

The E-waste Problem

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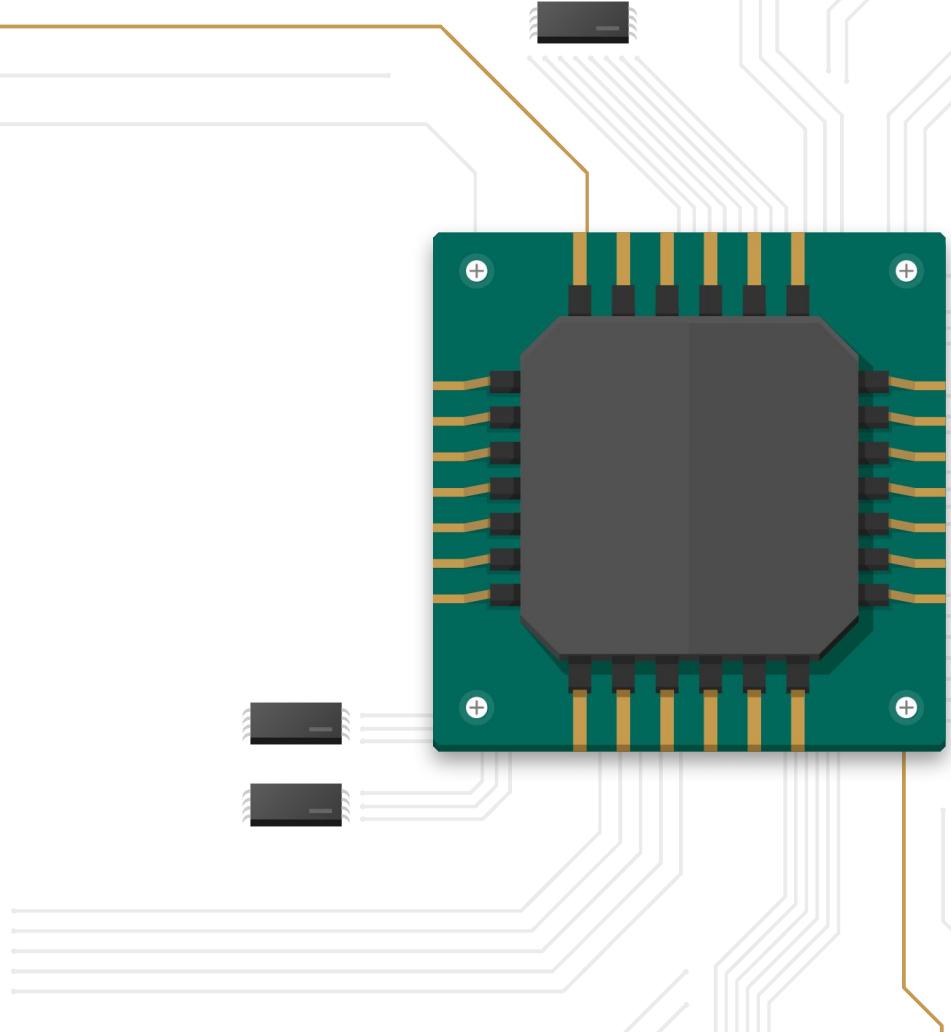


Table of contents

1

What is e-waste?

2

Repairability

3

Alternatives

4

Counterargument
+ rebuttal

5

What you can do
about it

6

Volunteer
experience

7

Conclusion



What is e-waste?

E-waste

- E-waste or electronic waste: discarded obsolete or no-longer-used electronics
- Usually ends up in landfills
- Not much public awareness



E-waste (cont.)

EPA's definition

“a subset of used electronics and recognizes the inherent value of these materials that can be reused, refurbished or recycled to minimize the actual waste that might end up in a landfill or improperly disposed in an unprotected dump site either in the US or abroad”

What it means

- When you toss out a device at a recycling center, they are sent to landfills, mixed with other plastic waste.
- Sometimes they are even sent to third world countries to be dumped!

