

Planned obsolescence

Planned obsolescence, or **built-in obsolescence**, in industrial design and economics is a policy of planning or designing a product with an artificially limited useful life, so it will become *obsolete* (that is, unfashionable or no longer functional) after a certain period of time.^[1] The rationale behind the strategy is to generate long-term sales volume by reducing the time between repeat purchases (referred to as "shortening the replacement cycle").^[2]

Producers that pursue this strategy believe that the additional sales revenue it creates more than offsets the additional costs of research and development, and offsets the *opportunity costs* of repurposing an existing product line. In a competitive industry, this is a risky policy, because consumers may decide to buy from competitors instead if they notice the strategy.

Planned obsolescence tends to work best when a producer has at least an *oligopoly*.^[3] Before introducing a planned obsolescence, the producer has to know that the consumer is at least somewhat likely to buy a replacement from them. In these cases of planned obsolescence, there is an *information asymmetry* between the producer, who knows how long the product was designed to last, and the consumer, who does not. When a market becomes more competitive, product lifespans tend to increase. For example, when Japanese vehicles with longer lifespans entered the American market in the 1960s and 1970s, American carmakers were forced to respond by building more durable products.^[4]

Contents

History and origins of the phrase

Types

- Contrived durability
- Prevention of repairs
- Perceived obsolescence
- Systemic obsolescence
- Programmed obsolescence

Advantages and disadvantages

Regulation

Critics and supporters

In software

In academia

Future

See also

References

Further reading

History and origins of the phrase

In the United States, automotive design reached a turning point in 1924 when the American national automobile market began reaching saturation. To maintain unit sales, General Motors head Alfred P. Sloan Jr. suggested annual model-year design changes to convince car owners that they needed to buy a new replacement each year, an idea borrowed from the bicycle industry, though the concept is often misattributed to Sloan.^[6] Critics called his strategy "planned obsolescence". Sloan preferred the term "dynamic obsolescence". This strategy had far-reaching effects on the auto business, the field of product design, and eventually the American economy. The smaller players could not maintain the pace and expense of yearly re-styling. Henry Ford did not like the model-year change because he clung to an engineer's notions of simplicity, economies of scale, and design integrity. GM surpassed Ford's sales in 1931 and became the dominant company in the industry thereafter. The frequent design changes also made it necessary to use a body-on-frame rather than the lighter, but less easy to modify, unibody design used by most European automakers.



The 1923 Chevrolet is cited as one of the earliest examples of annual facelifts in the car industry, because it had a restyled body covering what essentially was nine-year-old technology.^[5]

The origins of phrase *planned obsolescence* go back at least as far as 1932 with Bernard London's pamphlet *Ending the Depression Through Planned Obsolescence*.^[7] The essence of London's plan would have the government impose a legal obsolescence on consumer articles, to stimulate and perpetuate consumption.

However, the phrase was first popularized in 1954 by Brooks Stevens, an American industrial designer. Stevens was due to give a talk at an advertising conference in Minneapolis in 1954. Without giving it much thought, he used the term as the title of his talk. From that point on, "planned obsolescence" became Stevens' catchphrase. By his definition, planned obsolescence was "Instilling in the buyer the desire to own something a little newer, a little better, a little sooner than is necessary."

The phrase was quickly taken up by others, but Stevens' definition was challenged. By the late 1950s, *planned obsolescence* had become a commonly used term for products designed to break easily or to quickly go out of style. In fact, the concept was so widely recognized that in 1959 Volkswagen mocked it in an advertising campaign. While acknowledging the widespread use of planned obsolescence among automobile manufacturers, Volkswagen pitched itself as an alternative. "We do not believe in planned obsolescence", the ads suggested. "We don't change a car for the sake of change."^[8] In the famous Volkswagen advertising campaign by Doyle Dane Bernbach, one advert showed an almost blank page with the strapline "No point in showing the 1962 Volkswagen, it still looks the same".

In 1960, cultural critic Vance Packard published *The Waste Makers*, promoted as an exposé of "the systematic attempt of business to make us wasteful, debt-ridden, permanently discontented individuals".

