

Products for a future

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Abstract

The world is overfilled with products, and there is little doubt about the negative consequences this has for the environment. Most design approaches that attempt to solve the problem, focuses on reusable and environmentally friendly materials, rather than reducing the need and desire to keep consuming. This paper proposes that interaction design could be a direction to go, to limit the over consumption. The purpose of this paper however, is not to state how this should be done, but rather to start a discussion which could lead to further elaboration of the approach.

Keywords

- Interaction design
- Sustainability
- Impact of products

Introduction

We live in a materialistic world, where our culture is characterized by the need and expectation of buying whatever we want, whenever we want it. The industry earns more money by selling us products we quickly have to dispose and re-buy, rather than products we can have for many years. Therefore they keep on making products with a short life span. To further increase the demand, they make sure to come with improved models and spend fortunes on advertising to make us buy them. This trend encourages, and almost forces, the users to continue their consumption lifestyle.

There are several possible ways to find a solution to this problem, and it is possible one of them could be found within the scope of interaction design.

The situation today

According to John Thackara, “only one percent of material flows in the U.S. economy ends up in, and is still being used within, product six months after their sale. He also claims that “the amount of matter and energy wasted, or caused to be wasted, by the average North American consumer is roughly one million pounds a year”. [Both page 12, Thackara, 2006]. This situation is obviously crucial for the environment.

One way to measure the impact consumption has on the world, is by ‘Ecological footprints’. This is a method to estimate how much productive land, with world average

productivity, the consumption requires to provide resources and assimilate waste products. [Wackernagel] According to a research conducted by Mathis Wackernagel in 1997, the ecological footprint of average citizens of Toronto is 4.94 +/- 2.00 hectares [Wackernagel]. Thackara estimated that if everyone in the world lived as the average Canadian, we would need three Earths to provide all the material and energy essentials we currently use. [Thackara, 2006]

Fortunately, that is not the situation today, but the situation is developing in the wrong direction. WWF has estimated that between 1980 and 1998 the our ecological footprint increased from 1.00 to 1.20 times the Earth [WWF, 2002].

This trend leads to a rapidly increasing amount of disposed products we don’t really know how to get rid of. To give an example of the quantities, the UK produces more than 434 million tons of waste every year [Waste Online]. According to European Topic Centre on Waste, 67% of the municipal waste in EEA member countries ended landfill in 1995 [European Topic Centre on Waste, 2002]

Current approaches

One obvious and widespread way to solve this problem is to make sure that we can reuse or recycle the material from the disposed products. This approach is today often known as Eco-design and has a large number of methods to calculate and limit the environmental impact of the products one is designing, such as Life Cycle Analysis, Cradle to cradle, etc. This can lead to both reduced material usage and pollution from production and usage of the product. The methods often focus on recycling and reuse of the materials in the product.

These are both desirable and necessary developments within product design, but it is a question if it is sufficient by it self. It only reduces the consequences of the products, without reducing the amount of products being produced and disposed.

If the reuse and recycling of the materials were perfect, reduction of consumption would perhaps not be necessary either. But it has turned out to be difficult, for technological or economical reasons, to recycle the entire products. Often, one can recycle the main parts of the product, containing large elements of materials, but still disposing smaller parts, such as the electronics.

Unfortunately these parts often contain heavy metals or other dangerous substances that needs to be treated carefully after disposal.

One way to deal with this problem could be to limit the amount of products being disposed in the first place. There are numerous ways to achieve this, though many of which would be considered limiting peoples freedom, and thereby complicated to implement.

One example of this is a resent law in Norway, which states that every cell phone should have a guaranteed lifetime of at least five years. The industry is trying to get it changed. There are obviously positive intentions behind the law, and a clear response to the problem of bad quality and short lifespan cell phones we have today. But it will be interesting to see the consequences if, or when, the law comes into force.

Possible scenarios could be extremely expensive cell phones in Norway due to the guarantee program, probably leading to most Norwegian going abroad to buy cheaper phones, or the companies developing very basic, simple phones for the Norwegian market, probably leading to the same consequence as before. It is possible it actually is a necessary signal for the industry, leading to more durable cell phones on long term. But it is a question if it actually will reduce the mass consumption and give the consumers more durable cell phones. At least in the short term and as the only country doing it.

