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HARMAN I ADOPTS PLATFORM-BASED STRATEGY FOR EXTENDING DIGITALISATION

Over the past few years, we have seen that the level of electronics content has been steadily increasing in modern vehicles. This has also lead to digitalisation of a whole range of components that were once in the hardware domain.

We spoke with **Arvin Baalu, Vice President, Integrated Digital Cockpit Platform group, Harman International** about trends in the connected technologies scenario, the company's development strategy and its takeover by Samsung. Baalu also talked about the way Harman is transforming itself to become a digital solutions provider in the auto industry.

INDUSTRY TRENDS

Baalu said that the automotive industry is seeing a paradigm shift in the way mobility is being looked at. The ride-sharing economy has resulted in a fundamental shift on how end consumers buy cars. There is a move among consumers from buying cars, towards subscription models and different methods of ownership and mobility. This shift is important because companies like Harman, as well as the industry, needs to rethink the way in which systems in the car's cockpit are designed. Additionally, users need to be offered personalised experiences, even if they do not own the vehicle, he noted.

Unlike the traditional model, the changing ownership model results in deploying the context, then following the user and applying this context when the vehicle is used. Harman is heavily-focussed on this context, and one of the company's platform initiatives in this direction is the Digital Cockpit, noted Baalu.

Baalu also said that Harman is working in the area of autonomous driving. The company is developing a platform that supports Level 5 autonomous driving technologies, where no human intervention is required.

DIGITAL COCKPIT PLATFORM

The Digital Cockpit Platform group of Harman is working on creating a centralised cockpit controller that controls every aspect of the experience inside the car. This is in line with the industry's move towards cockpits that are getting digitalised completely, said Baalu. In other terms, it talks about the philosophy of 'bits eating atoms', referring to the move from hardware to software. All aspects of the user experience that have been in analogue or mechanical form will get replaced with various digital interfaces.

A major reason for the move towards complete digitalisation of the cockpit is that once that is done, it becomes much easier to personalise the user experience. Examples of the move towards digitalisation include replacing inside and outside rear-view mirrors with cameras and computer vision-enabled video screens, and replacing electro-mechanical display of clusters to digital cluster display. Harman is seeing a fundamental shift in the industry and is moving from being a standalone infotainment systems supplier to a more general purpose cockpit systems supplier.

In addition, this digitalisation of the cockpit is being controlled and managed by a high-powered computer platform, unlike the dedicated electronic control unit (ECU) that was driving it earlier, Baalu said. He added that Samsung's acquisition of Harman provides a gateway into the area of semiconductor and display technologies that the Korean manufacturer is known for. Technologies like OLED displays, silicon technologies to drive complete platforms from field-oriented control (FOC) to memory, as well as sensors will now enable Harman to offer more comprehensive digital packages to customers.

The company is also looking at offering cockpit solutions for the two-wheeler market in India, again focussing on digitalisation of the instrument cluster. The company is also contemplating on integrating passive Advanced Driver Assistance Systems (ADAS) features with cameras, along with adding telematics features. Baalu said that all this is at a platform level currently, since the company does not have customers in the Indian two-wheeler market as yet.

DEVELOPMENT APPROACH

Harman has a platform strategy when it comes to developing solutions, which focuses more on innovating and integrating new technologies into the platform, besides working on continuously evolving customer requirements. Baalu said a platform essentially includes the systems, feature points to be developed on the systems, and a roadmap of technologies that are to be added on to these platforms. The company has three platforms that it is developing and integrating. The autonomous drive platform leads up to a Level 5 controller of vehicle autonomy. This platform includes setting up the system, building hardware, developing software, installing it in a vehicle, validating it, and finally offering it to customers, explained Baalu. He added that the digital cockpit platform controls all aspects of interior, infotainment system, digital cluster, electronic mirrors, ambient lighting and digital personal assistance. Finally, the telematics platform is one where Harman is looking at leveraging Samsung's leadership in the mobile technology segment to offer a connected gateway platform to customers.

However, an important aspect that ties together all these platforms and the solutions they offer is the user experience, noted Baalu. He said there is no use in solving complex system software if a compelling user experience is not offered to the end-consumer.

ACQUISITION BY SAMSUNG

Baalu said Samsung's acquisition of Harman is a very complementary one. The coming together of Harman's leadership in the auto industry, especially in the connected car space, as well as the technology leadership that Samsung has in the consumer space will allow the company to offer solutions on an unprecedented scale. The companies are in the early stage of integration, but there is expectation that the new entity will drive significant value to customers, especially in the mid to long-term, he noted.

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