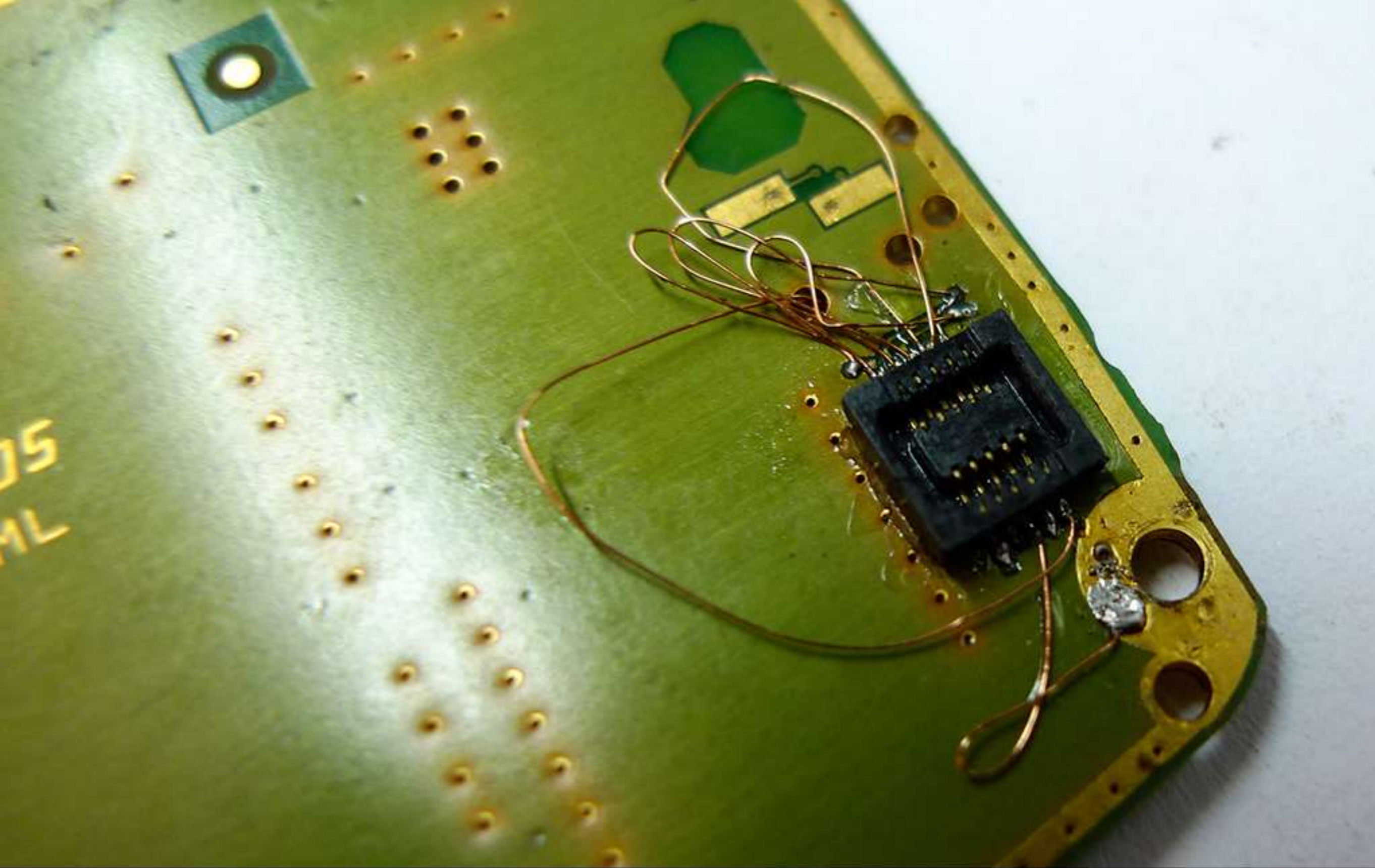


Lara Houston  
Researcher, Global Sustainability  
Institute, ARU

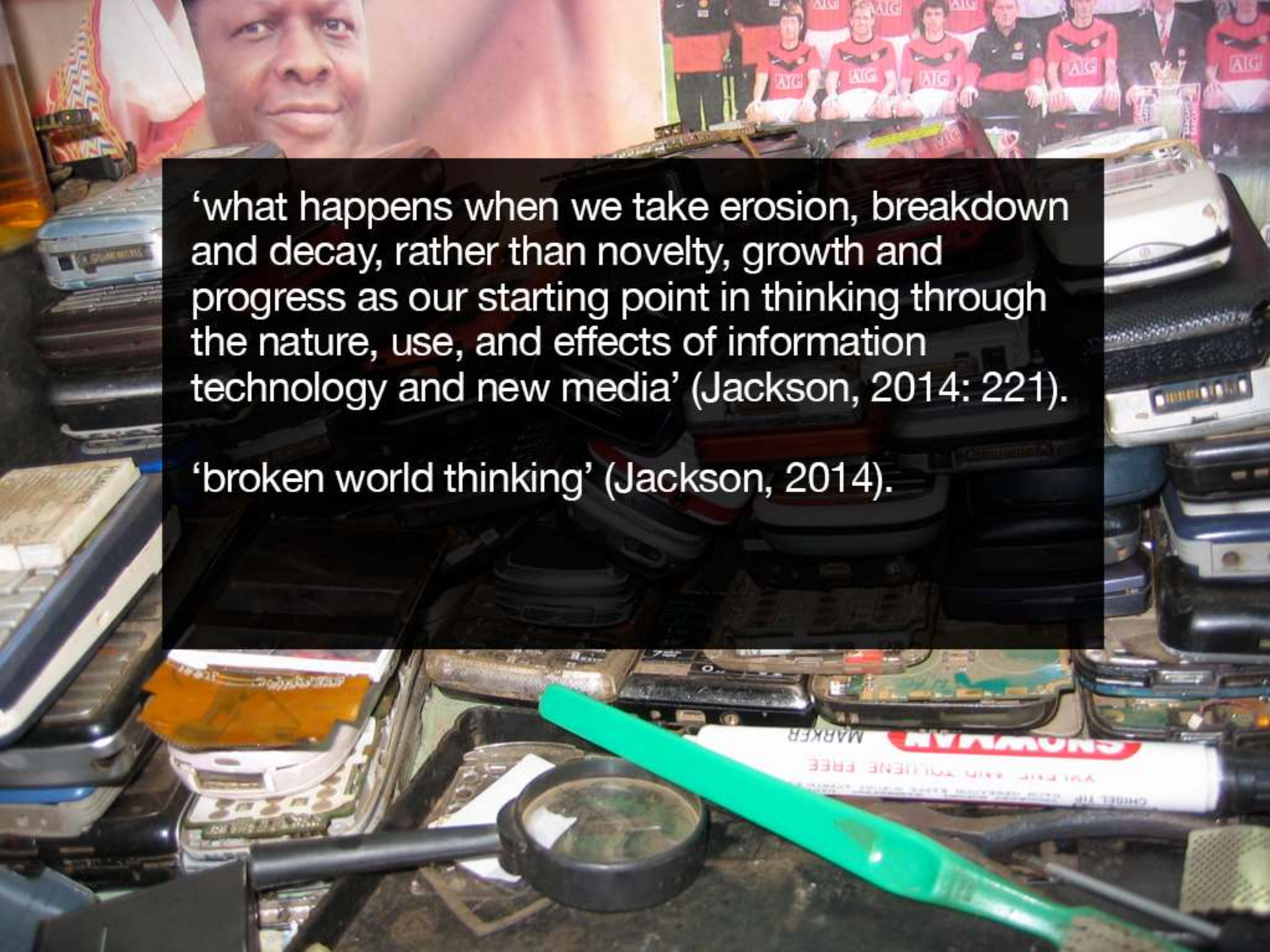
# Critical break- ing & repair



A picture of Jason's computer, with the Nokia Hardware Library open on-screen.  
Jason's workshop, 04 May 2011



Looped wires connected, Jason's workshop, 04 May 2011



‘what happens when we take erosion, breakdown and decay, rather than novelty, growth and progress as our starting point in thinking through the nature, use, and effects of information technology and new media’ (Jackson, 2014: 221).

‘broken world thinking’ (Jackson, 2014).

**Intro Q: Anybody repaired anything recently?**

**Or run into trouble getting a repair?**

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# Today's talk:

- 1. Setting the scene: **what's the problem with repair?**
- 2. Enhancing **'consumption knowledge'** (Appadurai, 2013) through community repair
- 3. Making **'production knowledge'** (ibid.) more widely available through policy and legislation

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# 1. What's the problem?

Three types of barriers to repair:

1. Physical
2. Organisational
3. Legal

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# Example case: 'Batterygate'

TECH / APPLE / IPHONE

## Apple hit with €25 million fine in France for iPhone slowdown controversy



Photo by James Bareham / The Verge

/ The result of a probe that began in 2018

By [Jon Porter](#), a reporter with five years of experience covering consumer tech releases, EU tech policy, online platforms, and mechanical keyboards.

Feb 7, 2020, 4:25 PM GMT |  [0 Comments](#)



# Anyone affected?

## Apple to face £853m iPhone Batterygate trial in the UK

Apple's ancient Batterygate scandal is back in the news thanks to UK case

---



Apple will have to face a court in the UK, in a case regarding years-old “Batterygate” issues with older generation iPhones.

The case seeks £853 million in compensation for people who bought iPhones only to find they ended up with throttled performance as the battery aged.

**[thestandard.co.uk](http://thestandard.co.uk)**

**2. Organisational:** the ways in which infrastructures of repair are controlled.

- What resources do you think manufacturers might keep to themselves?

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## **Example case: Nikon authorised networks**

“The technology underlying today’s cameras is more complex than it has ever been, and in view of the specialization of the technology as well as the specialized tools that are now necessary to perform repairs on this complex equipment, Nikon Inc. has decided that it will no longer make repair parts available for purchase by repair facilities that have not been authorized by Nikon Inc. to perform camera repairs.”

– Nikon Inc. to independent repair workshops,  
2012

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**3. Legal** : the legal regimes in which these infrastructures unfold.

