



Repair saves families big

AMERICANS ARE CHURNING THROUGH
ELECTRONICS, AND IT'S NOT CHEAP

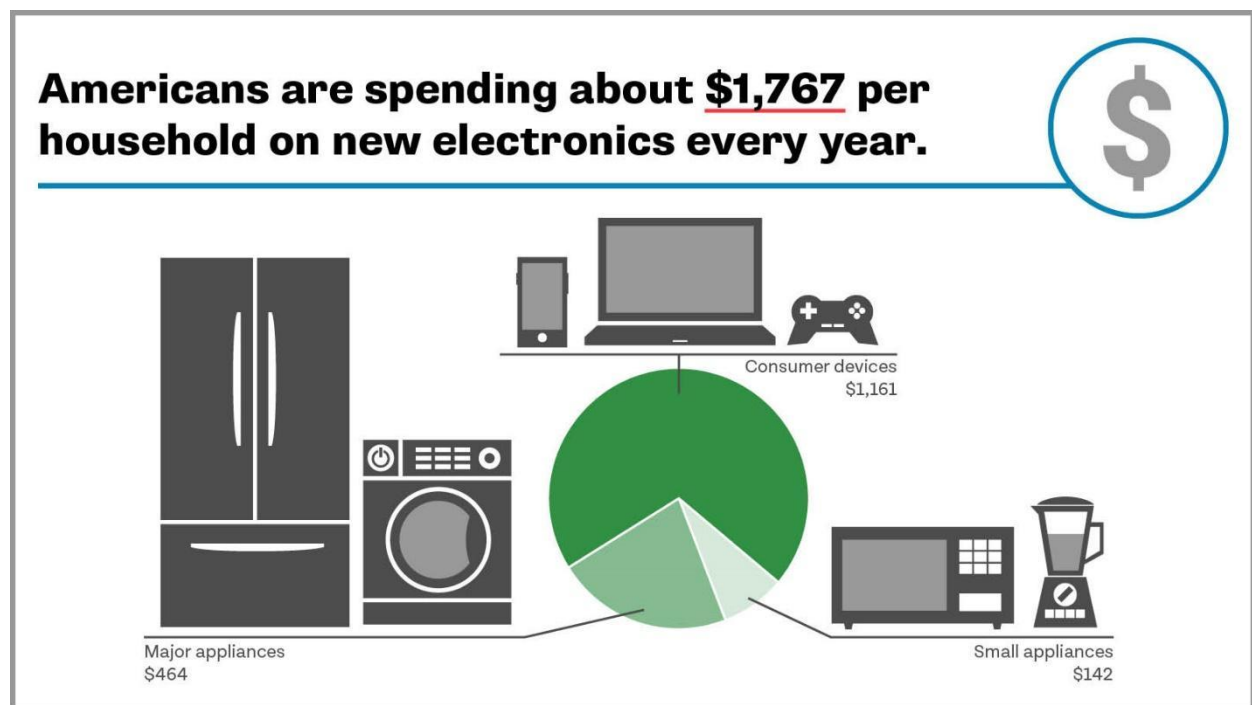
U.S. PIRG
Education Fund

We are churning through electronics, *and it's not cheap.*

It's not just your imagination, your products are breaking sooner.¹ As a result, people are buying more new electronics, and the cost, and clutter, are ramping up.

Our research shows that as of 2021, American households spend about **\$1,767 purchasing new electronic products per year**. Despite falling prices for many electronics,² this is \$287 more than the estimate in our last report using 2019 data, a 19% increase in just two years.

On average, Americans have **24 pieces of electronics** in their homes.³ As more things become digital, we are spending more – and replacing more.



Electronics shouldn't be disposable.

When something breaks, you fix it. That's just common sense. But manufacturers of everything from phones to appliances to tractors intentionally make things difficult to repair.

And even as the financial burden of replacing broken laptops, refrigerators, and other electronic products increases, so does the toll on the environment. The average American family generates about **115 pounds of electronic waste each year,⁴ and nationally, the United States generates 6.9 million tons of electronic waste.**

Disposable is not a word that should describe our electronics, but we are turning over our gadgets far too quickly. And when we dispose of electronics, we're adding toxic elements such as lead, mercury, and cadmium to our landfills.⁵

It's time to unleash repair for our wallets and the planet.



