



LEADERS AND LAGGARDS IN NEW YORK

A look at how well companies are supporting user repair for 21 products covered by New York's Right to Repair law

U.S. PIRG
Education Fund

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Executive Summary

Everything breaks at some point. When our products fail, we deserve the right to choose what we do with them. The goal of Right to Repair reforms is to ensure that when your product needs repair, you have a choice of where to take it to be fixed -- whether that's back to the manufacturer, or an independent repair shop of your choice, or maybe you opt to fix it yourself.

In order for these options to work, you need some basic support from the manufacturer, such as access to service manuals, spare parts, and sometimes special tools.

In June of 2022, the New York Legislature became the first state to pass a broad Right to Repair measure for electronics. Though it was narrowed by Gov. Kathy Hochul when she signed it in late December, it was still a critical milestone in the nationwide effort to remove barriers to repair.

New York's Right to Repair rules require manufacturers to provide owners and independent repair shops with the same repair materials they use for their own repair services -- including parts, tools and information like service manuals. Now that the law is in effect for products that were released after July 1,

2023, you would expect to be able to find repair materials for covered products. This report investigates whether that is indeed true.

For many devices, it is getting easier to access repair materials. However, our survey of electronics covered by the New York Right to Repair law shows that some companies still provide little to no repair support for their products.

In this report, we identified 21 devices covered by New York's new law. The devices include laptops and computers, tablets, VR headsets, smart phones, gaming consoles, and digital cameras. We then graded these devices based on the quality and accessibility of repair manuals, spare parts and other critical repair materials.

Nine of these devices earned As or Bs, including all of the smart phones. However, three products received Ds and six earned Fs (TABLE 1).

The legislation requires manufacturers to share only the repair materials they themselves distribute, so a manufacturer with no repair materials -- that offers no repair services -- does not have to share materials to comply with the law. The law does expose these manufacturers'

products as being unfixable by design, something a consumer should know before spending money on a product.

People need to be able to fix their stuff. Repair saves consumers money and cuts electronic waste. No one would expect a brand new, high-end product to be impossible to repair.

Companies that are still not providing access to repair materials need to start

doing so immediately. Consumers should check to see what repair materials are available before buying a product, to avoid buying something unfixable. And finally, the New York Attorney General should ensure that manufacturers which provide no support for their covered products know about the requirements of this new law, and that they could face penalties for noncompliance.

TABLE 1: PRODUCTS, SCORES AND FINAL GRADE

| Brand | Product | Manual Score (out of 10) | Parts Score (out of 10) | Total Score | Letter Grade |
|-----------|-------------------------|--------------------------|-------------------------|-------------|--------------|
| HP | Spectre Fold | 4 | 2 | 6 | D- |
| Apple | M3 Macbook Pro | 10 | 0 | 10 | C |
| Asus | Asus Zenbook Duo 2024 | 10 | 10 | 20 | A |
| Dell | XPS 16 (2024) | 10 | 0 | 10 | C |
| Acer | Acer Swift Go 14 | 8 | 0 | 8 | D+ |
| Microsoft | Surface Laptop Studio 2 | 10 | 10 | 20 | A |
| Steam | OLED Steam Deck | 10 | 10 | 20 | A |
| Sony | PlayStation 5 Slim | 1 | 0 | 1 | F |
| Sony | Alpha 6700 | 1 | 8 | 9 | D+ |
| Canon | EOS r100 | 0 | 4 | 4 | F |
| Nikon | Zf | 1 | 4 | 5 | F |
| Fujifilm | GFX 100 ii | 1 | 4 | 5 | F |
| Google | Pixel 8 | 10 | 8 | 18 | A- |
| Samsung | Galaxy ZFlip 5 | 10 | 8 | 18 | A- |
| Apple | iPhone 15 | 10 | 10 | 20 | A |
| Motorola | Razr + (2023) | 10 | 10 | 20 | A |
| Meta | Meta Quest 3 | 1 | 2 | 3 | F |
| Apple | Vision Pro | 0 | 0 | 0 | F |
| Amazon | Fire HD 10 | 0 | 10 | 10 | C |
| Lenovo | Tab P12 | 10 | 8 | 18 | A- |
| Samsung | Galaxy S9 FE | 10 | 2 | 12 | B- |

Introduction

Effective Right to Repair legislation allows consumers to choose where and how they repair their devices, and eliminate artificial barriers that prevent us from repairing our stuff.

