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## BINARY BOMBHELLS

# Reduce waste with repair



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I remember the first time I learned about rechargeable batteries. My new remote-controlled toy car was eating through AA batteries, so my parents gave me a set of rechargeable ones.

Rather than throwing away six AA batteries into the landfill every few weeks, I could reuse the same set over and over again.

As rechargeable battery use became more widespread, I expected it would reduce the amount of electronic waste in the world. Unfortunately, the opposite has happened because of corporate greed.

Manufacturers have made it harder for people to repair their own devices, such as by switching out batteries, in order to sell more units. It's time for this wasteful practice to end and for the right to repair to be guaranteed.

I could easily pop the battery out of my first cell phone during the late 2000s. When the battery stopped holding as much charge, it would take less than 10 seconds to swap in a new one.

Phone makers realized that if they made it hard to switch the battery out, consumers would either pay them to do battery swaps or buy new phones because the repairs were too hard or complicated.

In 2010, when the iPhone 4 came out, Apple began using a new type of screw called the pentalobe security screw.

Whatever Apple's intentions were, the change had an immediate impact. People couldn't open up their phones for repair because no one besides Apple employees had pentalobe screwdrivers.

If you opt to get a new phone instead and choose to recycle your old one, you might not be helping the environment as much as you think.

Jim Puckett, the executive director of the Basel Action Network, which works against the export of toxic waste, told NPR's Fresh Air in 2010, "A recycler can

be a recycler in name only."

Puckett explained that recovering the few valuable metals inside devices is a toxic process done in developing countries where people don't have adequate protective equipment.

The easy solution to this problem is to reuse and repair our slightly broken devices rather than chucking them in a landfill or "recycling" center. It'll cut down on the manufacturing of new products too.

That's not an easy task though, and it goes past switching batteries – most electronic components in our devices are difficult to access, repair and replace.

In the '90s and early 2000s, if your USB port stopped working, you could take off the case and swap in a replacement. Now you just give in and find a workaround until you can afford to get a new computer.

Online repair community iFixit rated the 2019 MacBook Pro as a 1 out of 10 on its repairability scale because key components including the keyboard, battery and memory are glued or riveted, making it significantly more difficult to repair.

It's not just Apple creating locked-down products – the Microsoft Surface Laptop earned a zero in repairability. Given that it wasn't designed to be opened at all without damaging the laptop, repair becomes effectively impossible.

That said, it is possible to create laptops that are easy to repair. Recent HP EliteBook models earned 9s and 10s on the iFixit scale.

During the coronavirus pandemic, being able to repair medical equipment quickly becomes a matter of life or death.

According to Business Insider Italia, in mid-March an Italian hospital found volunteers who could 3D print a valve needed for ventilators. The volunteers asked the manufacturer for the design, but were turned down as it was patented and likely illegal to reprint.

Thankfully, that didn't stop them, as they redesigned the part from scratch, successfully printing valves that the hospital could use, likely saving lives in the process.

That's why we need the government to step in, because companies are abusing copyrights and patents to prevent us

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from repairing devices we legally own.

Imagine for a minute if the car you bought didn't come with an owners manual. If you wanted to refill the oil or switch in new tires, you'd be required to go to the car company's own service program.

We wouldn't stand for such a world, that would be absurd. But in reality, more and more components of our cars are operated by computers that are often solely controlled by manufacturers.

In 2012, Massachusetts voters passed a "Right to Repair" initiative with 86% support, requiring car manufacturers to provide the same information their dealers use to vehicle owners and independent repair shops.

By 2014, car makers voluntarily agreed to follow the requirements of the Massachusetts law nationwide starting with 2018 model-year cars, according to The Atlantic.

Except now, Massachusetts voters will be heading back to the polls in November to vote to expand the law to include a "vehicle's telematic data," which includes monitoring and other diagnostic information that cars have started collecting.

Philosophically, it's quite simple – if you own a product, you should have the technical and legal abilities to modify it as you want. If manufacturers don't want to enable that, it's up to us to lobby our representatives in the state and federal governments to pass right-to-repair legislation.

Once again, Massachusetts is on the right track. Its state legislators are working on a Digital Right to Repair Act, which would make similar requirements from the 2012 initiative mandatory for all electronic device manufacturers.

The bill passed state House and state Senate committees in January 2019, but hasn't seen any action since. However, I'm hopeful that it will become the blueprint for similar legislation across the country.

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