- What are **intellectual property rights**?
- How do other legal 'rights' obstruct repair?

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# Example: John Deere Right to Repair

## America's Farmers Are Becoming Prisoners to Agriculture's Technological Revolution

Big data, proprietary systems, and restrictive EULA agreements threaten farmers, but the right to repair movement shows they are fighting back.

SHARE



TWEET



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Optional video 5m: <https://www.youtube.com/watch?v=hLM5ONE7dBE>



## John Deere Remotely Disables Tractors Stolen in Ukraine by Russian Troops

Grain and cereal theft by Russian troops has become a common practice. Now they also took tractors and machinery that cannot be used.

While the tractor-making company has been criticized in the past for its strategies to prevent tractor buyers from getting their tractors repaired and to encourage use of the [Connected Support](#) program, it was that very technology that allowed them to disable the units. The remote locking function is possible thanks to a GPS receiver that allows you to know your location at all times and software that allows you to correct mechanical failures remotely, as if it were a computer.

## 2. Enhancing 'consumption knowledge' - Repair movements

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## 2. What's 'consumption knowledge'?

Arjun Appadurai, *Social Life of Things*  
(1986)

**Production knowledge** - 'the knowledge (technical, social, aesthetic, and so forth) that goes into the production of the commodity'

**Consumption knowledge** 'the knowledge that goes into appropriately consuming the commodity' (Appadurai 2013: 45)

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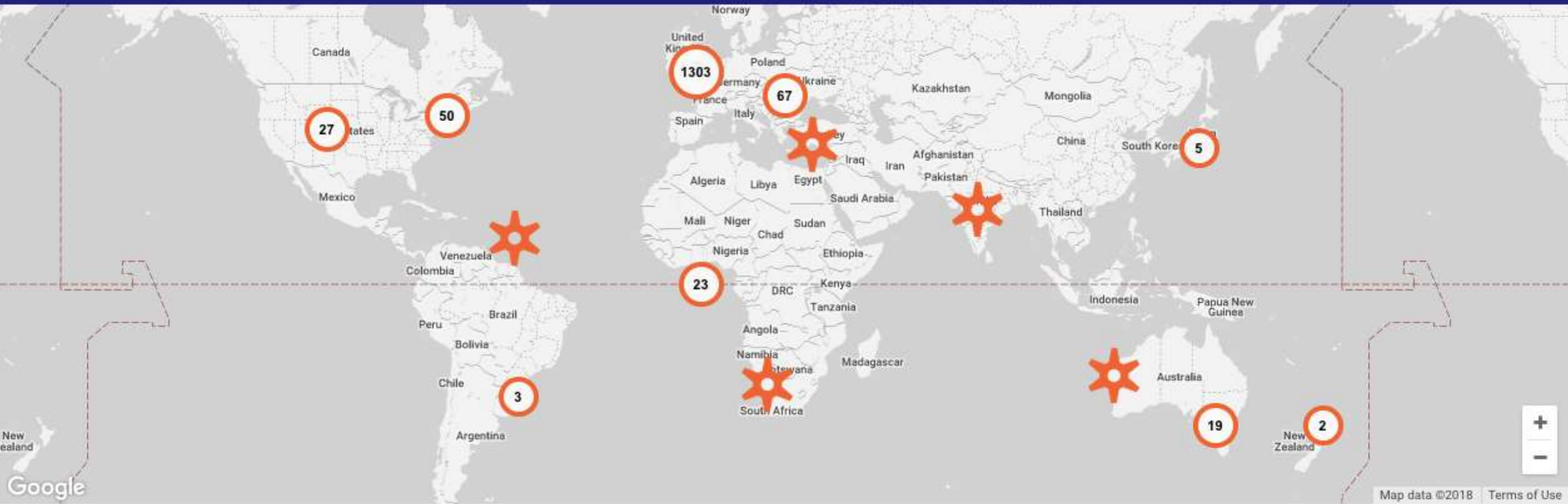
# Anybody been to a 'pop up' repair event?



Restart Party at Parliament, 2016, Brendan Foster

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# Visit a Repair Café



VISIT ONE OF OUR 1506 REPAIR CAFÉS

Enter the name of your hometown



UK

NETHERLANDS

BELGIUM

GERMANY

FRANCE

US

OTHER COUNTRIES

We're consuming too fast, creating unnecessary waste and feeling frustrated

# Let's fix our relationship with electronics

GET INVOLVED

The Restart Project is a London-based social enterprise that encourages and empowers people to use their electronics longer in order to reduce waste.

We help people [learn to repair](#) their own electronics in [community events](#) and in [workplaces](#), and [speak publicly](#) about repair and resilience.

## Upcoming Events

18 Reading

Platform21's

# Repair Manifesto

## 1. Make your products live longer!

Repairing means taking the opportunity to give your product a second life. Don't ditch it, stitch it! Don't end it, mend it! Repairing is not anti-consumption. It is anti-needlessly throwing things away.

## 2. Things should be designed so that they can be repaired.

Product designers: Make your products repairable. Share clear, understandable information about DIY repairs.

Consumers: Buy things you know can be repaired, or else find out why they don't exist. Be critical and inquisitive.

