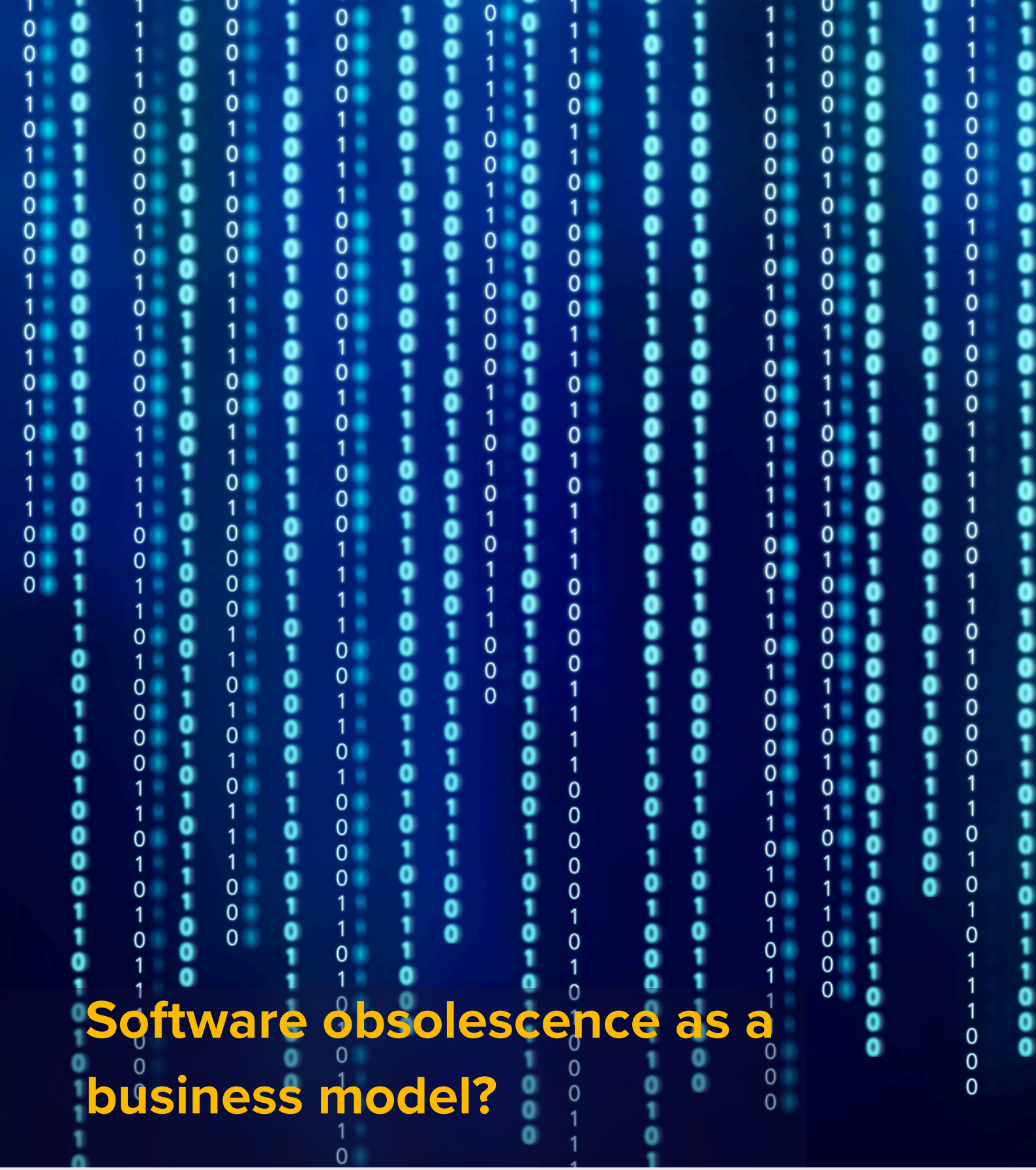


Software obsolescence as a business model?

euroconsumers GROUP

Empower people, improve the market.

ALTROCONSUMO DECO PROTeste ocu proteste testachats testaankoop

The rise of software-induced obsolescence

Premature obsolescence is not new. For decades, products have been breaking down too soon, for example because of the use of inferior parts. In many cases, premature obsolescence is also planned, meaning companies intentionally shorten product lifespans to drive repeat purchases. This practice is also not new.

