

Promise and peril in an ultra-connected world

March 2 2014, by Anick Jesdanun



A woman wears the new Samsung Gear 2, right, and at the Samsung Gear Fit , left, at the Mobile World Congress, the world's largest mobile phone trade show in Barcelona, Spain, Tuesday, Feb. 25, 2014. Expected highlights include major product launches from Samsung and other phone makers, along with a keynote address by Facebook founder and chief executive Mark Zuckerberg. (AP Photo/Manu Fernandez)

(AP)—We're in the beginning of a world in which everything is connected to the Internet and with one another, while powerful yet relatively cheap computers analyze all that data for ways to improve

lives.

Toothbrushes tell your mirror to remind you to floss. Basketball jerseys detect impending heart failure and call the ambulance for you.

At least that's the vision presented this past week at the Mobile World Congress wireless show in Barcelona, Spain. The four-day conference highlighted what the tech industry has loosely termed "the Internet of things."

Some of that wisdom is already available or promised by the end of the year.

Fitness devices from Sony and Samsung connect with your smartphones to provide digital records of your daily lives. French startup Cityzen Sciences has embedded fabric with heart-rate and other sensors to track your physical activities.

Internet-connected toothbrushes are coming from Procter and Gamble's Oral-B business and from another French startup, Kolibree. The mirror part is still a prototype, but Oral-B's [smartphone app](#) does tell you to floss.

Car makers are building in smarter navigation and other hands-free services, while IBM and AT&T are jointly equipping cities with sensors and computers for parking meters, traffic lights and water systems to all communicate.

Internet-connected products represent a growth opportunity for wireless carriers, as the [smartphone](#) business slows down in developed markets because most people already have service.

With the technological foundations here, the bigger challenge is getting

people, businesses and municipalities to see the potential. Then there are security and privacy concerns—health insurance companies would love access to your fitness data to set premiums.

At a more basic level, these systems have to figure out a way to talk the same language. You might buy your phone from Apple, your TV from Sony and your refrigerator for Samsung. It would be awful to get left out because you aren't loyal to a single company. Plus, the smartest engineers in computing aren't necessarily the best in clothing and construction.

Expect companies to work together to set standards, much the way academic and military researchers created a common language decades ago for disparate computer networks to communicate, forming the Internet. Gadget makers are starting to build APIs—interfaces for other systems to pull and understand data.

Building everything is too much for a single company, yet "they want all this stuff to work together," said Jim Zemlin, executive director of the Linux Foundation, a backer of the Tizen project for connecting watches, cars and more. Samsung's new fitness watches will use Tizen, and tools have been built to talk with Samsung's Android phones.

As for persuading customers, IBM executive Rick Qualman said the emphasis now is on pilot projects to demonstrate the benefits, such as better deployment of equipment and personnel during a natural disaster.

At the wireless show last week, Zelitron, a Greek subsidiary of Vodafone, showed how retailers can keep track of refrigerators used to dispense bottled drinks. The system tracks temperatures and inventory, and knows if a fridge is inadvertently unplugged.

Meanwhile, Cityzen hired athletes to demonstrate its connected fabric by

playing basketball. Data get sent to a smartphone app using Bluetooth wireless technology.

Gilbert Reveillon, international managing director for Cityzen, said he's had interest from a U.K. car insurance company and Chinese hospitals. Health data can tell you whether you're fit to drive and can call paramedics in an emergency.

Some customers might worry about security, given recent breaches compromising credit and debit card numbers at Target and other major retailers.

Determined hackers seem to constantly find loopholes. Imagine someone spying on you remotely through security cameras in your home or tricking your home security system into believing your car is approaching, so it opens your garage door automatically.

AT&T emphasizes that it uses encryption and other safeguards for its connected services, which include security monitoring and energy-efficiency controls in homes. Glenn Lurie, AT&T's president of emerging enterprises and partnerships, said the U.S. wireless carrier goes through extensive security certification and exceeds industry recommendations.

Reveillon said any data sharing by Cityzen will be in aggregate form, with users' identities removed. He said individual users could decide to share more, but that would be up to them. He said French regulators are quite strict on that.

But U.S. regulation isn't, and a government subpoena is typically enough to override any promises of privacy. Once the information is available, privacy advocates say, it's tempting to find other uses for it.

Jonathan Zittrain, a law professor at Harvard University, said it's difficult for people to say no when presented with immediate benefits because any potential problems are vague and years away.

"Information seems harmless and trivial at the moment, but can be recorded forever . and can be combined with other data," he said. "I don't think we've come to terms with that yet."

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