## 3. Repair is not replacement.

Replacement is throwing away the broken bit. This is NOT the kind of repair that we're talking about.

## 4. What doesn't kill it makes it stronger.

Every time we repair something, we add to its potential, its history, its soul and its inherent beauty.

## 5. Repairing is a creative challenge.

Making repairs is good for the imagination. Using new techniques, tools and materials ushers in possibility rather than dead ends.

## 6. Repair survives fashion.

Repair is not about styling or trends. There are no due-dates for repairable items.

## 7. To repair is to discover.

As you fix objects, you'll learn amazing things about how they actually work. Or don't work.

## 8. Repair – even in good times!

If you think this manifesto has to do with the recession, forget it. This isn't about money, it's about a mentality.

## 9. Repaired things are unique.

Even fakes become originals when you repair them.

## 10. Repairing is about independence.

Don't be a slave to technology – be its master. If it's broken, fix it and make it better. And if you're a master, empower others.

## 11. You can repair anything, even a plastic bag.

But we'd recommend getting a bag that will last longer, and then repairing it if necessary.

**Stop Recycling. Start Repairing.**

[www.platform21.nl](http://www.platform21.nl)

# THE FIXER'S MANIFESTO

Version 1.0 Fix, improve or fcrk this at [manifesto.sugru.com](http://manifesto.sugru.com)

**1. IF IT'S BROKEN, FIX IT!** BECAUSE EVERYDAY PRACTICAL PROBLEM SOLVING IS THE MOST BEAUTIFUL FORM OF CREATIVITY THERE IS. **2. IF IT'S NOT BROKEN, IMPROVE IT.** A SMALL, CLEVER TWEAK CAN IMPROVE HOW SOMETHING WORKS FOR YEARS TO COME. **3. GIVE YOUR PRODUCTS A LONGER LIFE.** IF WE DOUBLE THE LIFE OF OUR STUFF, WE HALVE WHAT GOES TO LANDFILL. **4. FIXING MEANS FREEDOM AND INDEPENDENCE.** AS A FIXER, YOU DON'T NEED TO WORRY ABOUT WEAR AND TEAR. NOTHING STAYS NEW, SO FORGET PERFECTION. **5. RESIST TRENDS AND NEEDLESS UPGRADES.** THEY FUEL OUR THROWAWAY CULTURE. **6. DON'T LET COMPANIES TREAT YOU AS A PASSIVE CONSUMER.** EVERY TIME WE SPEND MONEY, WE VOTE FOR THE KINDS OF PRODUCTS WE WANT TO SEE SUCCEED. BUY PRODUCTS THAT CAN BE REPAIRED. **7. A FIXED THING IS A BEAUTIFUL THING.** EVERY FIX, WHETHER SKILLFUL OR IMPROVISED, HOLDS A STORY. **8. IF YOU HAVE AN IDEA, START SMALL AND MAKE IT GOOD.** IF IT'S RIGHT, IT'LL GROW FROM THERE. **9. NURTURE YOUR CURIOSITY.** KEEP TRYING THINGS YOU'VE NEVER TRIED BEFORE. IT'S GOOD FOR YOUR BRAIN AND YOUR SOUL. DON'T BE AFRAID TO FAIL – IT MAKES SUCCESS ALL THE SWEETER. **10. PEOPLE ARE INFINITELY DIVERSE. PRODUCTS SHOULD BE TOO.** EVERYTHING CAN BE IMPROVED OR CUSTOMISED. **11. DISPOSABILITY IS A CHOICE, NOT A PHYSICAL CHARACTERISTIC.** PLASTICS AREN'T EVIL, BUT WE'RE USING THEM WRONG. TREAT THEM WITH RESPECT. **12. SHARE YOUR IDEAS, YOUR ENTHUSIASM AND YOUR SKILLS.** IF YOU'VE FOUND THE JOY OF FIXING, PASS IT ON. IT'S A GIFT FOR LIFE.

From the inventors of sugru

Inspiration credits to Platform 21's repair manifesto, ifixit, Holstee and the Cult of Done

### 3. Making **‘production knowledge’** more widely available through policy and legislation

**Production knowledge** - ‘the knowledge (technical, social, aesthetic, and so forth) that goes into the production of the commodity’

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## European National level policies

VAT reduction on repair services: Ireland, Luxembourg, Malta, Netherlands, Poland, Slovenia, Finland, Sweden

Personal tax: Sweden 0% labour costs for large household appliances are tax deductible to a max. Of 25,000 Kr p.a. (or 50,000 Kr p.a. for seniors)

In Graz, Austria 50% of the labour costs of repair refundable, to EUR 100 p.p. p.a.

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# Planned obsolescence was made illegal in France in 2015.



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## Investigations

We regularly investigate products (printers, tights...) to disclose good and worst practices and to unveil possible cases of planned obsolescence.



## Complaints

At the end of 2017, we filed the first complaints for planned obsolescence in France, against Epson and Apple.



## Researchs

In order to develop expertise on durability expertise, we work with the NGO Equiterre in Canada, our experts' Committee and our Club of businesses for durability.