Globally, we produced 62 million tons¹ of electronic waste in 2022. Americans replace some 416,000 phones every day.² Added up, electronic waste has become a pressing environmental concern, and one that demands immediate action.

In 2022, New York State passed a landmark bill on electronics repair, allowing independent repair professionals and consumers to be given access to the same tools, parts, and documentation that manufacturers use for their own authorized repair services.

The New York Digital Fair Repair Act³ took effect at the end of 2023. This report looks into how well manufacturers are supporting repair for their consumers, and many of which are lagging behind.

Gov. Kathy Hochul signed Right to Repair into law in December of 2022,

which then gave manufacturers one year to prepare for the rules to come into effect. The law only covers new products, which made their debut after July 1st of 2023.

Many manufacturers' websites provide links and guides on how to best access repair information. In our review, a number of new smartphones and laptops showcased repair manuals on their websites and an array of replacement parts, from batteries to keyboards.

While some companies are proving that Right to Repair can be accessible and easy to provide, others still offer little support. The fact remains, if a product you buy breaks or does not work properly, there are still many barriers preventing you from receiving repairs. Of the 21 newest products surveyed for this project for example, only 12 provided service manuals that could show a consumer how to replace a cracked screen, a common and predictable fix that all consumers should be allowed to perform themselves.

Even when prompted, customer support representatives frequently denied us access to repair materials outside of the OEM's in-house service, which is not

¹ [Global E-Waste Monitor 2024](#), UNITAR, March 20, 2024.

² Nathan Proctor, "[Americans Toss 151 Million Phones A Year. What If We Could Repair Them Instead?](#)" WBUR, Dec. 11, 2018.

³ [NY Gen Bus L § 399-NN](#) (2022)

only often slow and expensive, it runs completely counter to the spirit of this right to repair law.

Some of the worst offenders were the large camera companies surveyed – Nikon, Sony, and Canon. Their new suite of digital cameras only offer limited user guides and would deny access to many repair materials when contacted. This lack of support is frustrating and denies customers access to the freedom to determine repair options for themselves.

Many more companies should reevaluate their compliance as Minnesota and California legislation is set to come into force on July 1, 2024,

which have stronger consumer protections than in New York. There are still numerous hostile barriers set in place that prevent owners from receiving replacement parts, and service manuals are often incomplete and unhelpful.

In order to measure compliance, we developed a scorecard that would look at the new products covered under this New York law, and grade manufacturers on how well they support independent repair. Scores were determined based on a variety of factors, including the availability and quality of their repair guides, the tools and replacement parts that they offered, and what software and drivers are made available by the manufacturers.

Findings

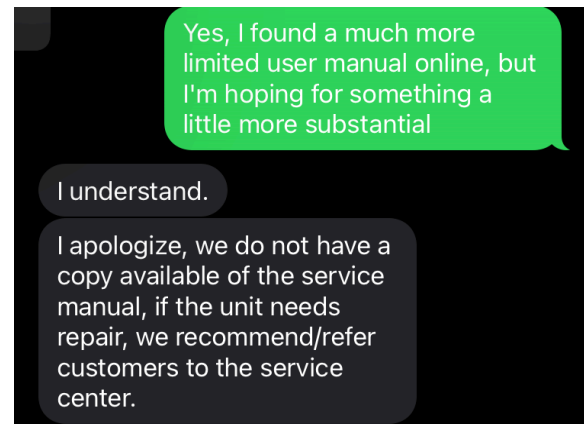
Many companies do not provide adequate repair manuals

For each product, we checked the manufacturer's website for the service manual, and then contacted customer service to request a manual as well. Of the 21 surveyed devices, 15 had repair manuals of any kind that we were able to access. Of those manuals we were able to access, we scored them based on whether they contained some important repair information: the procedure for replacing a part or parts, a list of required tools, exploded diagrams, troubleshooting procedures and a list of parts.

