

# CLEO

By Nina Cherrug

**A REFILLABLE PACKAGING SYSTEM FOR  
EXCLUSIVE, WATERLESS/SOLID COSMETICS**



**CLEO** (a refillable packaging system for exclusive, waterless/solid cosmetics)

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# ABSTRACT

For every cosmetic product a consumer buys, a new packaging (often plastic) is purchased together with it. Every year, this single-use behavior stands for 120 billion units of cosmetic packaging. For Europe alone, this is the equivalent of 5 packed Avicii Arenas. There is also a problem in the transparency of eco-friendly products today, where the recyclable packaging still ends up in landfills, and companies are buying eco-certifications to appear greener. The third problem is the perception of value in eco-friendly products versus the exclusive ones. Is there a way to combine sustainability with high-end cosmetics in the luxury market?

During my research, I came across waterless beauty, a concentrated cosmetic product form where you add water by yourself. Since cosmetics consist of up to 80% water, this solution would lead to energy savings in packaging, transportation, shipping, and logistics. After conducting user tests and interviews with chemists and cosmetic experts, my ideation phase started with inspiration drawn from the cosmetic front figure of the Ancient Egypt era, Cleopatra. The result became a brand for exclusive cosmetics, consisting of a face stick and a mascara in solid form, and a face cleansing powder, providing a refillable packaging system to minimise packaging and product waste.



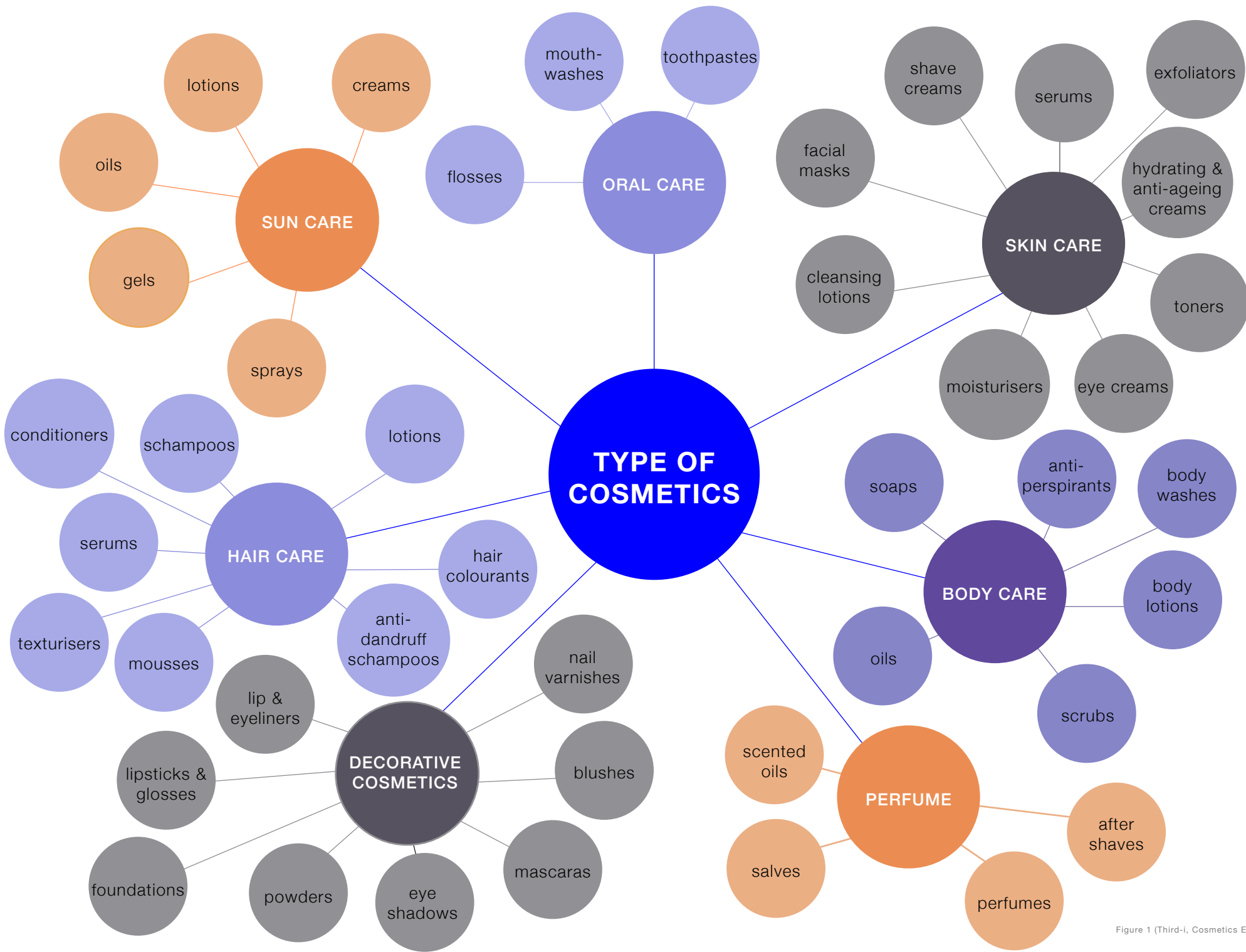


Figure 1 (Third-i, Cosmetics Europe., 2017)



# MOTIVATION / BACKGROUND / BRIEF

The cosmetic industry is a large industry with a wide range of products. The industry consists of colour cosmetics such as lipsticks, foundation and mascaras, i.e. makeup. Skincare, such as face creams, serums and cleansers. Hair-care like shampoos and hair dye. And also toiletries like soaps and bubble-bath-products. All of these products requires one packaging, that gets thrown away after one, single-use.

A survey conducted by Skinstore in 2017 (Diane D., Gaurav R., Kathy H., 2017), where they asked 3000 women between the ages 16-75, showed almost shocking results in terms of cosmetic behaviour in the United States. 80% of the women in the U.S wear cosmetics each day, that is around 128.8 million women. The survey also showed that they used around 14 products before leaving the house in the morning. This sounds a lot, but it's important to have in mind that it's products from cleaning your face to the last makeup brush stroke on your face. The products are mainly facial wash, toner, serum, eye-cream, moisturiser (which were considered an

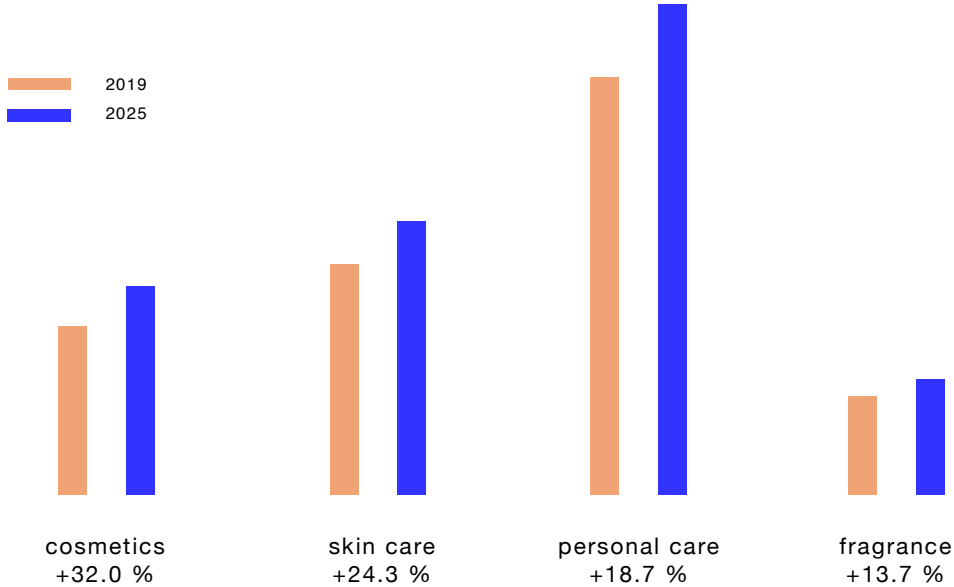
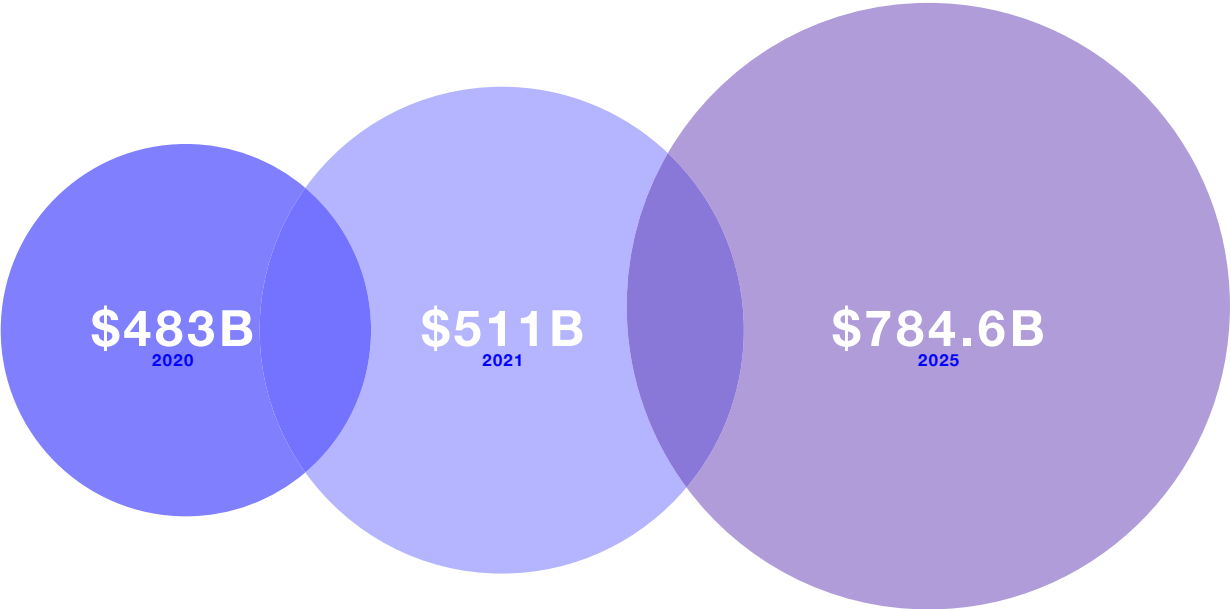
essential product), concealer, foundation, bronzer, blush, eye-shadow, eyeliner, eyebrow-product, highlighter, and lipstick. Consider the main life length of these products, which is 6 months, that means that 28 products are being bought annually by all of these women, which results in 3 606 400 000 products. I wanted to capture this huge amount in a context to be able to grasp the quantity. I put 28 of these products, and fitted them in a box with the dimensions 0.28x0.28x0.14 metres. After doing some calculations I got the amount of 128 800 000 carton boxes. One carton box is 0,012 cubic metres, so all of these boxes would turn into a volume of 1 545 600 cubic metres. This is equivalent to 2.5 Avicii Arenas (Globo), every year. Have in mind that this is only for women, and only in the United States, and only one year of cosmetic products. A lot of statistics shows that this industry isn't decreasing, which shows that the demand for cosmetic products is only growing each year.

I looked into a report prepared by Third-i on behalf of Cosmetics Europe, in 2017, to see the European behaviour. (Creek, Lescauwet

and Bowman-Busato, 2022) Their research conducted an online survey to 4116 consumers in April 2017. This was conducted across ten EU Member States from different regions, and all respondents were representative of each country's gender distribution and age groups. Their research also showed that there are around 500 million civilians who use cosmetic products every day. This research only showed the percentage of what type of cosmetic products that were used, where body care (88,78%), skin care (86,18%), hair care (85,06%), and make up (69,66%) were among the mostly used cosmetic products in their everyday life.

Since people in Europe use around 5-15 cosmetic products every day (European Commission, 2021), let's say that they use 8 products each day to get an average number. With the same calculations as before, this would result in 16 new products per year, which results in 8 billion products every year. This results in about 286 million carton boxes, which is equivalent to ca 5 Avicii Arenas, every year.