What is new is the growing shift towards **software-induced obsolescence**: products that remain physically functional but become vulnerable to malicious attacks once software updates stop or compatibility is withdrawn. As more and more devices become digital, the scope for this type of obsolescence has expanded dramatically. Unlike hardware, software updates and usability are tethered to the software provider and are therefore at the discretion of the company. This means software providers have all the power to determine how long a device remains usable.

The risk is particularly acute for ***connected devices*** that rely on apps or cloud-based services to function, such as smart home appliances, TVs, and washing machines. Maintaining app compatibility or cloud infrastructure is costly, and most hardware manufacturers are not software companies. At a certain point, whether planned or for economic reasons, support is discontinued, and consumers suddenly lose functionality. In many cases, devices that still work perfectly are rendered unsafe and sometimes even useless simply because the digital services behind them have been shut down. Few consumers anticipate this when buying such products, leaving them with sunk costs and premature e-waste.

Companies can give many reasons for this, but the end result is still the same: consumers are forced to buy new products – whether they want to or not. This is more than an annoying feature. It is wasteful consumption with huge implications for our planet and consumers' wallets. Software obsolescence is more than an inconvenience; it is emerging as a deliberate **business strategy**, with risks for consumer rights, sustainability, and trust in the digital economy.

The many faces of Planned Obsolescence

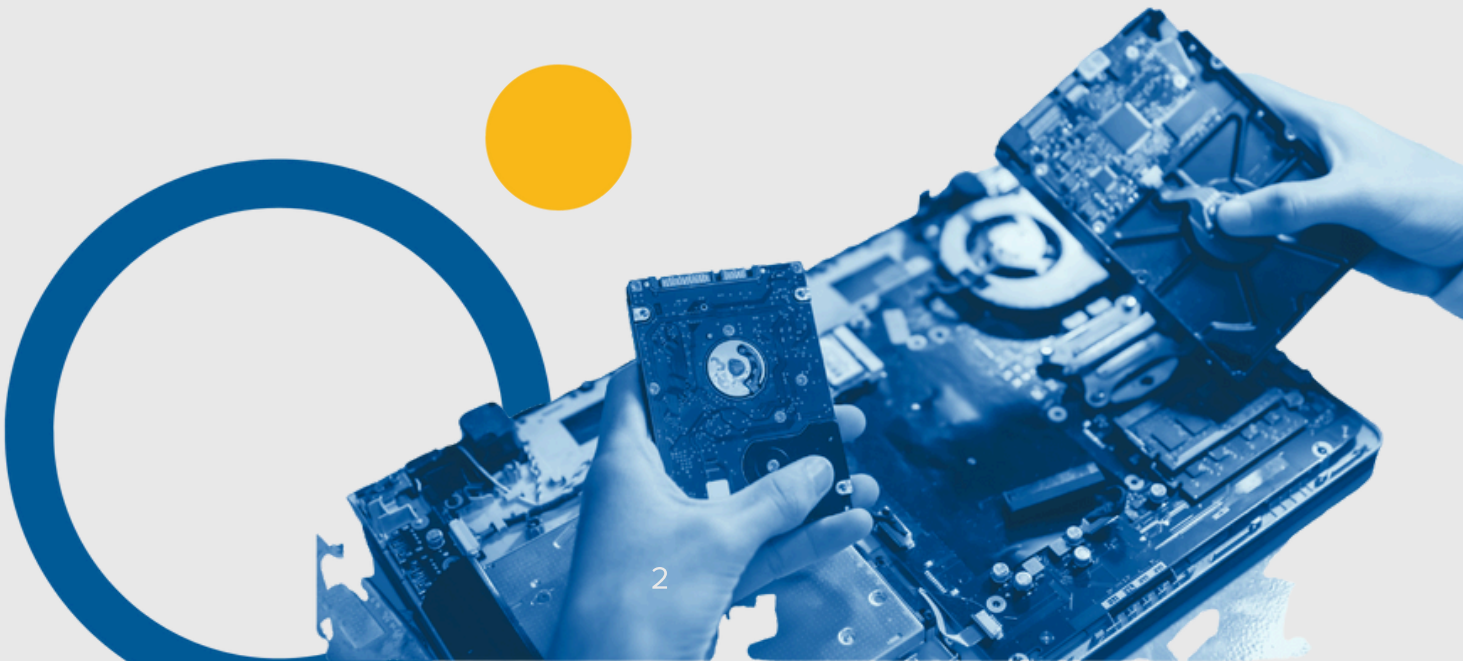
The Cambridge Dictionary defines obsolescence as “the process or fact of becoming old-fashioned and no longer useful”.[1] This can happen naturally, as innovations and new product developments push out older models. But this process isn’t always so innocent.

