Next Up ⌄

TECH INNOVATION (HTTP://IQ.INTEL.COM/TOPIC/TECH-INNOVATION/)

THE PROMISE OF PREDICTIVE COMPUTING: ANTICIPATING YOUR EVERY MOVE

PSFK Labs (http://iq.intel.com/author/psfk/), iQ Contributor and iQ Content Partner

(http://iq.intel.com)

🔍   ☰
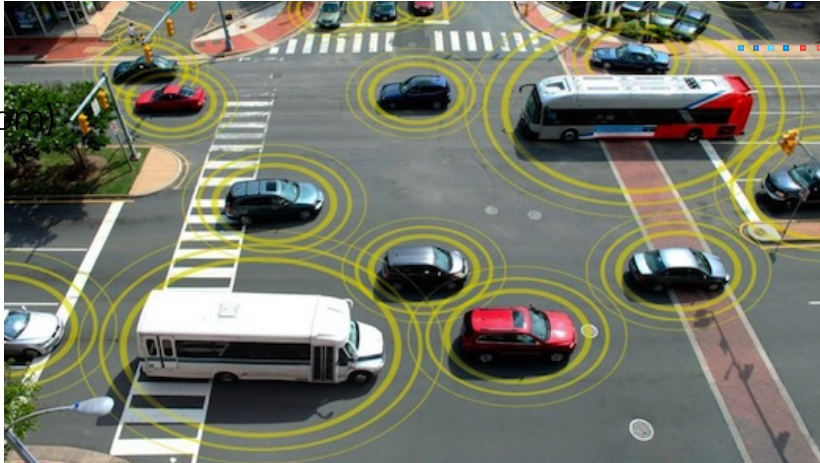
Technology assists us with issues that it was programmed to solve, but how will our lives change when it can learn and act before we even ask?o

We could soon live in a world where traffic flows at the whim of human behavior, where our smartphones send messages to our doctors and where low-cost, high-quality sensor technology anticipates our every move.

Sensor-embedded objects — and the increasingly interconnected networks of natural and man-made systems — are collecting real-time data about us and the unique ways that we live our lives. These networked objects are learning and evolving to provide anticipated actions that are orchestrated to deliver safety, efficiency and convenience, to scale.

Don't leave the fridge open or the TV on. Turn off the lights when you leave the room. Whether in consideration for the environment, or your personal finances, energy conservation is an idea that you're probably familiar with. Yet in the United States alone, there are around 25 million streetlights running each night, costing around $2 billion dollars per year (not including installation and upkeep). That's no good for our collective pockets, and it's awful for the environment. So why not take a page from our daily lives and just turn them off when we're not using them?