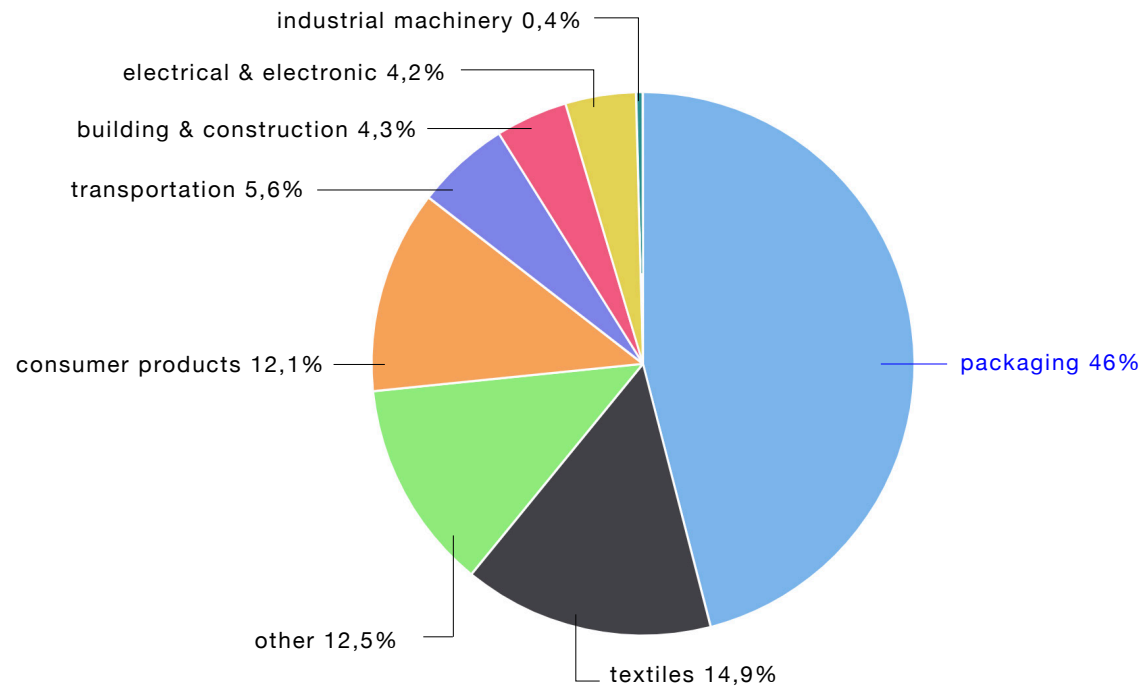
# BEAUTY AND PERSONAL CARE MARKET VALUE WORLDWIDE



Looking at all these different cosmetic packagings thrown away after one use, we get such a high number as 120 billion units yearly. Along with this, we have the global plastic waste distribution, where packaging stands for about 46%. (L'oréal, 2020)

The cosmetic market is worth an exceeding \$500 billion, where skin-care is the top category of 42% of the global market. There is evident growth in all the categories. The whole market is estimated at \$784.6 billion by 2025, which results in the number of 120 billion units only growing bigger and bigger. (Statista, 2022)

## GLOBAL PLASTIC WASTE PRODUCTION BREAKDOWN, 2018



**120 billion units  
of packaging  
annually  
(globally)**

Figure 3 (Statista, 2022)

If something isn't changed now on how we design, use and reuse plastics for our packaging, we could by the year of 2050 have more plastic than fish in our oceans.

The main topic that needs to be done in order to solve this problem is first of all eliminate the use of unnecessary and problematic plastics.

Second of all it is to innovate, to make sure that we can reuse, recycle or compost the plastics we use.

The third is to circulate the plastic products in order to keep them inside the economy and outside the environment.

To narrow this down further, to achieve a circular economy for plastic packaging can be drawn down to six key points:

**1. Elimination of problematic or unnecessary plastic packaging through redesign, innovation, and new delivery models is a priority.**

It is simply not possible to recycle our way out of plastic pollution, because of the rapid growth of it. It's limited by the speed of the infrastructure development. It would require connecting more than half a million of people, forming collecting systems every single day from now to 2040.

**2. Reuse models are applied where relevant, reducing the need for single-use packaging.**

This is a way to keep the material and its embedded values inside the economy. It can also be designed to offer customers an increased quality and functionality as the initial production cost is divided over many users. It can also reduce costs of production and logistics through standardizing packaging formats, [and packaging and transportation through compact refills](#). There is also a high chance of increasing brand loyalty and sales with a deposit system that creates rewards.

**3. Circular economy - all plastic packaging is designed to be 100% reusable, recyclable, or compostable.**

This must be designed to fit in a real world system, where plastics are collected, sorted, then reused/recycled/composted by existing infrastructure.

**4. All plastics packaging is reused, recycled or compostable in practice.**

The current situation with landfills, incinerators, and wasted energy are all linear.

All used plastics need to be collected, sorted, reused/recycled/composted, and this can be done with better infrastructure and policies from the government. Businesses also carry a responsibility far more extended than the use of the packaging itself.

**5. In a circular economy, the use of plastics is fully decoupled from the consumption of finite resources.**

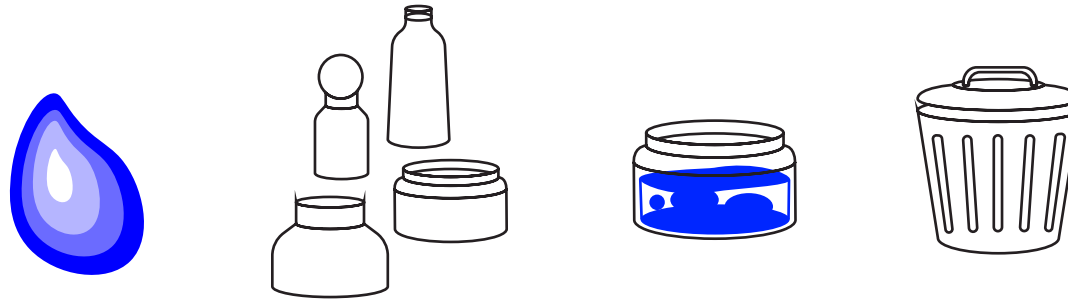
The need for virgin plastics needs to be reduced drastically. Also, the entire system from production, transport, cleaning and recycling needs to be powered by renewable energy.

**6. All plastic packaging is free from hazardous chemicals, and the health, safety, and rights of all people involved are respected.**

(Ellen McArthur Foundation, 2022)







need for a new product

buy new product with  
new packaging

use product til it's  
empty

throw away to then  
buy a new one

# THE COSMETIC INDUSTRY / PROBLEM II

## TRANSPARENCY IN “ECO-FRIENDLY” PRODUCTS

Another problem is the transparency in the eco-friendliness of cosmetic products. When discussing eco-friendly products, it is essential to state what these products are. It is products and companies who portray themselves as vegan, cruelty-free, recyclable and sustainable in their packaging.

However, the packaging can consist of a plastic container with a plastic lid with an aluminium shell that gets thrown away in the plastic-mix trash dispenser, to then be replaced with a similar product, if not the same, which turns it into a single-use product.

Talking to Christoffer Öhrman, the CEO of the Scandinavian cosmetic company Björk&Berries, he revealed some troubling facts. First, many companies do that to appear greener; they are buying eco-certifications, which results in a false green image, often referred to as greenwashing. Second, to appear eco-friendly, many

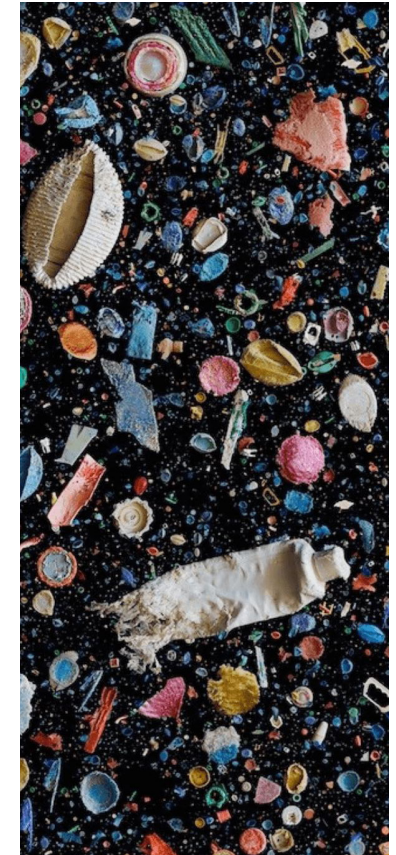
companies are buying virgin plastics, which are much cheaper than recycled ones, to then shred it down and turn it into containers with the recycled-plastic characteristics.

Some can argue that there is no problem in plastic products per se, but in how people use them. (Evans et al., 2020) However, I do believe that many people want to make a difference and do better. Still, the width of sustainable choices within the cosmetic industry is not wide enough, especially not if the green options we have on the market aren't green at all.

Suppose intelligent and easy packaging systems exist on the market, with a lower impact on the environment than the usual plastic packaging systems that dominate the market today. In that case, I am sure we will see a change for the better.



Maybelline New York 2022 (3)



Humanistbeauty, 2021 (4)



# THE COSMETIC INDUSTRY / PROBLEM III

## CONSUMERS PERCEPTION OF QUALITY IN ECO-FRIENDLY PRODUCTS

A third problem is consumers perception of quality in cosmetic packaging.

The sustainable options that are out there are attracting one user group that doesn't want to compromise with the eco-friendly aspects of a product. These packaging can also tend to have brown or green colored attributes to perceive it as more eco, than others. It could also be a cardboard shell around the product, to enhance a more natural, organic look, although it has lots of colored prints to it or contains a product that will harm the environment in other ways.

In more luxurious brands, we can see thick glass bottles with textured finishes and different levels of opaqueness. I will get into this perception in some surveys and questionnaires I did in my project. However, the main finding is that eco-friendly products usually don't contain some key- exclusive- elements that the

luxury products have on the market.

I would like to bring in the consumers that don't want to compromise with the exclusivity in the product. The ones who enjoy their self-care time in the morning and evening, who are purchasing rather expensive products without thinking too much about the life-cycle of it, but who are appreciating the tactile and visual attributes to a product. These people have not only the interest, but money for the products they want to use. I want to look at solutions where exclusivity and sustainability can go hand in hand, even for them.



Ethique, 2022 (5)



Yves Saint Laurent, 2022 (6)

## **FIRST INITIAL BRIEF**

**“Design a brand for exclusive cosmetics, providing a refillable packaging system with the aim to minimise packaging and product waste and optimise logistics”**



# TARGET GROUP

When I first thought about my target group, the initial idea was “the more, the better.” But this seems not to be the case in my project. The people who don’t want to compromise with sustainability when purchasing new products already know what to get. How about the customers who don’t want to compete with exclusivity and luxury in their products? I call them the Gucci ladies. It may sound harsh, but this group of people simply don’t value sustainability as much as a luxurious lifestyle. How can I make these people purchase sustainable products in the cosmetic industry? I didn’t want them to feel that the perception of these products and the behaviour around them would compromise their perception of exclusivity. This target group would also be stationary while applying makeup and conducting their morning routine in the bathroom. It is not for people on the go who use makeup in a hurry on a crowded bus. It is for people that have the time. And they also have the economic benefit of purchasing products of higher quality, which tend to be at a higher price.

By targeting this group, I also believe that I will target those who think sustainable but want high-quality products. By thinking sustainable, I mean the way their lifestyle is. It’s everything from being aware of buying ecologic

food, second hand, organic, vegan products, to recycling and owning an energy sufficient car/using more sustainable ways of transportation in their daily lives. These people also have the money for higher quality products. I call them the urban moneymakers, younger people living in the city with highly paid jobs who want high-quality products and living.

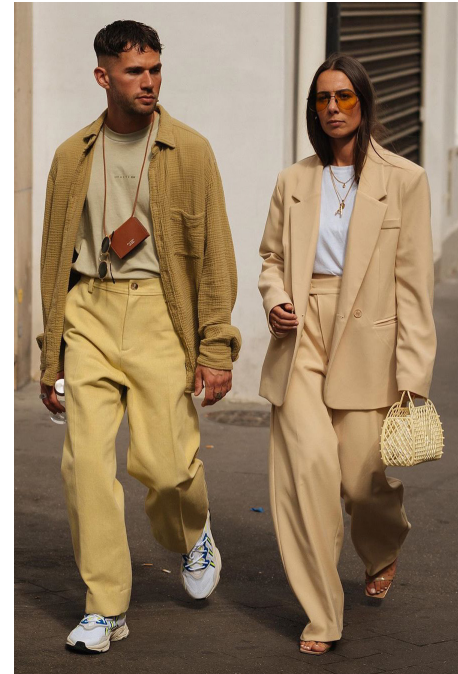
## **“the gucci ladies”**

**THE ONES WHO VALUE EXCLUSIVITY MORE  
THAN SUSTAINABILITY**



## **“the urban moneymakers”**

**THE ONES WHO ARE THINKING SUSTAINABLE BUT  
WANTS HIGH QUALITY PRODUCTS**





# ANALYSIS

## history of cosmetics

Cosmetic products have been a part of human lives for as long as at least 7000 years. Just about 8000 B.C, neanderthal men used paint for creating images on cave walls, they also used to paint their faces with red, brown and yellow paint derived from clay (Kumar, 2005). In ancient Egypt, we have Cleopatra as a front figure within the cosmetics. Scented oils and ointments preserved in clay jars were used for moisturising the skin. The mummy preservations also led to use of products on living people. Mummies were for example treated with special lotions to keep the bodies as intact as possible, in order to make them irresistible in the afterlife. Lipsticks with fish scales that give a shimmering effect, and kohl were used as eye paint. Wrinkle treatments have been found as well, made of gum of frankincense and fresh moringa. (Wikipedia, 2022)

During the roman empire around 500 B.C, lipsticks, kohl, and rouge were commonly used among prostitutes, which gave cosmetics a rather bad reputation. During the Middle Ages during the 15th century, pale skin became a sign of beauty. Although cosmetics were classified as indecent from the church and Kings and Queens due to the fact that cosmetics of color were products used by mainly prostitutes and the lower class.