Packard divided planned obsolescence into two sub categories: obsolescence of desirability and obsolescence of function. "Obsolescence of desirability", also called "psychological obsolescence", referred to marketers' attempts to wear out a product in the owner's mind. Packard quoted industrial designer George Nelson, who wrote: "Design... is an attempt to

Ending the Depression
Through
Planned Obsolescence
By Bernard London, 1932

Frank V. Vandenberg, former President of the National City Bank, of New York, characterized this as a stupid depression. He emphasized the fact that nations were suffering under general markets and surplus.

The new paradox of plenty constitutes a challenge to conventional economic thinking. Classical economics was predicated on the belief that nature was infinitely and that the human race was constantly confronted by the specter of shortages. The economist Phillips writing in 1786 stated that the race would be impoverished by an increase in population which he predicted would greatly retard gains in the production of foodstuffs.

However, modern technology and the advent of science have opened new sources to human race so tremendously increased the productivity of our factories and our fields that the material economic problem has become one of organizing human labor, that of accumulating producers. The material and human race of the present depression lies in the fact that millions of persons are deprived of a satisfactory standard of living at a time when the products and necessities of the world are overabundant with surplus supplies, which have to be thrown away or sold at a loss to break the price level so as to make new production attractive and profitable.

Presently, this country and other countries are suffering from disturbed human relationships.

Paranoia, neuroticism, and fear are all rooted and are ready to produce in unlimited quantities, but the urge to go ahead has been paralyzed by a desire to keep going. The existing conditions are not healthy, and the solution must be non-violent and non-revolutionary.

In the present inadequate economic organization of society, for too much is based on the unproductive system and capital of the consumer. Changing habits of consumption have increased property values and opportunities for employment. The welfare of society has been left to pure chance and accident.

In a word, people generally, in a frightened and hysterical mood, are using everything that they own longer than they have before the depression, in the latter period of prosperity, the American people did not use until the last possible cent of use had been extracted from every commodity. They replaced old articles with new for reasons of habit.

Ending the Depression Through
Planned Obsolescence, by Bernard
London, 1932

make a contribution through change. When no contribution is made or can be made, the only process available for giving the illusion of change is 'styling!'"

Types

Contrived durability

Contrived durability is a strategy of shortening the product lifetime before it is released onto the market, by designing it to deteriorate quickly.^[3] The design of all consumer products includes an expected average lifetime permeating all stages of development. Thus, it must be decided early in the design of a complex product how long it is designed to last so that each component can be made to those specifications. Since all matter is subject to entropy, it is impossible for any designed object to retain its full function forever; all products will ultimately break down, no matter what steps are taken. While it is known that products are optimized to match their required lifespan, such designs are often chosen for cost or weight saving reasons. Limited lifespan is only a sign of planned obsolescence if the lifespan of the product is made artificially short by design.

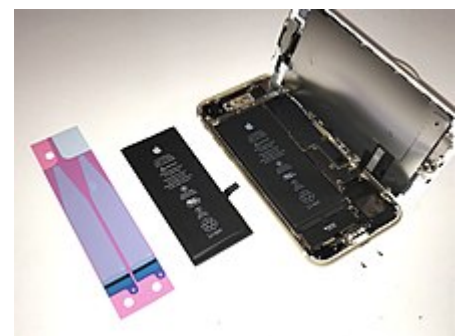
The strategy of contrived durability is generally not prohibited by law, and manufacturers are free to set the durability level of their products.^[3]

A possible method of limiting a product's durability is to use inferior materials in critical areas, or suboptimal component layouts which cause excessive wear. Using soft metal in screws and cheap plastic instead of metal in stress-bearing components will increase the speed at which a product will become inoperable through normal usage and make it prone to breakage from even minor forms of abnormal usage. For example, small, brittle plastic gears in toys are extremely prone to damage if the toy is played with roughly, which can easily destroy key functions of the toy and force the purchase of a replacement. The short life expectancy of smartphones and other handheld electronics is a result of constant usage, fragile batteries, and the ability to easily damage them. ^[9]

Prevention of repairs

The ultimate examples of such design are single-use versions of traditionally durable goods, such as disposable cameras, where the customer must purchase an entire new product after using them a single time. Such products are often designed to be impossible to service; for example, a cheap "throwaway" digital watch may have a casing which is simply sealed in the factory, with no designed ability for the user to access the interior without destroying the watch entirely.

