Got Battery? Lots of low battery hacks but no quick fix

January 22 2015, byBarbara Ortutay

In this Dec. 29, 2014, photo, travelers use a charging station at McCarran International Airport in Las Vegas. While the common lithium-ion battery that's used to power laptops, cellphones and tablet computers has improved in recent years, the demand that us gadget addicts are placing on these batteries has soared. (AP Photo/John Locher, File)

At a cozy watering hole in Brooklyn's Bedford-Stuyvesant neighborhood, bartender Kathy Conway counted four different phone chargers behind the bar. Call it the scourge of the red zone, call it battery anxiety.

Smartphone users are tired of begging to charge devices behind bars or hunting for hidden electrical outlets in airports and train stations. Where, oh where, is a better battery?

The common lithium-ion battery that's used to power laptops, cellphones and tablet computers has improved in recent years. Battery capacity has tripled since 1990, says K. M. Abraham, a professor at Northeastern University who researches batteries. But it's not nearly enough to keep up with the demand we gadget addicts have for constant use of skinny, light mobile devices, which limits battery size.

Two billion mobile phones were shipped worldwide in 2014, 75 percent of which were smartphones, says longtime technology analyst and president of Creative Strategies, Tim Bajarin. Demand is growing by 10 to 12 percent each year. And we want to send email, play games, stream music and videos, get step-by-step directions—all battery hogs.

"We are reaching the limit of what a good battery material can do," says Abraham. "Going beyond what we have now is taking a new understanding of chemistry, material science...People are working all over the world on it, but there is nothing on the horizon."

Still, there are some options.

Companies recently showed off battery chargers and smartphone extenders at the annual gadget show known as CES. One that seems particularly convenient is the 911 Boost, developed by Florida entrepreneur Bernard Emano and his two firefighter sons. The small black square weighs only 2.3 ounces and is designed to be carried on a key chain. It's versatile, with three different retractable jacks so it can plug into new and old model iPhones, and any other phone that takes a micro-USB plug.

The $30 device can only provide about a 60 percent charge for most phones, though. Emano explains that a battery with more capacity would be too heavy for a keychain. His device can plug into a wall outlet while connected to a phone, so the phone and the charger can both recharge together. They're sold at 911Boost.com; Emano is in talks with retailers.

Chinese company ZeroLemon has a line of rugged smartphone cases for Apple, Samsung and LG phones that come with built-in battery extenders. A $69 version for the iPhone 6, called the Rugged Juicer, will let you go up to three times as long before you need a recharge, according to spokesman Randyn Akiona. ZeroLemon also makes pocket-sized, solar chargers that will restore a smartphone battery to full capacity in about three hours, when connected by a power cable. "It's not for someone who needs a fast charge, but it will get you going" when there's no other power available, Akiona says. The SolarJuice chargers will take up to a week to recharge themselves from the sun, although you can also plug them into an outlet.

Qualcomm has extended battery life through more efficient software and hardware. After all, processors can handle sharper displays and cameras in phones these days, without the battery itself getting much bigger. Among the power-saving advancements: When one part of the chipset is in use, the rest gets turned off to save energy. The chipset also tries to store a lot of data internally so that it doesn't have to expend energy constantly reaching out to the phone's memory banks.

Google, whose Android operating system runs on most of the world's smartphones, last year launched "Project Volta"—named after Alessandro Volta, the Italian physicist who invented the battery—a tool aimed at extending mobile battery life. For example, waking up a phone's application processor can start consuming a lot of power, but a lot of apps don't need to do that constantly, says Dave Burke, vice president of engineering at Google who works on Android. A function

called JobScheduler helps ensure that apps wait to perform non-critical tasks like updates when your phone is connected to a power source.

"You are out in a restaurant with 10 percent power, you don't want apps to start updating," says Burke.

Conway says she doesn't know why more people don't carry around external chargers known as power bricks. On cue, Ben Eells, a theater electrician sitting at the bar, pulled one out of his bag. He bought it on the crowdfunding site Kickstarter for $70.

"It has LEDs built into it," he demonstrated. "I carry batteries around, but sometimes I forget to charge the batteries."

Next to him, a woman asked Conway to plug in her phone. She complied.

Such is modern life.

Citation: Got Battery? Lots of low battery hacks but no quick fix (2015, January 22) retrieved 1 May 2024 from https://phys.org/news/2015-01-battery-lots-hacks-quick.html