During the 18th-19th century, pale skin was still a sign of beauty and

wealth, since it meant that one did not work outside in the sun and got sunburned. Colored cosmetics were still products used by prostitutes, but also for cabarets and theatres to enhance the actors impressions. During the 19th-20th century was a breakthrough for cosmetic products since mirrors became more modernised and used in everyday life and interior, photography was also invented as well as commercials, marketing and electricity, which created a new way of self-awareness. There was also development in the industry of chemistry and medicine, and the film industry was growing bigger and bigger.

After World War 1 was the birth of cosmetic surgeries due to battle injuries. And the 1920's was the year of the great Hollywood impact. The film industry was now a big influence on how people wanted to portray themselves, and where they drew inspiration. Coco Chanel during these years also made some fashion statements which showed a lot of red lips, dark eye-makeup and red nail polish, but also the suntan. I also looked through the Swedish women's magazine "Husmodern", where I mainly looked at issues between 1920-1929. What mainly caught my attention here was the powdered products and hard soaps used for cosmetics. The shampoos were mainly powdered, and creams were advertised in mainly metal jars and tubes as treating and taking

care of one's skin and appearance. During World War 2 there was a short supply of cosmetics, although it was shown to be desirable during this time. During the 60's and 70's began the hippie movement which worked like a counterstrike on the whole cosmetic industry. This was a time where people threw cosmetic products in the bin in protests, and the makeup look in general were mainly natural or non existing. After the hippie movement came the punk era, then there was glam, grunge and other influences mainly from the music industry which have shown a great impact on usage of cosmetics to this day.

My main findings from the history research was that before plastic was introduced in society, we still managed to maintain these products in great ways. Powdered and solid cosmetic products were a part of the cosmetic industry, and it worked since people adapt to what's out there on the market. I feel that there is a need to look back in history on how we dealt with products before the industrialization that impacted the environment negatively. Before single-used plastics, and our behaviour around it. Is it possible to go back in time in our cosmetic purchasing behaviour, but with a modern take? Are people willing to adapt to it and is it even possible?



8000 B.C

- Cave paintings from red ochre paint

3100 B.C

Ancient Egypt

- Mummy preservation (scented oils, ointments, lotions)
- Lipstik shimmers from fish scales
- Kohl for eyes
- Wrinkle treatments
- Bald/greyness prevention



500 B.C

Ancient Greece

- Negative view on makeup (dishonest impersonation and tricking people)
- Either prostitutes or "respectable elite women"
- Lead based products to brighten skin
- Honey/oil for cleaning and moisture
- Kohl mixed with fat for eyes
- Pigments mixed with fat for lips



15th century

Middle ages

- Pale skin from lead products
- Rouged cheeks and lips
- Not common with eye makeup





### 18-19th century

- Territory of prostitutes, cabarets, actors
- Pale skin was sign of wealth



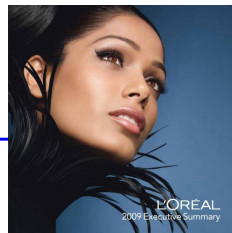
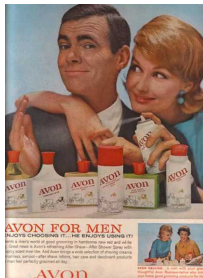
### 19-20th century

- Rise in visual self awareness (mirrors, photography, marketing, commercials, electricity, film industry)



- 20's
- 30's
- 40's
- 50's
- 60's
- 70's
- 80's
- 90's

- Hollywood
- WW2, short cosmetic supply
- The beginning of the large-scale plastic production
- Hippie movement (natural, organic, freedom)
- Music influences from punk, glam, rock, RnB



### 21st century

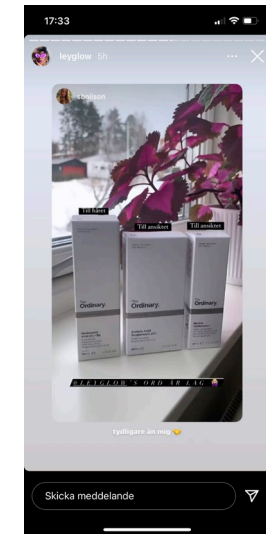
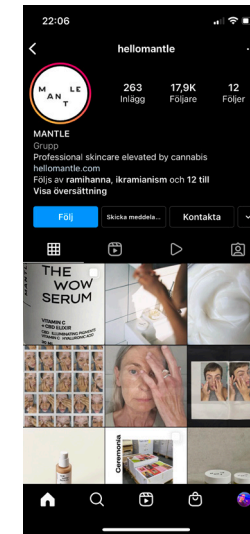
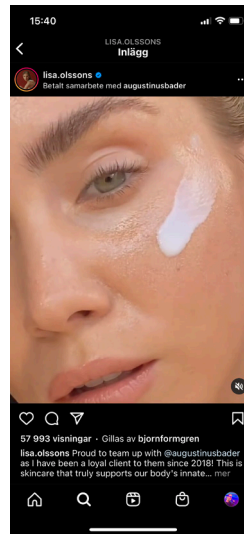
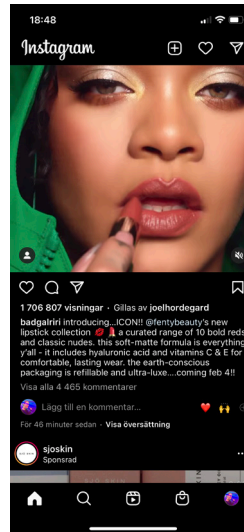
- Growing selfcare movement, aimed not only towards women

# HOW DOES IT LOOK TODAY?

The leading category is the skincare market (42%), and there is an estimation of a 24.3% growth between 2019-2025 (Shopify, Beauty Industry Trends and Cosmetic Marketing, 2021), so there is a clear indication of an expanding industry.

From my research I also see the influence from social media accounts. Today we get almost all of our purchasing habits online via influencers, and directed ads from algorithms in our phones, everything is tailored for our needs. I believe there is something psychological about it, that if this inspiring person is wearing this cosmetic product, then I as a consumer can achieve what they can, or look as cool/beautiful/pretty as them. This could be a reason to why cosmetic brands such as Kylie Cosmetics, Fenty Beauty by Rihanna and Victoria Beckham Cosmetics are as big as they are today.

This behaviour doesn't seem to fade away, rather the contrary. It is hard to say how the social media network will look like in ten years, but for what we can see from platforms such as Instagram and TikTok, it's growing bigger and bigger and especially if cosmetic brands keep on influencing consumers via these platforms.



Images taken from Instagram

# WHY DO WE EVEN USE COSMETICS?

As we can see throughout the history of cosmetics, the need started with portraying memories and stories onto the wall of caves with red ochre paint, and neanderthal humans also painted their faces with red, yellow and ochre clay. (Kumar, 2005) Today the main reasons are simply to improve the quality of life. From the research prepared by Third-i on behalf of Cosmetic Group Europe, a clear connection between cosmetic products and consumers quality of life was made in a conducted survey, and this strong connection extended across every age group and particularly among women. The most important criteria for a high quality life was good health and personal hygiene, and cosmetics and personal care products were seen as a key to maintaining these. (Third-i team, 2017) (Creek, M., Lescrauwaet, R., Bowman-Busato, J., 2017.

Consumer Insights 2017 report. Edited by Alec Walker-Love). The survey also showed that 80% felt that cosmetic products helped build up their self-esteem. This finding of the enhancement of how people are feeling was the same throughout all the age groups, from young teenagers to seniors. 68% considered the way they were perceived by others, and could help them to interact in a desired way with other people. As a conclusion, this survey showed that cosmetic products are improving the quality of life, building up one's self-esteem and peoples social interaction.



Smiling woman, Instyle 2021 (32)

# MARKET RESEARCH

To execute the market research in the best way possible, I need to divide it into categories.

## **The global, big-baller brands:**

Divided into both luxury brands but also commercial brands which are more affordable.

## **Niche, high-value cosmetic brands:**

These products are usually rather narrow in its product line but they are known for high quality ingredients and exclusive packaging.

## **Trending brands:**

Seen a lot on social media platforms. These are not necessarily the largest brands, but they are inspiring in their ethics and design language.

## **Eco-identifier brands:**

These vary from high-end to affordable. It can be from vegan ingredients to sustainable packaging. This is also where I first caught my eye on waterless products, but more of this later.

## **DIY-community:**

This community has a small geographic expansion. It's usually local, which makes it a sustainable choice. It can be argued that the

perception of quality is lacking within this community since it usually contains an organic, self-made approach.

I wanted to compare the sustainability aspect with value perception in terms of price. And also the product value in terms of quality compared to brand expansion. From these comparisons, I could get a more clear indication of where I want my products to be placed in the market.

There are also the brands I compared in different price ranges, which I made a test form in a questionnaire. This is to see patterns for non-exclusive products vs. exclusive products, and people's perception of them, this will be written about more thoroughly further ahead.

**Luxury market:**

STURM  
Sensai  
Clarins  
...

Prices between 50-400€

**Niche, high-value brands:**

Kiehls  
Mantle  
Ordinary  
...

Prices between 10-100€

**DIY:**

N/A

Prices between 0-100€

**Trending, new brands:**

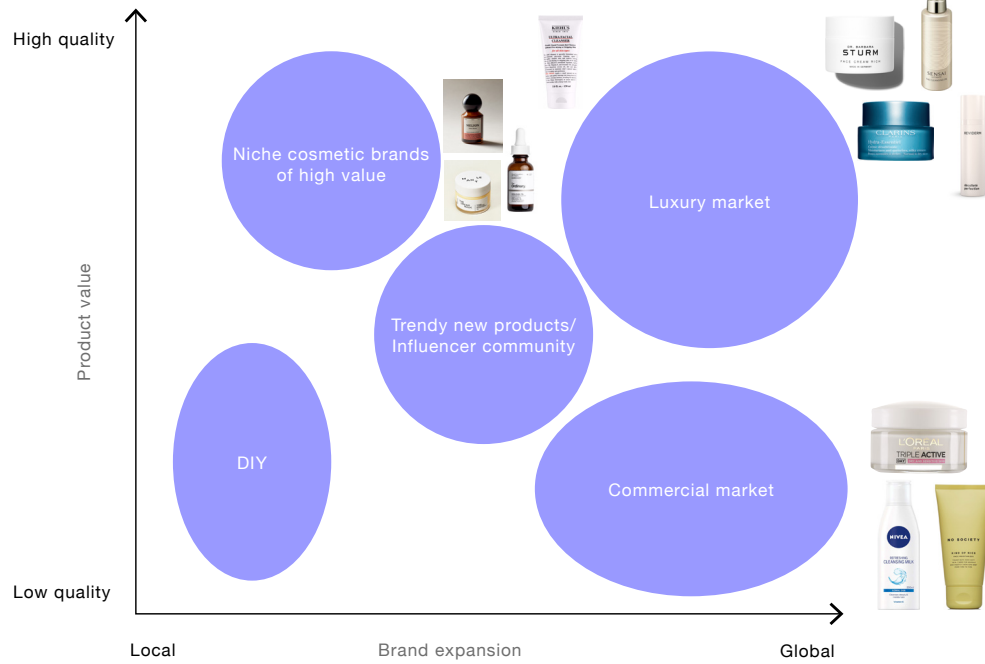
Melyon  
Ceremonia  
Augustinus Bader  
...

Prices between 20-100€

**Eco-identifiers:**

The Body Shop  
L'Occitane  
Lush  
...

Prices between 5-50€



# MARKET RESEARCH

## main findings

As a conclusion from the market research I want to place my products on the opposite side of the commercial, single-use products. Among brands like Kjaer Weis and FORGO. Kjaer Weis was truly an inspiring brand because of it's refills but also the exclusive design language. When I looked into the brand FORGO, who is working with waterless products in powder-form which you mix with water by yourself in order to get the product, it opened up a whole new chapter in this process for me.

