Issue Overview: The Internet of things

By Olaf Kharif, Bloomberg on 09.08.16
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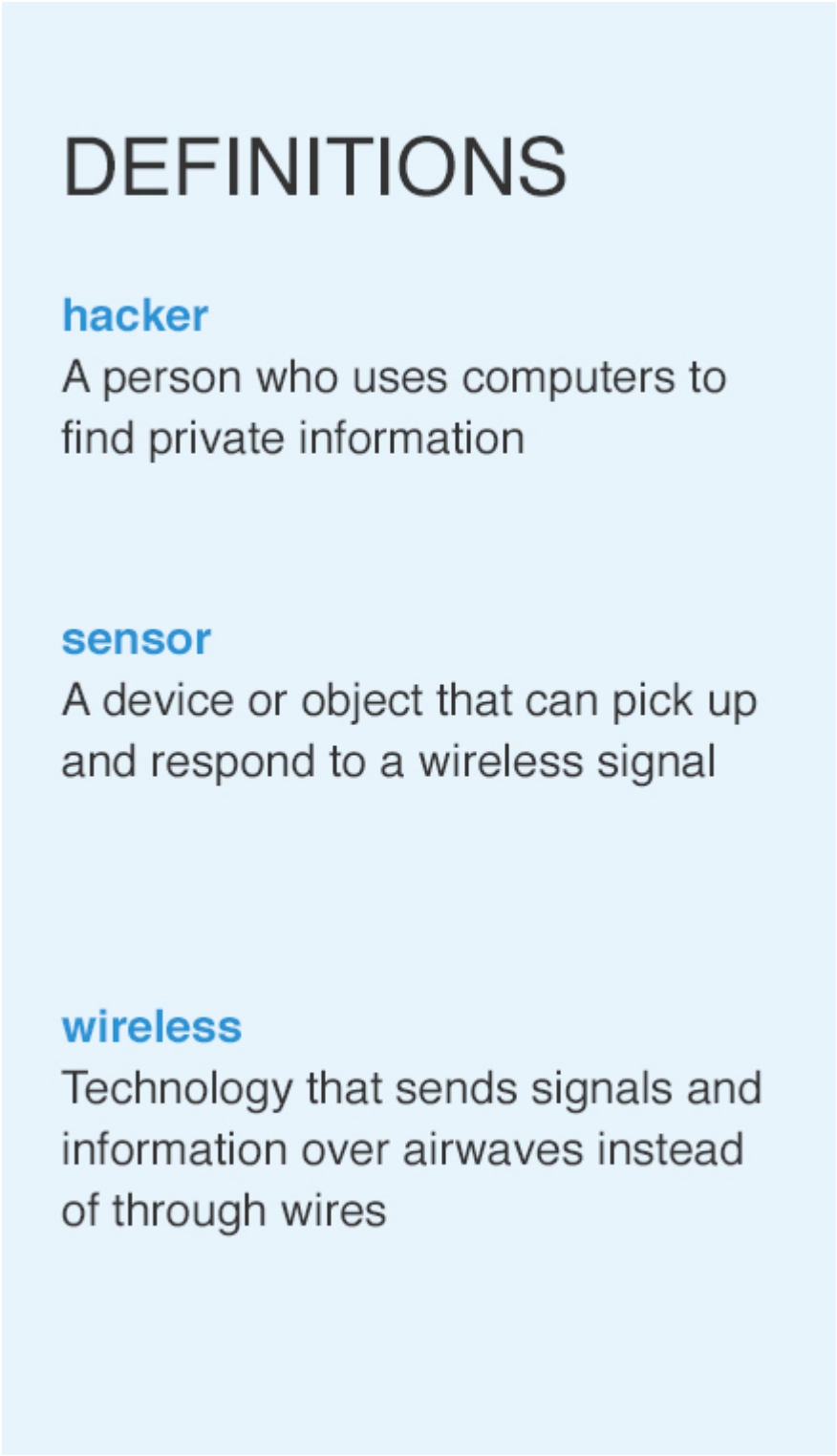
TOP: Smart Home at the 2015 Mobile World Congress Conference on July 15, 2015 in Shanghai, China. Courtesy of Getty Images.

