

# Sustainability of planned obsolescence and its impacts on the environment.

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## Introduction- What is 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. There are a few different types of planned obsolescence these include, the use of relatively unreliable parts in a product, so it mechanically fails within a relatively predictable period. This gets you to discard it and buy the same exact product again or a slightly newer version. Another includes the use of relatively unreliable parts in a product, so it mechanically fails within a relatively predictable period. This gets you to discard it and buy the same exact product again or a slightly newer version. And another form of planned obsolescence is using marketing and a basically useless or insignificant upgrade in a newer product to get you to discard the 'uncool' old one even if it functions perfectly, relying on the dedication of the customers to buy new products as soon as they are released. Examples of products that are subject to planned obsolescence include mobile phones, printers and ink cartridges, irreplaceable batteries in tech products, light bulbs, cars but cars apply to the type of planned obsolescence which involves minor or pointless upgrades to a new product released every year or so.

## Impacts of Planned obsolescence

Planned obsolescence impacts both the manufacturers and the end user.

Firstly, from the view of the manufacturing company the impacts in different ways. One of these impacts is that it allows companies to improve on the technologies and products they are supplying to the masses and sell new products. For example, a phone may be designed to last for 2-3 years, either the battery is designed to slowly decay, or updates are no longer applied to that phone. But in that 2-3 year gap a new, possibly better phone is being designed and made to replace

the older obsolete model. This gives the company money and gives the end user a new piece of technology, so from the company's point of view. This is also an example of market push and technology push. However, the constant development and production of new products every year or so, this can be quite costly.

From the point of view of the customer the impacts of planned obsolescence mainly revolve around money and having to change products frequently depending on what the product is. If it's a phone the user might need to swap it out depending on the contract they have with their provider, how long the phone is designed to last for, when the phone can no longer be updated, when the next better model is released, in addition to this modern phones such as iPhones and Android phones cannot be taken apart to be fixed or have components replaced therefore the lifespan is shortened because it can't be repaired and even if it could be repaired it would cost a lot of money if done directly through the original phone supplier. This may happen every few years, but for other products that have a longer life span they won't need to be replaced as often such as televisions, laptops, fridge-freezers they are designed to last longer and, in the case of a laptop or computer they can be repaired and modified if needed.

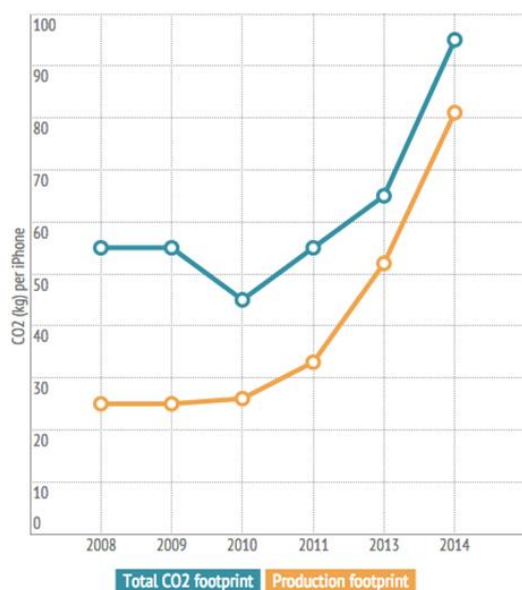
## Impacts on the environment

Planned obsolescence for products also has an impact on the environment due to the gathering of raw materials needed of each new make or model of the product being replaced, distribution such as air miles and shipping, waste and recycling. The gathering of raw materials can have a big impact on the environment for example the metal most commonly used as a component in modern mobile phones is aluminium, aluminium comes from bauxite which is its raw ore. The main sources of bauxite ore are in Australia, South America and Africa, but other countries including China, Jamaica, India and USA also have large amounts of the ore. Unfortunately, these areas are often forest, rainforest or areas of other importance to nature these then have to be destroyed and cleared to allow the bauxite to be dug up. Some mining companies do take measures to undo the damage they have done to the land once they have finished, by replacing the soil, planting trees and planting other plants that are natural to the area using seeds gathered from before the mining. However, in some cases this does not happen, and things can go wrong. In 2015 a bauxite mine in the Kuantan

District, Malaysia the bauxite mining was blamed for turning the waters and seas red near Kuantan as a result of this the mining of bauxite was banned until mid-2017 and a large amount of, money was investing in the cleaning up of the Kuantan harbour area.

Therefore, all this mining and subsequent refining for bauxite to make aluminium for each new generation of mobile phones. It will eventually get to the point where its not sustainable anymore and the planned obsolescence within these products would be a contributing factor. These elements behind planned obsolescence have an impact on the environment.