I appreciated the soft and geographic design lanugage Meylon possessed, but also the graphics and colors at Humanrace and Ceremonia. The whole concept of Kjaer Weis exclusivity together with sustainable design was something I wanted aimed for as well.

As a conclusion from the market research, I want to place my products on the opposite side of the commercial, single-use products. Among brands like Kjaer Weis and FORGO. Kjaer Weis was truly an inspiring brand because of it's refills but also the exclusive design language. When I looked into the brand FORGO, who is working with waterless products in powder-form which you mix with water by yourself in order to get the product, it opened up a whole new chapter in this process for me. It revealed brands such as Humanrace, Plus, Ethique, BHuman and more.

## FUNCTION



## SHAPES



# COLORS



# MATERIALS



# PRODUCT



Most cosmetic products contain up to 80-95% water, which means that companies are transporting and packaging huge amounts of water in their products, which results in larger volumes, increase in weight and general waste in water. (Ledesma, A., 2022) However, water is known as the universal solvent since it's together with emulsions, a great combination with thicker substances such as oils and butters, in order to get formulas such as creams and lotions. Water is also essential for skin hydration, which is why a lot of solid products are to be mixed with water or used on damp skin in order to get the right hydration for the skin. (Seaflo., 2022) (Nazish, N., 2021)

When talking to Christoffer Öhrman at Björk&Berries, and Katrin Molina-Besch, they both stressed that products with water needs preservatives in order to not contaminate. They also need to be completely sealed from air outside of the packaging when not in use to stay at a good quality for a specific amount of time. This means that while water has great properties and qualities because of its easy access, its solvent emulsification properties, it's still a concern when it comes to maintaining the product and keeping it in a good quality, inside the packaging and during transportation and use.

Katrin also mentioned that by

removing water from these products, much more can be done in terms of reusable packaging and transportation weight since more concentrated products could lead to reduction in packaging in terms of size and materials. The hygiene concern becomes less of an issue as well if the water gets removed. There is room to work with other materials that simply do not work as well with products containing water.

Waterless products can also result in less product waste, since waterless products means more concentrated products, which makes you not need as much as a regular cream or lotion. There can also be an issue with not getting the last water based product out in pumps or tubes, which often results in the consumer throwing away a container that still has some product left inside. This also results in difficulties recycling it in a proper way, which means that the container ends up in a plastic-mix fraction and in the end, landfills, even though the packaging says it's recyclable. (Civancik-Uslu et al., 2019)

So what exactly are waterless products? They can be divided into two categories: solid, concentrated products that transform into the formula, and powdered products which you add water to by yourself, in order to get the product. The solid products that

seem to be mainly on the market today are mainly shampoo-cakes, soap-bars and face scrubs. These are usually as well packaged in cardboard boxes which eliminates the plastic use. What these have in common is that they need water to get "activated", solid products that don't need water usually come in stone shapes or sticks that melt in contact with the skin. These can tend to be more fat and greasy against the skin, which makes them more optimal for people with dry skin. I believe it would be optimal with this kind of product, that you could mix with water in order to get a creamy consistency, which would make the product more suitable for a wider range of skin types. (Ethique., 2022) Also, by just having a concentrated product in the shape of a stick or a stone, the weight isn't really reduced in terms of transportation.

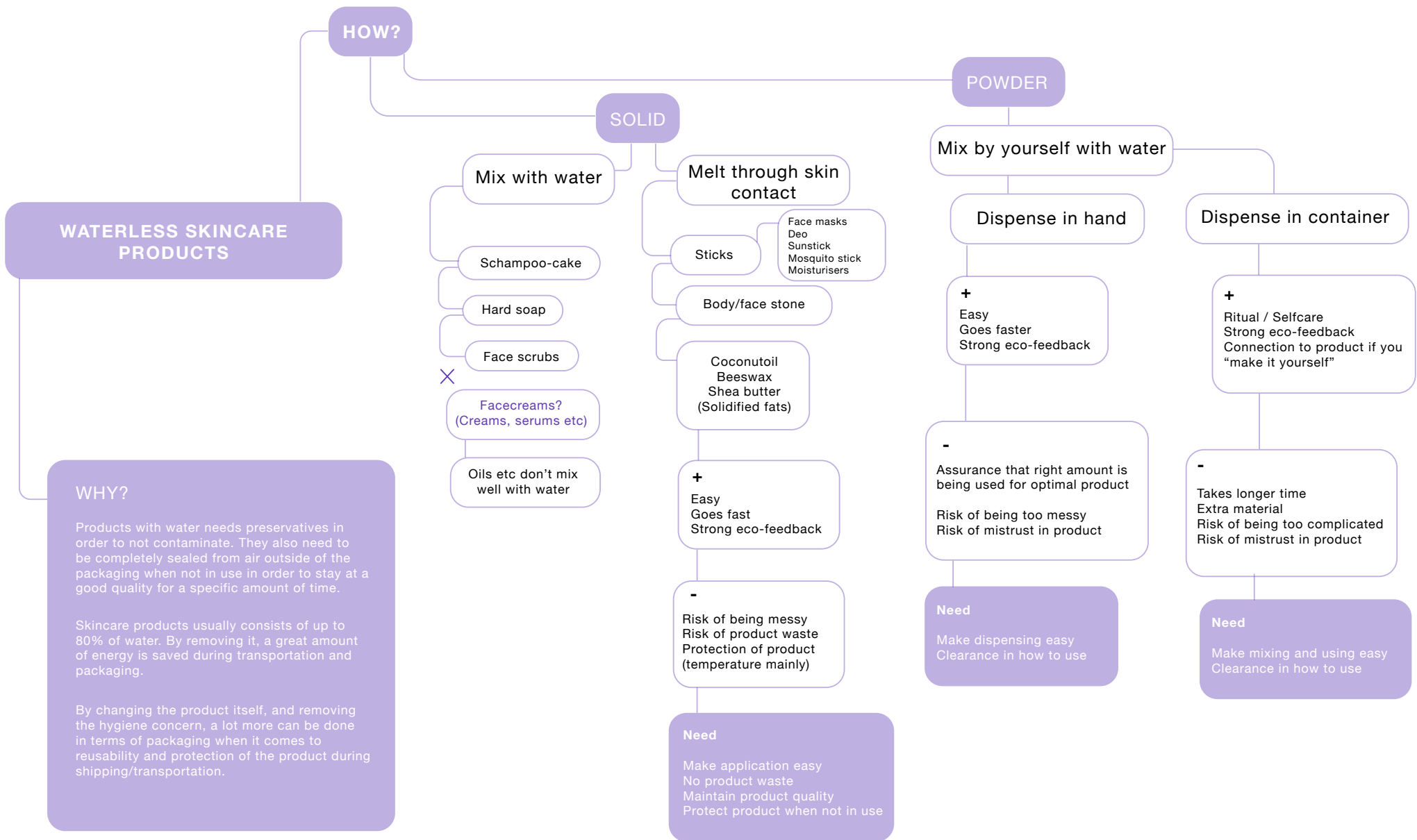
Powderised products on the market today are mainly face cleansers, soaps and shampoos, since it's suitable for more liquefied products. These are also usually less heavy than the solid products, simply because of the density.



# WATERLESS BEAUTY



Images of waterless products from top left to bottom right (48-56)



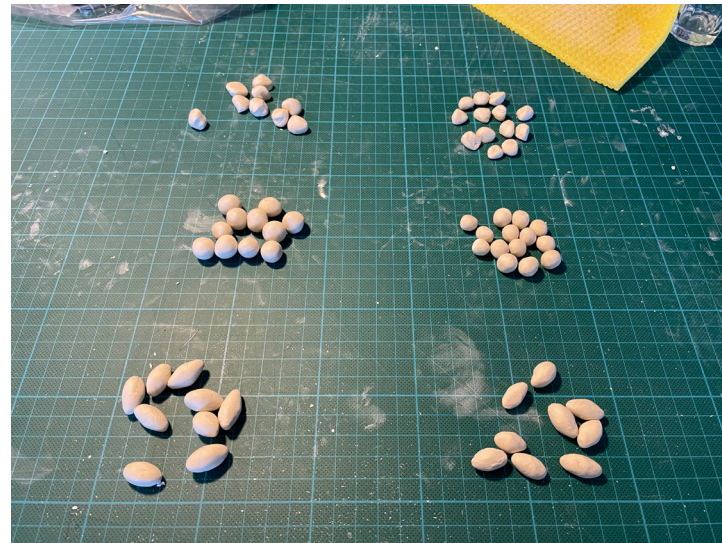
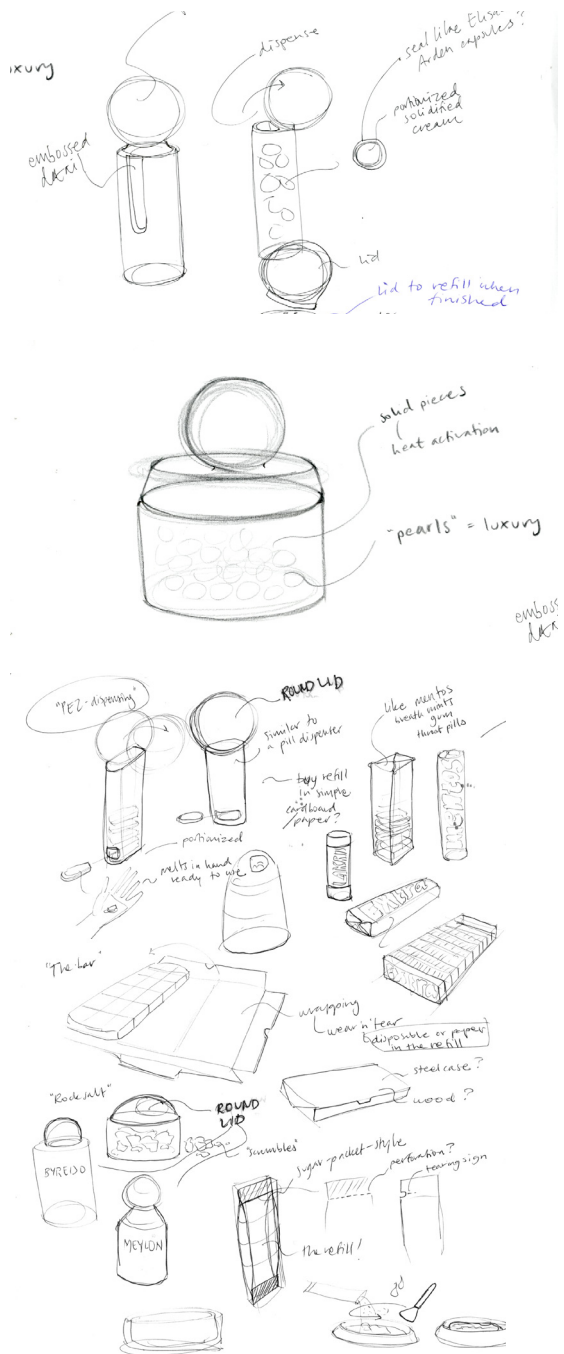
## WATERLESS SKINCARE PRODUCTS

### WHY?

Products with water needs preservatives in order to not contaminate. They also need to be completely sealed from air outside of the packaging when not in use in order to stay at a good quality for a specific amount of time.

Skincare products usually consists of up to 80% of water. By removing it, a great amount of energy is saved during transportation and packaging.

By changing the product itself, and removing the hygiene concern, a lot more can be done in terms of packaging when it comes to reusability and protection of the product during shipping/transportation.



I stepped upon struggles for the idea of the face moisturiser. The products on the market are mainly sticks, which I felt didn't possess the exclusivity I wanted to achieve. I believe the cream formula in a face cream (also after talking with Christoffer at Björk&Berries), enhances one's experience with the tactility, consistency and the usage of the product on the face. I got an idea of solid pearl-shapes that would melt in contact with the skin, creating a cream formula.

I made some mock-ups of this product in clay, to get a feel of the size the pearls could have and how they could be dispensed in the palm of the hand. I also sketched on ideas where these pieces could be made in a playful way such as PEZ:es in a PEZ-dispenser, a chocolate bar or mints.

The only concern that arose was, is this even possible? Would these pearls only melt together inside the packaging? Would you get the right amount of dosage with one pearl? Would two of them be too much? I needed to talk to an expert within the field, such as a cosmetic chemist or similar.



I needed to get a hold of some waterless products to understand the tactility, formula, and experience.

Shampoo cakes are getting more common today, and you can get them at most supermarkets. However, cleansing powder for the face is not. I only came across two different brands that had it, and I had to get it shipped from Singapore.