If we repaired products instead of replacing them, we'd save *BIG*.

Repair saves money – more than you might think. When the cost of repair inches toward the cost of replacement, it might seem like buying the new product is cheaper. But fixing the product and extending its lifespan leads to big savings.

Repair could reduce household spending on electronics and appliances by **21.6 percent, which would save an average family approximately \$382 per year.**

This means that across 129 million households nationally,⁶ **repair could save Americans a total of \$49.6 billion annually.**

**Consumers can save big
by repairing electronics**



\$49.6 BILLION
PER YEAR IN AMERICA

Repair could reduce household spending on electronics and appliances by 22 percent, which would save an average family approximately \$380 per year.

Local repair makes communities more self-reliant.

Not only does repair save families money in a tight economy, the money people do spend on repair provides more benefits to the local economy.

Repair makes our communities more resilient. Instead of relying on the global supply chain to bring a never-ending supply of new stuff, repair helps us keep devices going using only local resources. A robust repair ecosystem with more people in our neighborhoods working repair jobs, results in lower repair costs quicker and service. But if manufacturers further restrict repair, downtime and prices go up. Eventually, people give up and buy new things.

The money people do spend on repair circulates locally, rather than being sent to manufacturing operations across the country or, more likely, overseas.⁷

It's time to remove manufacturer barriers to repair.

Repair is critical to maintaining our lifestyles and saving money. By relying on local repair, households can keep their electronic products humming without breaking the bank. However, when manufacturers restrict access to the tools and manuals necessary for repair, they ultimately chip away at the resilience our communities need to bounce back in the face of global disruptions.

Now is a critical time to make Right to Repair the standard. Electronic manufacturers must heed our call to remove barriers to repair. If not, we must call on our state representatives to take action.

Leaders in state capitals should be vocal about their support for repair-friendly legislation and demand that manufacturers lower restrictions on necessary tools, parts, and manuals. If electronics companies won't remedy the situation, our leaders must.

METHODOLOGY

As a baseline calculation for our research, we calculated the average amount of money American households spend on electronics each year. Because a recent, comprehensive estimate was not readily available, we totaled the average household expenditures from three categories, “major appliances,” “small appliances,” and “consumer devices,” which we believe covers the range of products a household would possess.

According to the U.S. Bureau of Labor Statistics, average household spending on major appliances was \$464 in 2021.⁸ Meanwhile, households spent an average of \$142 on small appliances in 2021.⁹

In terms of spending on consumer devices, Statista estimated that the average revenue generated per capita was \$464.50 in 2021.¹⁰ If there are an average of 2.5 people per household in the United States, this means that average household spending on consumer electronics is approximately \$1161.25.¹¹

Overall, the average American household spends \$464 on major appliances, \$142 on small appliances, and \$1,161.25 on consumer electronics. By adding these numbers together, we estimate average annual spending on electronics is \$1,767.25 per household. Pandemic spending clearly had an impact, our estimate in fall of 2020 was \$1,481.60. Because the Consumer Electronics Association estimated that annual household spending on electronics amounted to \$1,200 in 2007, we feel that this calculation is on par with this previous estimate, plus expected growth.¹²

Both the U.S. Bureau of Labor Statistics and Statista data go back to at least 2014, so we charted their growth over that period as well using the same method.

Product Lifespans and Cost Estimates

Because we did not have information on repair costs, lifespans and initial costs across the major device types overall, we decided to calculate the cost of owning four products (smartphones, laptops, refrigerators and washing machines) in two scenarios: one in which they're replaced at the end of their life and one in which their life is extended by repair. Then, we took the percentage savings from repair and applied it to all expenditures on household equipment. First we determined the average expected lifespan: smartphones (2.67 years),¹³ laptops (4 years),¹⁴ refrigerators (13 years),¹⁵ and washing machines (10 years).¹⁶ In addition, we located the average cost to replace¹⁷⁻²⁰ or repair these four product types.²¹⁻²⁴ If a range was provided for a product's

lifespan or cost of replacement/repair, we relied on the average during calculations (e.g. the average lifespan of a laptop was listed as 3 to 5 years, so we used 4 years in our calculations).

