

PLANNED OBSOLESCENCE: GAIN OR LOSS TO THE CONSUMER?

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Abstract: Planned obsolescence is one of a company's strategies in relation to its product. It happens in three ways: (1) the company shortens the life span of the product; (2) the repair of the product is made too expensive, and therefore the consumer decides to buy a new one; and (3) the company introduces better models. Planned obsolescence is often assessed as unethical behavior, contrary to the idea of sustainable development. In this article, I present the problem of planned obsolescence and then explain that this phenomenon brings not only losses to the consumer, but also benefits.

Keywords: planned obsolescence, consumer market, technological advances.

JEL classification indices: L10, L11, L23.

1. Introduction

In the classic marketing concept, a product is one of the crucial sales instruments¹ and is usually defined very broadly to include everything that can be offered to buyers for consumption or use (Mruk, Pilarczyk, and Szulce, 2005, p. 104). Its management consists in determining not only the product's packaging as well as physical and nonphysical characteristics, but also its life cycle.

The life cycle of every product, just like the human life cycle, consists of different phases among which stand out its introduction to the market, sales growth, market maturity, and decline. Efficient management of product development during these stages is aimed at better fulfilling the needs of buyers and facilitating competition with other companies' products while generating profit. However, it should be remembered that the product's life cycle and its

¹ In the traditional "marketing mix" (4P) approach, besides product, there are also price, distribution (place), and promotion. This approach, changing the earlier perspective of Borden, was created in 1964 by McCarthy. From that time it has undergone numerous modifications and extensions with further instruments, up to for example 5P, 7P, or even 15P. For more on this topic, see Goi, 2009, p. 2.

phases vary for all goods. The product's life cycle can last from, say, three months (e.g., the Rubik's cube) to over a hundred years (e.g., a petrol-fueled car) (Michalski, 2004, p. 203). Estimating the length of a product's life cycle is not easy, as it depends on many factors, such as design, technological changes, repair costs, availability of spare parts, and social pressure (Granberg, 1997; Cooper, 2004). Regardless, many believe that to maximize profit, companies shorten the life cycle of their own products – that is, they intentionally lower the quality of the goods to age them and force consumers to buy more frequently, which causes behavior contrary to sustainable development and limitation of pollution (Sakiewicz, Nowosielski, Pilarczyk, and Emperor, 2012, p. 185).

The purpose of this article is to present the problem of purposeful aging of products and answer the research question – Can this phenomenon be beneficial to the consumer? First, I present the history of planned obsolescence, and then I consider various types of planned obsolescence.

2. Planned obsolescence: a description

Planned obsolescence is a producer's strategy aimed at designing and producing goods in such a way so that they have a limited lifetime (Packard, 1960, p. 53; Aldeojebi, 2013), after which they become unserviceable or unprofitable to repair. The phenomenon first took place on a large scale in the 1920s, in the context of industrialization and mass production. Before that, high production costs resulted in the production of goods at a small scale to serve the next generations. Along with new technological discoveries, mass production and consumption developed. Manufacturers began to produce their goods at a large scale with greater ease, but people were not interested in buying them. There was therefore an overproduction of goods in relation to the reported demand (London, 1932, p. 3; Ryś, 2015, p. 143).

Bernard London, considered the father of research on planned obsolescence, thought the overproduction led to the Great Depression. According to him, shortening products' life cycles should be a good remedy for depression. He suggested that the government should control the production of goods so that they would have a certain (shorter) expiration date, known to all consumers, after which date they have to be disposed of. Such a situation should fuel the economy by offering people new jobs and causing the development of companies (London, 1932).

The vision of controlled shortening of products' life cycles was too radical, and, therefore, it was not initially accepted. But the idea returned in the 1950s in a revised form (Ryś, 2015, p. 144). From that time until today, without any interference or orders, the producers decide on aging their goods. This phenomenon is often negatively evaluated. It is emphasized, above all, that it is unethical to design products that wear out prematurely (i.e., before buyers expect them

to), especially if their replacements are costly (Guiltinan, 2008). In addition, it was noted that deliberate aging of products increases environmental pollution, which in turn results in the deterioration of the health of societies around the world (Calcott, and Walls, 2005).

3. Forms of planned obsolescence

Planned obsolescence can take various forms because of the different methods used to shorten the life of a particular good (Ryś, 2015, p. 145-146). Among them, the most frequently mentioned are limited functional-life design, design for limited repair, and product aging based on the creation of human needs (Aladeojebi, 2013)². See Figure 1.

