



THE CHALLENGE OF ECO-DESIGN

Sustainability | Anyone who focuses on sustainability when it comes to cosmetic packaging should not be satisfied with using outer packaging made from recycled paper. It goes much deeper in detail. Malgorzata Chomiuk explains what is involved in eco-design and what the real challenges are.



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Eco-design is yet another newly coined term that has recently entered our dictionaries. Its etymology is self-explanatory, but what does it really mean? What requirements must be met in order to call a product's design "eco"? In recent years we have become increasingly aware of the problem of draining the earth. We deplete its

natural resources and constantly search for new deposits, while simultaneously flooding our planet with waste. Although the subject has been on the tapis for many years now, it is only recently that we have heard strong voices against this irresponsibility.

It is difficult to change old habits, but fortunately governments and NGOs

start to force us, the earthlings, to revalue our day-to-day behaviours. Let's have a look at the idea of eco-design incorporated at the stage of product planning.

Endearing consumers

The process of marketing cosmetics is time-consuming and quite grueling. The main goal: sell it and make as much money as possible. Today, however, we must take into consideration our ethical obligations not only towards the planet, but also ourselves and the future generations. First, we need to formulate the medium's recipe that would be consumer-attractive, design the packaging and draw up marketing and sale strategies.

Although consumer studies show the customers become more and more aware of the product and packaging composition, **most decisions to buy are made spontaneously on the spot** (50 to 80% consumers buy on impulse). Hence, it is important to draw customer's attention with packaging. Eco-design is surely not for everyone.

The key to success may be to include the label with information that the packaging is fully recyclable or that it was made from recovered materials. Since today we mainly shop online, it would be wise to use efficient copywriting to inform the buyers about the eco-benefits of the particular purchase.

Regardless of the target market, everyone can make a step towards the eco-designing by printing packaging labels with signs of the waste bins our empty packaging should go to.

From medium to glue

The idea of the eco-design **involves making conscious choices about all packaging elements**. A very important part of the process is to devise a balanced composition of the product. Main ingredients for example can include herbal extracts or other natural active ingredients but here we will focus on the packaging.

If the packaging includes a bottle, closure, label, external and collective packaging, all these elements need



Although aluminium can be easily recycled and reused, it also has disadvantages, for example when it is completely emptied.

paper-based bottles. The producers claim it would take 18 months for their new containers to completely disintegrate in compost, ground- or saltwater, while their decomposition would not leave any trace or negative environmental impact.

Unfortunately, there is no information about the cap. We can only hope that mindful consumers will remember to place it in a proper waste bin.

Aluminium bottles

Another idea to replace plastic bottles has been put forward by a **shampoo company**. This year they plan to sell their products in **aluminium bottles**. The idea is to refill them in-store instead of buying product in yet more packaging.

Once again, we could say we are going back to "the good old days" when cosmetic packaging made from aluminium was a standard. Today, some manufacturers opt for the retro ▶

"WE NEED 1.6 EARTHS TO SATISFY OUR CONSUMERISM!"

Malgorzata Chomiuk

Companies that decide to implement it have a base of ecologically conscious customers who do not fall for fancy knick-knacks or tricks and need substantive arguments to make a purchase. If we need to attract such customers, we need to present solutions based on hard evidence and reasonable arguments.

eco-solutions. Plastic bottles manufactured in whole or in a major part from PCR-recycled polymers, are a good start. **However, many companies have lately come up with innovative solutions which completely oust plastic**. One of the world leading beverage alcohol companies has recently unveiled its

When using PCR plastic, the highest possible purity of the granulate must be ensured to guarantee the stability of the packaging.



photos: kutaysemel, Nuy7DP, stockphoto-graf, 9dream studio, Shutterstock.com

style by selling their products in aluminium jars.

Nonetheless, aluminium bottles for products that are quickly used up by consumers may sound controversial. Right now, there are still very few in-store refill stations, so would it not become a “single-use” packaging? And what about the functionality? It would be difficult to get the very last drop of the product since aluminium cannot be squeezed as plastic. This may simply result in wasting which is in clear violation of the basic principles of the zero-waste philosophy. All in all, we will have to observe and analyse the consumer behaviour once these bottles find their way to the market.

The eco-process also involves planned refilling of the bottles. For the recycling purposes, it is very important to avoid multi-material refill pouches, otherwise we might fall into another eco-trap. If our original packaging (bottle and dispenser) is recyclable, but the refill packaging is not, we simply torpedo our previous efforts. The refill packaging supplier should offer packaging with all layers made from the same type of recyclable material.

Multidimensionality of the eco-design requires us to stay on our toes and constantly question seemingly sustainable solutions. Since there are many stages in the production process, as well as in the later “life” of a product, we should try not to throw the baby out with the bathwater. If we apply an eco-solution at one stage only, it might turn out that our efforts are

corrupted later in the process by leaving carbon or water footprints.

Not long ago, a niche cosmetic company from Poland decided to sell their creams in glass jars, which could be returned to the producer. The packaging was cleaned, sterilised, and refilled with cream. It seemed perfect, especially for the supporters of the container-deposit systems. However, after a while the company backtracked and told their customers to throw the packaging to the glass waste bins. Why? The process of preparing the returned jars for re-use involved too much water and electricity, plus the transport from the customer left a carbon footprint. Since glass is 100% recyclable, in practice, new jars are more eco-friendly.

Challenge of closures

Closures are the key elements of packaging as they assist the consumers in dispensing of the cosmetic products.