# HOP: Halte à L'obsolescence Programée

# French Repairability Index



- **Documentation**
- **Disassemblability**
- **Availability of spare parts**
- **Price of spare parts**
- **Specific criteria (product-related)**
- **Who determines these scores? Well... It's the manufacturers themselves!**

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Ask EU policymakers for a universal Right to Repair now!

EUROPE,

LET'S



REUSE



REFURBISH



REPAIR



- The **Right to Repair Europe** coalition
- 100+ organisations, 21 European countries
- Environmental NGOs, community repair groups, social enterprises, repair & refurbishing businesses, self-repairers

# Changes to EU Legislation – Active and partially achieved

- Products designed to be easily disassembled
- Repairability scores for consumers
- Replaceable batteries, unbranded spare parts
- Reasonably priced spare parts
- Manufacturer repairs
- Longer software updates

# Right to Repair Europe policy paper

## What's my right to repair?

Your product is broken and you want to claim your 'right to repair' that you have heard about?  
Find out which rights apply and when

Regulation ... ■ is in force    ■ will be in force    ■ is being developed    ■ is completely absent  
SP = Spare parts

Product (group)	Repairable design & SP available	Replaceable battery	Reasonable SP prices	Repair offered by manufacturer	Right to use compatible SP & No software blocks	Repair score	Longer software updates
Relevant type of EU regulation	<i>Ecodesign Regulations</i>	<i>Batteries Regulation</i>	<i>Right to Repair Directive</i>	<i>Right to Repair Directive</i>	<i>Right to Repair Directive</i>	<i>Energy label</i>	<i>Ecodesign Regulations</i>
<b>Large household appliances</b>							
Washing mashine			31/07/2026	31/07/2026	31/07/2026		
Tumble dryer	01/07/2025		31/07/2026	31/07/2026	31/07/2026		
Dishwasher			31/07/2026	31/07/2026	31/07/2026		
Fridge			31/07/2026	31/07/2026	31/07/2026		
Oven							
<b>Small household appliances</b>							
Coffee machine							
Vacuum cleaner		18/02/2027					
Electric toothbrush		18/02/2027					
Other household appliances (Clothes Iron, Sewing Machine, Hair Dryer, Kettle, Toaster, Mixer, Fryer, Hand blender etc.)							

Read more: <https://repair.eu/resources/current-state-of-eu-right-to-repair/>

# EU Policy and Legislation

## Ecodesign directive:



- Access to spare parts & info for 7+ years
- Compatible software updates for 5+ years
- Withstand at least 45 accidental drops
- 800 charging cycles > 80% battery left
- Adoption of repair index!

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# Forthcoming – EU Digital Product Passports