Other products may also contain design features meant to frustrate repairs, such as Apple's "tamper-resistant" pentalobe screws that cannot easily be removed with common consumer tools.^[11] Front loading washing machines often have the drum bearing - a critical and wear-prone mechanical component - permanently molded into the wash tub, making it impossible to renew without replacing the entire tub. The cost of this repair may exceed the residual value of the appliance, forcing it to be scrapped.^{[12][13]}



Apple devices, such as the iPhone and iPad, may be difficult for users to repair^[10]

According to Kyle Wiens, co-founder of an online repair community, a possible goal for such design is to make the cost of repairs comparable to the replacement cost, or to prevent any form of servicing of the product at all. In 2012, Toshiba was criticized for issuing cease-and-desist letters to the owner of a website that hosted its copyrighted repair manuals, to the detriment of the independent and home repair market.^[14]

Some products contain batteries that are not user-replaceable after they have worn down. While such a design can help make the device thinner, it can also make it difficult to replace the battery without sending the entire device away for repairs or purchasing a replacement.^[15]

Perceived obsolescence

Obsolescence of desirability or stylistic obsolescence occurs when designers change the styling of products so customers will purchase products more frequently due to the decrease in the perceived desirability of unfashionable items.

Many products are primarily desirable for aesthetic rather than functional reasons. An obvious example of such a product is clothing. Such products experience a cycle of desirability referred to as a "fashion cycle". By continually introducing new aesthetics, and retargeting or discontinuing older designs, a manufacturer can "ride the fashion cycle", allowing for constant sales despite the original products remaining fully functional. Sneakers are popular fashion industry where this is prevalent - Nike's Air Max line of running shoes is a prime example where a single model of shoe is often produced for years, but the color and material combination ("colorway") is changed every few months, or different colorways are offered in different markets. This has the upshot of ensuring constant demand for the product, even though it remains fundamentally the same.

To a more limited extent this is also true of some consumer electronic products, where manufacturers will release slightly updated products at regular intervals and emphasize their value as status symbols.

Systemic obsolescence

Planned systemic obsolescence is the deliberate attempt to make a product obsolete by altering the system in which it is used in such a way as to make its continued use difficult. Common examples of planned systemic obsolescence include not accommodating forward compatibility in software, or routinely changing screws or fasteners so that they cannot easily be operated on with existing tools.

Programmed obsolescence

In some cases, notification may be combined with the deliberate disabling of a product to prevent it from working, thus requiring the buyer to purchase a replacement. Example: inkjet printer manufacturers that employ smart chips in their ink cartridges to prevent them from being used after a certain threshold (number of pages, time, etc.), even though the cartridge may still contain usable ink or could be refilled (with ink toners, up to 50 percent of the toner cartridge is often still full^[16]). This constitutes "programmed obsolescence", in that there is no random component contributing to the decline in function. In the Jackie Blennis v. HP class action suit, it was claimed that Hewlett Packard designed certain inkjet printers and cartridges to shut down on an undisclosed expiration date, and at this point consumers were prevented from using the ink that remained in the expired cartridge. HP denied these claims, but agreed to discontinue the use of certain messages, and to make certain changes to the disclosures on its website and packaging, as well as compensating affected consumers with a total credit of up to \$5,000,000 for future purchases from HP.^[17] Samsung produces printers that are programmed to stop working even though the printer is still working perfectly. There are some work-arounds for users, for instance to more than double the life of the printer after it stops with a message to replace the imaging drum.^[18]

Advantages and disadvantages

Estimates of planned obsolescence can influence a company's decisions about product engineering. Therefore, the company can use the least expensive components that satisfy product lifetime projections.

Also, for industries, planned obsolescence stimulates demand by encouraging purchasers/putting them under pressure to buy sooner if they still want a functioning product. These products can be bought from the same manufacturer (a replacement part or a newer model), or from a competitor who might also rely on planned obsolescence. Especially in developed countries (where many industries already face a saturated market), this technique is often necessary for producers to maintain their level of revenue.