Obsolescence can take many different forms[2]:

- **Quality obsolescence** – when a product becomes unusable due to wear and tear or malfunctioning parts. - e.g. broken parts in a dishwasher.
- **Aesthetic obsolescence** – when cosmetic or visible wear drives replacement. -e.g. changes in colour preference make a product feel dated.
- **Psychological obsolescence** – when new models shift consumer perception, making existing products feel outdated even if they work fine – e.g. introduction of a new model may then increase consumers’ perception that they own an outdated model.
- **Technological obsolescence** – when newer models offer improved functionalities – e.g. new mobile phones with new features.
- **Economic obsolescence** – when a product is replaced by more efficient models – e.g. washing machines that are more eco-efficient.

Planned obsolescence refers to the deliberate strategy of ensuring a product or service will become out of date due to intentional product design choices. As these products become unusable and irreparable, this practice ensures that consumers will seek a replacement, thus ensuring a steady demand for the product in the future. One of the most common forms of premature obsolescence is not planned, but driven by a race to the bottom in component quality in order to compete on price.[3]

1 https://dictionary.cambridge.org/dictionary/english/obsolescence
2 **Van den Berge, R., Magnier, L., & Mugge, R.** (2023), Until death do us part? In-depth insights into Dutch consumers’ considerations about product lifetimes and lifetime extension. *Journal of Industrial Ecology*, 27(3), 908–922.
3 https://www.ocu.org/organizacion/prensa/notas-de-prensa/2019/prompt171019



Bad for consumers, environment and circularity

Costly consumer frustration

As part of the PROMPT study, Euroconsumers asked consumers why they opted not to get a faulty item replaced. The **cost of repair** was the most commonly cited reason across the different product types which included smartphones, laptops and washing machines. In the case of dishwashers, tumble dryers and vacuum cleaners, consumers claimed the device wasn't worth the cost of the repair. This illustrates how consumers are 'priced out' of circular consumption. Similarly, a 2020 Eurobarometer found that many EU citizens replaced a digital device because the old one broke (38%) or had serious performance issues (30%). Only 14% bought a new device to access new features.[4]

By deliberately shortening the lifespan of products and forcing more frequent replacements, planned obsolescence is a **costly nuisance** for consumers. Consumers must spend money to replace items that could have lasted longer, if not for profit-driven business decisions. These devices are not cheap, and the price only grows as newer models come out. Beyond the financial burden, such practices erode trust in brands and the broader market, leaving consumers uncertain about the reliability and value of the products they purchase.

4 https://europa.eu/eurobarometer/surveys/detail/2228

Increasing electrical waste

Planned obsolescence has serious **environmental consequences**. By intentionally designing products to have a limited lifespan, manufacturers drive frequent replacements, fuelling the global electronics waste crisis. In 2019, almost 54 million metric tons of e-waste were generated worldwide, and projections suggest this will rise to 74 million metric tons by 2030[5]. Alarmingly, around 80% of e-waste is not recycled, with much of it ending up polluting soils and waters. The environmental impact is compounded by the energy-intensive extraction of rare earth minerals used in electronics, as well as the production and shipping of each new device[6]. In addition, the scarcity of critical raw materials poses a strategic geopolitical risk for the EU, increasing its dependency on external suppliers and exposing the region to supply chain vulnerabilities.

5 https://ewastemonitor.info/gem-2020/#:~:text=A%20record%2053.6%20million%20metric,waste%20was%20collected%20and%20recycled
6 https://www.unep.org/news-and-stories/press-release/un-report-time-seize-opportunity-tackle-challenge-e-waste

Inhibits circular business models

Planned obsolescence, by intentionally limiting product lifespans, directly undermines both consumer adoption of circular practices and business models built to promote sustainability. When devices are designed to become obsolete quickly, consumers are discouraged from repairing or maintaining them, as repairs often become costly, impractical or impossible. The **inability to repair** not only accelerates product turnover but also discourages the use of refurbished products. If products cannot be repaired, they are automatically denied the chance of a second life as a refurbished product.

This is particularly pertinent to digitally connected products. For example, if a 3-year-old smartphone is refurbished, but the software updates are only provided for 5 years, it is **difficult for consumers to trust refurbished products**. This was a key concern highlighted in Euroconsumers' research into refurbished products.[7] Similarly, businesses face high uncertainty when investing in refurbishment processes. By restricting durability, upgradability and the predictability of product longevity, planned obsolescence impedes the development of circular markets and weakens the economic viability of reuse and refurbishment. This directly impacts the transition to a circular economy and reinforces a linear "take-make-dispose" system.