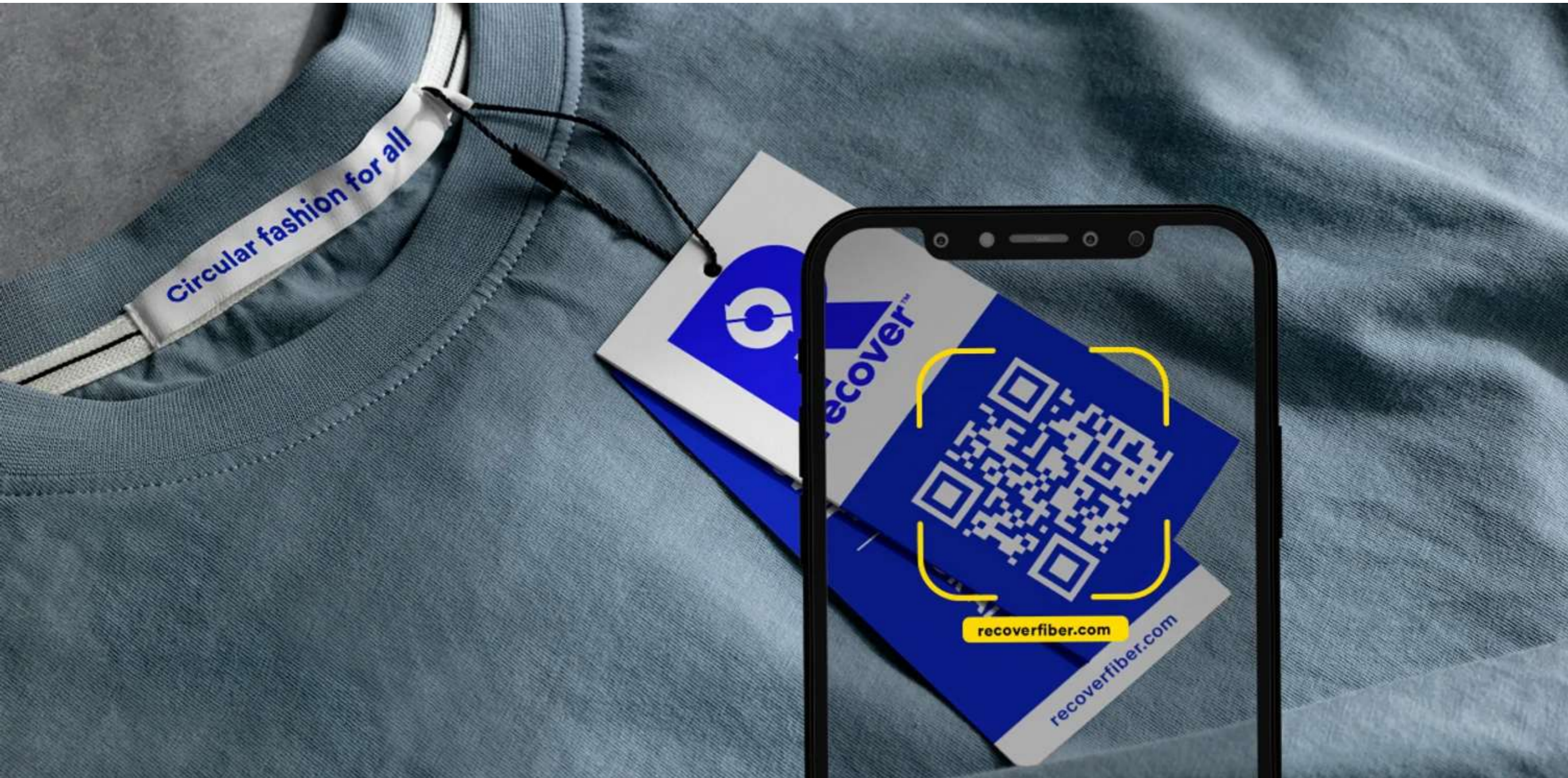


Image credit: <https://recoverfiber.com/newsroom/digital-product-passport>

# US policy changes – State level

POLICY / TECH / GADGETS

## Right-to-repair rules are now the law in Minnesota

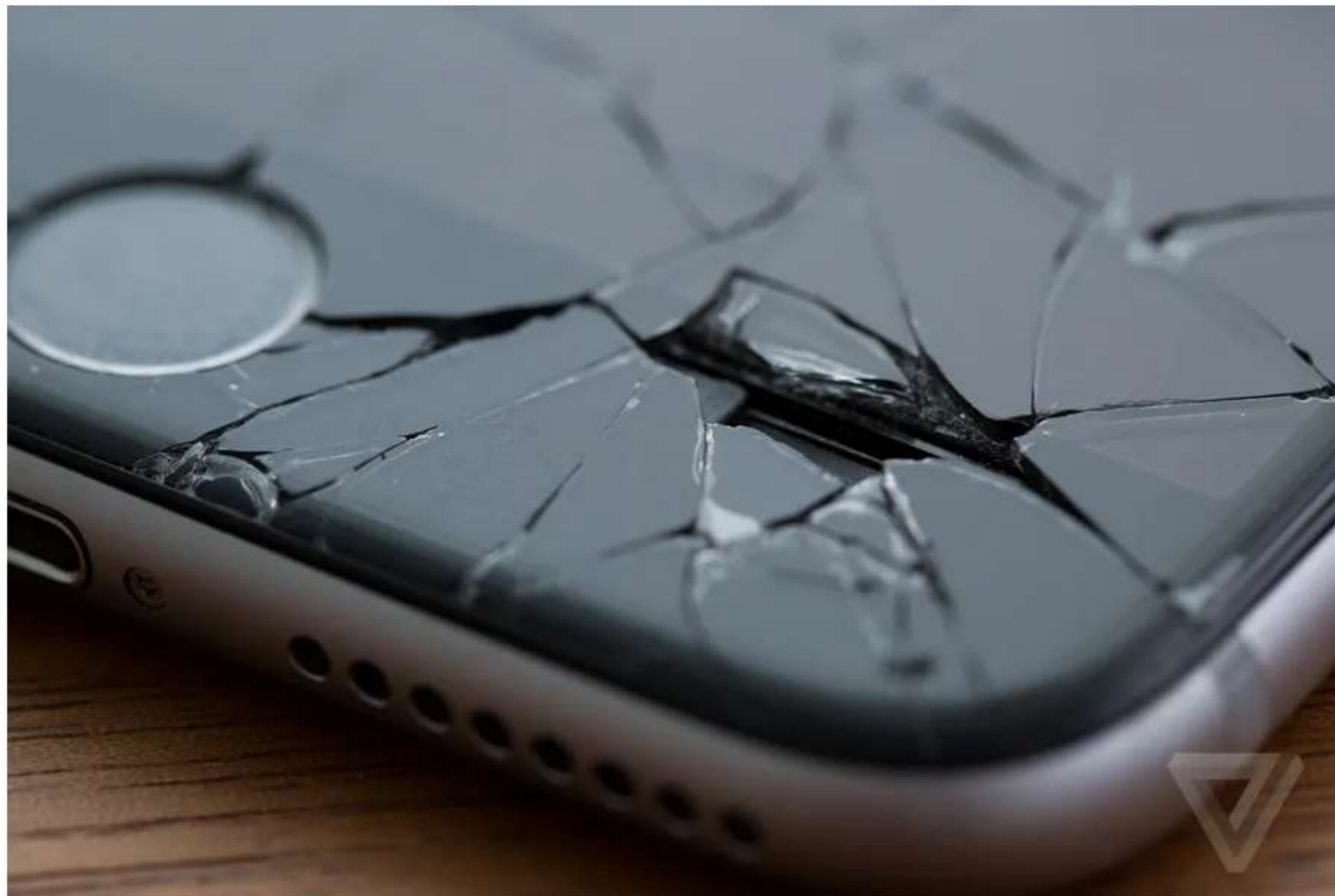


Image: The Verge

/ After New York's law disappointed activists, Minnesota's made it past the governor with teeth intact.

