The wearable revolution is coming – but when?

By: Rachel Boagey in Analysis, Commercial Vehicles Analysis, Electronics Analysis, OEMs & Markets Analysis, Safety Analysis

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They can be used as fashion accessories and to monitor health, but the latest use for wearable technology is in the automotive sector, where it can make the car and driver more intelligent.

The trend for wearables is poised for considerable growth in many industries including automotive, and the Consumer Electronics Show (CES) 2014 saw a plethora of wristwatch tech and smart-eyewear in a new TechZone area of the annual show in Las Vegas, called WristRevolution. All hoping to be the next big thing, Sony released its Smartwatch 2, and Samsung released its Galaxy Gear, but some believe the so-called wearable revolution has yet to arrive.

Recent developments

The latest innovation in wearable technology has come from Scania, which in partnership with Sony Mobile has released a watch that can communicate with trucks. The watch collects information on variables including fuel consumption, driving efficiency and average speed and provides the driver with the ability to receive emails, send text messages and receive phone call notifications.

Mattias Lundholm, Head of Scania Connected Services and Solutions, says the use of wearables is still in its early stages and market awareness is low. However, he explained that the company sees “exciting opportunities for connecting a wristwatch to the essential information obtainable from a truck’s technical systems, as well as to data from our system for real-time monitoring and analyses of truck fleets.”

Scania’s Project Manager Jonas Svanholm recently noted that the OEM wanted to develop technology that allowed the Scania Watch to truly serve as a friend of the driver. “Existing fleet management apps have primarily targeted transport companies and fleet operators. The Scania Watch, combined with the new app, takes the technology one step further and helps the driver in his or her daily work,” commented Svanholm.

The first version is being launched as a limited edition of 999 watches, called the Black Griffin. Scania will continue to develop the device, improving usability and adding new functions via software downloads.

Automotive World spoke to Mark Bünger, Research Director at Lux Research, who noted his predictions for the wearable market in automotive over the next decade and beyond.

He explained that the market is difficult to predict, “Ten years from now, wearables will be around five to seven generations ahead of where they are today, whereas cars will be roughly the same as what we see now. Wearables will evolve and be adopted even faster, so this question is largely about what wearables will become.”
In fact, Bünger noted that in ten years, it’s a reasonable bet that nearly every adult and teenager in developed markets will have more than one wearable device. However, only about half the cars on the road will be model year 2015 or later, and even of those, only a small percentage will be equipped with wearables-ready telematics interfaces. “How many?” he asked. “We assume that the technologies that are being piloted today such as like Hyundai’s Blue Link for Google Glass, Mercedes’ Digital DriveStyle for Pebble smartwatch, BMW’s i3 EV for Samsung Galaxy Gear, will be standard equipment by 2020 at the very earliest, and 2025 is more likely. So ten years from today, at best 20% of the cars will be wearables-capable while 100% of the drivers will have wearables.”

Moreover, Bünger noted that the wearables we know today such as Google Glass, Pebble and Samsung Gear will be about as up-to-date as a Windows CE phone or a Blackberry. “In other words, they will be long gone – even some of the companies we think of as dominant today, like Samsung and Apple, will have exited the market.”

He explained the likelihood therefore that today’s upstarts like Xiaomi and Micromax will be leaders: “The devices themselves will be greatly advanced; one device in 2025 will do what all devices today do, taking inputs from dozens of sensors such as voice, touch, gestures, and giving output visually, via voice, and via haptics such as vibration, electrical tingling, constriction.”

**Integrating in automotive**

So how will these devices connect with OEMs’ systems, if only 20% of the cars are ready? “They won’t,” explained Bünger. “Aftermarket dongles for OBDII ports like Automatic and Metromile will be far more commonplace, and they will be the integration point for most drivers and their cars.” Other aftermarket devices, he noted, in particular cameras and some other spatial and proximity sensors will use advanced image processing and predictive analytics to create a 360-degree vision of...
the situation around the vehicle, complementing it with data from other vehicles, from infrastructure, and from cloud-based data like maps, weather, and traffic.

The more interesting development about this time will be autonomous vehicles, noted Bünger. He observed that basic ‘Level 2’ autonomous behaviour is already coming to market in the form of relatively modest self-driving features like adaptive cruise control, lane departure warning, and collision avoidance braking. “With these initial steps, OEMs are already on the road to some level of autonomy, but costs remain high in many cases.” Lux therefore forecasts that that Level 2 self-driving will increase from a small fraction of new cars sold today – about 3% globally – to 57% in 2020, and 92% in 2030. “However, by that same year only 8% of new cars sold will attain the reasonable capabilities of Level 3 autonomy.”

So what benefits will wearables have in the future of automotive, and how will they change automotive safety for the better? Bünger noted that for most drivers, the novelty of vehicle and trip stats wears off after a few months. This data will find more use for drivers making long-term behaviour adjustments, as well as in forensics for post-accident evaluations and for catching recall issues early. “The fact that the data comes in on a wearable device as opposed to a smartphone doesn’t change the situation much,” Bünger explained. “Other types of communication such as texts and emails are changing as devices get smarter, however, so within ten years, it will be very uncommon for us to type a response on a tiny QWERTY keyboard. Instead, the devices will read messages to us, and transcribe our responses or offer common standard replies while we are driving.”

The potential for 2015 to be the year that the wearable market really moves into high gear is rapidly increasing, yet some problems arguably still need to be overcome for wearables to gain traction in the automotive industry. Ideally, Bünger explained that new devices won’t worsen driver distraction, but in practice this is a clear possibility. “Anything that takes the driver’s attention from the three-dimensional space ahead is a risk – even hands-free calling can be risky if the conversation requires the driver to do certain types of mental tasks,” he said. “Hopefully the safety features of autonomous vehicles, as well as the situational awareness that wearables themselves provide, will alleviate the problem.”

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http://www.automotiveworld.com/analysis/wearable-revolution-coming/