Environmental concerns



- E-waste that is left in landfills can release toxic chemicals
- These chemicals are released into the environment, which affects the health of individuals
- Increasing demand for different metals as technology progresses

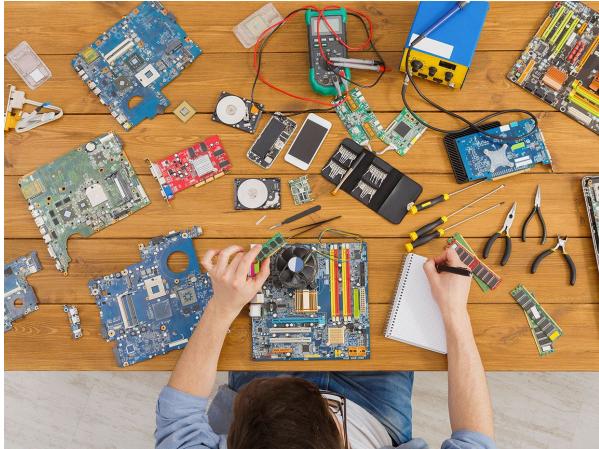
Source:

Gibbons, Serenity. "How Companies Are Addressing the E-Waste Problem." Forbes, Forbes Magazine, 9 Nov. 2022.



Repairability

Repairability

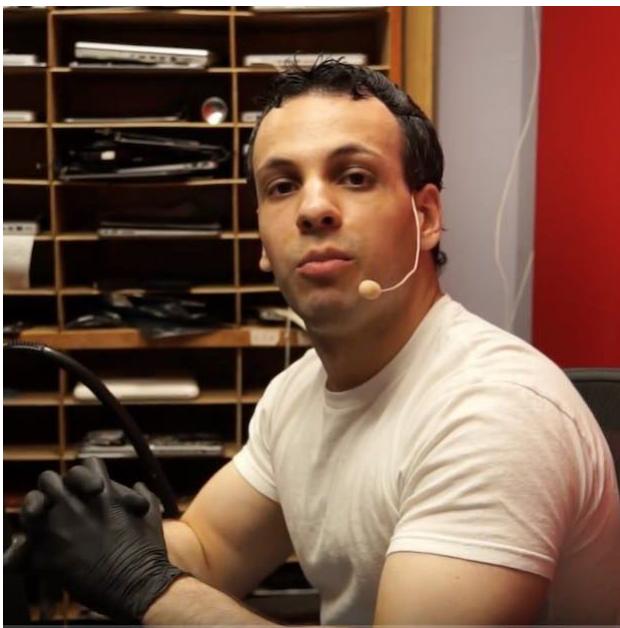


- Most electronic devices are difficult to repair
- Phones nowadays are sealed with glue, which make it hard to take apart
- Devices have limited lifespan, companies decide how many years they'll release OS updates
- Situation is getting better as of 2024, but we have yet to see an actual effect on e-waste

Source:

Chen, Brian X. "A Smartphone That Lasts a Decade? Yes, It's Possible." New York Times, 14 Sep. 2022.

Rossmann's testimony on repairability



- Louis Rossmann is a New York repair technician who has advocated for Right to Repair
- Testified in Washington State Senate about device repairability in 2020 (SB 5799)

Rossmann's testimony



- Rossmann, in his testimony, described his experience in fixing an Apple device.
- According to Rossmann, in order to obtain a chip he needed, he had to purchase an entire iPhone shell with the chip, and dispose of the shell.
- Also contacted manufacturers that create Apple's chips, was unable to sell it to him.

Source:

Rossmann, Louis. "Louis Rossmann Right to Repair Testimony in Washington SB 5799." YouTube, 22 Jan. 2020

Alternatives to recycling



Alternatives



Opt for repairable devices

- Most devices nowadays are sealed with glue or screws, and require special tools to take them apart.
- A tech startup, Fairphone, sells repairable phones, which allow you to replace parts easily.

Source:

Chen, Brian X. "A Smartphone That Lasts a Decade? Yes, It's Possible." New York Times, 14 Sep. 2022.

Alternatives (cont.)



Mining them for metals

- Earth is running out of rare metals!
- All electronic devices contain these metals
- These include metals such as silver and gallium.
- Used in other items such as thermometers and surgical implants.

Sources:

Gibbons, Serenity. "How Companies Are Addressing the E-Waste Problem." Forbes, Forbes Magazine, 9 Nov. 2022.