Annual Cost of Ownership without Repair

We calculated the average cost per year *without* repair by dividing the average replacement cost by the average lifespan for each product. The average annualized cost without repair, derived from adding the average annualized purchase cost across devices, is \$667.

Annual Cost of Ownership with Repair

To calculate the average annual cost of ownership *with* repair, we added the replacement cost of each product with its respective repair cost, then divided by an expanded product lifespan, assuming an additional repair would add 50 percent to the life of the equipment.

Adding the annual cost of ownership with repair across all four devices yielded a cost of \$523.23 per year spent on ownership with repair included.

Final Calculations for Savings

Finally, the process of calculating savings per year entailed subtracting the average cost of ownership *with* repair from the average cost of ownership *without* repair for each of the four devices. This same formula was applied to the final result, for which we subtracted total cost of ownership with repair (\$523.23) from total cost of ownership without repair (\$667). This resulted in an average savings of \$144.12 per year across the four device categories.

We then divided annual savings (\$144.12) by annual cost of ownership without repair (\$667) and found that there was a 21.6% savings across the four devices. Assuming this percent in savings extends beyond the types of devices considered in our calculations, this would result in a total savings of \$381.63 when multiplied by total annual household spending on electronics this is (\$1,727.25).

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APPENDIX: STATE SAVINGS AND ELECTRONIC WASTE

State	Total Savings	Tons of E-waste
Alabama	\$ 750,900,000	113,000
Alaska	\$ 103,500,000	16,000
Arizona	\$ 1,075,400,000	162,000
Arkansas	\$ 451,700,000	68,000
California	\$ 5,125,200,000	772,000
Colorado	\$ 882,800,000	133,000
Connecticut	\$ 545,100,000	82,000
Delaware	\$ 151,000,000	23,000
Florida	\$ 122,000,000	18,000
Georgia	\$ 3,269,000,000	493,000
Hawaii	\$ 1,527,000,000	230,000
Idaho	\$ 187,000,000	28,000
Illinois	\$ 264,800,000	40,000
Indiana	\$ 1,905,100,000	287,000
Iowa	\$ 1,023,100,000	154,000
Kansas	\$ 496,300,000	75,000
Kentucky	\$ 442,300,000	67,000
Louisiana	\$ 681,500,000	103,000
Maine	\$ 680,800,000	103,000

State	Total Savings	Tons of E-Waste
Maryland	\$ 899,000,000	135,000
Massachusetts	\$ 1,053,000,000	159,000
Michigan	\$ 1,546,400,000	233,000
Minnesota	\$ 870,600,000	131,000
Mississippi	\$ 431,100,000	65,000
Missouri	\$ 942,200,000	142,000
Montana	\$ 171,300,000	26,000
Nebraska	\$ 300,000,000	45,000
Nevada	\$ 454,700,000	69,000
New Hampshire	\$ 209,200,000	32,000
New Jersey	\$ 1,335,000,000	201,000
New Mexico	\$ 318,300,000	48,000
New York	\$ 2,920,600,000	440,000
North Carolina	\$ 1,595,200,000	240,000
North Dakota	\$ 123,100,000	19,000
Ohio	\$ 1,844,500,000	278,000
Oklahoma	\$ 590,800,000	89,000
Oregon	\$ 649,800,000	98,000
Pennsylvania	\$ 1,995,600,000	301,000
Rhode Island	\$ 168,000,000	25,000
South Carolina	\$ 782,400,000	118,000
South Dakota	\$ 136,200,000	21,000
Tennessee	\$ 1,057,300,000	159,000
Texas	\$ 4,120,400,000	621,000
Utah	\$ 420,400,000	63,000
Vermont	\$ 103,100,000	16,000
Virginia	\$ 1,271,500,000	192,000
Washington	\$ 1,153,400,000	174,000
West Virginia	\$ 275,600,000	42,000
Wisconsin	\$ 935,000,000	141,000
Wyoming	\$ 92,700,000	14,000
Puerto Rico	\$ 445,000,000	67,000
United States	\$ 49,588,200,000	6,900,000

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