I found it interesting why consumers don't use this powder to a broader extent. Is it too different? I believe pouring it in one hand and adding water with the other hand was a comfortable and straightforward process. However, the packaging itself was in test size, making it feel cheaper. Also, the dispensing was one hole of about 5mm in diameter, which made it a bit hard to dispense the right amount of product. By using several smaller holes, the dispensing could be simplified.

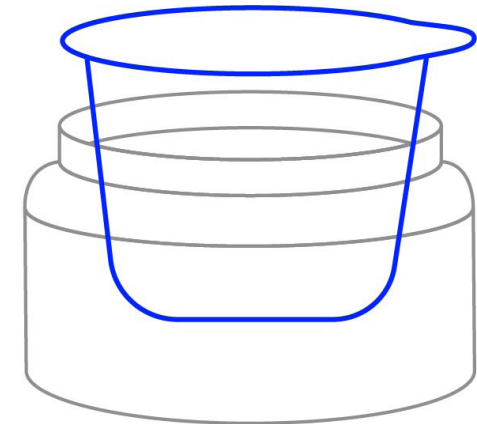
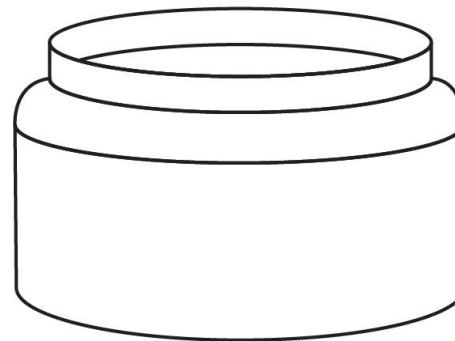


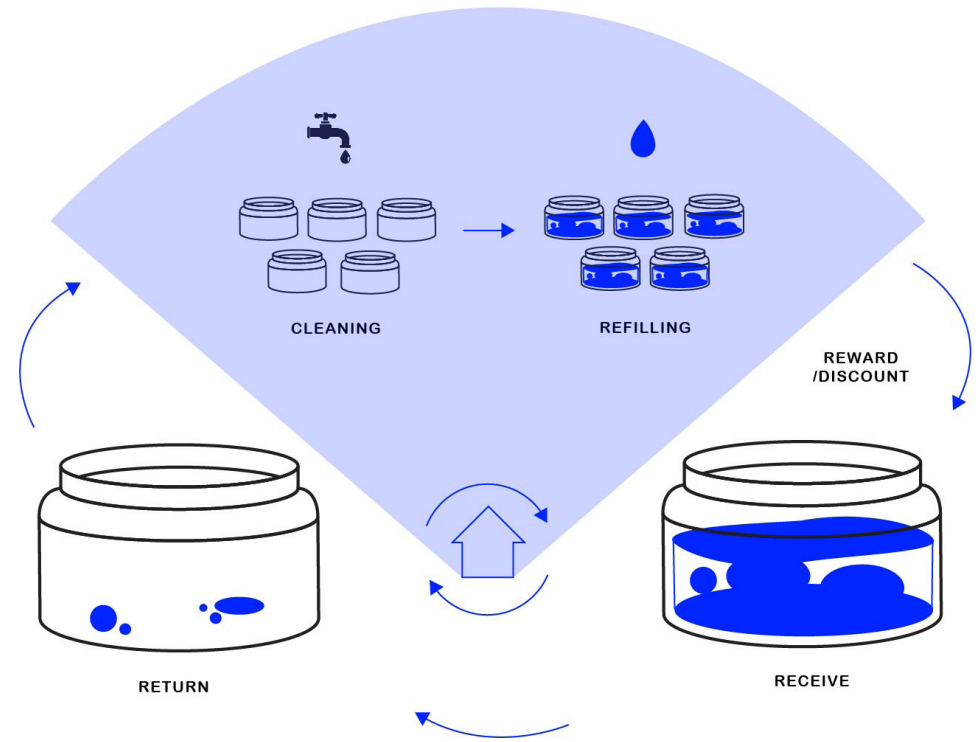
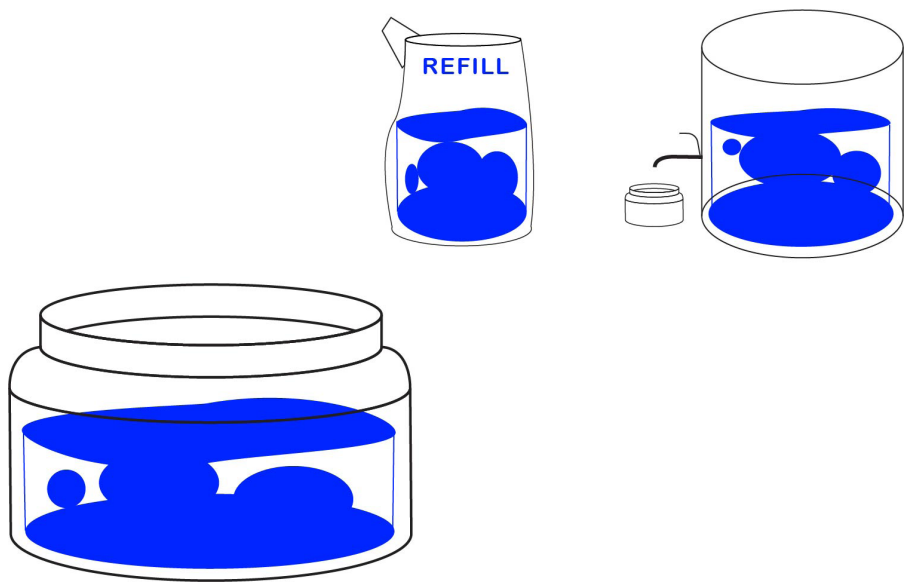
### 3 DIFFERENT REUSABLE SYSTEMS

There are four different classifications of reusable packaging, and 3 of them are connected to cosmetic products. They are first of all, a packaging that is refillable by bulk dispenser, which means that the customer is going to a mobile truck or in-store with their own container to refill it. This is mainly dry products due to hygiene. Second, is a system with a refillable parent packaging, which means that you have a parent packaging which holds a refillable packaging that you change regularly, or that you fill up the parent packaging itself, or dilutes concentrated product in a powder/tablet/pod-form with water to get the product, inside the parent packaging. The third system is returnable packaging, which is a container the customer returns to the producer/retailer in order to get it cleaned and refilled, this is commonly used as a deposit system for returning for example soda cans. (Coelho, Corona, ten Klooster and Worrell, 2020)

I concluded that the parent packaging system would be the most suitable for this project. I believe

it has the best potential in terms of the perception of exclusivity and ease of use. Many people had concerns about the returnable system through my surveys and discussions since they would get another person's packaging back. Even though the company would clean it, it still had some hygiene question marks. Refilling a parent packaging also creates a less stressful situation in getting the product once it's finished. The user can buy new refills in time and not risk being without the product when it's finished for a few days.





# EXPLORING AND UNDERSTANDING MY TOPIC

articles, surveys, questionnaires, interviews, observations & user testing



My project has been consisting of a great amount of research and understanding the cosmetic industry, and also peoples general behaviour towards it.

Articles gave me a great insight in the plastic situation throughout history but also today and what we should do to solve it. I read about different reusable systems, cosmetic packaging and its benefits and flaws, human behaviour when it comes to sustainability (everything from the use of plastics to perception of eco-friendly beauty products). I also read a very interesting article on an innovation resistance theory perspective on purchase of eco-friendly cosmetics.

I will now briefly state the articles I got a lot of knowledge from and my main findings from them.



## articles, surveys, questionnaires, interviews, observations & user testing

### Recycling of multi-material multilayer plastic packaging: Current trends and future scenarios. Resources, Conservation and Recycling

Soares, C., Ek, M., Östmark, E., Gällstedt, M. and Karlsson, S., 2022. Volume 176, p.1.

This article was stating the recycling issue of the plastic MMPP (Multi-material multilayer plastic packaging), which is getting more and more common in consumer goods today. It also speculated about future scenarios and trends regarding new recycling technology and bio-materials.

This article was good to find out some facts on the plastic situation today, and to get some back up on "ordinary" plastic-issue-information. Such as:

- Land and sea pollution is one of the negative side effects plastic-related issues lead to.
- Plastic packaging stands for 39.6% of the whole plastic demand in Europe. Most of them end up as waste and becomes therefore single-use products.

### Improving the production chain with LCA and eco-design: application to cosmetic packaging. Resources, Conservation and Recycling

Civancik-Uslu, D., Puig, R., Voigt, S., Walter, D. and Fullana-i-Palmer, P., 2019. Volume issue 151, p.2

This article was about how a circular economy can have benefits for both the environment but also companies, who mainly care about economical benefits and customer growth. This by using eco-design packaging aligned with the circular economy throughout the production chain.

I found an interesting part in this article about cosmetic tubes and some problematics around them.

- Cosmetic tubes are great for not having the product inside drying out, and mainly for thicker liquids.
- Even though these tubes are recyclable, they usually end up in landfills, because of product left inside the tubes, that makes them ending up in the plastic-mix fraction.

### Understanding plastic packaging: The co-evolution of materials and society. Global Environmental Change

Evans, D., Parsons, R., Jackson, P., Greenwood, S. and Ryan, A., 2020. Volume 65, pp.1, 6-7.

This article showed an interesting point of view regarding human behaviour around plastic products and packaging. It stresses the importance of understanding plastics, both their environmental impact but also the role plastics have in society.

- In order to make a change, there is a need for change in how consumers use plastic packaging, and their purchasing behaviour. However, this should'nt be based on guilt and blame creation towards them, but rather a focus on socio-technical arrangements.

- Refilling and reusing systems among cosmetic products are not being used as much as it should today because of legal issues. If the limitations could be broaden or changed, this could create an opening for these systems.

### Sustainability of reusable packaging—Current situation and trends.

#### Resources, Conservation & Recycling: X

Coelho, P., Corona, B., ten Klooster, R. and Worrell, E., 2020.  
Volume 6, pp.1-10.

This article is about how different reusable systems work and how they are mainly used today, also how packaging connects strongly with the transportation. It states both benefits with these systems but also struggles when it comes to a whole new business-structure of a company, which requires a major retooling process.

- Reusable systems is not a new system. It's used a lot in B2B-businesses (secondary packaging like pallets, crates etc), and also in B2C like deposit systems for cans (pant).

- It's estimated that about 20% of plastic packaging today can be replaced by reusable systems. What is needed is the implementation of great design put into it. Main constraints are safety, complex logistics, restructuring busi-

ness-models, cleaning and unrecyclable laminated materials.

- 3 systems connected to cosmetic products are: Refillable by bulk dispensing, refillable parent packaging, and returnable packaging. (Will write more about this in this documentation).

- Around 80% of cosmetic products is water. Therefore would concentrated products without water lead to a great reduction in transportation and packaging costs.

- This is also a way of keeping track of the hygiene aspect, since water equals bacteria getting into the product. This is also the case for refillable parent packaging, such as Rituals or Kjaer Weis. Lush also has a sustainable system where they focus on having the same plastic throughout the whole product, which enhances the recycling process.

- Even though systems like this can lead to more expensive products, there is a belief that customers will look for more sustainable options, and also gain trust in the company, which will increase the chance of them coming back and con-

tinuing using this specific system.

- Why this isn't used to a wider extent is mainly because of the retooling process that comes with changing a certain business model into a reusable one.

- A reusable system requires good design. It may play an important role when it comes to efficiency and effectiveness, when it comes to user-friendliness, choice of material, reduction of product damage etc.

**An innovation resistance theory perspective on purchase of eco-friendly cosmetics. Journal of Retailing and Consumer Services**

Sadiq, M., Adil, M. and Paul, J., 2021.  
Volume 59, pp.1-11.

This article is about how people as consumers are perceiving eco-friendly products and the issues with trust regarding these. It also states the different barriers that comes in the way between adapting to new innovations.

- People seem to have a good or intentionally good attitude towards eco-friendly products, and want to purchase these. However, eco-friendly products contribute less than 15 % to the total market value of the global cosmetic industry. This shows clearly that there still is some resistance towards eco-friendly products.

- "Eco-friendly cosmetic purchase intention". Intention seems to be the best predictor of the actual purchase behavior.

- "Resistance towards any new innovations" - This is about a functional barrier, which is divided into value, risk and us-

age. And the psychological barrier is divided into image and tradition.

- It has been shown that consumers show a low level of trust against organic products, because of the unsureness of its certification and manufacturing process. This mistrust affects the purchase decisions and the likelihood of purchasing organic products.

