The Internet of You

As wearable devices get better-looking and more powerful, we'll trust them to monitor and control more of our lives.

By Rachel Metz on May 20, 2014

The Internet of things typically conjures images of "smart" light bulbs and automatic door locks. Yet with an ever larger number of smart watches, activity trackers, and head-worn computers hitting the market, we're becoming part of the Internet of things, too.

Slowly but surely, a few wearable devices — mainly high-tech pedometers like those from Fitbit and Jawbone — are catching on with consumers, and many researchers and companies are certain that body-worn computers will become second nature — sensing, recording, and transmitting data to and from our bodies, to networks around us.

For the most part, wearables still lack wide appeal. Some, like Google Glass, elicit ambivalence. IDC estimates that manufacturers will ship 19 million watches, bands, and other wearables next year — barely a flicker next to the billion or so smartphones sold in 2013.

Wearables are still looking for their killer app. Now some people have begun to imagine that the Internet of things will provide it. If indeed our houses become filled with smart devices like door locks, a watch or wristband may be the most convenient way to control them or let them know our needs.

"Your car should know that you're tired because you didn't sleep that well, so it should be alert to that, how awake are you when you're driving, those things," says Hosain Rahman, the CEO of Jawbone, a 14-year-old company that makes earphones, speakers, as well as wrist-worn fitness trackers. "I just think that things that are on your body — wearables — ultimately will [control] all the smart stuff and be kind of at the center point."

Jawbone is among the first to try to turn a wearable into such a lifestyle remote. Jawbone's Up24 wristband can act as a trigger for the Web service IFTTT ("If This, Then That") by using its low-energy Bluetooth radio to share the data it gathers about you with an app on your smartphone. For now, it does only simple things. If you have an Internet-connected heater, the wristband can signal it to turn on when you get up in the morning. The idea is that the environment reacts to you.

Such ideas are in their infancy. Many companies are still struggling to get anyone to put a wearable computer on. Another problem is power. With Google Glass, for instance, you'll get a few hours of use before it needs to be recharged. And the biggest power draw is usually the wireless chip that lets these devices communicate. That's why MC10, a startup manufacturing soft, thin electronics, is experimenting with "every novel form of power source," says cofounder Ben Schlatka. One possibility comes from a project at Columbia University called Enhants. Researchers there are developing small, flexible tags that harvest energy from light or as they are shaken by movement. In an upcoming research paper, they describe outfitting 40 people with flat sensors attached to different parts of their bodies while they walked, ran, or relaxed. Sensors were able to harvest enough energy to transmit data continuously at a rate of one kilobit per second. That's not much, but it could be enough for simple applications like authenticating someone's ID or reading the local temperature. Enhants researcher Peter Kinget, a professor of electrical engineering at Columbia, says enough energy can typically be harvested to wirelessly link a sensor on your body to a smartphone — something we're already comfortable carrying everywhere we go.

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