In short, premature obsolescence not only drives waste and environmental harm but also directly **undermines the EU's ambitions for a sustainable, circular economy**, highlighting the need for active consumer protection and intervention.

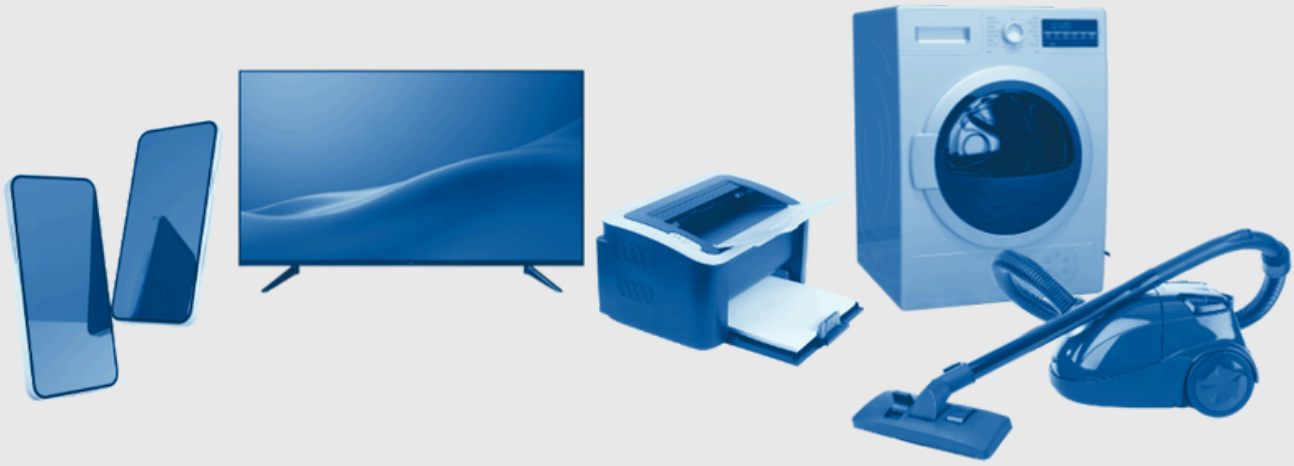
7 https://www.euroconsumers.org/wp-content/uploads/2025/01/How-good-is-as-good-as-new.pdf

Euroconsumers' pioneering work against premature obsolescence

Planned obsolescence is an old battle for consumers, one that Euroconsumers has taken up as the first consumer group on the scene and has fought many times over.

Trashed Too Fast: In response to an influx of consumer complaints, Euroconsumers' Belgian member, Testachats/Testaankoop, launched in 2017 a web tool for consumers to report devices that stopped working prematurely. Just over a couple of months over 9,000 devices were reported by frustrated consumers who felt let down. The data gathered showed some worrying trends: two-thirds of products reported were less than 3 years old, with smartphones, printers, and washing machines the most frequently reported product groups. While just under two thirds of consumers reportedly tried to repair their broken products, only one out of five repair attempts succeeded. For the 37% of consumers who did not try to repair the product, the cost of the repair was the main concern. In 2019, the tool was relaunched by the other Euroconsumers' organisations in Italy (Altroconsumo), Spain (OCU) and Portugal (DECOProteste) and three other countries.[8]

PROMPT Project: The joint research project, PROMPT, which Euroconsumers' members were a part of, found that in over 16,000 cases across seven EU countries, consumers highlighted products failing before their expectations and/or being too hard or costly to repair. Smartphones, printers, washing machines, TVs and dishwashers were in the top 5 of reported products, meaning that consumers were most concerned about these products breaking down. These are also predominantly higher-value products, reflecting consumers' expectations that expensive products should be made to last.[9]



8 https://www.test-achats.be/famille-prive/droits-des-consommateurs/presse/le-point-de-contact-trop-vite-use-prend-une-dimension-europeenne

9 https://www.euroconsumers.org/new-product-obsolescence-research-costly-repairs-stop-consumers-fixing-devices/

Thankfully, at political level the tide is shifting. During the last mandate, the EU sought to promote circular consumption models and worked to prohibit this waste-generating policy.