All manufacturers provide materials on initial setup for their devices, but only 12 of 21 products provided replacement procedures and 11 listed which tools are required to disassemble the product. Twelve of the manuals we reviewed contain an exploded diagram, which is a common repair diagram used to showcase the order and spatial relationship between parts. The vast majority of manuals offer troubleshooting tips on how to fix common issues.

In a conversation with Meta regarding self-repairs on the VR headset Meta Quest 3, customer support advised us

that "we are not offering repair as of this moment" and that "we do not replace parts of the device".



Customer service conversation with Sony conveys that the service manual would be unavailable for a consumer.

Customer Service still informs users self repair impossible

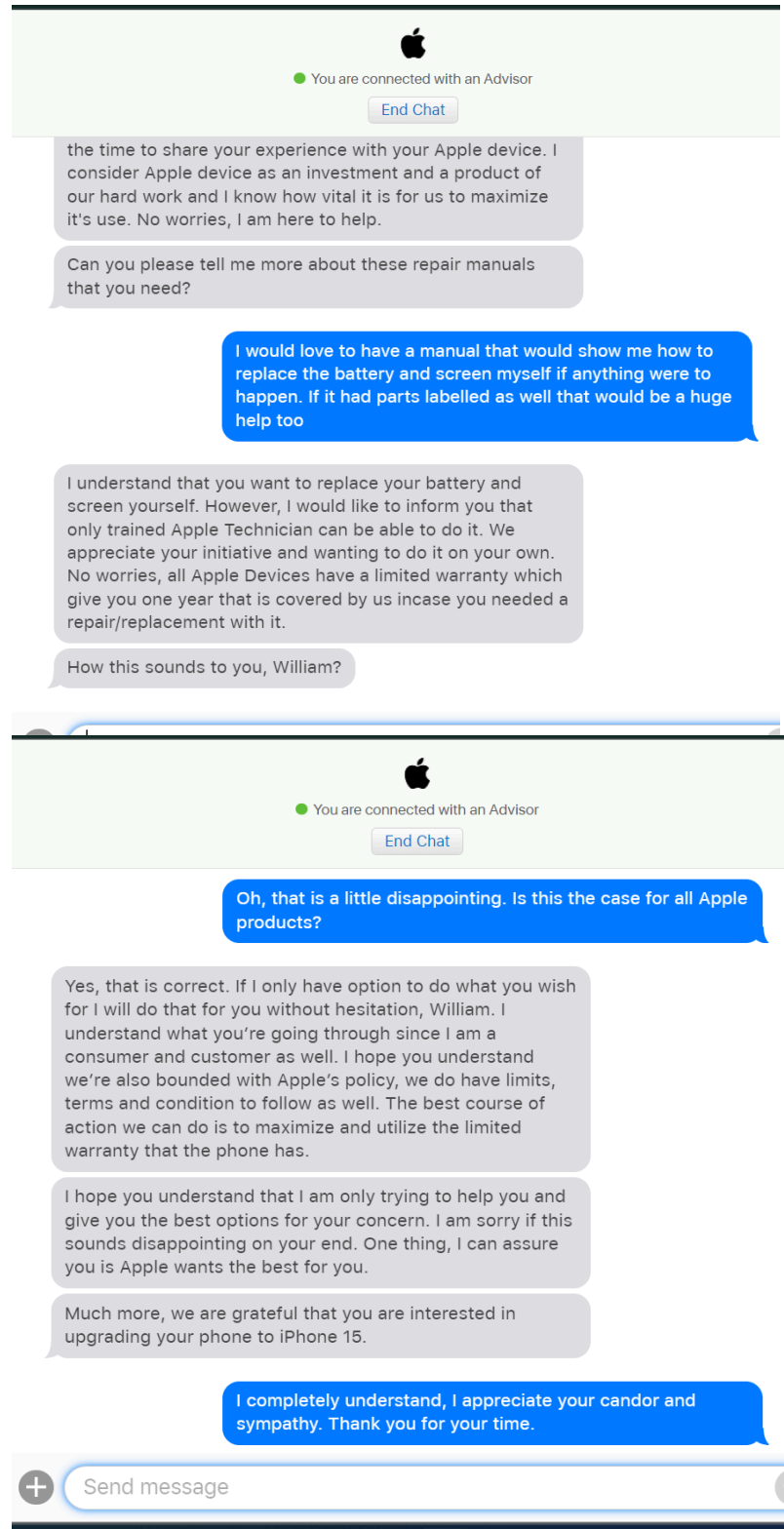
In cases where we couldn't locate the repair manuals or parts, we reached out to customer service representatives, though these interactions were often unhelpful.

