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Planned Obsolescence and Sustainability

Academic Work

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Introduction

Life cycle is an issue that has received much attention in recent years due to its importance to sustainability. Manufacturers are more concerned about the environmental performance of their products due to the growth of the worldwide awareness of the environmental problems we face today (Tao et al., 2017).

Introduction

In order to increase sales, some industrial sectors promote modifications in their products, sometimes minimal, to differentiate the products produced in one year from those produced in another one.

Introduction

At the same time, these industries design, manufacture and sale their products so that they can become non-functional or obsolete in a short period of time, reducing the product life cycle, and so forcing consumers to buy new ones very frequently. This phenomenon is referred as “planned obsolescence” (Fishman et al., 1993)

Objective

The objective of this paper is to study the necessity of changing the paradigm of planned obsolescence to one of long-lasting products and present some suggestions on how to keep them updated under so many changes and innovation to which the products are subject in the present days.

Planned obsolescence

The term “planned obsolescence” was coined by Brook Stevens in 1954, in Minneapolis, USA, during a talk at a local advertising club with the concept of “instilling in the buyer the desire to own something a little newer, a little better, a little sooner than it is necessary” (Milwaukee Art Museum (MAM), 1999).

Planned obsolescence

The aim of planned obsolescence is to provoke buyers to replace their buying (Guiltinan, 2009). According to Guiltinan (2009), there are two main obsolescence mechanisms:

(a) Physical obsolescence and

(b) Technological obsolescence.

Planned obsolescence - Physical obsolescence

Limited functional life design ("death dating") or Contrived durability.

The product is designed to deteriorate quickly, so each component of a product is made to last a short period of time, such as 3 years. Examples: inferior materials in critical components, screws undersized that break down after a limited time, and others that compromise the use of a product (Giles, 2006; Orbach, 2004).

Planned obsolescence - Physical obsolescence

Broken plastic support of vanity mirror in the sun visor of Hyundai Tucson, budgeted at almost 2% of the total car sales price to be replaced.

Planned obsolescence - Physical obsolescence

Design for limited repair.

Critical components that are subject to breakage in service are made to be so expensive to replace that it is cheaper to buy a new product. For example screws head that require special tools only available in the factory technical assistance, such as the ones required to fix the iPhones (Foresman, 2011).

Planned obsolescence - Physical obsolescence

Design aesthetics that lead to reduced satisfaction.
Aesthetic characteristics that deteriorate over time, such as golden parts that oxidize with use.

Planned obsolescence - Technological obsolescence mechanism

Design for fashion or style obsolescence.

Fashion thinking is applied to products, so that consumers are induced to replace their buying for a new one that has some design change. Such as the automotive industry.

Planned obsolescence - Technological obsolescence mechanism

Design for functional enhancement through adding or upgrading product features.

New products are launched incorporating other functionalities or technological enhancement, such as cellular phones incorporating digital TV, GPS and other functionalities, or personal computer with more powerful processors, memory, etc., making it attractive to replace the old ones that did not have these new features.

Planned obsolescence - Technological obsolescence mechanism

Design for functional enhancement through adding or upgrading product features.

Methodology

Literature review

Database: Scopus

Search engine: “planned obsolescence” AND sustainability

Search field: Paper title, Abstract, Keywords

Period: 2007 to 2017

Document type: all

It resulted in 9 documents

Methodology

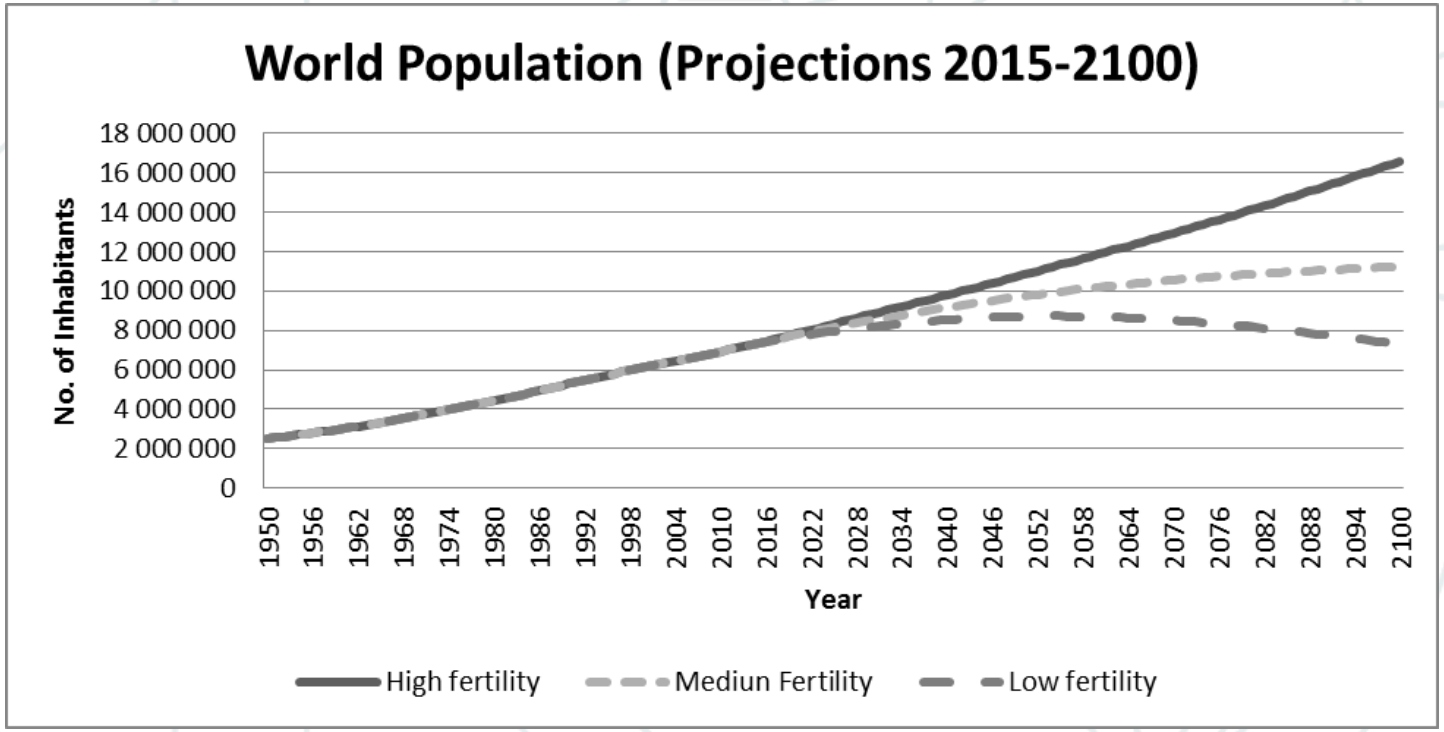
Quantity of documents found in Scopus database