A company called Tvilight has created a system that does just that. CitySense (http://www.tvilight.com/) is described as "a plug-and-play integrated wireless sensor" that's compatible with any type of streetlight, and dims or brightens them in response to the presence of pedestrians, bicycles and cars. The whole system can be monitored and controlled through a central interface and programmed however the user sees fit. An automated system like this could save energy costs by 80 percent, maintenance by 50 percent and take a huge chunk out of our carbon dioxide emissions. Plus, it would greatly reduce light pollution so that cities might even have starry nights again.
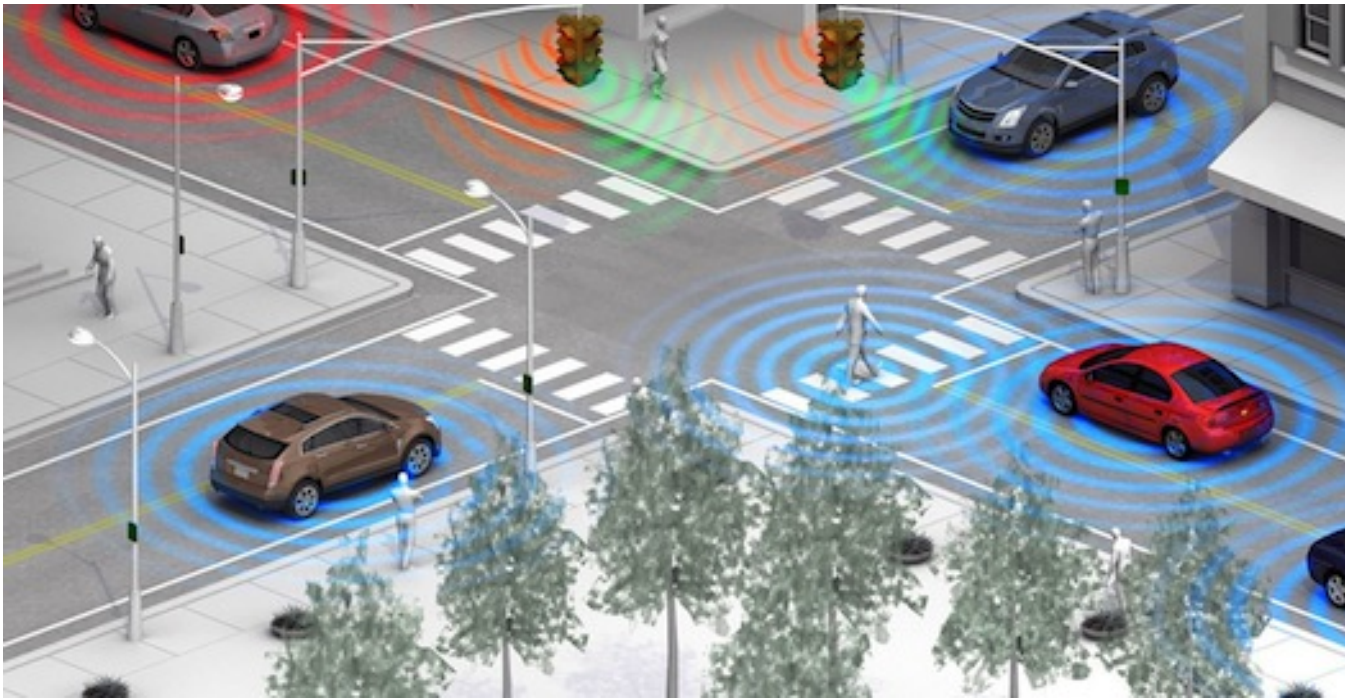
Car manufacturers have been building increasingly smart vehicles for some time. Now at least two companies, Audi (https://www.audi.co.uk/about-audi/latest-news/audi-traffic-light-recognition-technology-could-save-millions-of-litres-of-fuel.html) and Honda (http://www.digitaltrends.com/cars/honda-vehicle-to-vehicle-communication-system-syncs-cars-with-traffic-lights/#!baZ6P6), are testing systems that could turn their cars into our co-pilots. The technology is based on vehicle-to-vehicle communication (V2V), which lets cars send information back and forth between one another and with enabled infrastructure like, in this case, traffic lights.

Knowing when a light was going to change would allow cars to give a little heads-up to their drivers. We'd then know to brake gradually or, if there was time, a display might show what speed would be necessary to make it through (hopefully the system is well versed in local speed limits). If you're already sitting at the red, both systems would count down your wait. In fact, Audi figures it might be best to shut the engine off altogether and just start it back up five seconds before the light turns green.