While planned obsolescence is appealing to producers, it can also do significant harm to the society in the form of negative externalities. Continuously replacing products, rather than repairing them, creates more waste and pollution, uses more natural resources, and results in more consumer spending. Planned obsolescence can thus have a negative impact on the environment in aggregate. Even when planned obsolescence might help to save scarce resources per unit produced, it tends to increase output in aggregate, since due to laws of supply and demand decreases in cost and price will eventually result in increases in demand and consumption. However, the negative environmental impacts of planned obsolescence are dependent also on the process of production.^[19]

There is also the potential backlash of consumers who learn that the manufacturer invested money to make the product obsolete faster; such consumers might turn to a producer (if any exists) that offers a more durable alternative.

Regulation

In 2015, as part of a larger movement against planned obsolescence across the European Union, France has passed legislation requiring that appliance manufacturers and vendors declare the intended product lifespans, and to inform consumers how long spare parts for a given product will be produced. From 2016, appliance manufacturers are required to repair or replace, free of charge, any defective product within two years from its original purchase date. This effectively creates a mandatory two-year warranty.^[20]

Critics and supporters

Shortening the replacement cycle has critics and supporters.

Philip Kotler argues that: "Much so-called planned obsolescence is the working of the competitive and technological forces in a free society—forces that lead to ever-improving goods and services."^[21]

Critics such as Vance Packard claim the process wastes and exploits customers. With psychological obsolescence, resources are used up making changes, often cosmetic changes, that are not of great value to the customer. Miles Park advocates new and collaborative approaches between the designer and the consumer to challenge obsolescence in fast-moving sectors such as consumer electronics.^[22]

Some people, such as Ronny Balcaen, have proposed to create a new label to counter the diminishing quality of products due to the planned obsolescence technique.^[16]

In an attempt to counter planned obsolescence, Greenpeace created the rethink-it.org website to examine (before purchasing a product), which product scores best in regards to repairability.^[23]

In software

Software companies sometimes deliberately drop support for older technologies as a calculated attempt to force users to purchase new products to replace those made obsolete.^[24] Most proprietary software will ultimately reach an end-of-life point - usually because the cost of support exceeds the revenue generated by supporting the old version - at which the supplier will cease updates and support. As free software and open source software can always be updated and maintained by somebody else, the user is not at the sole mercy of a proprietary vendor.^[25] Software which is abandoned by the manufacturer with regard to manufacturer support is sometimes called *abandonware*.

In academia

Russell Jacoby, writing in the 1970s, observes that intellectual production has succumbed to the same pattern of planned obsolescence used by manufacturing enterprises to generate ever-renewed demand for their products.

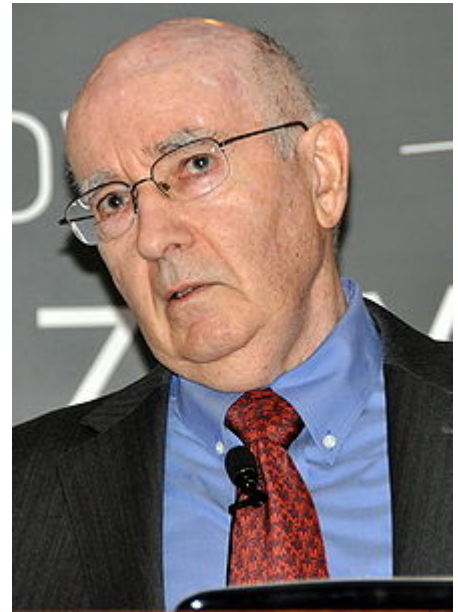
The application of planned obsolescence to thought itself has the same merit as its application to consumer goods; the new is not only shoddier than the old, it fuels an obsolete social system that staves off its replacement by manufacturing the illusion that it is perpetually new.^[26]

Camille Paglia characterizes contemporary academic discourse influenced by French theorists such as Lacan, Derrida, and Foucault as the academic equivalent of name brand consumerism. "Lacan, Derrida, and Foucault," she says, "are the academic equivalents of BMW, Rolex, and Cuisinart."^[27] Under the inspiration of the latest academic fashions, academic planned obsolescence is to manufacture content with little merit for the same reason fashion designers come out with new fashions.