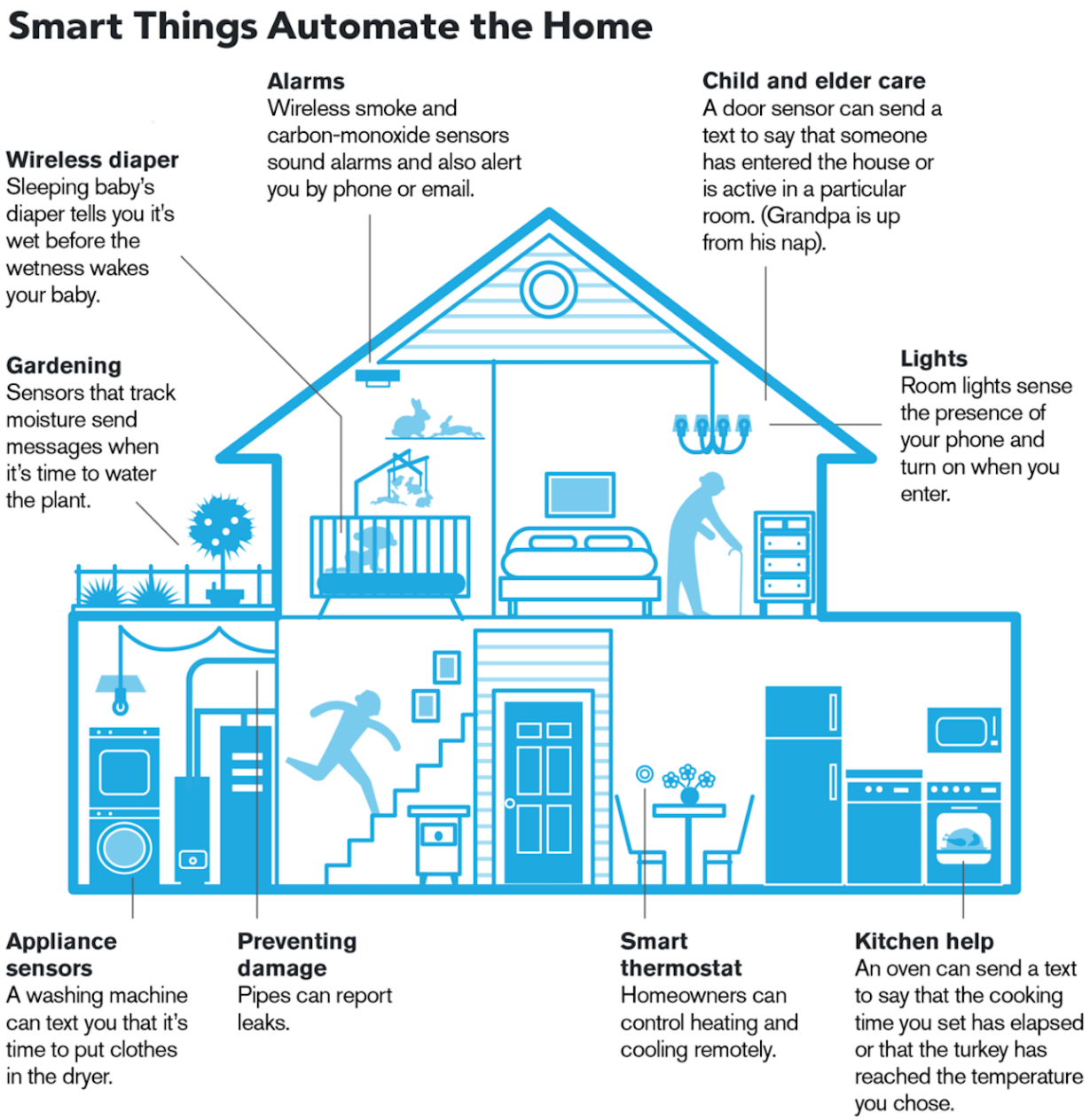


Are you looking forward to the day when your sleeping baby's diaper tells you it's wet before the wetness wakes your baby? Or are you dreading the day when a hacker or the government can learn everything about you that your car, appliances and even your internal organs can divulge? Either way, that day is coming, as a wave of cheap sensors connected to the Internet begin to invade almost everything around us. Linked by wireless technology, they will make up what's been dubbed the Internet of Things. Altogether, the network of connected objects is expected to eventually dwarf the Internet of people: Some researchers predict that by 2020, as many as 20 billion

devices will be connected, up from more than 6 billion now. For consumers, that could mean coffeemakers that delay grinding when you hit your alarm's snooze button. For businesses, it could mean gigantic savings when pipes report their own leaks, warehouses place their own orders and cows that need milking communicate through something more direct than mooing.