An alternative solution could be to make the consumers themselves want to limit the disposal or consumption. Numerous attempts have shown that this can be difficult to achieve through information campaigns. People often understand the problem and want to do something about it, but this tends to be insufficiently to make them change their behavior.

The proposal of this paper, is that we can achieve this by making the products in such a way that the user doesn't want to dispose it, and that perhaps the best approach to design these products is by interaction design.

Products for the future

The question arising is how products can be made in such a way, that the users not will dispose it. A simple answer could be to make products people will like and be satisfied with over time. This answer might be correct, but it only states how the users will experience the products. It does not say anything about the products themselves.

Donald Norman claims in 'The design of everyday things', that we are surrounded by products we do not like, because we do not understand how to use them [Norman, 1988]. Based on this, it would make sense to assume that we would like products we understand how to use.

Although I haven't found any research stating it directly, I would go even further and claim that the products ability to let us do what we want to do with it, is one of the most important factors determining whether the users likes to use the product or not. If you look at your possessions, you will probably find, that most of the products you like to use, are products that are good at helping you to do what you want to do with them. Beautiful, trendy, status creating, emotionally charged, or for some other reason attractive, but not functional products, can still be liked and create a desire for possession, but most of us will prefer to use a purely functional product that helps us to do what we intend. If a product is beautiful but not functional, it should perhaps rather be considered as a piece of art, than a product. It will most likely spend most of its life on a shelf, doing what it does the best, namely being beautiful and collecting dust.

It is of course desirable to have a product with numerous of the aspects mentioned above, in addition to being functional. But without the functionality it is likely that much of the attractiveness will disappear when the trends are changing or new versions enter the market.

One could argue that this also would be the situation for the functional aspects of the product. It will lose much of it's attractiveness as the world is evolving, alternative objects enter the market, and especially with technological products; new software and technology demands new and faster hardware. This is of course true, and one of the reasons why we keep on buying new products. But the usage of the product is not only a question about the product being suitable to fulfill its function.

It is also a question about the user being familiar with it, and liking the way one interacts with a product. Anyone who has tried to switch between different cell phone brands, has experienced the difficulties of being used to one product, and then trying to use another one to do the same task. This does not necessarily have anything to do with the usability of the particular cell phones.

It is reasonable to believe that if a user has a product that fulfills it purpose, and the user is familiar with and likes the way to interact with it, the desire to dispose it and purchase another is limited. It is of course also essential that the product can be repaired, or upgraded when necessary.

To give an example of this can succeed, one could look at a product such as a bike. Most bike owners will most likely repair the flat tire, rather than buying a new bike, if they should experience a puncture. This can of course only be a consequence of the price difference between a new tire and a new bike, and the ease of changing a tire. But many bike owners would also change an entire wheel or the gearing system if necessary, even though this might const more time and money than buying a new bike. At least if you consider old bikes and a

second hand bike marked. This can be explained by many bike owners liking their particular bike, and are prepared to sacrifice both time and money to keep their own bike. Riding another bike, just doesn't feel the same.

Conclusion

Thackara claims that "eighty percent of the environmental impact of the products, services, and infrastructure around us is determined at the design stage" [page 1, Thackara, 2006]. This describes design in a much broader context than just product design, but there is no doubt that designers have the possibility, and perhaps responsibility to do something about the over consumption of products.

As proposed above, interaction design is perhaps the best approach to design these products. Preece et. Al. defines interaction design as "designing interactive products to support people in their everyday and working lives" [page V, Preece et. Al. 2002]. The core of interaction design is exactly to design the interaction between the user and the product. Or as Wikipedia states it; "interaction designers are typically informed by user research, design with an emphasis on behavior as well as form, and evaluate design in terms of usability and emotional factors" [Wikipedia.org].

By using the numerous tools we have as interaction designers, to create functional products, the user likes to use, combined with reparability and upgradeability in mind, I believe it is possible to make a difference. Exactly what methods and approaches that will be the most appropriate will probably differ from product to product, and will also need to be further explored and developed. But this development can only begin once

the problem is accepted and the designers start being conscious about it.

It might be utopian and naive to believe we can save the world and change peoples consumption behavior by designing better products, but at least we can make it possible for those who has the will to try.

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