We have reason to believe that the issue could be a lack of communication with customer service teams. For example, even though Apple received good marks for their compliance on our scorecard for the iPhone 15, our interaction with their customer service team seemed to imply that there was no self-repair option for their phones. We

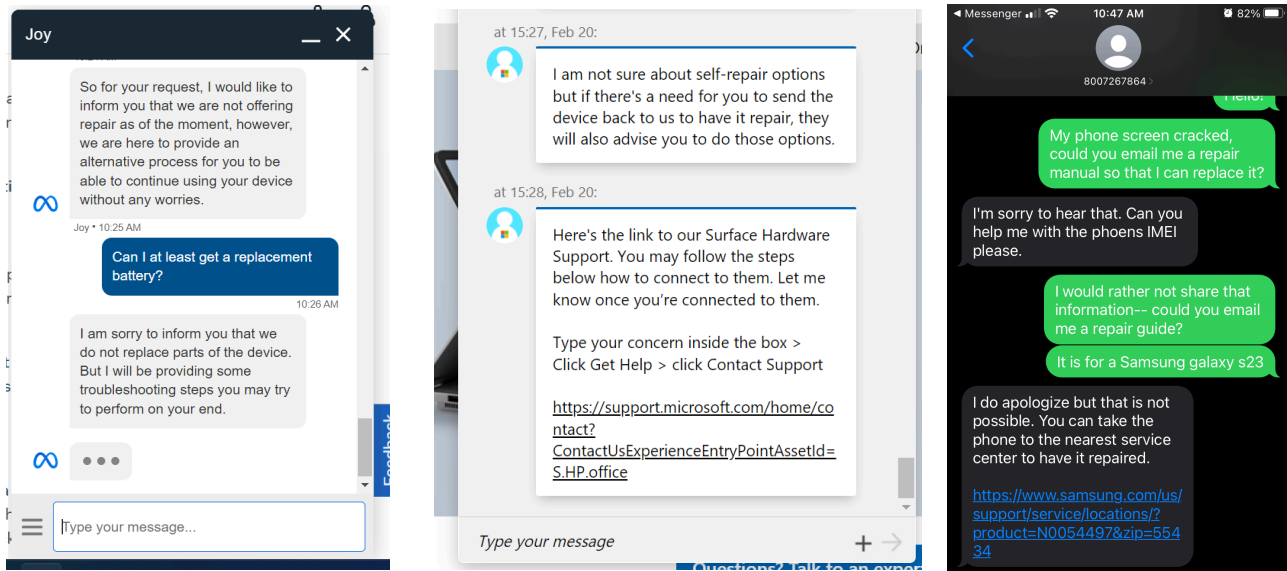
were told by an Apple support representative that "only trained Apple Technician[s]" would be able to replace our phone screen or battery, despite a full repair manual and robust parts selection available on the Apple website.

Some customer service agents would not assist us in accessing repair materials and information until we could provide proof of purchase and a registered serial number. This was the case for the Canon cameras, Amazon Fire tablet, Asus Zenbook laptop, and Microsoft Surface Studio tablet, all of which required product registry to obtain information on repair materials from customer service representatives.