The Situation

Tech giants like Samsung, Apple and Google have been connecting all kinds of devices — from thermostats to smart watches — to the Internet. In 2015, Amazon introduced Dash Buttons, which attach to washing machines and pantry doors and, when pressed, reorder supplies like detergent and Kraft Mac & Cheese. This year, GE put out a washer that can automatically reorder detergent if it's running out, and makers of devices ranging from printers to glucose meters are following suit. In February, Cisco acquired Jasper Technologies for $1.4 billion to help customers connect and manage devices wirelessly. Companies ranging from Microsoft to IBM have launched new tools to make it easier for smaller companies to manage Internet-connected devices. In February, the Linux Foundation said it would build an operating system for the Internet of Things, an effort supported by chipmakers Intel and NXP. One challenge continues to be getting devices to talk to each other — a homeowner may need one mobile app to turn up the heat and another to turn on a home alarm system. An even bigger question is security — an issue vividly illustrated by a video a hacker titled "Weaponizing Your Coffee Pot."



The Background

In 1982, computer science students at Carnegie-Mellon University put sensors in a Coca-Cola vending machine and connected it to an early version of the Internet so they could tell if it was empty without having to walk all the way there. The term “Internet of Things” was coined in 1999, by Kevin Ashton, the co-founder of an MIT center that helped develop the radio chips that businesses now use to track goods and materials. But for the most part, web-connected gadgets remained out of consumers’ reach until the rise of smartphones, which use a score of sensors to track everything from motion to eye movement, led to a steep drop in prices. Sensors typically connect to an at-home hub via a Wi-Fi network or connect to other devices via Bluetooth technologies.

The Argument

More data, more problems. The data collected, monitored and transferred by wireless devices can include names, addresses, credit card numbers or even health information. Doors and electrical systems can provide clues into whether a house is empty. And while technology companies confidently power ahead, U.S. officials are moving more slowly, trying to fashion rules that could keep the Internet of Things from becoming a vast feeding ground for hackers who could turn devices against their owners as well as steal information. Former U.S. Vice President Dick Cheney said last year that he disabled the wireless feature on his defibrillator in 2007, because he feared terrorists could use it to kill him. The U.S. Federal Trade Commission last year brought charges against the maker of web-enabled security cameras for leaving the devices vulnerable to hackers. Hardware companies are also struggling to figure out which devices mainstream consumers will be willing to pay to connect to the web. Nest says its $249 thermostat will pay for itself by lowering heating and cooling bills. But wireless diapers may have to be a lot cheaper before consumers regard them as anything more than a novelty.

Quiz

1 Which of the following options BEST summarizes how the article says smartphones have affected the Internet of Things?

(A) They have made it easier for companies to predict what kinds of devices will become most popular.

(B) They have made web-connected devices more vulnerable to hackers and identity theft.

(C) They have made web-connected gadgets cheaper and more accessible to the average consumer.

(D) They have made it more difficult for companies to develop the right kinds of sensors.

2 The article suggests that the Internet of Things may have a negative impact on consumers for all of the following reasons EXCEPT:

(A) It is easier for smaller companies to manage internet-connected devices.

(B) Electrical systems can give clues about whether a house is empty.

(C) Web-enabled security cameras may be vulnerable to hacking.

(D) Data collected by wireless devices can include credit card and health information.

3 Who would find the graphic "Smart Things Automate the Home" MOST useful?

(A) someone trying to determine the best way to hack into a home internet system

(B) someone giving a presentation to homeowners on the benefits of web-enabled sensors

(C) someone developing a software system to enable devices to talk to each other

(D) someone studying the technology of how web-connected gadgets work in the home

4 What information from the article would be MOST appropriate to include as an additional caption on the graphic "Smart Things Automate the Home?"

(A) Coffeemakers can delay grinding when you hit your alarm’s snooze button.

(B) U.S. officials are working to make new rules for the Internet of Things.

(C) Sensors in warehouses can automatically reorder goods.

(D) Web-connected technology can notify farmers when cows need milking.

Answer Key

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