By [Adi Robertson](#), a senior tech and policy editor focused on VR, online platforms, and free expression. Adi has covered video games, biohacking, and more for The Verge since 2011.

May 24, 2023, 9:05 PM GMT+1 | [4 Comments](#) / [4 New](#)



[theverge.com](https://theverge.com)

SB 244 —

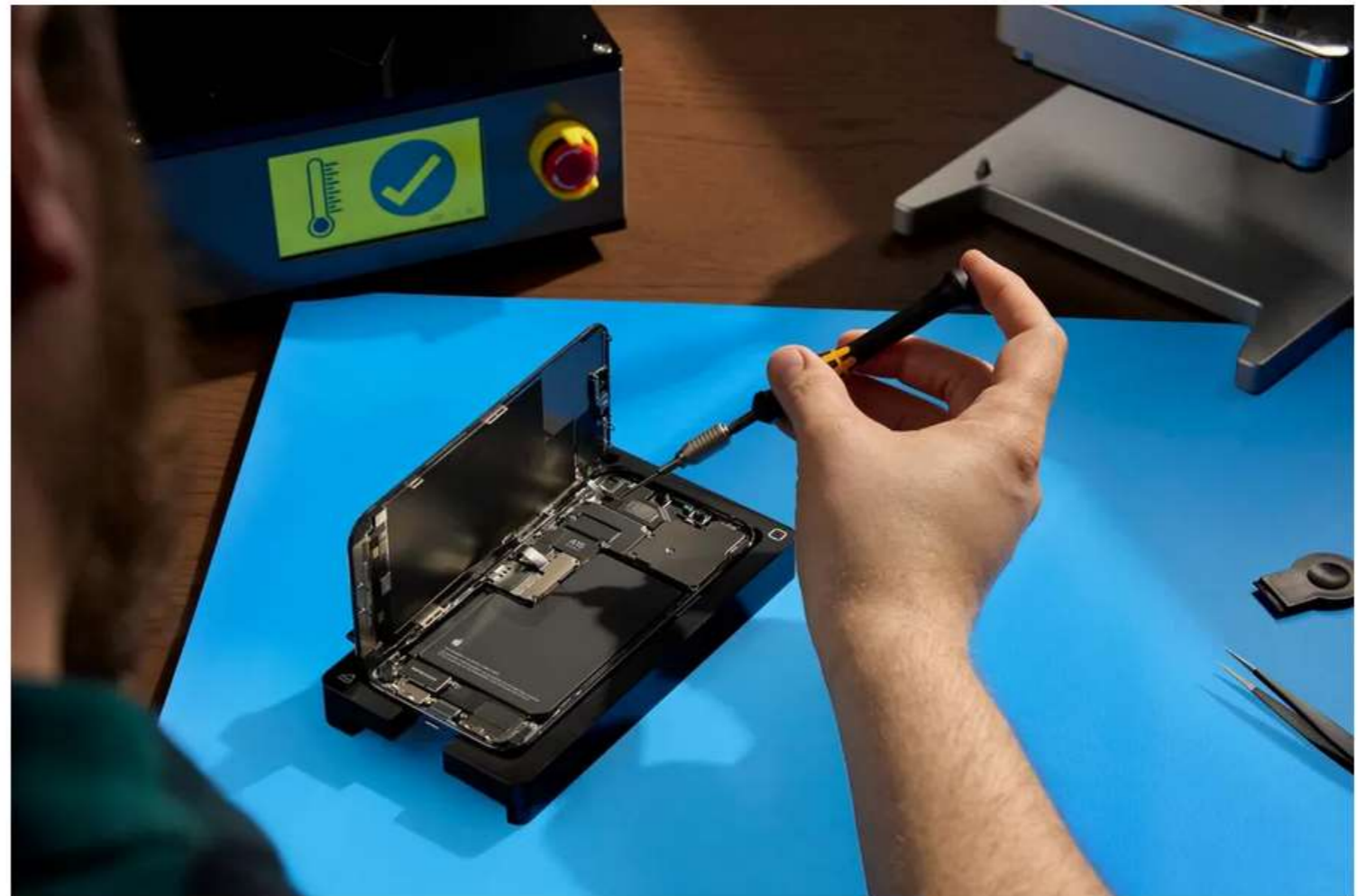
# Hell freezes over as Apple supports right-to-repair bill

As California legislation nears finish line, Apple suddenly switches sides.

SCHARON HARDING - 8/24/2023, 7:32 PM

arstechnica.com

## Right-to-repair is now the law in California



Fixing it!

California Governor Gavin Newsom has signed SB 244, or the Right to Repair Act, into law, making it easier for owners to repair devices themselves or to take them to independent repair shops. Because

theverge.com

# John Deere commits to letting farmers repair their own tractors (kind of)



/ The company signed a memorandum of understanding with the American Farm Bureau Federation – but can exit the agreement if state or federal right-to-repair laws go into effect.