(Right) In a conversation with an Apple customer service representative, we were told that "we are bounded with Apple's policy" and that "only trained Apple Technicians" would be able to replace a phone battery and screen. As we were denied this self-service option, they assured us that "Apple wants the best for you."



D



A chat with Meta (shown in the left of the above image) customer support advised us that “we are not offering repair as of the moment” for the Meta Quest 3, and that “we do not replace parts of the device.” Microsoft (above center image) is “not sure about self-repair options” for New York consumers, despite its ample resources online. Samsung (above right image) was unable to provide a service manual without IMEI, an unfortunate barrier when these resources are available freely online otherwise. These three examples showcase the variety of responses that we received from customer service when we were not given repair information.

Smartphones have made the most obvious improvements

Smartphones were the highest ranking device type of the six device types we reviewed, with all of the four major brands surveyed providing substantive repair materials. With the growing consumer demand for accessible repairs, smartphones have risen to the occasion and offer some of the most repairable devices on our scorecard.

All four of the manufacturers for the phones which fell under our criteria, the iPhone 15, Samsung ZFlip 5, Motorola Razr+, and Google Pixel, provide

detailed repair manuals, as well as a range of spare parts for sale, for users on their websites.

These products earned either A or A-. The repair manuals were easily accessible, and documented step by step procedures on how to disassemble and reassemble the devices, along with a list of the parts and tools required to make repairs safely.

These phones had service manuals that detailed all the required elements on our scorecard and provided screens and batteries without issue. The Apple iPhone 15 and Motorola Razr+ earned slightly higher scores due to the greater

number of different spare parts available.

Camera repair isn't a pretty picture

We had the most difficulty accessing repair materials for the cameras we surveyed, including models from Nikon, Sony, Fujifilm, and Canon.

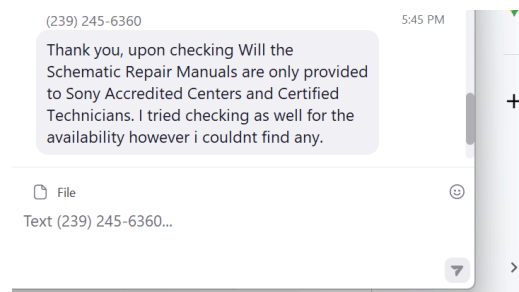
Neither Sony, Nikon or Fujifilm offered repair documentation when it was requested from customer service representatives, and Canon required proof of purchase and a serial number in order to assist us. While these cameras have detailed user guides, there is no information about replacing broken components, disassembling the camera or other basic repair information.

Nikon representatives wrote that "Nikon makes available certain information, repair parts and tool available for self-repair of certain products as we believe appropriate". They then stated that only two products were available for self repair, the binoculars Coolshot 20i GIII and Coolshot 20 GIII. Sony representatives stated that "Repair Manuals are only provided to Sony Accredited Centers and Certified Technicians".

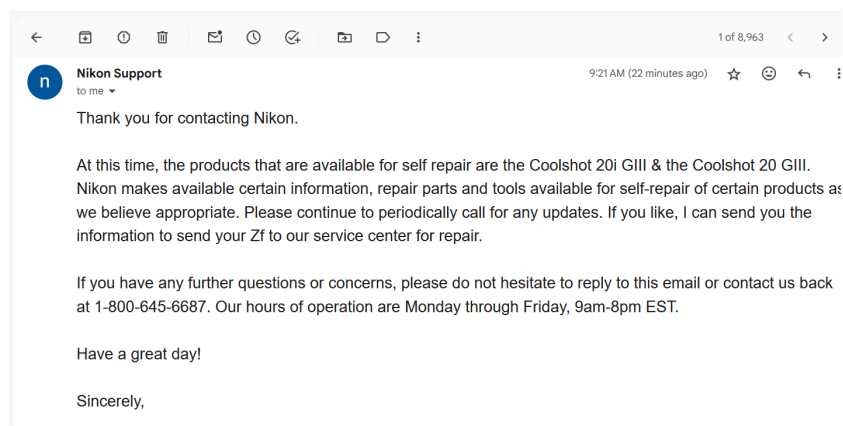
Canon has a self repair hotline that promises access to genuine parts and documentation for independent repair. These materials, however, are not

available without a proof of purchase and serial number for the requested product. Without access to this information, it was impossible to accurately score Canon's repair materials since most of them are kept hidden behind product registry. We believe that this barrier is unreasonable, there is no reason to deny customers access to this information by requiring receipts.