We wish to incorporate the best solutions, so we juggle between temporary and virtually eco-friendly ideas vs. long-run sustainable options. We are forced to consider many different factors. For instance: a cosmetic dispenser with twelve tiny elements made from 100% PCR turned out to be very flawed. A substantial portion of the ordered test batch failed the quality tests. It could have been saved by adding curing agents to the compound, but then it would negatively influence another recycling process.

How does it work?

PCR dispenser with additives should be sorted as post-consumer waste and processed into regranulate dedicated for everyday products for contact with cosmetics and/or food. However, our regranulate has already been weakened by one recycling process and contains contaminants, which would lower the quality of the new recycled plastic, and finally the PCR product.

Assuming dispensers are used, for example, in the bottles for liquid soaps which are then refilled from plastic pouches or at in-store refill stations, we should pay extra attention to their long-term quality and reliability. **Reused bottles without durable and functional closures would simply contradict the basic idea of the refilling.**

Eco-design solutions that we recommend are closures without extra finishes in white or other light shades – disc top or flip top caps made from single material. In some detergents one can use all-plastic sprayers made from 100% plastic. The earlier mentioned aluminium jars with their infinite recycling cycles are also a great eco-option for packaging.

As we have already pointed it out, producers must focus on high quality closures that will properly assist their consumers in the application, making foam or spraying mist. Frequently used and then discarded into a proper waste bin will bring more benefits than, for example, disposing uncontrolled amount of medium from a container with a plain cap or risking malfunction of a 100% PCR dispenser, which would block the medium inside the bottle.

Properly chosen closures precisely dispense the desired amount of the product, which is very economical. Consequently, it limits the amount of produced waste which corresponds with the eco-design agenda.

Label

Another important element is a label. For a long time, it was neglected in the process of making eco-friendly packaging and treated as a minor part



The material and the adhesive on the label also play an important role in Eco-design

of no importance in the recycling of the labelled waste. The **increasing awareness concerning the label production, glue, and ink**, drew the attention to this significant aspect. Companies which introduce labels to the market stepped up to the challenge and offer multiple eco-friendly solutions.

There are many different types to choose from, including: paper labels with warm water-soluble glue; labels made from the same material as the rest of the packaging, which does not disrupt the recycling process; or labels made in whole or in a great part from recovered materials. The thickness of a label is also significant: the thinner it is, the less waste we produce, regardless of its material.

There are many interesting innovations dedicated to manufacturers of products closed in glass packaging. They can use paper labels with water-soluble glue, which will neither disrupt the recycling nor smear the recycling equipment.

In the case of **returnable bottles** which make their way back to the manufacturer and are washed and refilled, the best option would be to **choose permanent labels**. Such labels can be washed at least 30 times, transported, and stored in different temperatures and weather conditions. It lowers the cost, shortens the time of the bottle's re-circulation, and saves the material for label.

Eco-labels should not include special finishes. Gilding, extra coating or metallisation hamper the material recovery. While such refinements bring small, purely visual benefits, they effectively disrupt on of the eco-design stages, therefore it would be worthwhile to re-think the project and give up on unnecessary finishing options.

External packaging

All packaging layers are important, although some of them are completely unnecessary. For years now, Greenpeace UK has been encouraging the toothpaste manufacturers to stop putting their products into cardboard boxes, which do not fulfil any significant protective functions and in practice are just waste.

In this case, one must answer a series of questions concerning a particular product. Is the outer packaging necessary? If so, in what form?

It might turn out that all we need is a polyolefin heat shrink film that would protect the product against unwanted breach of the packaging while on the store shelf. Such films not only give the product a touch of elegance, but also perfectly complete our eco-packaging.

Polyolefin is a polymer built only from carbon and hydrogen. Such chemical composition makes it fully recyclable. Its burning does not produce any toxic substances, whereas its energy efficiency is comparable with that of carbon. During the thermal processing of the polyolefin film, the machine operator is not exposed to harmful fumes. It is yet another health-promoting chain link in the complex process of eco-designing. The project should also include the transport preparation. **Collective cardboard packaging should be fully filled with product.** If we do without additional box fillers – whether plastic or natural, we increase the transport efficiency. Packing and loading a container should be carefully planned to avoid ineffective transport. Carbon footprint left in transport is still very high, even when we choose trains or ships. Hence, when we plan shipments, we should try to utilise 100% of the available loading capacity.

Trusted supplier

In order to fully commit to the idea of the eco-designing, all of the conditions mentioned above must be based on a cooperation with a trusted supplier. Bottle, label, or closure manufacturers should conform to specific rules. On-site recycling, sewage treatment plant or a clear agreement with a rendering plant, as well as ethical employment policies, are the most important guidelines. If we are satisfied with the deliveries and know the goods are produced



Sustainability also means packing the transport packaging as fully as possible so that filling material can be dispensed with.

according to the eco-rules and sustainable development, we can rest assured our final product is truly eco-friendly as all of its elements, including the last stages of delivery, comply with the eco-requirements.

Conclusion

Eco-design is a multi-stage process. At each step we should carefully analyse the available solutions and consider all pros and cons. Superficial and short-term benefits may ultimately fall short of the mark. On the other hand, seemingly insignificant choices may positively influence the outcome of the project.

It is also natural to backtrack or improve once implemented solutions. When we are confronted with something new, which in theory seems perfect, it can be only cross-checked when put in practice and verified by consumer behaviours. **If the goal is to protect the planet, one should not be discouraged by a temporary failure.** Sometimes it is more profitable to take a step back and start over than to persistently stand by wrong solutions.

Innovation is a risk worth taking in the name of supporting the eco-efforts and corporate social responsibility. □