- "Therefore, it is expected that environmental concern and health concern would reduce the negative influence of barriers (usage, value, risk, tradition and image) on eco-friendly cosmetic purchase intentions, motivating consumers to alter their existing beliefs and status quo." (Sadiq, Adil and Paul, p.2, 2021)

- **The usage barrier:** A change in status quo. A new innovation requires a new adaption to the product itself. A changed behavior. Prior studies show that consumers are lacking access to eco-friendly cosmetic products, and therefore there is no real consistency which results in the fact that there are no

habits involved in this behavior. **The value barrier:** The consumers perception of value in terms of price compared to its alternative products. It is linked to a product's performance and monetary value, and is also shown to be the strongest barrier that doesn't motivate consumers to adopt a new product.

**The value barrier:** The consumers perception of value in terms of price compared to its alternative products. It is linked to a product's performance and monetary value, and is also shown to be the strongest barrier that doesn't motivate consumers to adopt a new product.

**The risk barrier:** A new innovation consists of a certain level of uncertainty, which results in a risk of using or purchasing it. Green washing is a part of this barrier, where the lack of trust in eco-friendly products results in a risk of using them.

**The tradition barrier:** This is about a risk of changing the consumers lifestyle and habits by adopting a

new innovation. "...the tradition barrier is influenced by consumers' psychological states as eco-friendly products have a "low shelf life" and "low satisfaction" in comparison to conventional products." Based on family values, acceptance etc.

**The image barrier:** The perception of how easy or difficult it is to adopt a new innovation/product by a consumer. Here the consumer is comparing a new innovation with an existing product-line.

- Different moderators are the environmental concern and health concern. The more environmental concern you have, the more willing you are to purchase eco-friendly products. Health concern is aligned with willingness to purchase eco-friendly products.

Organic products are in general not as available as conventional products are in supermarkets etc. Also the tradition barrier is believed to be the strongest one, since its about violating ones norms and beliefs in comparison to conven-

tional products. Therefore it is important to market eco-friendly products in a trustworthy way that emphasizes the eco-beneficial aspects, why these are better than the other non-eco products. A solution is to demonstrate the benefits from a health concern and environmentally concern perspective, in this way, it is possible to gain the consumers trust.

**Green factors stimulating the purchase intention of innovative luxury organic beauty products: Implications for sustainable development.**

Lavuri, R., Chiappetta Jabbour, C., Grebinevych, O. and Roubaud, D., 2022. Journal of Environmental Management, 301, pp.2-8.

This article is about how the trust among customers are related to the green labeling of cosmetic products, and also what causes them to mistrust the products and why.

- Customer's awareness gets increased by green advertising and can affect the consumer trust and purchasing intent. Brand value is something that is created by customer trust. By green eco-labeling, packaging and product details, consumers evaluate the products, however the more aware consumers are about green-labeling and its psychological intent, the more skeptical they can become towards purchasing green labeling products.

- In order for companies

to get brand value and consumer trust, they are using green ads and a green marketing campaign. Studies show that these have an effect. In order for luxury organic beauty products to gain trust, they should consist of well put information to address the environmental concerns of the customers. Green ads and packaging has a clear impact on consumers' trust and attitude towards the product, this as well with luxury products. The importance with the marketing is to communicate the green intentions well to create an interest in knowing more about the company's environmentally friendly intentions. A solution for a brand could be to use social media to portray this and get a good company reputation and trustworthiness.

- Why consumers aren't buying premium organic cosmetic products is mainly the lack of trust. They need to believe and trust that their purchase will lead to a better environmental impact.

- "Customers would be willing to pay higher premiums for organic beauty goods if brands adopt organic promotion tactics and advertising strategies".

How companies can stay competitive on the market is by investing in sustainable technology and partnering with environmental suppliers and consumers.

**Energy consumption in e-commerce versus conventional trade channels - Insights into packaging, the last mile, unsold products and product returns.**

Pålsson, H., Pettersson, F. and Winslott Hiselius, L., 2017.  
Journal of Cleaner Production, 164, pp.765-778.

This article was sent to me by Carl Craft who also investigated a lot about the main energy consumption in e-commerce. This information was valuable in terms of further development of the CLEO brand. What to think about mainly when saving energy in both shipping, transportation and e-commerce.

- Energy efficiency can be determined by the five following factors: Product waste and product returns, buildings, packaging, passenger transport and freight transport.

- Product manufacturing possesses about the same energy consumption via e-commerce as in-store purchasing. The main CO2 emissions depend a lot on the product return methods. For example, if the

return is via a single car trip it's 12 times greater than if it would be collected on a subsequent delivery ground. On the other hand, unsold products via in-store can reach up to 35% for some categories, which concludes that e-commerce would lead to less waste in the manufacturing process and fewer unsold products, although it is important to in this case have the return method in mind.

- The last mile has the most demanding part in terms of energy consumption in the distribution process. When picking products up, cartrips should be combined with doing other errands in order to lower the energy consumption. The consumer's trip to and from the pick-up place or store is greater than the energy consumed during all other transport associated with the production and distribution.

- Some factors that affects the energy efficiency are product price, since the price can affect

the requirements on the packaging and protection of the product itself to also enhance a safe delivery, this goes also hand in hand with the product protection which also is a factor, because this can influence the choice of vehicle when transporting the product and the packaging system. The weight and volume is another factor, since it affects the amount of packaging material and possibility to stack the products with other ones during transport. Another factor is also the product returns, mentioned above.

- "The reason for the home delivery option being less energy-efficient in these five variants depends only on packaging. In the home delivery option, each book uses a corrugated board package, while the books from the store are sold in a paper bag with approximately 80% less energy consumed."

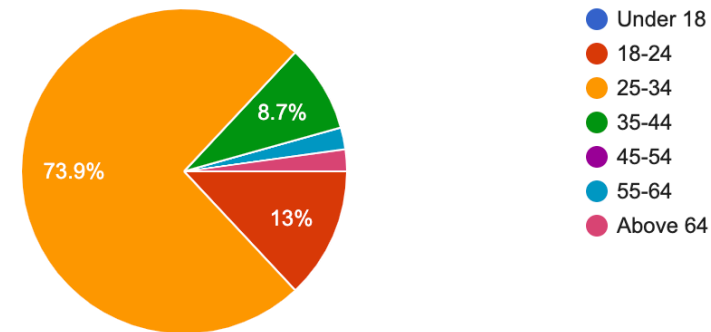
articles, surveys, questionnaires, interviews, observations & user testing

I first did a survey where I wanted to see the general behaviour among cosmetic users. The questions included storage, the main goal of using cosmetics, and also the preferable reusable system.

The main findings from this were that many people tended to have an issue with hygiene regarding the reusable systems, especially the bulk and returnable systems. Also, people didn't see much potential in the parent packaging system because the refill seemed not as durable and sustainable as the other two because of the need for the plastic material to contain the refill product.

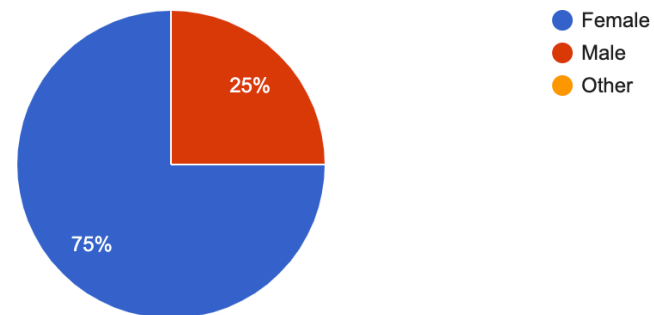
### What is your age?

46 responses



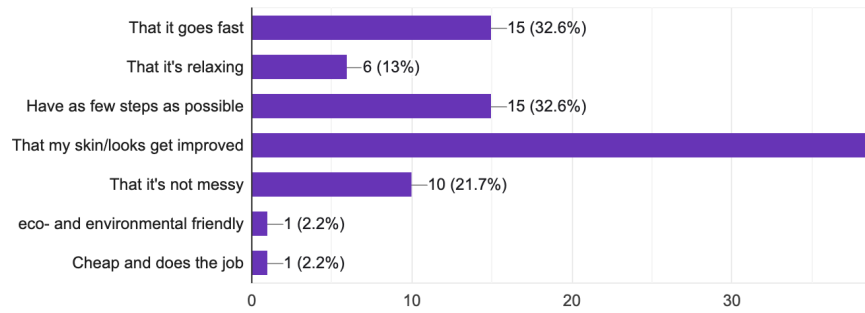
### What is your gender? (This is for statistics only)

44 responses



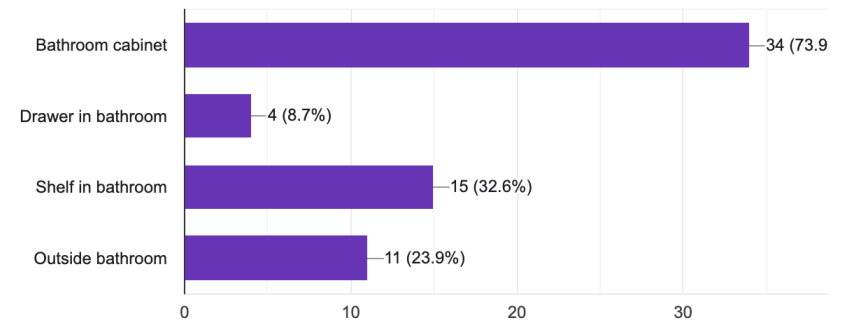
### What is most important for you when using cosmetics?

46 responses



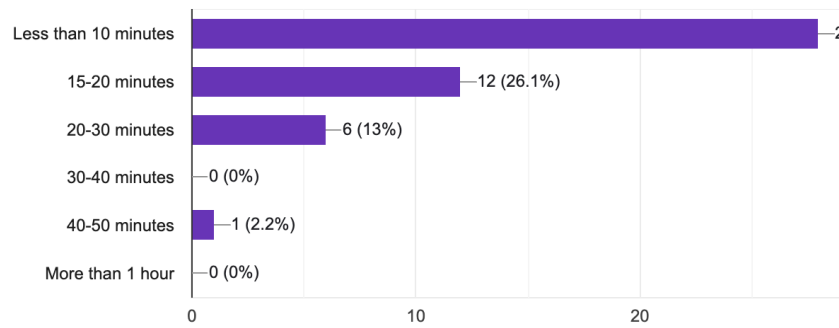
### Where do you usually store your cosmetic products?

46 responses



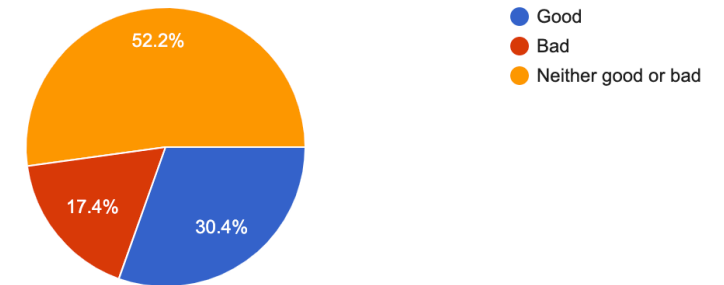
### How much time do you put on skincare everyday?

46 responses



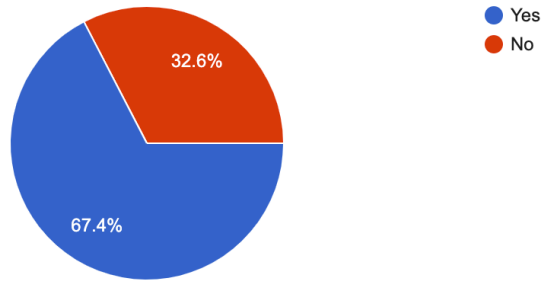
### How is the storing situation like for your cosmetic products?

46 responses



Have you ever thought about refilling your cosmetic products?

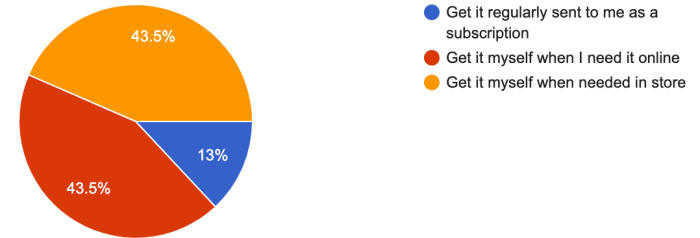
46 responses



Refill system 1 - Parent packaging. This means that you have a packaging that holds a refillable packaging, which you regularly change (throw and replace). How would you rather use this system?