Future

Planned obsolescence has been assumed a necessity when it comes to stimulating consumption; however, this practice has come into question. In 2015 the French Parliament ruled and further established a fine of up to 300,000 euros and jail terms of up to two years for those manufacturers planning the death of their products in advance. The rule is not only relevant because of the sanctions that it establishes but also because it is the first time that a legislation recognizes openly the existence of planned obsolescence. These techniques may include "a deliberate introduction of a flaw, a weakness, a scheduled stop, a technical limitation, incompatibility or other obstacles for repair", reads the text regarding what may be considered as planned obsolescence.

The European Union is also beginning to address this problem. The European Economic and Social Committee (EESC), an advisory body of the EU,^[28] announced in 2013 that it was studying "a total ban on planned obsolescence". It said replacing products that are designed to stop working within two or three years of their purchase was a waste of energy and resources and generated pollution.^[29] The EESC organised a round table in Madrid in 2014 on 'Best practices in the domain of built-in obsolescence and collaborative consumption' which called for sustainable consumption to be enshrined as a consumer right in EU legislation.^[30] Carlos Trias Pinto, president of the EESC's Consultative Commission on



Marketing writer Philip Kotler

Industrial Change^[31] supports "the introduction of a labeling system which indicates the durability of a device, so the consumer has the possibility of choosing whether he/she prefers to buy a cheap product or a more expensive, more durable product".^[32]

See also

- Obsolescence
- Artificial demand
- Durapolist
- Life spans of home appliances
- Setting up to fail

References

- Bulow, Jeremy (November 1986). "An Economic Theory of Planned Obsolescence" (<https://faculty-gsb.stanford.edu/bulow/articles/an%20economic%20theory%20of%20planned%20obsolescence.pdf>) (PDF). *The Quarterly Journal of Economics*. New York: John Wiley & Sons, Inc. **101** (4): 729–749. doi:10.2307/1884176 (<https://doi.org/10.2307/1884176>). Retrieved April 9, 2013.
- Bidgoli, Hossein (2010). *The Handbook of Technology Management, Supply Chain Management, Marketing and Advertising, and Global Management*. Wiley. p. 296. ISBN 978-0470249482.
- Orbach, Barak (2004). "The Durapolist Puzzle: Monopoly Power in Durable-Goods Market". *Yale Journal on Regulation*, vol. 21, pp. 67–118. SSRN 496175 (<https://ssrn.com/abstract=496175>)³.
- Dickinson, Torry D.; Schaeffer, Robert K. (2001). *Fast Forward: Work, Gender, and Protest in a Changing World*. Rowman & Littlefield. pp. 55–6. ISBN 0-7425-0895-1.
- Annual model change was the result of affluence, technology, advertising (<http://www.autonews.com/article/20080914/OEM02/309149950/annual-model-change-was-the-result-of-affluence-technology-advertising>). *Automotive News*, September 14, 2008
- Babaian, Sharon (1998). *The Most Benevolent Machine: A Historical Assessment of Cycles in Canada*. Ottawa: National Museum of Science and Technology. p. 97. ISBN 0-660-91670-3.
- Bernard London's pamphlet ([http://upload.wikimedia.org/wikipedia/commons/2/27/London_\(1932\)_Ending_the_depression_through_planned_obsolescence.pdf](http://upload.wikimedia.org/wikipedia/commons/2/27/London_(1932)_Ending_the_depression_through_planned_obsolescence.pdf)) Archived (https://web.archive.org/web/20120819154515/http://upload.wikimedia.org/wikipedia/commons/2/27/London_%281932%29_Ending_the_depression_through_planned_obsolescence.pdf) August 19, 2012, at the Wayback Machine.
- Inc, Time (1959-08-03). *LIFE* (<https://books.google.com/books?id=80kEAAAAMBAJ>). Time Inc. Archived (<https://web.archive.org/web/20170228030304/https://books.google.com/books?id=80kEAAAAMBAJ>) from the original on February 28, 2017.
- "Life Expectancy of a Smartphone" (<http://smallbusiness.chron.com/life-expectancy-smartphone-62979.html>). Archived (<https://web.archive.org/web/20170325021121/http://smallbusiness.chron.com/life-expectancy-smartphone-62979.html>) from the original on March 25, 2017. Retrieved 2017-05-27.
- Foresman, Chris (January 20, 2011). "Apple "screwing" new iPhones out of simple DIY repair" (<https://arstechnica.com/apple/2011/01/apple-screwing-new-iphones-out-of-simple-diy-repair/>). *Ars Technica*. Archived (<https://web.archive.org/web/20120514171627/http://arstechnica.com/apple/2011/01/apple-screwing-new-iphones-out-of-simple-diy-repair/>) from the original on May 14, 2012. Retrieved January 28, 2012.
- Foresman, Chris (January 20, 2011). "Apple "screwing" new iPhones out of simple DIY repair" (<https://arstechnica.com/apple/2011/01/apple-screwing-new-iphones-out-of-simple-diy-repair/>). *Ars Technica*. Archived (<https://web.archive.org/web/20120514171627/http://arstechnica.com/apple/2011/01/apple-screwing-new-iphones-out-of-simple-diy-repair/>) from the original on May 14, 2012. Retrieved January 28, 2012.

