

Planned obsolescence

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Planned obsolescence or built-in

obsolescence^[1] is the process of a product becoming obsolete and/or non-functional after a certain period or amount of use in a way that is planned or designed by the manufacturer.^[1]

Planned obsolescence has potential benefits for a producer because the product fails and the consumer is under pressure to purchase again, whether from the same manufacturer (a replacement part or a newer model), or from a competitor which might also rely on planned obsolescence.^[1] The

purpose of planned obsolescence is to hide the real cost per use from the consumer, and charge a higher price than they would otherwise be willing to pay (or would be unwilling to spend all at once).

For an industry, planned obsolescence stimulates demand by encouraging purchasers to buy again sooner if they still want a functioning product. Built-in obsolescence is in many different products, from vehicles to light bulbs, from buildings to proprietary software. There is, however, 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.

Planned obsolescence was first developed in the 1920s and 1930s when mass production had opened every minute aspect of the production process to exacting analysis.

Estimates of planned obsolescence can influence a company's decisions about

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product engineering. Therefore the company can use the least expensive components that satisfy product lifetime projections. Such decisions are part of a broader discipline known as value engineering.

The use of planned obsolescence is not always easy to pinpoint, and it is complicated by related problems, such as competing technologies or creeping featurism which expands functionality in newer product versions.

Origins of the term

Origins of *planned obsolescence* go back at least as far as 1932 with Bernard London's pamphlet *Ending the Depression Through Planned Obsolescence*.^[2] 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.^[3]

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."^[3]

Stevens' term was taken up by others, and his own 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 a now-legendary 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."^[4]

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."^[5]

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 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!'"^[5]

Rationale behind the strategy

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). Firms that pursue this strategy believe that the additional sales revenue it creates more than offsets the additional costs of research and development and opportunity costs of existing product line cannibalization. However, the rewards are by no means certain: In a competitive industry, this can be a risky strategy because consumers may decide to buy from competitors. Because of this, gaining by this strategy requires fooling the consumers on the actual cost per use of the item in comparison to the competition.

Shortening the replacement cycle has many critics as well as supporters. Critics such as Vance Packard claim the process wastes resources and exploits customers.^[5] Resources are used up making changes, often cosmetic changes, that are not of great value to the customer. Supporters claim it drives technological advances and contributes to material well-being. They claim that a market structure of planned obsolescence and rapid innovation may be preferred to long-lasting products and slow innovation. In a fast paced competitive industry market success requires that products are made obsolete by actively developing replacements. Waiting for a competitor to make products obsolete is a sure guarantee of future demise.

The main concern of the opponents of planned obsolescence is not the existence of the process, but its possible postponement. They are concerned that technological improvements are not introduced even though they could be. They are worried that marketers will refrain from developing new products, or postpone their introduction because of product cannibalization issues. For example, if the payback period for a product is five years, a firm might refrain from introducing a new product for at least five years even though it may be possible for them to launch in three years. This postponement is only feasible in monopolistic or oligopolistic markets. In more competitive markets rival firms will take advantage of the postponement and launch their own products.

Types of obsolescence

Technical or functional obsolescence

The design of most consumer products includes an expected average lifetime permeating all stages of development. For instance, no auto-parts maker would run the extra cost of ensuring a part lasts for forty years if few cars spend more than five years on the road. 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.

Planned obsolescence is made more likely by making the cost of repairs comparable to the replacement cost, or by refusing to provide service or parts

any longer. A product might even never have been serviceable. Creating new lines of products that do not interoperate with older products can also make an older model quickly obsolete, forcing replacement.

Planned functional obsolescence is a type of technical obsolescence in which companies introduce new technology which replaces the old. The old products do not have the same capabilities or functionality as the new ones. For example a company that sold video tape decks while they were developing DVDs was engaging in planned obsolescence. That is, they were actively planning to make their existing product (video tape) obsolete by developing a substitute product (DVDs) with greater functionality (better quality). Associated products that are complements to the old products will also become obsolete with the introduction of new products. For example video tape holders saw the same fate as video tapes and video tape decks. Likewise, buggy whips became obsolete when people started traveling in cars instead of buggies.