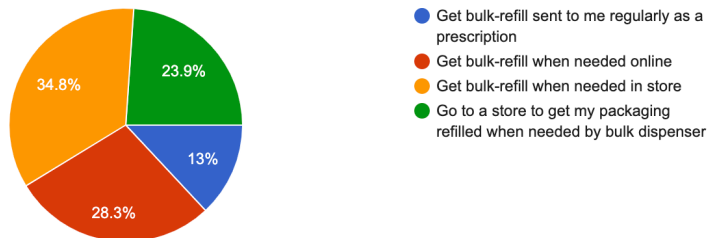
46 responses



Refill system 2 - Bulk dispensing. You either go to a store with your packaging to refill it, or you get a bulk-refill to refill by yourself at home (like soap-refill for your soap-pump-container). How would you rather use this system?



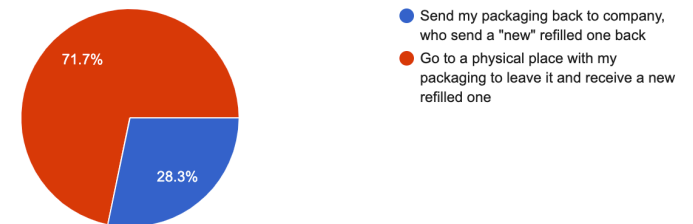
46 responses



Refill system 3 - Returnable packaging. You go to a place where you return your used packaging, to receive a washed and refilled one, just like a deposit system. This could give you a reward (like pant) or discount on the next purchase you make there. (The packaging you return is not the one you receive back). How would you rather use this system?



46 responses





Please explain why you didn't choose any of the other 2 choices.

34 responses

The first one seems like a good solution but I'm wondering how different it is from original packaging (as there is still a packaging part you are meant to throw away). The 3rd option means that you need to purchase the same product again and again from the same place. I have products in my routine from different brands, and I want to be able to go and refill all of these at the same time - not have to go to different places for each of my products.

Parent and Bulk packaging still have to produce packaging which is bad for the climate

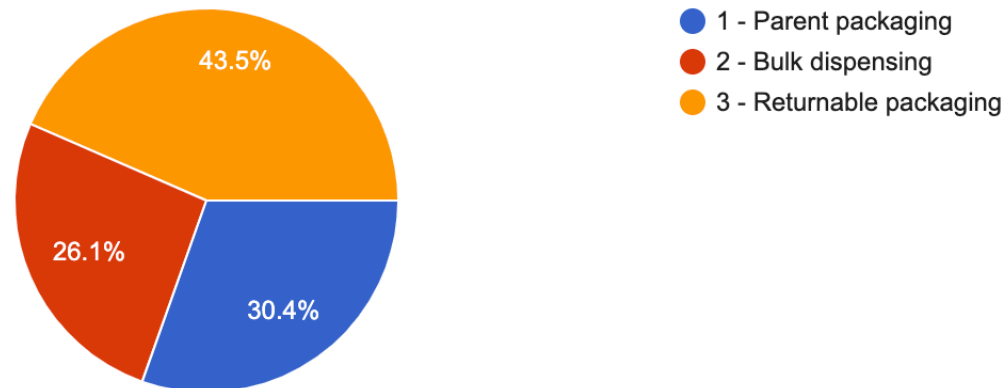
Bulk dispensing seems more time consuming and messy. Parent packaging wastes more material.

System 1 - seems to use double up on packaging? Hard choice between system 2 and 3. System 3 seemed more sustainable than system 2, since you need less material/packaging

Which one of these 3 systems would you rather use?

46 responses

 Copy



To check people's perception of exclusive and non-exclusive products, I did another survey with a variety of products in different categories.

I also did a similar test where I wanted people to rank these products outside the computer to get a more "in real life" discussion about their choices. I also collected different cosmetic products and covered the brand to conduct a tactility testing where the participants, based on the look and touch, would rank the exclusivity of the products.

Based on their looks, rate these lipsticks from least exclusive/expensive to most exclusive/expensive. (ex. EDABC - where E is least exclusive/expensive and C is most)



A



B



C



D



E



Based on their looks, rate these face creams from least exclusive/expensive to most exclusive/expensive. (ex. EDABC - where E is least exclusive/expensive and C is most)



A



B



C



D



E

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Lumene CC cream (left), Sensai cream foundation (right), (57, 58)

## Budget

= bright colors  
lightweightness  
too much information

## Exclusive

= Thick, heavy materials  
Frosted glass  
Tactile elements  
Brand of big importance  
(Eco-products usually lack these attributes)

## articles, surveys, questionnaires, interviews, observations & user testing

I conducted a questionnaire to get a further sense of peoples perception of quality in products the used by themselves at home. I first asked them to take a picture of their storage situation and then I asked the following questions:

Favorite products and why? (think about the tactile/visual experience about the using etc)

Thoughts about how they look together where they are stored?

Is there something you rather hide away because of the way the packaging looks?

Something you like to have exposed because of the way it looks?

The findings I got from this was that they cared about which products they exposed and also wanted to hide away. This showed a mindset about the fact that the packaging affects a lot what you as a user expose and not.



articles, surveys, questionnaires, interviews, observations & user testing



**CHRISTOFFER ÖHRMAN**

CEO/head of sales for cosmetic company  
björk&berries



**KATRIN MOLINA-BESCH**

associate senior lecturer at packaging  
logistics, LTH



**CARL CRAFT**

master student in chemical  
engineering, LTH  
currently doing his master's  
thesis in packaging logistics  
at cosmetic company nøie



These three people gave me important insights at the beginning of my project—especially Christoffer Öhrman, the CEO and head of sales for the Scandinavian cosmetics company Björk&Berries. The most worrying fact (which I stated at the beginning of this report) was that eco certifications are in 99% of the cases bought by companies, and it's easy for people to think it's official. This means that even if a brand has an eco-certification, it doesn't have to be eco itself, simply because they have money to buy themselves into a greenwashed image. We also talked about recycled plastics and how cosmetic companies embrace them to appear greener. However, recycled plastics are much more expensive than virgin ones. This usually leads to another greenwashing example where companies buy these virgin plastics, then shred them down and melt them down into new containers to have the recycled plastic aesthetic.

Christoffer and Katrin-Molina Besch, a senior associate lecturer in packaging logistics at LTH, agreed that the primary importance lies in the protection and maintenance of

the cosmetic product itself. When talking about waterless products, Katrin also stated that these would save a lot of energy in packaging and transport. The only concern about it, mainly expressed by Christoffer, was maintaining a high quality of the product. How will the whole experience affect the usage of the product when it comes to tactility, scent, and consistency?

This was one of the main reasons I wanted to try out different solid formulas that could turn into a cream formula to keep the same tactile experience as the current products on the market. This led me to Anna Karin Morén, a Principal Scientist for Semi Solids at Galenica AB, a company that is a pharmaceutical technology partner. We talked about how these formulas are built up with emulsifiers, water, and oil and how these components turn into a cream. The main finding from this was that creating a solid formula that turns into cream is exceptionally complex and is a Master's Thesis by itself. She showed great positivity about durable and cheap refills since they are as expensive as the parent packaging. She believed this was an area of great opportuni-

ties, where a solid and a waterless formula could open up cheaper and more durable packaging.

When talking to Carl Craft, a Master's student in chemical engineering at LTH, who is doing his Master's Thesis in packaging logistics at the cosmetic company NØIE, it was mainly about finding the most optimal material for cosmetic packaging. According to Carl, it is tough to find out for various reasons. First, will this material lead to different behaviour, such as a reusable one? Second, can it be recycled several times? We talked about aluminium and how it needs to be used a lot of times before "deserving" the high production energy, which differs from plastics.



## GRAM

bulk dispensing grocery store in Malmö



## CARINA FOLKSESSON

CEO at Grön Lycka Cosmetics AB, one of the suppliers for GRAM



## ETHIQUE

Cosmetic company with focus on being plastic and waste free, with solid bars and waterless formulas

To better understand the packaging of solid and waterless formulas, I contacted GRAM in Malmö, a bulk dispensing store of grocery products such as grains, cereals, washing powders, and bars. They showed me how they got their solid shampoos and conditioner bars shipped to the store, which were put together in a cardboard box and then stored on a covered shelf to keep them in a dark and cool place. In this way, the products didn't need individual packaging; they could be put together in the cardboard box like this. Carina Folkesson is one of the suppliers of these solid bars, and she told me that for shipping, she also filled out the space between the products with paper material to keep them in place. In addition, she works with waxes and fats with a higher melting point to prevent melting issues during shipping and transportation.

Ethique is a cosmetic company based in New Zealand, with a definite aim to minimise plastic and product waste with solid bars and waterless formulas. They also told me that they are using cardboard boxes for their solid products and

have shown to be effective in maintaining the product quality throughout its 36-month shelf life.

This information showed me the optimistic potential of shipping solid and waterless formulas in cardboard packaging, significantly reducing energy during shipping and transportation.

articles, surveys, questionnaires, interviews, observations & user testing



My observations during this project were also a part of the market research to get a deeper look into how different stores work with reusable, refillable, and returnable systems. L'Occitane and The Body Shop is one of few companies that has been working with refillable cosmetics for longer. In L'Occitanes store in Triangeln, Malmö, they also have a system where you as a customer can return empty soap bottles, which are then getting correctly recycled. These bottles usually contain a metal spring in the dispensing pump and are not often thoroughly cleaned before recycling. They also use aluminium bottles, which you buy refills for.

To my surprise, I also observed a lot of refills in stores like Coop that could be sold together with a similar aluminium bottle like L'Occitanes. It seems like refillable options are getting more common on the market, which shows great potential in changing customer behavior. Perhaps we are getting closer than we think to eliminate single-use cosmetics packaging.

# FINAL BRIEF

**“Design a brand for exclusive cosmetics, providing a refillable packaging system with the aim to minimise packaging and product waste and optimise logistics”**

**Second focus: Store concept/branding**

I wanted to focus on making a parent packaging for a few products so it could become more of a family in the project. The first idea was to have around five products from different categories: a face moisturiser, face cleanser, mascara, lipstick, and a face serum. I quickly realised that this would take up too much time within my time frame. So I narrowed it down to 3 products, a face moisturiser, a face cleanser, and a mascara.

Although I wanted to have different products in mind, I wanted to achieve consistency. The face moisturiser and lipstick would have the same formula in terms of its application and dispensing from the parent packaging, so I excluded the lipstick. The cleanser in the powder formula was something I wanted to keep because of its eye-catching properties due to the formula and dispensation. I also wanted to keep the mascara because of the development that could be done with the previous cake mascara we had in the 19-20th century.



## AIMS

### Reduce/remove:

SINGLE USE PACKAGING  
PRODUCT WASTE  
WATER WASTE

Easy to use

Attract my target group

Experience

## HOW?

By designing for waterless/solid products that will reduce product and packaging waste.

# IDEATION

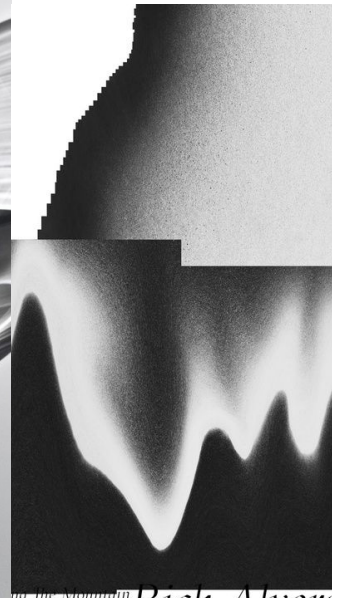
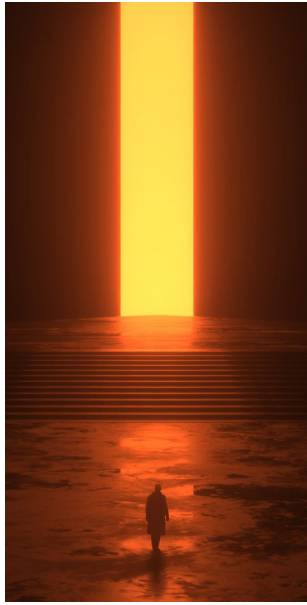
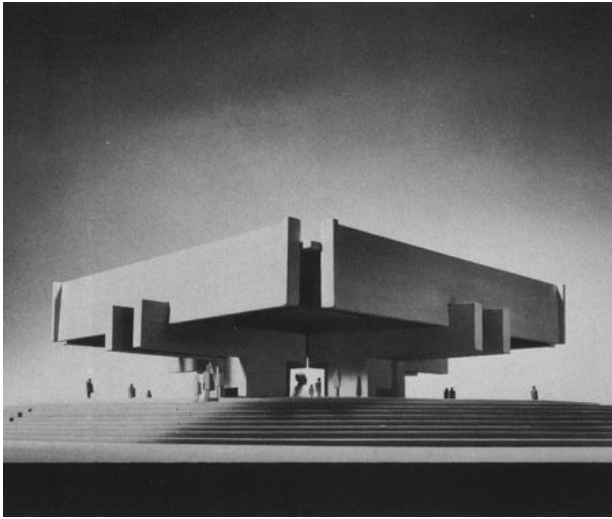
moodboard, sketching, trying out existing products, sketch models, 3D-printing, testing, branding, material choice

Brutalist architecture and sci-fi scenarios influenced my primary inspirations in the mood board and glossy finishes in metallic objects. First, the sharp edges that come together elegantly capture my attention in these elements.