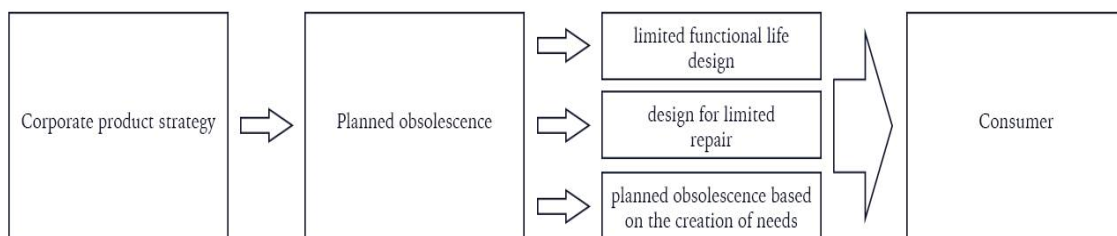


Figure 1. Kinds of planned obsolescence.

Limited functional-life design is about designing a product with a specific lifetime. A classic example of such action is a light bulb. After Thomas Edison invented the bulb, at the beginning of the twentieth century, companies in the energy sector competed with each other to offer a product of the best quality, assigning priority to its durability. But the sale of incandescent bulbs lasting many hours did not generate as much profit as could be gained with a shorter-lasting product (Hamrol, and Best, 2013, p. 122). Therefore, in 1924, the largest companies in the industry, such as Philips, General Electric, and Osram, decided to establish a cartel named Phoebus in Geneva (Bright, 1949, p. 306-7). In addition to joint activities regulating the prices of their products in an imperfectly competitive market, these companies decided to reduce the lifespan of light bulbs from 2,500 hours in 1924 to 1,000 in 1940 (Wong, 2012). As a result of increased competition and disruptions in trade due to World War II, the cartel collapsed, but its actions initiated the process of reducing the lifespan of incandescent bulbs, which continues today.

Additionally, producers sometimes deliberately build mechanisms that end the life of a particular good (e.g., the Epson printer, which is prevented from further functioning after printing a fixed number of copies (Ryś, 2015a, p. 145) or create disposable products

² In his article, Cooper classifies the types of deliberate aging of the product as technological, economic, and psychological (Cooper, 2004, p. 426).

(e.g., a disposable camera), which should also be included in the category of limited functional-life design.

Next, in contrast to purposeful product aging, the design for limited repair aims to produce a good, the cost of repair of which will be so high that the consumer decides to buy a new one, or to produce goods with no spare parts available. Among other companies, Apple, a company considered one of the strongest and most recognized contemporary brands in the consumer market, has used such a product strategy. Before the production of the first iPhone in 2007, mobile phones sold by competing companies had batteries that were easy to replace. Consumers could do it at any time, e.g. when accessing the SIM card placed under the battery. Apple, however, decided to break with the lasting tradition, and the iPhone had a battery built-in in such a way that the user could not pull it out. This meant that after a battery, which had a lifetime of 300 to 400 recharges (Word 2007), ran out, the consumer had to buy a new phone, thereby increasing the company's sales. Apple, however, understood that some of their customers are strongly attached to their phones, which is why it offered battery replacement for about \$90. In addition to the monetary cost, users had to leave their phones at the store for at least a week and clear all data from it. Of course, other companies offered a similar battery-replacement service using a non-original replacement, but people who took up the offer lost the warranty. Therefore, there was no good alternative to Apple's proposal, and all the costs were so high that instead of repairing the iPhone, it was more profitable to purchase new equipment (Keeble, 2013), which makes the iPhone an example of design for limited repair.

The last form discussed in this paper is product aging consisting in the creation of needs – that is, cases³ where the entrepreneur introduces newer (more functional and aesthetically pleasing) models, thus encouraging customers to buy the newer models and abandon the old ones, despite the fact that the older ones are still working and are suitable for use. An example of this is the transition from dot-matrix printers to inkjet printers and then laser printers, which are faster and cheaper and print in better quality (Ryś, 2015b, p. 125). Replacing a car, a phone, any type of home equipment, or even a garment in response to such factors as changing trends indicates the product is aging not because it is being consumed (as in the two examples above), but because of the creation of needs. The public acquires products that have been improved technologically, that are better designed, or that fit the current trend (the so-called sheep-dog phenomenon).

³ The literature on the subject also makes another distinction of forms of deliberate aging of a product: technological and psychological obsolescence. (In order to explain this difference, it is good to use the example of the car industry, which, in terms of basic concepts, such as the internal combustion engine, has not changed much during the last century. But since the 1950s, new generations of individual car models – enriched with amenities such as airbags, ABS, and hybrid drive – have been introduced every two to four years. Read more on this topic in Berger, 2001.) Alternatively, consider human obsolescence, where people are replaced at work by more machines (see Slade, 2006).

Each of the above types of deliberate aging of a product harms consumers by generating additional costs associated with the purchase of a new product. Producing more and more goods also contributes to pollution. But can the same activities have benefits as well?