Year	No. of Documents
2016	1
2015	1
2014	4
2013	0
2012	1
2011	1
2010	0
2009	0
2008	0
2007	1
Total	9

Discussion

In the 1950's when the concept of "planned obsolescence" was launched (MAM, 1999), the II World War (1935 – 1945) had finished five years before, economy was experiencing a virtuous growth cycle and the world population was about 2.5 billion inhabitants.

Discussion



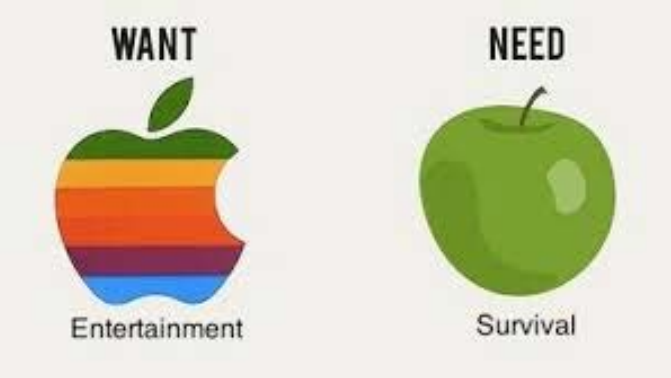
World Population (Source: Adapted from DESA, 2015)

Discussion

The population has grown faster than expected; in 2011 the world's population reached the mark of 7 billion and today it stands at more than 7.5 billion (UNFPA, 2017), or three times the world population in the 1950's.

Discussion

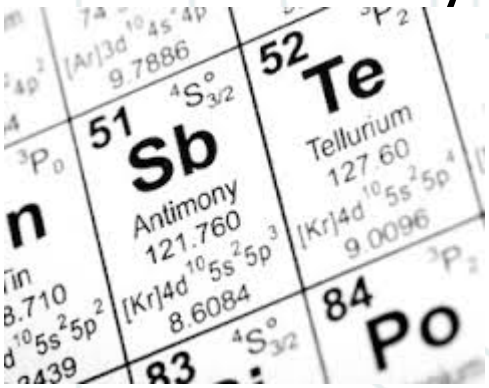
Fast obsolescence increases waste generated, pressuring public resources with the increase of garbage collection, costs with acquisition and maintenance of waste disposal areas, and increases demand for raw material.



Discussion

Another challenge is metal scarcity.

Antimony, which is used in the electronics industry to manufacture semiconductor accessories, should have extraction reduced in 96%, or antimony mineral reserves will be depleted before 2050-year.



Discussion

Copper extraction should be reduced in 63% to become sustainable, and **gold, molybdenum, boron, bismuth, zinc and rhenium** should also be given high priority to reduce their primary consumption on a world scale for the same reason.

Conclusion

Now, in the twenty-first century things have changed. Population has grown faster than expected, due to the modern medicine, the improvement of living standards and the reduction of war between nations, so today the world's population stands at more than 7.5 billion (UNFPA, 2017), or three time the world's population in the 1950's, when planned obsolescence paradigm was launched.

Conclusion

The industries will have to produce each time more to supply a population that is growing in a rate never seen before, and the natural resources required are becoming scarce. Scientists, engineers and designers have the challenge of delaying obsolescence, for example, creating open source software (Nyman et al., 2014), making technologies easier to fix / update, developing projects that make it simple to replace / update parts, rather than replacing the whole product (Lawlor, 2015).

Conclusion

Entrepreneurs, industry and academy must be made aware of the impact on sustainability of the short life cycle products. It is no more possible trying to live in the twenty-first century, based on paradigms created in the twentieth century, when the conditions of life on Earth were others and natural resources were abundant.

Thank you – Gracias – Grazie – 谢谢 - Obrigado

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