Hackenberg explains VW's new infotainment architecture

Volkswagen Group is rolling out a new modular infotainment system (MIB). The German carmaker hopes MIB will give it the tools to provide its customers state of the art infotainment systems that can be tailored to each of its brands and updated quickly and easily.

Ulrich Hackenberg, member of the VW brand management board and the executive who also developed the company's modular car-platform strategy, explained to automotiveIT how VW will use the new MIB.

In a wide-ranging interview, Hackenberg also discussed the role of the Cloud in infotainment, the potential for Ethernet in the car, the role of partner companies and privacy concerns related to the connected car.

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Mr. Hackenberg, like Volkswagen's subsidiary Audi, you are introducing a modular infotainment system, MIB for short. What is the concept promising in the way of advantages?

With MIB, the Volkswagen Group is facing up to the infotainment challenges of the future. Its modular construction allows the use of multifaceted infotainment functions across a broad spectrum of vehicle classes. With its development spread across the brands, we are exploiting the opportunities for synergies company-wide at the maximum level and making it possible to respond quickly to the constantly changing demands of the market.

Can you explain the technology behind MIB in somewhat greater detail?

The main computer for our top navigation system is composed of two units. In addition to the main and flash memory, this high-performance module integrates the latest Tegra processor. Thanks to this equipment, all the voice control, online, media, navigation and telephone functions can be realized. The new modular layout allows the simple updating of hardware. This makes it possible to constantly keep the system state-of-the-art.

Despite all the modularity at the backend, the controls concept for the new Audi A3 with its turn/press control knob is different from that of the future Golf VII, which continues to rely on touch screen technology. When it comes to ergonomic controls, which brand is taking the wrong approach?

The modes of control have a long tradition at individual brands. In my view, there is not a clear, scientifically founded conclusion as to which control concept is generally better. It always comes down to the details of specific criteria and customer habits. The two methods – Audi's indirect controls and Volkswagen's direct interaction on the touch screen – have different strengths.

What are they?

Interaction by touch is an established form of control. It is mainly impressive because it is easy to learn and offers direct, immediate interaction with the elements that are presented. Moreover, the customer is accustomed to touch controls in other areas. At Volkswagen, we are clearly relying on touch as a cross-segment, brand-shaping element for the control of information and communication systems in our vehicles.

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What significance do you attach to text-to-speech, gesture control and augmented reality?

The evaluation of various input and output channels – such as speech, touch and gestures for interaction with technical devices in the automotive environment – is a key factor for safe and simultaneously intuitive display and controls technology. In this regard, let me refer to interpersonal communication. It is precisely the parallel availability of several communication channels – you say something and then support what you say with appropriate gestures – that makes the exchange of information between two people not just extremely robust but flexible with regard to changing constraints.

What consequences does that have for your company's development engineers?

We also want to offer this convenience to our customers as they deal with the information and communication systems built into their cars. The customer has the opportunity to choose between various input and output options.

At its introduction, MIB is still using the UMTS standard. When do you think LTE will find its way into it?

As the successor standard to UMTS, LTE, or Long Term Evolution, offers the opportunity for higher data rates. LTE routers are currently becoming more common for home use – as a substitute for DSL in rural areas – and for the first mobile devices. We are working with chip manufacturers on the introduction of LTE in the automobile. This will realistically begin in 2014.

BMW and Mercedes have taken the path of integrating smartphones in such a way that the driver sees the usual surface of the device in the display. Are you adopting this philosophy? Or what path is Volkswagen taking on integration?

The use of touch screens on smartphone has really been an overwhelming success; we will consistently use them in our vehicles as well. The integration philosophy for Volkswagen cars will turn out to be even more familiar to customers than the philosophy of our competitors. Volkswagen is currently working on integration that allows the use of safe, familiar controls during driving.

Apps will play an important role in the car in the future. With its new 208 this summer, Peugeot will

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be one of the first automakers to introduce a comprehensive app package and may even have its own shop for it. When can Polo drivers expect this?

With smartphone integration, it will be possible to use the personal apps that the customer carries on his smartphone in the vehicle as well. Advanced concepts to expand functions of the integrated vehicle systems will be made available in all vehicle classes with the use of MIB across vehicles.

And do you see a business model behind this?

Here we see the opportunity to take advantage of the creativity of other companies or even our customers to increase the appeal of our vehicles.

Will the customer be able to store his data in a VW cloud in the future?

As a vehicle manufacturer, Volkswagen is not competing with existing clouds and their personalized functions. New vehicle-related functions will be made available to customers with an appropriate VW infrastructure.

A global study of automakers and suppliers by the consulting firm KPMG found that the auto industry has no proper notion of the future desires of customers. In your opinion, what features will be high on buyers' wish lists in 2025?

Volkswagen regularly carries out studies on this issue, both in the "classic" U.S., European and Chinese markets and in influential markets such as South Korea. In 2025, media and network technologies will have shaped customer requirements even more strongly than they have today. The focus is now on topics such as connectivity, fuel consumption and sustainability, and they will become even more important due to new mobility concepts.

Please explain that a bit

There is strong demand especially for connectivity already, yet it will continue to develop vigorously. We know that there is a strong demand for connectivity among young people today. The young have grown up with the new technology and they know that technologies change, mutate and even disappear when they are replaced by something else. That's why younger customers prefer solutions that integrate their mobile devices into the vehicle.

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And the older customers?

Older customers want an integrated solution and put more value on fuel consumption and efficiency. The combination of connectivity and alternative powertrains also permits completely new functions such as the pre-cooling/heating of a battery-powered electric vehicle during the charging process.

Some premium brands are pushing the networked vehicle effectively in the media. What does Volkswagen understand this to mean and what are the milestones for it?

Today the world of the customer is networked to a high degree thanks to smartphones, tablets, PCs and the like. The networked vehicle will integrate itself seamlessly into this world and will offer new functions for convenience, entertainment and safety. You can find visible milestones for it in our e-vehicle test fleets. Every fleet customer is given an iPhone along with his vehicle that can be used to control the charging process and interior climate system as well as review other details of the vehicle's status.

A networked vehicle requires the maximum end-to-end integration of the IT infrastructure within the car and outside of it. Is Ethernet the right solution for this – after all, the technology can be found in every home and office. Or is the structural similarity overstated?

As a first step in this technology, Volkswagen is developing the networking of cameras for assistance systems based on Ethernet technology. In this way, the digital point-to-point connections are replaced and Volkswagen is creating the technological foundation for the use of Ethernet as a broadband bus technology in future vehicles. In the future, transmission rates often found in offices and homes can thus be used for networking in the vehicle as well.

With networking's progress, the quantity of data transferred from and into the vehicle will rise dramatically. Powerful backend structures are needed for this. How is Volkswagen preparing for this?

We are basically paying attention to data efficiency and data protection in our functions' designs. That means we give careful consideration to what data are transmitted how often. The backend concepts will be completely scalable, so they can respond to all requirements flexibly. We created the internal requirements with the launch of the new corporate computing center in Wolfsburg. It sets

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