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What is the Internet of Things, and why should you care?

By | **Consumer Reports**

The Internet of Things, or IoT, refers to the growing number of Internet-connected devices that can perceive their environment in some way, share data with one another—and, of course, communicate with you. An IoT device must have its own processor, a way to directly or indirectly connect to the Internet, and some type of sensor or sensors to collect information. Current IoT products include smart watches, such as the Samsung Gear Live; activity trackers, including the Fitbit Flex; connected-home hubs and devices, such as the Nest Learning Thermostat, and "intelligent" cars and home appliances.

The term generally excludes computers, tablets, and smart phones, but IoT devices can serve as intermediaries between you and those devices. For example, an activity tracker keeps tabs of your number of steps and calories burned. You then sync the tracker with your smart phone for data analysis and to keep a history.

You may have heard this term recently, especially considering the decreasing cost and increasing complexity of electronics components, and the advent of wearable-technology devices and the connected home.

Find out all about the connected home in "Run Your Home From Your Phone."

A recent Pew Internet report cited some intriguing examples of possible IoT devices:

- A milk carton that's almost empty—and pings you when you're near a store where you can replace it.

- An alarm clock that can signal your coffee maker to start brewing as you wake up.

- Smart appliances that know to do their chores after peak electricity loads subside.

How quickly is the IoT arriving? Getting off the grid may become near impossible very quickly! Peter Middleton of the research company Gartner Group estimates that: "The growth in IoT will far exceed that of other connected devices. By 2020, the number of smart phones, tablets, and PCs in use will reach about 7.3 billion units. In contrast, the IoT will have expanded at a much faster rate, resulting in a population of about 26 billion units at that time."

With this increasingly everything-connected world, privacy and security concerns increase as well. If personal data isn't well protected as it's being transmitted and stored, consumers could lose privacy and be vulnerable to cybercrimes such as identity theft. In fact, a recent study from HP Fortify on Demand found that "70 percent of the most commonly used Internet of Things (IoT) devices contain serious vulnerabilities." Some of the top problems cited in the report were privacy concerns, insufficient authorization, lack of transport encryption, insecure Web interface, and inadequate software protection.

So despite the futuristic fun and great promise of the IoT, there's a lot of work to be done to make sure consumers aren't put at risk by it.

Before you jump in with both feet, make sure to educate yourself on how to stay safe. Bookmark our guide to Internet security for news and tips.

—Carol Mangis

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