- The **Empowering Consumers for the Green Transition Directive (ECGT)**[10] obliges manufacturers to provide consumers with pre-contractual information on the durability and reparability of goods and adds unfair commercial practices related to early obsolescence (such as misleading claims or omission of information about design features limiting durability) to the UCPD Blacklist, if the trader is aware of such features.
- The **Ecodesign for Sustainable Products Regulation (ESPR)** builds on the current framework to improve the sustainability and prolong the durability of more products.[11]
- The **'Right to Repair' Directive**[12] introduces the obligation for manufacturers to offer repair, tackles built-in obsolescence and aims to boost the EU repair market. While it does not ban all forms of built-in obsolescence outright, it includes significant tools and incentives aimed at making repair easier, more transparent, and cheaper.

While all of these legislations have been adopted, they have not yet all come into force. ECGT will come into force on 27 September 2026, and the Right to Repair directive will apply to sales contracts concluded after 31 July 2026 at the latest, pending national transpositions.

10 https://eur-lex.europa.eu/eli/dir/2024/825/oj/eng#ntr13-L_202400825EN.000101-E0013
11 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32024R1781&qid=1719580391746
12 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32024L1799

The new frontier: software-induced obsolescence

Despite legislative progress on physical durability[13], **software is now the weak link**. A growing number of consumer devices rely on software and connectivity to function, meaning that a product's lifespan now depends as much on the software that supports it as on the hardware itself.[14] As we will see below, this impacts both physical and digital products. As connectivity and digital services become essential for product use, software developers and manufacturers have unprecedented control over how long a device stays viable.

We are increasingly seeing physical products that remain fully functional, being retired prematurely because they no longer receive security patches, cannot run updated apps, or become incompatible with other systems. This practice, known as **software-induced obsolescence**, has a direct impact on the market for circular products (repaired, refurbished and second-hand). Euroconsumers' 2025 report *"How Good is As Good as New?"* highlighted that concerns about software support are a major barrier to when it comes to buying refurbished goods.[15] Without reliable updates, refurbished products cannot be safely repaired, marketed, or resold, and consumers lose confidence in second-hand devices.

13 https://www.impegnatiacambiare.org/altrocomprare/news/durata-elettrodomestici
14 https://prompt-project.eu/wp-content/uploads/2023/07/PROMPT-D4.3-TEXT-APPENDIX.pdf
15 https://www.euroconsumers.org/wp-content/uploads/2025/01/How-good-is-as-good-as-new.pdf

When premature becomes planned

Software-induced obsolescence is no accident. It is not driven by mere technical limitations, but more and more by budgetary and corporate considerations. It is increasingly a **business model**: by limiting software support, companies create predictable cycles of forced replacement and new sales.