12. Poulter, Sean. "Washing machines 'cheaper to replace than fix': Manufacturers accused of making appliances too costly and complicated to repair" (<http://www.dailymail.co.uk/news/article-3130577/Washing-machines-cheaper-replace-fix-Manufacturers-accused-making-appliances-costly-complicated-repair.html>). *Daily Mail Online*. Archived (<https://web.archive.org/web/20161019012512/http://www.dailymail.co.uk/news/article-3130577/Washing-machines-cheaper-replace-fix-Manufacturers-accused-making-appliances-costly-complicated-repair.html>) from the original on October 19, 2016. Retrieved 18 October 2016.
13. Cooper, Daniel R.; Skelton, Alexandra C. H.; Moynihan, Muir C.; Allwood, Julian M. (2014-03-01). "Component level strategies for exploiting the lifespan of steel in products" (<http://www.sciencedirect.com/science/article/pii/S0921344913002619>). *Resources, Conservation and Recycling*. **84**: 24–34. doi:[10.1016/j.resconrec.2013.11.014](https://doi.org/10.1016/j.resconrec.2013.11.014) (<https://doi.org/10.1016/j.resconrec.2013.11.014>).
14. Wiens, Kyle. "The Shady World of Repair Manuals: Copyrighting for Planned Obsolescence" (<https://www.wired.com/opinion/2012/11/cease-and-desist-manuals-planned-obsolescence/>). Archived (<https://web.archive.org/web/20140327192009/http://www.wired.com/opinion/2012/11/cease-and-desist-manuals-planned-obsolescence/>) from the original on March 27, 2014.
15. End of the line for stuff that's built to die? (<https://www.theguardian.com/technology/shortcuts/2015/mar/03/has-planned-obsolescence-had-its-day-design>) Archived (<https://web.archive.org/web/20161023171156/https://www.theguardian.com/technology/shortcuts/2015/mar/03/has-planned-obsolescence-had-its-day-design>) October 23, 2016, at the Wayback Machine.. The Guardian. March 2015
16. RTBF documentary "L'obsolescence programmée" by Xavier Vanbuggenhout
17. "HP Inkjet Printer Settlement" (<https://www.hpinkjetprintersettlement.com>).
18. "Archived copy" (<http://www.instructables.com/id/Samsung-CLP-365-Laser-Printer-DIY-Imaging-Drum-Uni>). Archived (<https://web.archive.org/web/20161013080601/http://www.instructables.com/id/Samsung-CLP-365-Laser-Printer-DIY-Imaging-Drum-Uni/>) from the original on October 13, 2016. Retrieved 2016-10-12.
19. Guiltinan, Joseph Guiltinan (2009). "Creative Destruction and Destructive Creations: Environmental Ethics and Planned Obsolescence". *Journal of Business Ethics*. **89**.
20. Drew Prindle. New French law tells consumers how long new appliances will last (<http://www.digitaltrends.com/home/france-planned-obsolescence-law/>) Archived (<https://web.archive.org/web/20160201102006/http://www.digitaltrends.com/home/france-planned-obsolescence-law/>) February 1, 2016, at the Wayback Machine.. Digitaltrends. March 3, 2015
21. "Planned obsolescence" (<http://www.economist.com/node/13354332>). The Economists. Archived (<https://web.archive.org/web/20131207162419/http://www.economist.com/node/13354332>) from the original on December 7, 2013. Retrieved 8 February 2014.
22. Park, M. (2010). "Defying Obsolescence." In Cooper T (ed) Longer Lasting Products: Alternatives to the Throwaway Society. Gower, Farnham, UK."
23. Tell tech companies to make products that don't cost the Earth (<https://www.greenpeace.org/international/act/rethink-it/>)
24. "Idea: Planned obsolescence" (<http://www.economist.com/node/13354332>). The Economist. March 25, 2009. Archived (<https://web.archive.org/web/20110515215713/http://www.economist.com/node/13354332>) from the original on May 15, 2011. Retrieved May 29, 2011.
25. Cassia, Fernando (March 28, 2007). "Open Source, the only weapon against 'planned obsolescence'" (<http://www.theinquirer.net/inquirer/news/1001739/open-source-weapon-planned-obsolescence>). The Inquirer. Archived (<https://web.archive.org/web/20120420223957/http://www.theinquirer.net/inquirer/news/1001739/open-source-weapon-planned-obsolescence>) from the original on April 20, 2012. Retrieved August 2, 2012.
26. Russell Jacoby, *Social Amnesia* (1975), p. xvii.
27. *ibid.*, p. 186.
28. European Economic and Social Committee. retrieved June 7, 2016 from "Archived copy" (<http://www.eesc.europa.eu/?i=portal.en.the-committee>). Archived (<https://web.archive.org/web/20160620235955/http://www.eesc.europa.eu/?i=portal.en.the-committee>) from the original on June 20, 2016. Retrieved 2016-06-07.