Sony actually responded by saying while the company doesn't provide repair information, you can usually get what you need by searching iFixit or on YouTube.



ABOVE: Conversation with Sony about camera repair.
BELOW: Nikon noted that they only have repair available for two other products, not the camera we inquired about.



Apple and Meta don't have a clear vision for repairs

In addition to the more traditional electronics surveyed, we looked at the new VR headsets on the market, the Apple Vision Pro and the Meta Quest 3. When contacted, Meta explained "that we are not offering repair as of the moment" and "do not replace parts of the device."

Neither product had any available service manual or spare parts, despite being covered by the New York Right to Repair law.

RIGHT: Conversation with Meta tech support.

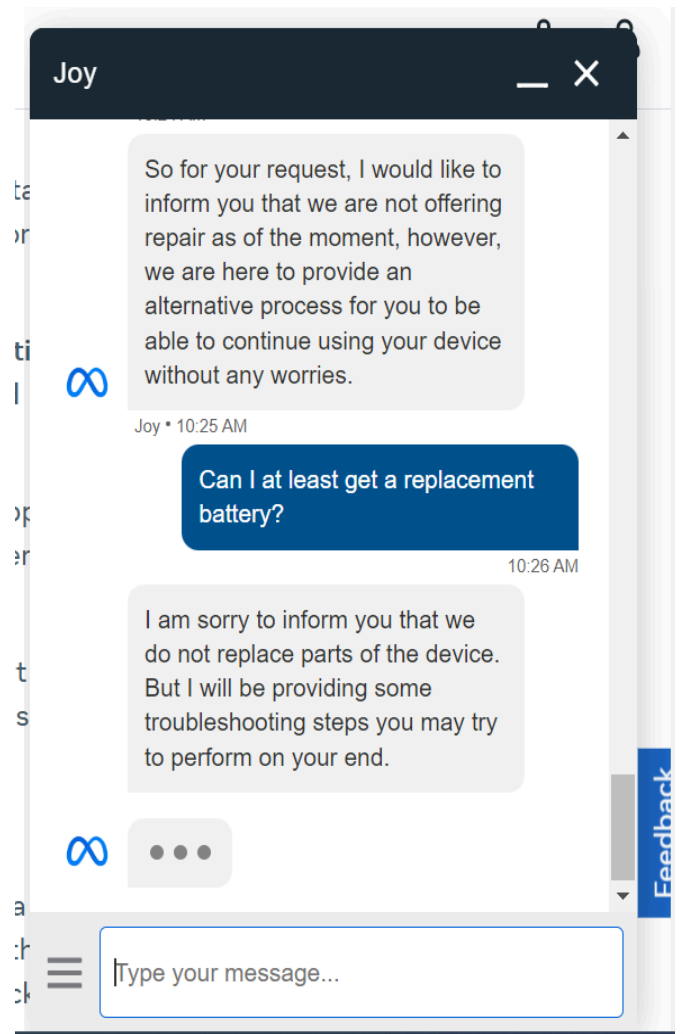


TABLE 2: PRODUCTS SCORED, TYPE AND RELEASE DATE

| Brand | Product | Product Type | Product Release Date |
|--------------|-------------------------|---------------------|-----------------------------|
| HP | Spectre Fold | Laptop | September 2023 |
| Apple | M3 Macbook Pro | Laptop | November 2023 |
| Asus | Asus Zenbook Duo 2024 | Laptop | January 2024 |
| Dell | XPS 16 (2024) | Laptop | February 2024 |
| Acer | Acer Swift Go 14 | Laptop | January 2024 |
| Microsoft | Surface Laptop Studio 2 | Laptop | October 2023 |
| Steam | OLED Steam Deck | Console | November 2023 |
| Sony | PlayStation 5 Slim | Console | November 2023 |
| Sony | Alpha 6700 | Camera | July 2023 |
| Canon | EOS r100 | Camera | July 2023 |
| Nikon | Zf | Camera | October 2023 |
| Fujifilm | GFX 100 ii | Camera | September 2023 |
| Google | Pixel 8 | Phone | October 2023 |
| Samsung | Galaxy ZFlip 5 | Phone | August 2023 |
| Apple | iPhone 15 | Phone | September 2023 |
| Motorola | Razr + (2023) | Phone | October 2023 |
| Meta | Meta Quest 3 | Headset | October 2023 |
| Apple | Vision Pro | Headset | February 2024 |
| Amazon | Fire HD 10 | Tablet | September 2023 |
| Lenovo | Tab P12 | Tablet | July 2023 |
| Samsung | Galaxy S9 FE | Tablet | October 2023 |

Methods

How we selected the products we evaluated:

We worked to find several products in the major device categories covered by the New York Right to Repair law, which covers electronics first made after July 1, 2023, and exempts appliances, such as toasters or refrigerators, as well as several other categories of device. Devices that are covered include cameras, cell phones, laptops, consoles, tablets, and VR headsets.

We targeted well-known brands,⁴ where a consumer might expect repair to be available. We generated a list of the most recent electronics⁵ produced by these manufacturers and sorted these into categories based on their product type, attempting to get a spread of different products across type and brand.