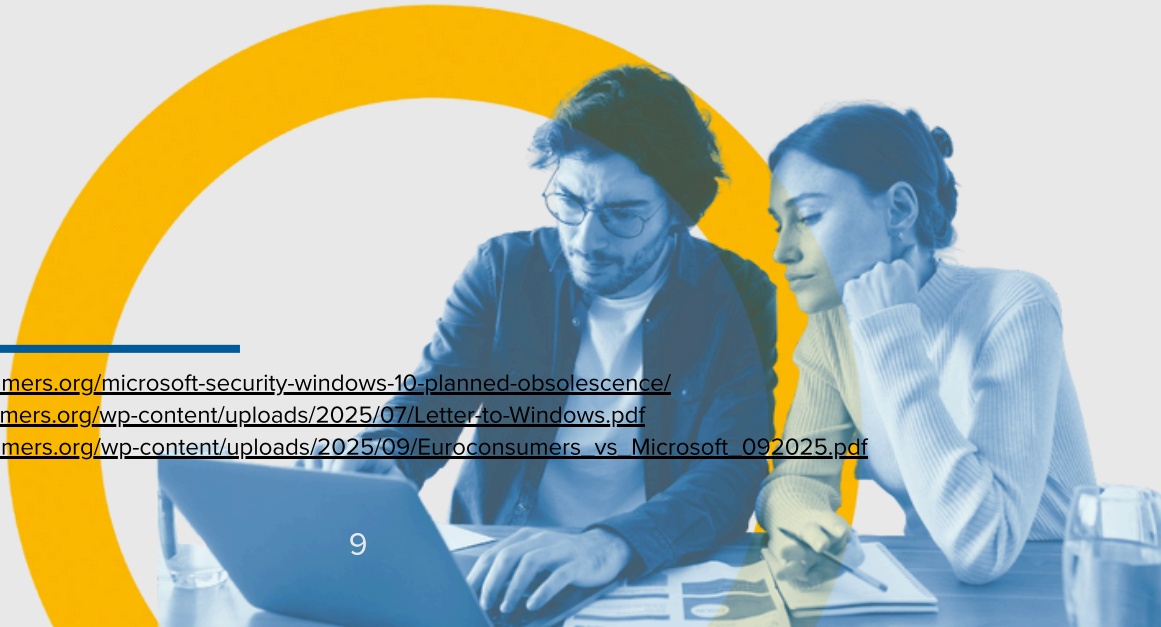
Case Studies

Windows 10

A clear example of software-driven obsolescence is **Microsoft's plan to end free security support for Windows 10 in October 2025**. Although the system will continue running, devices without updates will become increasingly vulnerable. This disproportionately affects millions of users with older hardware, often from 2017 or earlier, that cannot upgrade to Windows 11. A Euroconsumers survey shows that 22% of consumers still depend on such devices.[16] Without essential security updates or affordable alternatives, these products are rendered unsafe or obsolete by design.

Euroconsumers raised these concerns directly with Microsoft, calling on the company to reconsider its approach and provide longer-term, accessible support options.[17] Microsoft initially restricted access to its paid support extension but later made an additional year of updates more broadly available in Europe. A big win for consumers.

But this is not enough. In 2026, consumers will face the same challenge, and it will not solve the barrier facing refurbished products. In addition, the decision to extend support by one year shows that Microsoft does have the technical means to prolong the software availability. They are choosing to stop providing this support for corporate or economic reasons, at the expense of consumers. We need products that last longer and can live a second life through refurbishment. Euroconsumers will continue to push for a complete reversal of the decision, warning that ending security updates for viable machines.[18]



16 https://www.euroconsumers.org/microsoft-security-windows-10-planned-obsolescence/
17 https://www.euroconsumers.org/wp-content/uploads/2025/07/Letter-to-Windows.pdf
18 https://www.euroconsumers.org/wp-content/uploads/2025/09/Euroconsumers_vs_Microsoft_092025.pdf

Video Games with "always-on" DRM

In the video game industry, an increasing number of titles rely on a constant internet connection to function, even in single-player or offline modes. This **"always-online DRM"** (Digital Rights Management) model requires games to authenticate with the publisher's servers before launching, ostensibly to prevent piracy. While these checks are generally unproblematic for players with internet access, the system creates an opportunity for publishers to control the lifespan of their products.

That control becomes most visible when server support ends. Publishers may shut down authentication servers to cut costs or steer players toward newer releases. Once this happens, games often become unplayable in every mode, including single-player. A stark example is Ubisoft's The Crew (2014), which remained available for purchase until 2023 but became entirely unusable in 2024 when its servers were deactivated.[19]

Publishers can enforce obsolescence in several ways: by pulling titles from digital stores, disabling activation servers, removing games from subscription services, or issuing updates that break compatibility. Community-led efforts to preserve access through patches, server emulation, or mods are frequently blocked with encryption, takedowns, or legal threats.

This case illustrates a broader trend in digital markets: **the idea that consumers rarely truly own the software they purchase**. Instead, they acquire a license whose usability can be revoked at any time. In this way, software obsolescence becomes part of the business model, generating ongoing revenue by shortening product lifespans and creating dependence on publisher-controlled services. Understanding this practice is essential for evaluating consumer rights, ownership, and the sustainability of digital business strategies.

19 https://www.videogameschronicle.com/news/ubisoft-has-delisted-the-crew-which-will-no-longer-be-playable-from-april-2024/

Sonos

Sonos provides a striking example of how software control can shape the lifespan and usability of otherwise durable consumer products. In 2019, the company introduced a controversial **“Recycle mode”**, a software kill switch that permanently disabled devices traded in for discounted newer models. This practice was heavily criticised and Sonos quickly abandoned it.[20]

A year later, in 2020, Sonos launched a new app platform that excluded support for older speakers. Consumers with mixed systems faced a difficult choice: migrate to the new platform and render older products unusable, or stay on the old platform with reduced functionality. This highlighted the **dependency of Sonos hardware on proprietary software**, raising concerns that if the company were ever to go bankrupt, even high-quality devices could become largely inoperable**.**[21]

These episodes show how software decisions can create premature obsolescence, erode consumer trust, and undermine sustainability, even in premium, durable hardware.

And that’s not all...