Gill, Victoria. "Mine E-Waste, Not the Earth, Say Scientists." BBC News, BBC, 7 May 2022,

Counterargument + rebuttal



Counterargument



- Others may argue that we should recycle old devices rather than maintain them
- This may seem like a good idea, but there's drawbacks

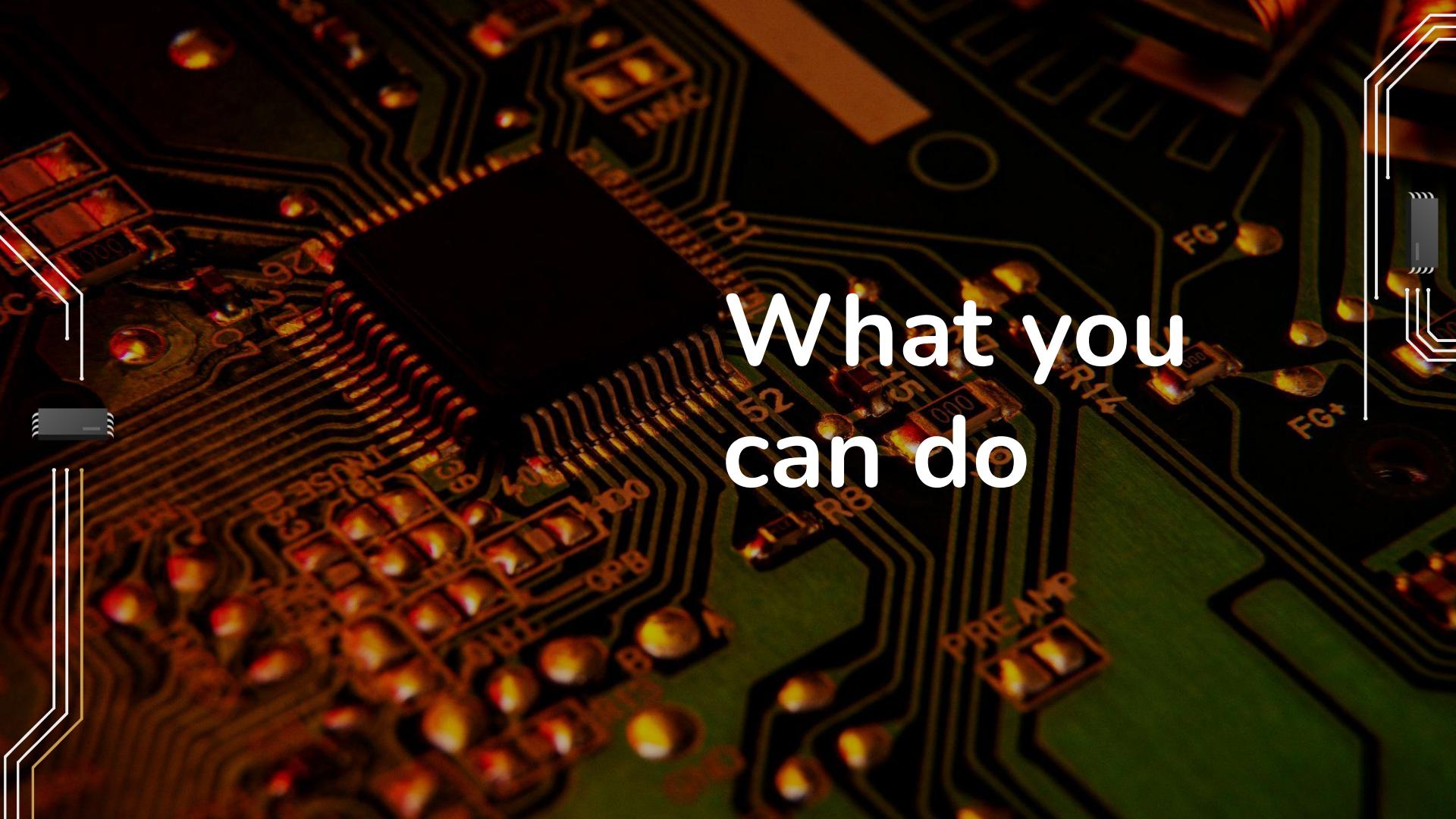
Rebuttal

- When you send old devices to a recycling center, they're not properly recycled
- Usually, they are just mixed with other plastic waste
- Improper disposal of electronics leads to environmental pollution



Sources:

