



It's not really yours if you can't modify or give it away.

Make it, Break it, Fix it, Own it

The holidays were once filled with happy sounds of things being made. Santa's helpers in homes around the world were kept busy putting gifts together.

To many weary parents, Christmas Eve was often a nightmare before IKEA as they assembled bikes, swing sets, or playhouses at midnight with just a few hand tools and some poorly-printed instructions. Days after the holidays were almost as bad, as toys broke and parents scrambled to fix them. Such memories are little more than family lore nowadays.

With modern technology, building or fixing things – especially electronics – has become so difficult and costly for ordinary people (as well as many pros) as to be almost inconceivable. Even the most sophisticated devices have become disposable in the name of neverending progress. Progress – but for **whom**?

The effects of all this **conspicuous waste** are proving dire with increased **pollution, resource depletion, climate change**, global poverty and wealth inequality. Yet this sad state of affairs is no way an accident.

Powerful manufacturers have long sought to keep consumers dependent on their products and services, even manipulating governments to enforce their **monopolies**. However, ordinary people all around the planet are slowly wising up, demanding the **right to repair**, modify, or use products as they please. The tech giants are desperately fighting back, as they are involved in huge **antitrust legal battles**.

The rise of the black box

Americans are practical people; making tools and keeping them in working order was life or death for colonists. So although the word “**fix**” has been around since the Middle Ages (meaning “fastening”), we Americans were the first to use it to mean “repair”.

As such, we have inherited a proud tradition of barnyard tinkerers and shade tree mechanics. This grew through the Industrial Revolution and the necessities of the Great Depression and World War II further deepened appreciation for durable tools. Inventors were American heroes. Every town was sprinkled

with small appliance, car, and bike repair shops, and repair manuals were easily available.

Yet this began to change even before the war. In 1924, **Alfred J. Sloan**, the head of General Motors, suggested that the way to increase auto sales in the then-saturated market was to convince consumers to buy a new car *every year*. **Planned obsolescence** was born with annual model-year changes from greed appealing to vanity disguised as a show of progress.

Promoted as a way to **end the Great Depression**, the quickening rate of invention and the novelty of all the shiny new gizmos after the war allowed such practices to be widely adopted without notice.

Planned obsolescence evolved through the 1950s and 60s but few then cared. It takes various forms which should seem all too familiar to consumers today. Bad design is often an intentional “feature”.

- **Contrived lifespan** – everything breaks eventually, so why not let it happen sooner than later? It's easy – just use slightly cheaper materials in the **most critical parts** which wear out the quickest.
- **Repair prevention**. Make it so **hard or expensive** to fix that it's almost easier or less costly to replace. **Apple** is the all-time acknowledged genius at this since the beginning, making products **impossible to open** without special tools, **not releasing repair manuals**, and **even locking out users** and bricking devices when it detects **non-Apple replacement parts**. The company has told Congress that they make no money off repairs, but many right-to-repair critics **don't buy it**.
- **Non-replaceable parts**. Some devices – again **iPhones** come to mind – are made with parts, typically **batteries**, that cannot be removed. Doing so often voids the warranty (supposedly because it's dangerous), yet over 50 electronics manufacturers still continue this **illegal practice**. Binding parts together so that a larger, more expensive unit must be replaced than merely the small broken piece is another proven strategy to charge more.
- **Perceived obsolescence** – the fashion factor. When genuine improvements can no longer be made to the design, the classic solution is to glam up the looks and sell the thing at a premium for snob value. This has moved countless unnecessary

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vanities from the biggest-finned cars of the 1960s to the thinnest smartphones today.

- **Programmed or systemic obsolescence** means to alter the system to make continued use difficult or impossible. This is often claimed to be necessary due to ongoing technical improvements, but has involved deliberate disabling of perfectly-good tech, as when **HP put chips** in their ink cartridges to kill them after reaching a certain page count. But **Microsoft** is the true master here, with frequent system updates and forced upgrades.
- **Buried in legalese** – all these “innovations” are defended by legions of lawyers and skills. **End User License Agreements** (EULAs) are standing jokes as their dense language and interminable length virtually guarantee that nobody reads nor understands what restrictions may actually apply.
- **Walled gardens** compensate against future obsolescence by persuading consumers to commit to proprietary corporate systems. Apple, Microsoft, Google, and Amazon all do this by offering users attractive terms to get started (**Amazon Prime** being a perfect example), knowing that the longer people engage with their system, the harder and more costly it will be for them to ever leave.

The copyright coffin

This is infuriating enough, but the biggest nail in the coffin of user-repairability came not from tech tricks but from computer software by way of copyright law.

Copyright was not meant to protect impoverished writers, but their publishers. Printers in various cities would join together to agree on who could print a book there. Authors had to fight to get any payment. In fact, Miguel de Cervantes was forced to write a **bad sequel** killing off Don Quixote as so many printers and **hacks** were stealing his hero outright.

Until recently, copyright has been used mainly by corporations to safeguard their exclusive claims to a literary or artistic property – most famously extended by the successful lobbying of the Walt Disney Co. to protect its **iconic rodent** for decade upon decade.

Copyright is important here because **software is not considered an invention** like the physical hardware it runs on. **Software** is generally **copyrighted** as any other literary production, though **some processes** may be patented. Either way, only its creators may change anything about it without permission. Big tech firms are not eager to give anyone that power – often not even their **independent repair centers**.

In such a scheme, users have **no real ownership**, and technology is designed to further limit them. Readers **cannot easily give** an ebook away. Not only that, but the rights they think they have can disappear. Early

on, **Amazon un-ironically erased** Orwell's 1984 and *Animal Farm* from Kindles once it found that it didn't have the rights. All the notes made on the texts by studious readers also vanished into the void, and there was nothing anyone could do about it.

Farmers cannot legally repair their **John Deere tractors** stuck out in the field because they don't **really own them**. **Marines may not fix** their vital gear in forward units either. Busted equipment must often be replaced by brand-new units from stateside even if they could easily be repaired on-site. How well will that work out in a real live shooting war?

Meanwhile, **Digital Rights Management** (DRM) to prevent copying media has become enshrined within the basic code that runs the web. Its legal teeth derive from the **Digital Millennium Copyright Act** (DMCA) intended to foil content copiers. Long used to lock devices down, it recently gained certain **exceptions**.

Despite that, restrictions keep growing tighter. A number of **recent initiatives**, originating in the European Union, are stongly pushing the grip of copyright holders (that is, publishers) on content at the expense of everyone else around the entire world.

Menders of the world, unite!

Many people are rebelling against these pressures. A **Right To Repair** movement is gaining strength across the planet. Online advocacy and lobbying groups such as **The Repair Association** have sprung up. As could be expected, the **Electronic Freedom Foundation** is also involved, along with passionate critics like **Cory Doctorow**, and **Louis Rossman**, who makes videos for a million subscribers on fixing Macbooks. **YouTube** has huge amounts of other repair clips, too.

iFixit is a wiki-based site to teach repair skills. For hands-on help, **Repair Café** is a worldwide chain of DIY repair shops – like tinkerers' co-working spaces, the closest of which is in Colorado. But Albuquerque has **Quelab** and **FUSE** makerspaces, and our city has even recently held a **Fixit Clinic**. People are learning how to mend their own devices, but it is the **bloated system** itself that most desperately needs repair.



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