These examples are not unique. **Spotify**[22]**, Amazon**[23] and **Google**[24] have followed the same path, using software to disable functioning products, eroding consumer trust and creating unexpected costs. But is this even legal?

20 https://www.popularmechanics.com/technology/gadgets/a30625816/sonos-speaker-software-updates/; https://www.theverge.com/2019/12/30/21042871/sonos-recycle-mode-trade-up-program-controversy
21 https://www.test-achats.be/hightech/audio/news/sonos-obsolescence-programmee
22 https://tweakers.net/nieuws/222284/spotify-car-thing-is-vanaf-9-december-niet-meer-te-gebruiken.html
23 https://www.androidpolice.com/amazon-halo-trackers-dead-eligible-for-refund/
24 https://tweakers.net/nieuws/208518/google-stopt-per-8-april-2024-ondersteuning-voor-nest-secure-alarmsysteem.html

Current rules

EU law provides some protection against software-induced obsolescence, but the framework remains fragmented and often imprecise. The **Digital Content Directive**[25] and the **Sale of Goods Directive**[26] require updates to keep digital products secure and functional, but only for the contract period or what a "reasonable consumer" might expect. These concepts are open to interpretation, allowing manufacturers considerable flexibility in deciding when to end support.

The **Cyber Resilience Act (CRA)**[27] represents a step forward by obliging manufacturers to provide security updates for the expected lifespan of a product or at least 5 years. Every security update made available during the support period remains available for the remainder of it or a minimum of 10 years. However, the expected lifespan of a product is not defined in detail and does not reflect circular practices such as repair, refurbishment or resale, where devices may remain in use long after official support has ended. As a result, even well-functioning products can lose critical software updates prematurely.

Current **Ecodesign rules**[28] only specify a minimum software update duration for smartphones and tablets (5 years). The rules for laptops and countless other devices are still being developed.

Upcoming rules

Further measures are in the pipeline, but their effectiveness depends on future decisions. **The Ecodesign for Sustainable Products Regulation**[29] creates a framework for setting minimum requirements on durability, repairability and upgradability, including software. Yet concrete rules on mandatory software support periods will only be established through delegated acts, which for many products are still to be adopted. Without these, the Regulation remains a framework rather than a guarantee.

The **Empowering Consumers for the Green Transition Directive**[30] adds another layer by requiring pre-contractual information on how long free software updates will be provided. However, this provision will only apply from September 2026, leaving consumers in the meantime without reliable information about the expected lifespan of their digital products. Having this pre-contractual information helps consumers understand what they are getting, but it doesn't encourage manufacturers to provide a longer lifespan for these products. It might provide some incentive to spur the market in that direction, but this is a hope and not a certainty.

25 https://eur-lex.europa.eu/eli/dir/2019/770/oj/eng
26 https://eur-lex.europa.eu/eli/dir/2019/771/oj/eng
27 https://eur-lex.europa.eu/eli/reg/2024/2847/oj/eng
28 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32024R1781&qid=1719580391746
29 Ibid
30 https://eur-lex.europa.eu/eli/dir/2024/825/oj/eng

Taken together, these instruments signal a clear policy direction towards tackling software obsolescence. But a central gap remains: **there is currently no binding EU-wide minimum duration for software support**. Existing legislation can address misleading practices or ensure basic functionality, but it does not prevent manufacturers from ending updates for products that remain physically durable.

At the same time, questions of **digital ownership** remain unresolved. In many cases, consumers only hold a licence to use software, which can be revoked or restricted by the provider. This means that even products which are still supported can become unusable if access is withdrawn, as seen in the video games market.

Until these gaps are addressed with clear and enforceable rules, both on minimum support periods and on consumer rights to digital products, consumers and the circular economy will remain vulnerable to premature, software-driven obsolescence.