Tatum, Hunter. "People Are Paying to Break Printers with Sledgehammers in Smash Rooms." Washington Post, 08/06 2023. ProQuest; SIRS Issues Researcher, Verrax, Fanny. "'Urban mines': how to unlock our electronic junk's potential." The Conversation, 28 Feb. 2024,



What you
can do

Sell/donate old devices

- Some stores will allow you to trade in your device for cash, or donate them
- Breathes in a new life in that device, and prolongs its lifespan

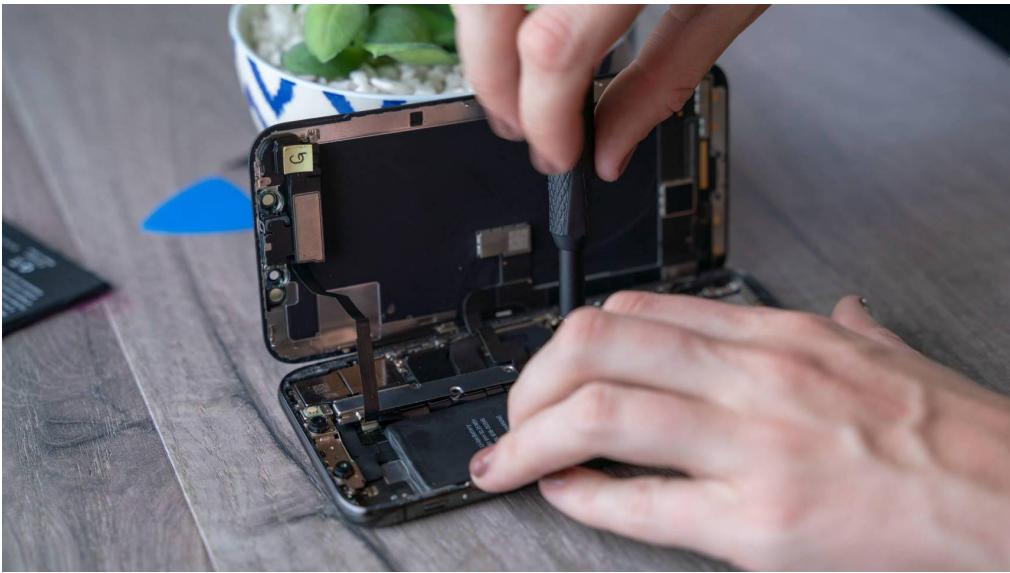


Opt for upgradeable devices



- If you need to buy a new device, opt for something that has replaceable parts.
- For example, if you're buying a laptop, some manufacturers sell ones with swappable RAM or storage.

Learn how to repair



- You can learn how to fix your devices through online repair guides on websites such as iFixit
- Some online marketplaces also sell parts for your devices

Take good care of your devices

- To prolong your device's lifespan, take good care of it
- Put a case on it, so it doesn't break if you drop it
- Good charging habits



Volunteer Experience

Volunteer experience

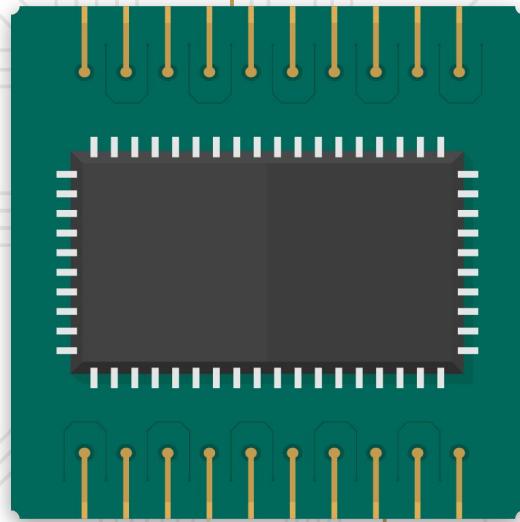


- Did my volunteer hours at the South San Francisco Public Library
- Mostly shelved books/DVDs/CDs
- Also worked in Makerspace area, where I was tasked with putting a robot together

Conclusion

- More public awareness needs to be brought to e-waste
- Majority of e-waste end up in landfills rather than being properly recycled
- Devices are becoming increasingly less repairable
- There's other environmentally friendly ways to handle e-waste





Thanks for
listening!
Questions?

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