This is not a comprehensive list of products or brands impacted by the new Right to Repair law in New York, but instead is meant as a representative

⁴ [“The Best Tech Products and Services of 2023,”](#) PC Mag, December 18, 2023.

⁵ Tucker Bowe, [“The Best New Gadgets to Keep on Your Radar,”](#) Gear Patrol, December 22, 2023.

sample which include popular brands and the newest releases.

Through this process we identified 21 products (TABLE 2).

We surveyed these products between February and April of 2024, with some additional confirmations in June. We evaluated each product for how accessible their service documentation was, and whether it contained important categories of information, as well as evaluated the spare parts available. We additionally reviewed software and diagnostic tool availability, but there was too much variance in the kinds of tools and software support offered to create a meaningful comparison across the different product types.

Service Manuals

When grading manufacturer’s on their service manuals, we evaluated how accessible they were and whether or not they contained the following elements: a parts list, a list of required tools, part replacement procedures, exploded diagrams (diagrams showing how the product can be disassembled and

reassembled), and troubleshooting tips. These are the same elements described by iFixit as important for a successful service manual.⁶ If a product's service manual outlined this information, a consumer would have the documentation required to perform basic repairs safely.

To attempt to find a manual, we went first to the manufacturer's website and searched through the product's page. If that did not result in our finding a manual, we would search the support and repair options listed on the manufacturer's website. We also reached out to customer service via email or over the phone if online services were unavailable.

When grading access to service manuals, manufacturers fell within one of three distinct groups. Companies would provide access to their service manuals freely on their websites, they would deny access to repair manuals based on artificial barriers such as receipts or product registry, or they would not have a service manual at all.

Points were awarded for having manuals available, and whether or not the manuals contained the elements listed above. A point was deducted if the manufacturer required proof of purchase or a serial number to access the manual. The New York repair law

stipulates that manufacturers may not place a "condition or impose a substantial obligation or restriction that is not reasonably necessary"⁷ in order to access parts, tools, and documentation.

⁶ Jeff Suovanen, "[How iFixit Scores Repairability](#)," iFixit, May 18, 2023.

⁷ General Business (GBS) [CHAPTER 20, ARTICLE 26](#), State of New York.