1

2

Table 1. Legislative overview

Legislation	Relevant Provisions	How it addresses software obsolescence
Digital Content & Digital Services Directive (EU) 2019/770	Art. 7, Art. 8(2) + recitals 46, 47	Digital content/services must be updated to remain functional and secure, for the contract duration or a reasonable period.
Ecodesign for Sustainable Products Regulation (2024/1781)	Art.5, Art. 7, Art. 8, Annex I, Delegated Acts	Requires products to be designed for durability, repairability, and upgradability, including software, with delegated acts able to set minimum update periods.
Empowering Consumers for the Green Transition (Directive 2024/825)	Recitals 22, 25, 33, Art. 2(b), Art. 3(3) Annex I (Blacklist)	Updates CRD to require traders to provide pre-contractual information on product durability and reparability, including the expected period of free software updates. Updates UCPD to prohibit misleading practices, including misrepresenting product lifespan or software update support. (applicable from September 2026).
Cyber Resilience Act (2024/2847)	Art.13(8)(9)	Requires developers to provide security updates for the expected lifespan of a product or at least 5 years. Security updates offered during the support period should remain available for the remainder of it or for a minimum of 10 years.
Digital Markets Act (Regulation 2022/1925)	Art. 6(9)	Gatekeepers cannot use technical or other restrictions to stop users from switching between different software applications or services accessed via their platforms.
Sale of Goods Directive (EU) 2019/771	Art. 7(3)	Goods with digital elements must receive updates necessary to remain in conformity for a period the consumer can reasonably expect or within two years (depending on the nature of the product).

Recommendations

1. Minimum mandatory update durations

Some of the existing legislation focuses on the "expected lifespan" of devices, but the term is vague and leaves room for early support cutoffs. To reduce confusion and help consumers understand exactly what they are getting, **clear, product-specific minimum durations for software updates should be introduced** for both functionality and security.

These obligations could be set via product-specific delegated acts under the Ecodesign Regulation, while also being supported by broader provisions in consumer law. This dual approach would help ensure that consumers have clear expectations about how long a device will remain supported, while also promoting circular practices such as resale, refurbishment, and repair. Update duration should reflect not just average consumer usage, but also **circular practices such as resale, refurbishment, and repair**. Therefore, the minimum duration of software updates should also at least match the availability of spare parts and consider the number of consumers still using the software or a software-dependent device. By no means the software should become obsolete before the hardware does.

2. Strong enforcement against deliberate obsolescence

The **ECGT Directive** already prohibits certain unfair practices, such as hiding the fact that updates degrade performance or designing products to fail prematurely. What is missing is strong enforcement. It might not always be easy or straightforward, as these provisions are tied to deception or misleading practices with the accumulative criteria often difficult to prove and depending on interpretation by national authorities. But without determined and well-resourced enforcement, the Directive's promise to curb unfair digital practices will remain unfulfilled.

3. Interoperability and repairability of software

The current rules on interoperability and repairability are limited in scope. As a result consumer devices are often locked into a certain software system. If the software is switched off, consumers can often not use another provider to ensure the device stays functional – as we saw in the case of Sonos. In a more competitive market, consumers would be able to switch between software providers. Or third parties (e.g. open source or community-based initiatives) could take over support for certain hardware when the manufacturer decides to pull out.

Software obsolescence as a business model? No, thank you

Software obsolescence is increasingly shaping the lifecycle of digital products, and the trend is concerning. Unlike natural wear and tear, premature obsolescence driven by software updates is a choice. It's a business decision with real consequences for consumers and the environment. Through a process known as ‘software tethering’, manufacturers can control when and how a device remains functional.[31] This means companies hold significant power, capable of deciding a product’s life or death at will.

Recent experiences, such as the Windows 10 case, show that this is not a technical inevitability. Companies have all the tools necessary to extend product lifespans. Yet, in many cases, commercial considerations prevail over sustainability and consumer protection. The quick reversal by Microsoft demonstrated that it is possible to provide longer support when a company chooses to do so, but left to market forces alone, consumers may continue to face unnecessary device replacements.

Euroconsumers calls for clearer guidance at the EU level on minimum durations for software updates, ensuring consumers can rely on predictable and transparent support. At the same time, we are appealing to companies to embrace sustainability as a strategic advantage. By designing products that last longer and remain compatible, businesses can build long-term consumer trust, enhance brand credibility, and contribute to a more circular digital economy.

Addressing software obsolescence is therefore a shared responsibility. Regulators should provide a clear, enforceable framework that sets clear expectations for software support, while companies should use their capabilities to align profit motives with consumer and environmental interests. Together, these measures can shift the market away from short-term gains toward long-term value - a win-win scenario that benefits consumers, businesses, and the planet alike.

31 https://www.iotforall.com/software-tethering-iot

About Euroconsumers

Gathering five national consumer organisations and giving voice to a total of more than 6 million people in Italy, Belgium, Spain, Portugal and Brazil, Euroconsumers is the world's leading consumer group in innovative information, personalised services and the defence of consumer rights. Our European member organisations are part of the umbrella network of BEUC, the European Consumer Organisation. Together we advocate for EU policies that benefit consumers in their daily lives.

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