29. The EESC calls for a total ban on planned obsolescence. (2013, October 17). Retrieved June 7, 2016, from "Archived copy" (<http://www.eesc.europa.eu/?i=portal.en.press-releases.29603>). Archived (<https://web.archive.org/web/20160630041831/http://www.eesc.europa.eu/?i=portal.en.press-releases.29603>) from the original on June 30, 2016. Retrieved 2016-06-07.
30. New attitudes towards consumption: Best practices in the domain of built-in obsolescence and collaborative consumption. (2014, June 25). Retrieved June 7, 2016, from "Archived copy" (<http://www.eesc.europa.eu/?i=portal.en.events-and-activities-built-in-obsolence>). Archived (<https://web.archive.org/web/20160624112858/http://www.eesc.europa.eu/?i=portal.en.events-and-activities-built-in-obsolence>) from the original on June 24, 2016. Retrieved 2016-06-07.
31. Consultative Commission on Industrial Change - Presentation. (no date). Retrieved June 7, 2016, from "Archived copy" (<http://www.eesc.europa.eu/?i=portal.en.ccmi>). Archived (<https://web.archive.org/web/20160621032029/http://www.eesc.europa.eu/?i=portal.en.ccmi>) from the original on June 21, 2016. Retrieved 2016-06-07.
32. Lavadoras con muerte anunciada. (2014, November 2). Retrieved May 19, 2015, from "Archived copy" (http://economia.elpais.com/economia/2014/10/31/actualidad/1414761553_335774.html). Archived (https://web.archive.org/web/20150525103723/http://economia.elpais.com/economia/2014/10/31/actualidad/1414761553_335774.html) from the original on May 25, 2015. Retrieved 2015-05-25.

Further reading

- Bernard London: *Ending the depression through planned obsolescence* (1932)
-

Retrieved from "https://en.wikipedia.org/w/index.php?title=Planned_obsolescence&oldid=827894648"

This page was last edited on 27 February 2018, at 10:40.

Text is available under the Creative Commons Attribution-ShareAlike License; additional terms may apply. By using this site, you agree to the [Terms of Use](#) and [Privacy Policy](#). Wikipedia® is a registered trademark of the [Wikimedia Foundation, Inc.](#), a non-profit organization.