4. Planned obsolescence and consumer benefit

Ludwig von Mises, one of the most eminent representatives of the Austrian school of economics, believed that individuals prefer to acquire goods sooner than later because current satisfaction is more desirable than future satisfaction⁴. He explained that if people did not prefer present consumption, they would not act (Mises, 2007, p. 420). Therefore, the later they consume certain goods, the less they prefer them, which also explains the general desire to buy them. On the other hand, we also know that after purchasing certain goods, societies decide to replace them more quickly than they need to – that is, they acquire new goods, but not because the old ones have worn out. For example, according to research conducted by Cooper on 802 households from Great Britain, over the course of five years, fully one third of respondents decided to replace still-functioning devices such as computers, telephones, cookers, or hi-fi systems. And although 50 percent of the respondents said they would like the devices to function longer, they associated a long-lasting product with it becoming out of date after several years and with an increase in the cost of acquisition, repair, and maintenance (Cooper, 2004). On the other hand, in 2013, Echegaray asked 806 adult Brazilians (aged eighteen to sixty-nine) for their opinion on deliberate aging of products. Fully 47 percent of respondents replaced still-functioning goods with new ones, especially digital and audio-video products (Echegaray, 2015). The differences between these two tests are shown in Table 1.

Table 1.
Percentage of people who decide to exchange their goods

	UK	Brazil	Digitals	Audio-Video devices	Mobiles	Household appliances
Beyond repair	46	30	25	33	33	28
In need of repair	21	23	22	15	21	30
Still functioning	33	47	53	52	46	42

Source: Echegaray, 2015. Consumer's reactions to products obsolescence in emerging markets: the case of Brazil. *Journal of Cleaned Production*, 7.

⁴ Mises referred to this phenomenon as time preference: the ratio of current satisfaction to satisfaction achieved in the future.

In addition, it was pointed out that the functionality of the product is more important to consumers than its durability. Durability alone has a marginal influence on consumers' choices (Cooper, 2004; Cox, et al. 2013; Echegaray, 2014), which in itself refutes the argument that deliberate aging harms the consumer. Thus, the above-mentioned argument can show that strategies to shorten the life of goods are in accordance with consumer preferences (Varey, 2014, p. 72).

Looking at different types of intentional product aging, we can see significant benefits for the consumer (see Figure 2).

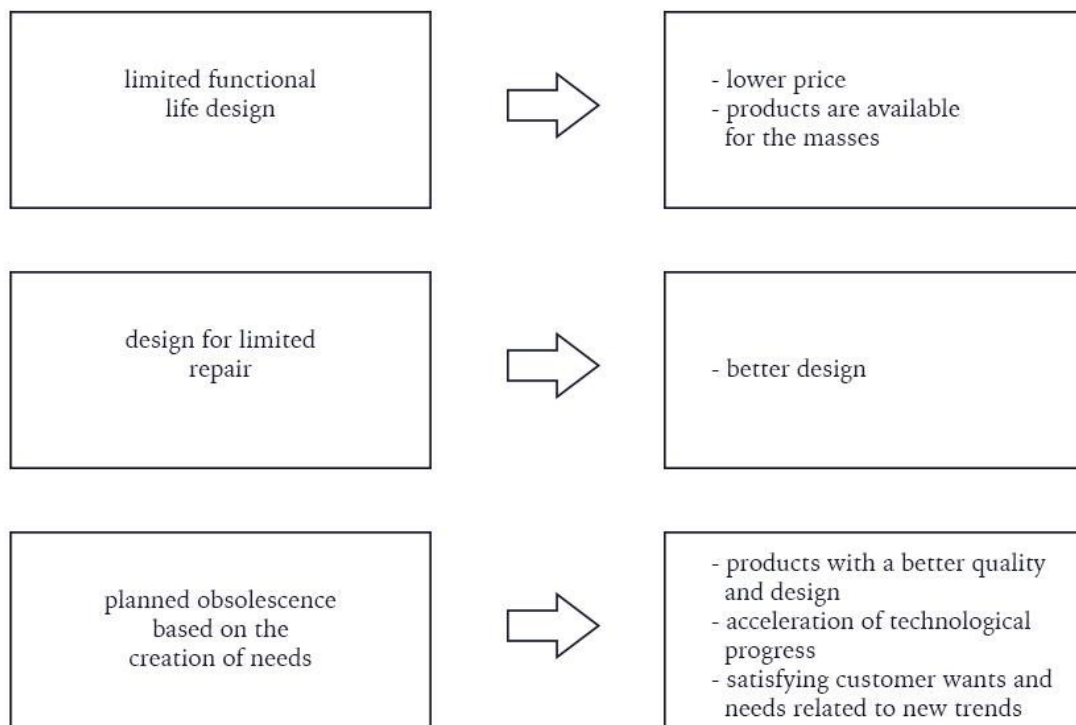


Figure 2. Consumer benefits due to the different kinds of planned obsolescence.