Replacement Parts

When evaluating replacement parts, grades were determined in two criteria, overall quantity of parts and availability of the most commonly needed parts. If parts were for sale, we would look at the overall quantity of parts being supplied, with more parts being reflected positively in the score. Additionally, we checked to see whether a new battery or a replacement screen were available, since for many devices, these are the most common repairs. According to our 2021 report, *The Fix Is In*, 47% of all repair jobs done by small electronics repair technicians surveyed were reported to be either screen or battery replacement.⁸

To find replacement parts, we searched the manufacturers' product pages as before, followed by the support and repair pages to find replacement parts for sale. Often, manufacturers would link their replacement parts sales to third party websites. We counted third party part sources for our grading if the third party website was endorsed by, and linked from, the manufacturer.

⁸ Nathan Proctor, "[The Fix is In](#)," U.S. PIRG Education Fund, March 2020.

TABLE 4: BREAKDOWN OF PARTS INFORMATION

| Brand | Product | Replacement Parts for Sale? | Quantity Score (>10=0. 10-25=1. 26+ =2) | Battery and screen available? | Parts Score (out of 10) |
|-----------|-------------------------|-----------------------------|---|-------------------------------|-------------------------|
| HP | Spectre Fold | TRUE | 0 | 0 | 2 |
| Apple | M3 Macbook Pro | FALSE | 0 | 0 | 0 |
| Asus | Asus Zenbook Duo 2024 | TRUE | 2 | 2 | 10 |
| Dell | XPS 16 (2024) | FALSE | 0 | 0 | 0 |
| Acer | Acer Swift Go 14 | FALSE | 0 | 0 | 0 |
| Microsoft | Surface Laptop Studio 2 | TRUE | 2 | 2 | 10 |
| Steam | OLED Steam Deck | TRUE | 2 | 2 | 10 |
| Sony | PlayStation 5 Slim | FALSE | 0 | 0 | 0 |
| Sony | Alpha 6700 | TRUE | 2 | 1 | 8 |
| Canon | EOS r100 | TRUE | 0 | 1 | 4 |
| Nikon | Zf | TRUE | 0 | 1 | 4 |
| Fujifilm | GFX 100 ii | TRUE | 0 | 1 | 4 |
| Google | Pixel 8 | TRUE | 1 | 2 | 8 |
| Samsung | Galaxy ZFlip 5 | TRUE | 1 | 2 | 8 |
| Apple | iPhone 15 | TRUE | 2 | 2 | 10 |
| Motorola | Razr + (2023) | TRUE | 2 | 2 | 10 |
| Meta | Meta Quest 3 | TRUE | 0 | 0 | 2 |
| Apple | Vision Pro | FALSE | 0 | 0 | 0 |
| Amazon | Fire HD 10 | TRUE | 2 | 2 | 10 |
| Lenovo | Tab P12 | TRUE | 1 | 2 | 8 |
| Samsung | Galaxy S9 FE | TRUE | 0 | 0 | 2 |

Recommendations

Companies should expand access to repair options to ensure compliance

Many companies have expanded their repair programs, but others have not. On July 1, 2024, California and Minnesota laws will come into effect, and laws passed in Oregon and Colorado are also on the horizon. Companies which do not have manuals or spare parts available should make them available.

The New York Attorney General should further investigate and explore additional enforcement action

This investigation evaluates and grades manufacturers on how available their manuals and spare parts are, and is not intended as a definitive analysis on whether any manufacturer is in violation of the New York law. The New York Attorney General's office should follow up with those who do not have posted repair materials and determine whether these companies are out of compliance.

We should expand/amend the New York Right to Repair Bill to guarantee that these repair options are given to consumers

The New York Right to Repair Bill has had mixed success. It has gone a long way in pushing companies towards greater repair standards, but it has been surpassed by newer repair bills in other states like the [recent passage in Oregon](#). In order for this bill to remain useful for the people of New York, it should be updated to bring it in line with newer repair standards, as well as provide greater enforcement to move companies towards full compliance in the future.

In Minnesota and California, Right to Repair covers the devices covered in New York (except video game consoles), but reaches back to devices first sold starting in July of 2021. Both also cover home appliances. Minnesota is somewhat broader, covering business computers, such as enterprise networking equipment. Colorado's latest Right to Repair law has a similar scope to Minnesota. Updating New York's Right to Repair laws to mirror those passed elsewhere will improve its effectiveness.

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