Proprietary batteries

Many portable consumer electronics contain proprietary, often lithium-based batteries. These batteries last only about 500 cycles before losing large amounts of their capacity. Rechargeable lithium batteries always contain ICs, they are required because of the above average risk of fire or explosion the batteries have when improperly charged. The IC keeps track of statistics of the battery to determine the current full charge point for the battery. A manufacturer can set the algorithms of the IC to be ultra conservative and/or time/cycle based, rather than based around the physical properties of the battery cells, and this artificially limits the life of the battery. The IC will not permit the device to charge the battery any more than the IC dictates. Production of these batteries is usually stopped at around the same time the product is discontinued, therefore rendering the product worthless once the batteries start to wear out. Some people will reset the ICs in the battery pack, and obtain almost their original runtime on the battery (minus the natural decay the battery cells), only to have to do it again in the future because the IC ran down the limit. While battery packs can be rebuilt and fitted with new cells,^[6] this is either too costly or too time consuming for most consumers.

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. For example, new software is frequently introduced that is not compatible with older software. This makes the older software largely obsolete. For example, even though an older version of a word processing program is operating correctly, it might not be able to read data saved by newer versions. The lack of interoperability forces many users to purchase new

programs prematurely. The greater the network externalities in the market, the more effective this strategy is. Often times, developers of hardware will try to prevent a product from being backwards compatible with older interchangeable cartridges and proprietary connector plugs.

Another way of introducing systemic obsolescence is to eliminate service and maintenance for a product. If a product fails, the user is forced to purchase a new one. This strategy seldom works because there are typically third parties that are prepared to perform the service if parts are still available. One place it does work is in proprietary software, where copyright forbids third parties from performing some kinds of service. One example of this type of obsolescence is Microsoft's termination of support for Windows 98 and earlier versions of Windows. Similarly, Apple Inc.'s introduction of Mac OS X (post-purchase of NeXT in 1997), which is Unix-based and incompatible with previous versions of the company's operating systems (although a compatibility layer was provided for several years). This strategy can have an unintended consequence; if a customer is not dependent on the specific proprietary system they may switch to a different system in hopes of longer support.

Style obsolescence

Marketing may be driven primarily by aesthetic design. Product categories in which this is the case display a fashion cycle. By continually introducing new designs and retargeting or discontinuing others, a manufacturer can "ride the fashion cycle". Examples of such product categories include automobiles (style obsolescence), with a strict yearly schedule of new models, and the almost entirely style-driven clothing industry (riding the fashion cycle) and the mobile phone industries with constant minor feature 'enhancements' and restyling.

Planned style obsolescence occurs when marketers change the styling of products so customers will purchase products more frequently. The style changes are designed to make owners of the old model feel "out of date". It is also designed to differentiate the product from the competition, thereby reducing price competition. One example of style obsolescence is the automobile industry, in which manufacturers typically make style changes every year or two. As the former CEO of General Motors, Alfred P. Sloan stated in 1941, "Today the appearance of a motorcar is a most important factor in the selling end of the business—perhaps the most important factor— because everyone knows the car will run."^[7]

Some marketers go one step further: they attempt to initiate fashions or fads. Examples of successfully created fashions or fads include Beanie Babies, Ninja Turtles, Cabbage Patch Kids, pet rocks, acid wash jeans, and tank tops. Obsolescence is built into these products in the sense that marketers are aware of the shortness of their product life cycles so they work within that constraint. For example, when Beanie Babies sales revenue started to decline, company

president Ty Warner decided to go for one last Christmas marketing push and then drop the product.

Another strategy is to take advantage of fashion changes, often called the fashion cycle. The fashion cycle is the repeated introduction, rise, popular culmination, and decline of a style as it progresses through various social strata. Marketers can "ride the fashion cycle" by changing the mix of products that they direct at various market segments. This is very common in the clothing industry. A certain style of dress, for example, will initially be aimed at a very high income segment, then gradually be re-targeted to lower income segments. The fashion cycle can repeat itself, in which case a stylistically obsolete product may regain popularity and cease to be obsolete.

Notification obsolescence

Some companies have developed a version of obsolescence in which the product informs the user when it is time to buy a replacement. Examples of this include water filters that display a replacement notice after a predefined time and disposable razors that have a strip that changes color. Whether the user is notified before the product has actually deteriorated or the product simply deteriorates more quickly than is necessary, planned obsolescence is the result. In this way planned obsolescence may be introduced without the company going to the expense of developing a "more up to date" replacement model.

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. An example of this would be inkjet printer manufacturers who employ proprietary 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. Some medical equipment also exploits this technique to ensure a steady stream of revenue from sales of replacement consumables.

Economics of planned obsolescence

Planned obsolescence tends to work best when a producer has at least an oligopoly.^[8] 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. When Japanese vehicles with longer lifespans entered the American market in the 1960s and 1970s, the American carmakers were forced to respond by building more durable products.^[9]

However, there are some industries where there is significant competition and consumers have chosen to go for products that will fail more quickly anyway.