The new generation of products and replacement products must also travel all over the world, not only to be shipped to a branch of the company to be sold but also the many components that go into making a phone are made and distributed from all over the world. The further these parts and products have to travel, the larger the products carbon footprint will be thus creating more pollution which effects the planet and the environment. A negative impact. Using Apples iPhones again as an example the greenhouse gas emissions have an impact on the environment including land, ocean and temperature. Most of the pollutants come from the production, transport, use, and recycling of products. Planning for these products to be replaced after a year or so just isn't sustainable for the environment. But buying a new product when it comes out is done by the consumer at the end. So, the impact of planned obsolescence isn't just down to the company but also the end user. Everyone has their own part to play.



The graph above shows the amount of carbon dioxide in kilograms produced per iPhone during production and the iPhone overall. It shows an increase in CO2 produced in total and during production. More CO2 being produced means a greater negative impact on the environment. Greater carbon footprint per phone.

### Waste

Planned obsolescence generates a lot of waste so does manufacturing in general. New products are released all the time, a part of planned obsolescence which companies use plays upon the customer being so involved and committed to a line of products that would be willing to buy the latest version of a product at a moment's notice, to have the latest thing. But what happens to the last phone, fridge or television. And what impact does this have on the environment. Waste from electronic devices is considered e-waste or just electronic waste which is just a term used for unwanted, non-working or obsolete electronic products. A large amount of the electronics inside these products can be recycled, recycling circuit boards can be better than mining for ore. One tonne of circuit boards is estimated to contain 40 to 800 times more gold than one tonne of ore. There is 30 to 40 times more copper in a tonne of circuit boards that can be mined from one tonne of ore. Plastics from e-waste can be recycled to make items such as plastic furniture. Battery components can be reused in other batteries. Metals can be used in jewellery and automotive components.

In 2014, 41.8 million tonnes of e-waste were shipped to developing countries, creating huge waste dumping problems in those countries, but also fuels and other natural resources to transport waste to countries around the world where it would be left to rot. Guiyu in China was one such place in the late 2000s that has become a dumping ground for electronic waste generated by the USA. After the electronic waste is transported to China, the electronic components are dumped in the town where it litters the streets and poisons the residents and surrounding area. Workers in the area sort through the waste with their bare hands in factories to find parts that can be reused. The residents and land around these factories are exposed to toxins on a daily basis, soils in the area have been saturated with many different heavy metals and discarded electronics leach toxins into the groundwater making it undrinkable and poisoning even more of the environment. Some of the land in

Guiyu is still contaminated from the electronic waste processing and have not been cleaned up. Planned obsolescence is a contributing factor to waste products by both the manufacturing process and the end customer. It'll get to the point where its not sustainable to be throwing away products and we must try to recycle a larger percentage of obsolete products. Waste in any form has an impact on the environment, either positive impact like recycling and reusing or a negative impact such as landfill and pollutants.

### France vs Planned Obsolescence

In late 2017 Apple faced allegations from France involving the planned obsolescence within Apples iPhones. In France there is a law against intentionally shortening the lifespan of a product with the aim of making customers replace it. This makes planned obsolescence a crime. But in December 2017, Apple admitted that they were deliberately slowing down older iPhone models through software updates. Apple insisted however that this was because of the phones battery performance dying over time, stating that "Lithium-ion batteries become less capable of supplying peak current demands when in cold conditions, when they have a low battery charge or as they age over time, which can result in the device unexpectedly shutting down to protect its electronic components." Apple did admit to the slowing down of some older phones. At the time France was the third country to investigate Apple after the USA and Israel but France is the only country out of the three that sees planned obsolescence as a crime. In 2017 the penalties could have included up to 5% of annual turnover or even jail time.

A French legal organization, Halte à L'Obsolescence Programmée (HOP) also challenged companies who manufacture printers such as Brother, Canon, Epson and HP for deliberately shortening the lifespan of printers and printer ink cartridges.

This is an example of countries not agreeing with planned obsolescence, this could make it unsustainable for companies producing products which they might not be able to sell in certain countries. Producing products which cannot be sold, they'd be losing out on sales and capital.

### Conclusion

Planned obsolescence is real. It can and cannot be sustainable depending on where you are in the life of the product. As for the impacts it has on the environment, the impacts can be minimal if done responsibly such as recycling in ways that won't

pollute or harm the environment. But impacts can also large and devastating when waste is not disposed of properly like in the early 2000s in Guiyu, China, or when raw materials are obtained with no consideration for the future or the environment. Its up to us the users and the manufacturer, and what we do with the product from its creation to the end of its planned life that determines the impact the product will have on the environment.

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