John Deere has stood at the center of  
Image: Getty Images

## Colorado governor signs first right-to-repair law for farmers



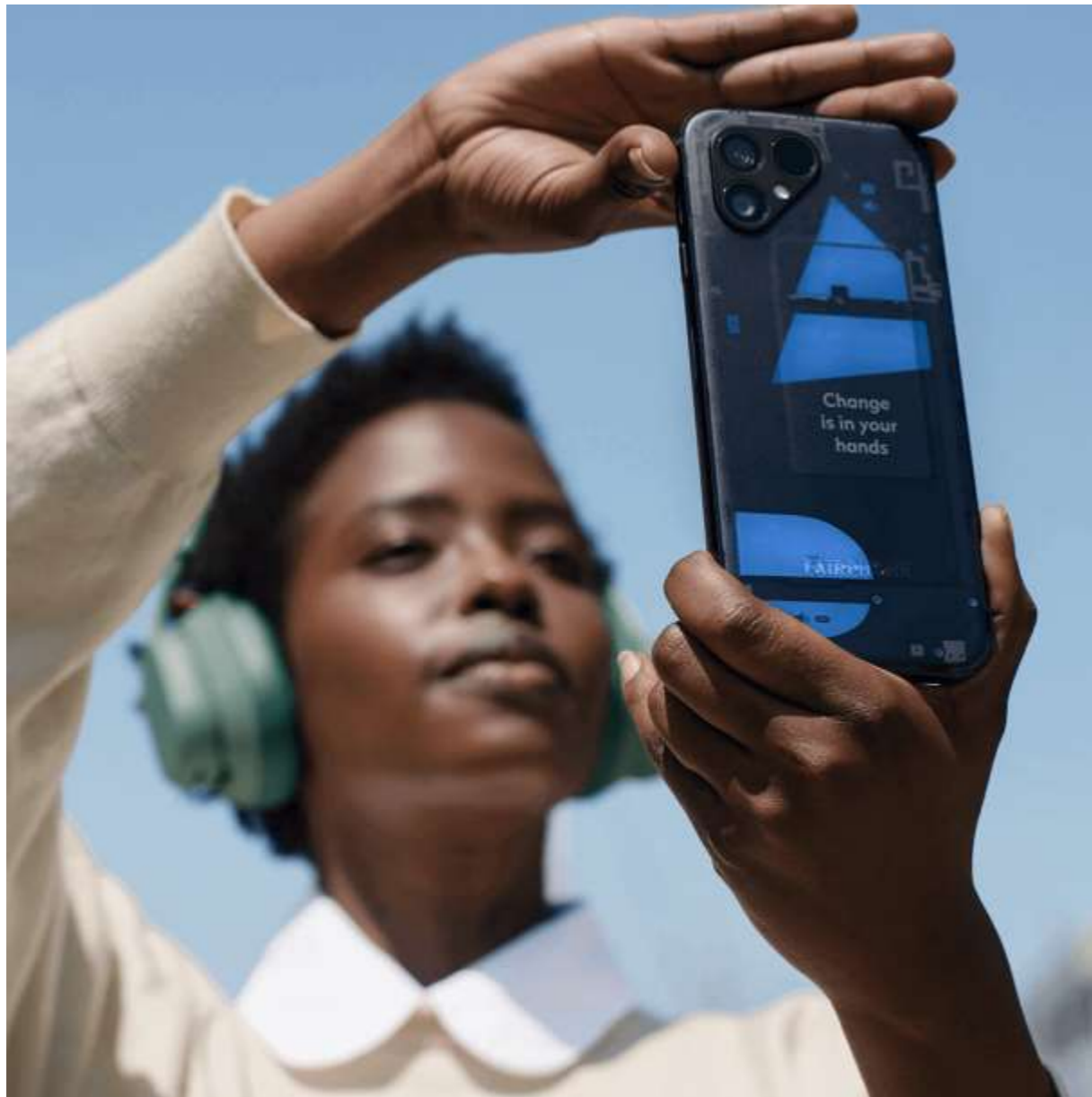
/ The law requires agricultural equipment manufacturers to give farmers and independent repair shops access to tools, software, and documentation.

By [Emma Roth](#), a news writer who covers the streaming wars, consumer tech, crypto, social media, and much more. Previously, she was a writer and editor at MUO.

Apr 27, 2023, 3:17 PM GMT+1 | [0 Comments](#) / [0 New](#)



# The modular revolution (that hasn't quite happened yet)



Fairphone 5, fairphone.com

Optional video 5m:

<https://www.ifixit.com/News/55818/fairphone-4-teardown-if-only-apple-made-phones-like-this>



TMA-2, aiaiai.audio

# What's the answer to creating products with longer lifetimes? Over to you!

## Think about:

- Design for repairability / disassembly of devices
- The role of software on board devices
- The role of digital platforms (e.g. device updates and access to new apps)
- How to create good repair infrastructures (tools, parts, manuals, competent people)?

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**Might like to watch:**

**Buy Now: The Shopping Conspiracy**  
Netflix

<https://www.netflix.com/gb/title/81554996>

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