Even in a situation where planned obsolescence is appealing to both producer and consumer there can also be significant harm to society in the form of negative externalities. Continuously replacing, rather than repairing, products creates more waste, pollution, uses more natural resources, and more consumer spending. However one workaround for these setbacks can involve a consumer getting more tech-savvy about them so they can jury-rig them to work with newer equipment similar to a MacGyverism; and upcycling the resources can offset the budget for home projects, whereas downcycling allows for more generalized purposes to live on. And those consumer strategies can counter the setbacks.

Others have defended planned obsolescence as a necessary driving force behind innovation and economic growth. Many products, such as DVDs, become both cheaper and more useful the more people have them. Planned obsolescence will also tend to benefit those companies with the most modern and up-to-date products, thus encouraging extra investment in research and development that often has large positive externalities.

Obsolescence and durability

If marketers expect a product to become obsolete they can design it to last for a specific lifetime. For example, if a product will be technically or stylistically obsolete in five years, many marketers will design the product so it will only last for that time. This is done through a technical process called value engineering. An example is home entertainment electronics which tend to be designed and built with moving components like motors and gears that last until technical or stylistic innovations make them obsolete.

These products could be built with higher-grade components, but they are not because it is felt that this imposes an unnecessary cost on the purchaser. Value engineering will reduce the cost of making the product and lower the price to consumers. A company will typically use the least expensive components that satisfy product's lifetime projections.

The use of value engineering techniques have led to planned obsolescence being associated with product deterioration and inferior quality. Vance Packard claimed that this could give engineering a bad name, because it directed creative engineering energies toward short-term market ends rather than more lofty and ambitious engineering goals.

Planned obsolescence in software

Software companies are sometimes thought to deliberately drop support for older

technologies as a calculated attempt to force users to purchase new products to replace those made obsolete. Most proprietary software will ultimately reach an end of life point, at which the manufacturer will cease updates and support.

Fair trade

In the United Kingdom, planned obsolescence engineered into products is considered a breach of customer rights. The Office of Fair Trading and Trading Standards Institute investigate claims of products constantly failing just outside the warranty period. A famous case of this was the 'Click Wheel' Apple iPod, which many consumers found to fail within 18 months of purchase.^[10]

See also

- Ethical consumerism
- Functional obsolescence
- Sustainability
- General Motors#History in the United States
- Scrooge
- Backwards compatibility

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- [^] Adbusters has published the text of London's essay as part of an article on obsolescence: "How Consumer Society is Made to Break (<http://www.adbusters.org/category/tags/obsolescence>) ". adbusters.org. 2008-10-20. <http://www.adbusters.org/category/tags/obsolescence>. Retrieved 2009-06-21. *or see Files below for pdf version* It is interesting to note further that the essence of London's plan would have the government impose a legal obsolescence on consumer articles in order to stimulate and perpetuate consumption and bears in its essentials a striking resemblance to the "Cash for Clunkers" programs developed by the German and American governments in 2008 and 2009 to stimulate their respective economies.
- [^] ^{**a**} ^{**b**} "Industrial Strength Design: How Brooks Stevens Shaped Your World (<http://www.mam.org/collection/archives/brooks/index.asp>) ", *Milwaukee Art Museum Biography*, <http://www.mam.org/collection/archives/brooks/index.asp>, retrieved 2008-03-08
- [^] See [Thomas Frank], *The Conquest of Cool: Business Culture, Counterculture, and the Rise of Hip Consumerism*

- (<http://www.press.uchicago.edu/Misc/Chicago/259919.html>) , (University of Chicago Press, 1997); Randall Rothenberg, *Where the Suckers Moon: The Life and Death of an Advertising Campaign*, Vintage, 1994; and Lawrence Dobrow, *When Advertising Tried Harder: The Sixties: The Golden Age of American Advertising* (WH Smith Pub, 1984).
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Files

- London, B. (1932) Ending the depression through planned obsolescence (*Full Text PDF*)

External links

- "Companies Slash Warranties, Rendering Gadgets Disposable" (<http://www.stayfreemagazine.org/public/wsj-planned-obsolescence.html>) Wall Street Journal, July 16, 2002.
- The story of stuff - 20 min Video to reflect the wasteful way of life (<http://www.storyofstuff.com>)
- "Ending the Depression Through Planned Obsolescence" (full text) (http://www.adbusters.org/blogs/blackspot_blog/consumer_society_made_break.html)
- "The man who said no to Wal Mart," (http://www.fastcompany.com/magazine/102/open_snapper.html) Case Study, Dec 19, 2007

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Categories: Ethically disputed business practices | Product development | Waste

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