Audi estimates that systems like these could reduce CO2 emissions by 15 percent and save around 238 million gallons of gas. Plus, it could dramatically improve traffic flows in cities, which could ease long commutes and save a ton in hurt feelings caused by road rage.
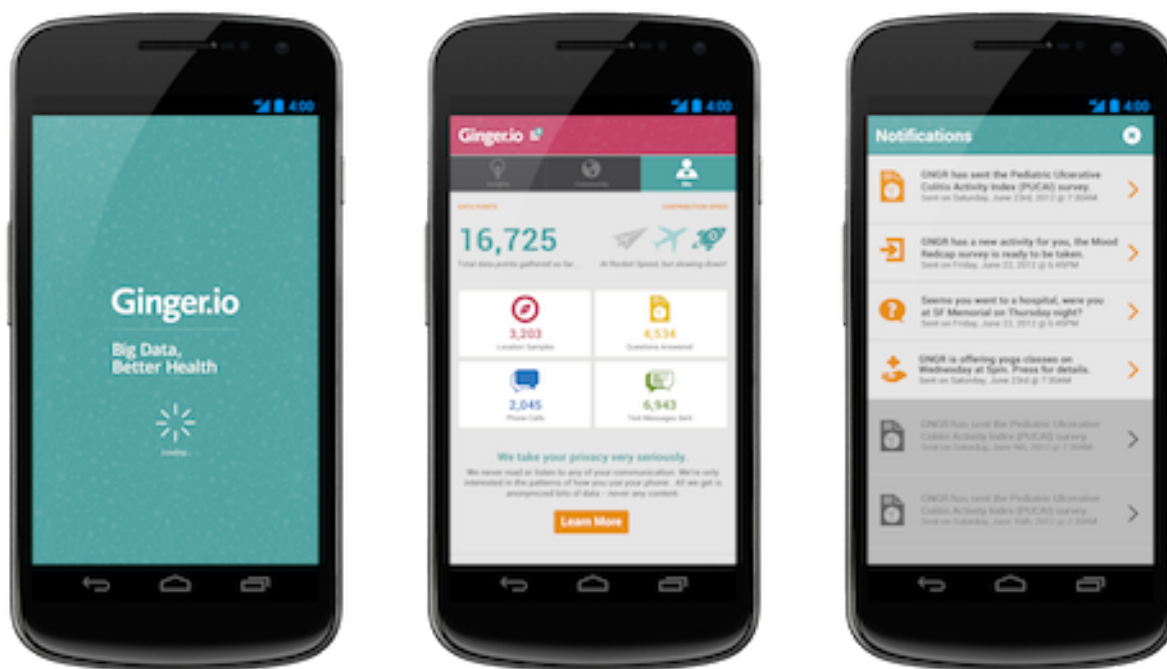
Speaking of feelings, it sometimes feels like the Internet of Things is really just for things. Not so. The kinds of anticipated actions that we see when connected devices broadcast their information also has a human side. Take Ginger.io, a startup founded by former MIT students Anmol Madan and Karan Singh, which passively gathers data from users' smartphones to predict emotional and physical issues like depression, anxiety or even the flu.

Currently focused on people suffering from diabetes, Ginger.io (http://ginger.io/) collects and analyzes information about texting habits, call frequency and location and sends these statistics to doctors so that they can provide better care for their patients. Doctors are also able to use the app to conduct surveys and ask quick questions that will help inform them on how to best tailor treatments.

The implications leave many experts advising caution as the technology moves forward. Christine Outram, associate director of Invention at Deutsch LA, in an interview (http://postscapes.com/iot-voices/interviews/5-questions-with-christine-outram-of-city-innovation-group-on-the-internet-of-action/) with Postscapes explains:

"For me (the IoT term) is not really capturing the power of what this next iteration could do,

or what augmenting all of our devices can actually lead to. It would be nice to see us talk less about the object of the network itself "the Internet of Things", and more about what is this going to lead to. So, it's kind of the Internet of Action, the Internet of Decision Making, the Internet of Faster Feedback, it's the Internet of Greater Agility. On the flip side, it could of course be the Internet of Control, or the Internet of Manipulation, which we have to be equally aware of. These are the kinds of concepts that the Internet of Things is going to push us towards, and we need to be aware of outcomes, not just structure."

As long as we continue to invest our creative energy into the potential applications for these systems of anticipated action — and continue to ourselves anticipate the potential outcomes of our creations — the gains that we'll see might even surprise us.

SHARE THIS ARTICLE

RELATED TOPICS

Tech Innovation (http://iq.intel.com/topic/tech-innovation/)

READ THIS NEXT ‹ ›