For example, limited functional-life design is often associated with the modernization of the method of producing a particular good. Because of the new method, the product takes a different form, usually far from the previous one. In addition, its price is reduced, which ultimately enables mass production. In the case of the light bulb, reducing the number of hours it can be used resulted in better performance – specifically, a brighter ray of light. In addition, the change in the production process contributed to energy savings and lower electricity bills. For example, the industry transitioned from traditional incandescent lamps, which had a thin rod made of tungsten, to new forms such as a LED bulb (Brown, 2013; EPA's Energy Star, 2017)⁵. The case is similar to nylon stockings, which, unlike their predecessors from the 1930s,

⁵ It should also be noted that currently some LED bulbs can shine up to 50,000 hours and use only 20 percent of the power for equivalent light output. For more on this topic, see Brown, 2013.

are thinner and more attractive but tear faster⁶. More generally, thanks to limited functional-life design, consumers can buy products that are less durable but cheaper and more functional.

Furthermore, design for limited repair offers consumers a better design. In the case of the iPhone, a non-replaceable battery⁷ enabled Apple to offer lighter, thinner products, such as the MacBook which is cut by a large number of connections among the various parts, which also improves its appearance (Eaton, 2009). Finally, consumers themselves are responsible for product aging based on the creation of needs. They widen the range of their preferences and, thus, exert pressure on producers in relation to offering more innovative solutions⁸. After the products' introduction, not only do the entrepreneurs themselves benefit, but, above all, so do the consumers. For example, cars equipped with ABS, ESP, ASR, BAS, and airbags enable a radical increase in safety. Refrigerators, washing machines, and other household appliances are more efficient (they consume less electricity and water) and offer consumers financial savings. Also, airplanes and cars not only use less fuel, but also produce less noise and emit less pollution (Hamrol, and Best, 2013, p. 125).

5. Summary

Intentional aging of products was introduced in the 1920s. Among its many varieties, the most often mentioned are limited functional-life design, design for limited repair and aging based on the creation of needs. Each of these can bring tangible benefits to the consumer. Among them are lower prices, mass production, and more functional products. Of course, it is worth remembering that in the past some goods were of better quality, such as women's stockings that did not tear. However, thanks to the intentional aging strategies, these goods nowadays are produced using other methods that allow consumers to buy cheaper goods, which makes them available to a larger number of interested persons. From this point of view, the lower quality of goods allows them to be purchased by a larger number of consumers. At the same time, high-quality goods are offered to more demanding and richer people (Sieroń, 2017, p. 156-57). The durability of a good itself is not the same as its usefulness. For example, customers buying goods of inferior quality achieve greater satisfaction than if the same goods were of better quality because of their desire to consume available goods as fast as possible, as Ludwig von Mises (2007) mentioned.

⁶ For more on the history of nylon stockings and changes in the production process, see Handley, 2000.

⁷ More than a year ago, a scandal erupted regarding uncharged batteries in iPhones. The introduction of new system updates slowed the operation of the phones. Because of strong consumer opposition, Apple has officially issued a statement in which it apologized to all users, promising to replace the batteries cheaper than before (for Apple's statement, see <https://www.apple.com/iphone-battery-and-performance>).

⁸ In addition, it should be remembered that the design of new generations of products has the effect of sucking the technology. For more on this subject, see Byggeth, Broman, and Robert, 2007.

The argument presented in this paper sheds new light on the problem of planned obsolescence. This strategy is presented in the context of the benefits for the consumer, who initiates the introduced changes and values the utility of products more than their durability. Entrepreneurs, on the other hand, can generate profits only after satisfying the preferences demonstrated by consumers. If this were not the case, the producers would manufacture products for which there would be no demand, which would lead to their bankruptcy and exit from the market⁹.

Deliberate aging of products creates additional economic benefits, including stimulating economic growth in the industrial and trade sectors as well as combating unemployment, as London (1932) wrote. These strategies should also be seen as the methods companies use to fight competition. By offering better technological or aesthetic solutions, companies can compete for customers who have a choice among a wider range of products. This thesis is supported by Philip Kotler, a marketing guru who claims 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” (Hindle, 2008, p. 147). On the other hand, the instability of market advantage and the uncertainty of success force entrepreneurs to introduce changes of a strategic nature. One of them is creative destruction, a term introduced by Joseph Schumpeter (2009), according to which companies decide to use innovations to replace obsolete products with improved and more modern successors. These activities, in turn, affect the possibilities of economic development (McKnight, Vaaler, and Katz, 2001, p. 6), which shows purposeful aging in a positive light.

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⁹ In addition, entrepreneurs do not always generate as much profit as they want because of delays in customers' purchasing decisions, a case mentioned by Coase, then Bulow and others (Aldeojebi, 2013).

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