sondur adds.

Another area where Tata Elxsi sees good potential is the Advanced Driver Assistance System (ADAS). An important component of this area is the driver drowsiness detection module which uses image processing technology. Sondur adds that Tata Elxsi is also working on applications like lane departure warning systems. The company is also working on a heads-up display system. With this application, the entire instrument cluster will be displayed on the vehicle’s windscreen. ‘We believe that when it comes to future safety regulations, applications like these may not only become the norm but also become mandatory for passenger cars and commercial vehicles,’ states Sondur. At the moment, such technologies are seen in high-end passenger cars. But, going forward, premium buses may requisition them too.

**HOW ELXSI FITS IN**

Tata Elxsi either works directly with OEMs, or it deals with them through technology tier-1 companies. The latter are suppliers of mechanical components, electronic control units or even complete telematics/infotainment control units. ‘Our work mostly revolves around software development and integration. Hardware design and manufacture is generally taken up by tier-1 customers.’

In short, the activity of conceptualising an application, developing and validating the code, testing and clearance of required certifications is undertaken by Elxsi, while hardware design and integration is handled by the tier-1 company. But, there are exceptions to this rule too. ‘In some cases we develop the entire telematics unit box while in others, we take on the designing of the hardware along with the software,’ claims Sondur.

Whether it is the control of lighting systems, ACs or door modules, chances are that each of them will feature a piece of software. And, a company like Tata Elxsi would have been the silent brains behind the effort. Clearly, there is more going on here than meets the eye. More, should come to the fore as the CV industry ups the ante on the electronics front.