I wanted to keep my Cleopatra inspiration in mind with one of the famous pyramids, and I enjoyed the way the contrast came together between this old piece of architecture together with dystopian scenarios and high glossy materials.

For me, the play between these harsh elements coming together with elegance in a sleek silhouette and materials lays the base for my design language.





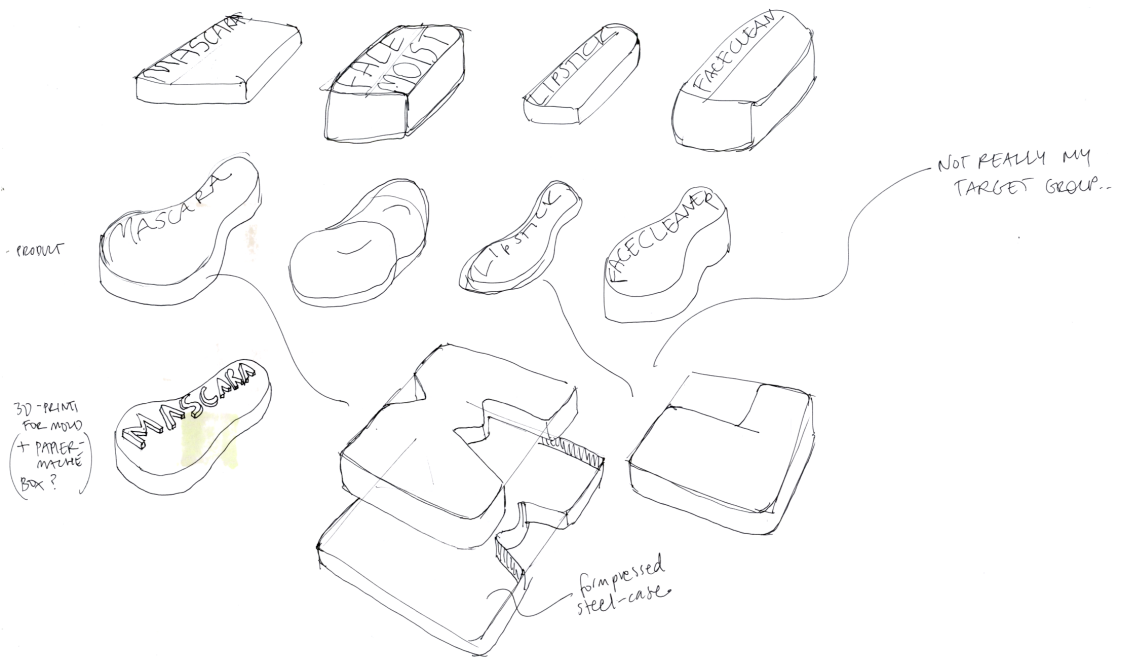
ing the Mountain  
to follow *Rick Alvers*



- BAR-BASED PRODUCT - COLORCODING / EMBOSSING / ENGRAVING

→ NO PACKAGING AT ALL...

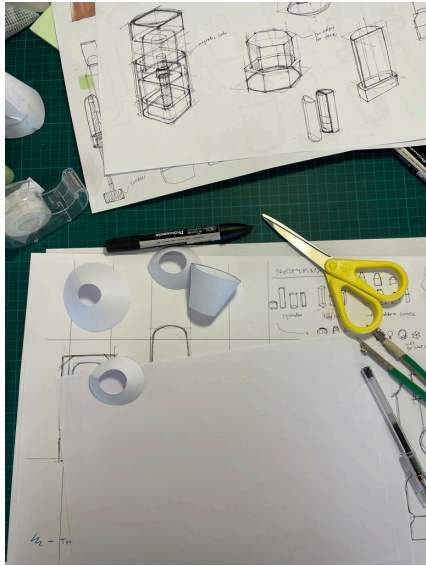
EXCLUSIVE GRAM / LUSH



After talking to Olof Kolte, I sketched out some ideas where there was no packaging at all. The products could be only in solid forms like soap bars. How to distinguish the different products could be either by engraving names, similar to what soap bars have today. It could be shaped like the first letter of the product, such as "M" for the mascara cake and "C" for the cleanser.

However, after some consideration, I concluded that this idea wasn't aimed at my target group. It didn't give out the perception I wanted to achieve with these products. Even though it is a great idea to obliterate packaging, I believe that this format of the products is a bit too far away from the one today, which could result in a risk of consumers not using it.

moodboard, sketching, trying out existing products, sketch models, 3D-printing, testing, branding, material choice

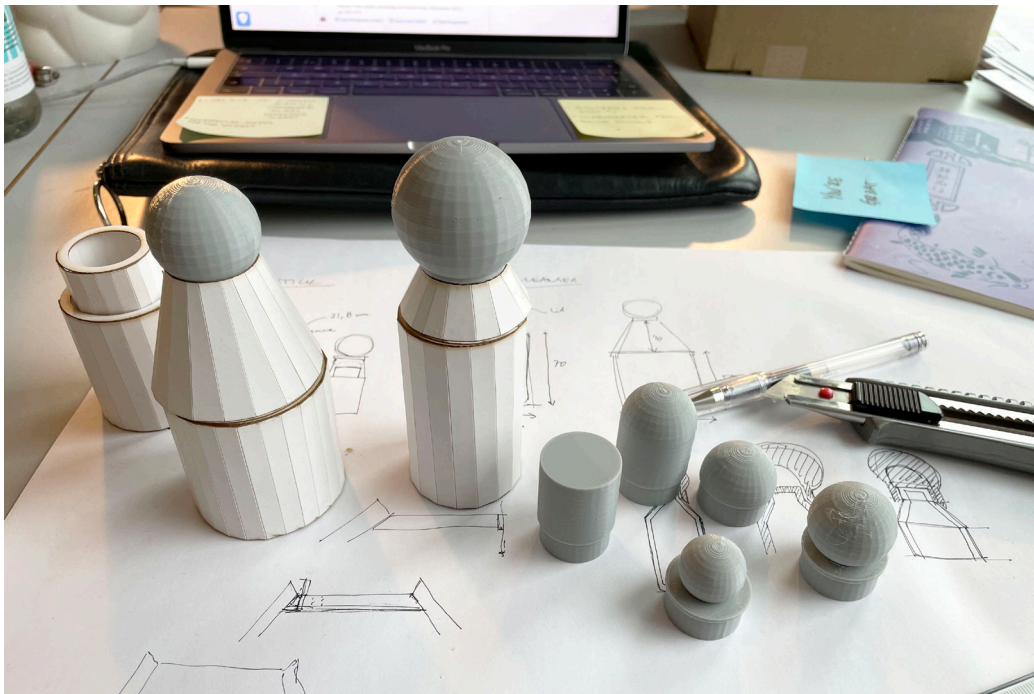


I needed to grasp the dimensions I thought would be appropriate for the specific products. For example, how does it feel most natural to pour out a powder product without feeling like a salt shaker? I also wanted the face moisturizer to have a comfortable dimension inside the hand with the screwing mechanism and also that the face stick would have an optimal side against the face.

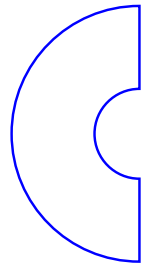
I felt that cylindric shapes would be optimal to hold and resemble current products on the market today. I also wanted to bring in a chamfered or cone-shaped edge to it and thought of ideas where it could end in a spheric lid.

I had people try out the different shapes to see which one they felt was most comfortable in the palm.





moodboard, sketching, sketch models, 3D-printing, testing, trying out existing products, branding, material choice



**CLEO**



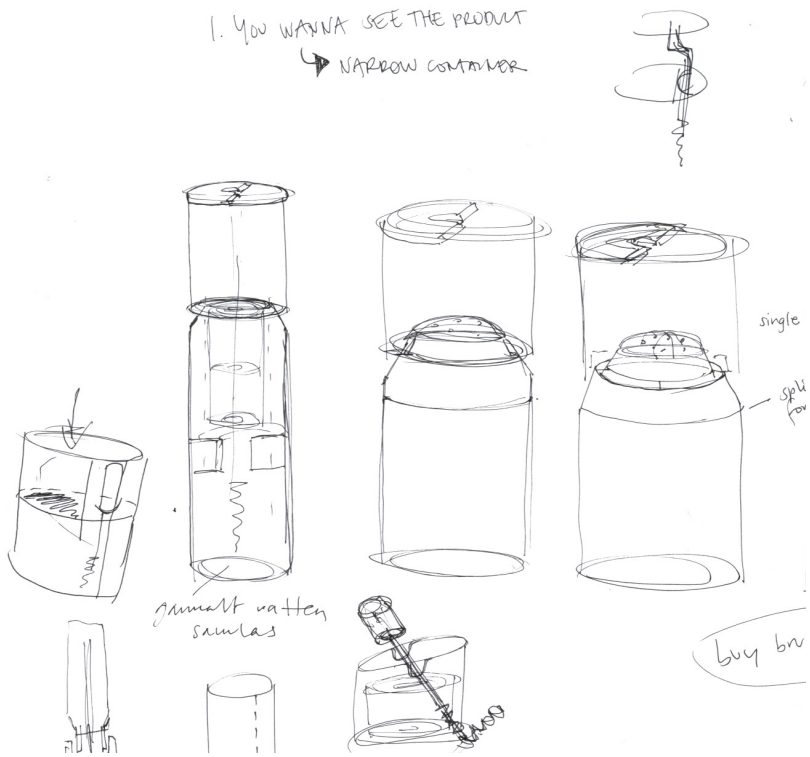
I felt I needed a brand to design around for my design process to proceed. A brand would inspire me to make specific details and give storytelling to explain the shapes and reason behind them.

I went back to the historical research I did, where I read a lot about ancient Egypt and the beautiful cosmetic containers used. I felt that a name connected to this era and especially cosmetics is Cleopatra, so I decided to go for that but shorten it to Cleo. The 'C' in the name could be used as a detail in the container's lid since it would be a cylinder shape.

What I also connected with Egypt is chamfered edges. They are seen in temples and pyramids, and I wanted to imply this in the design.

Ancient Egypt pictures, Top picture with pyramid (74)

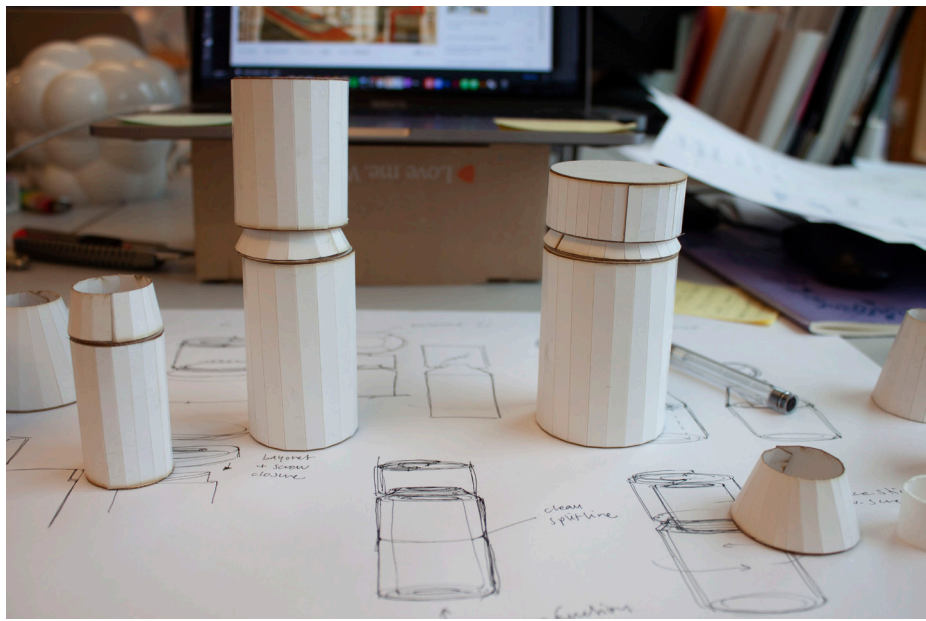
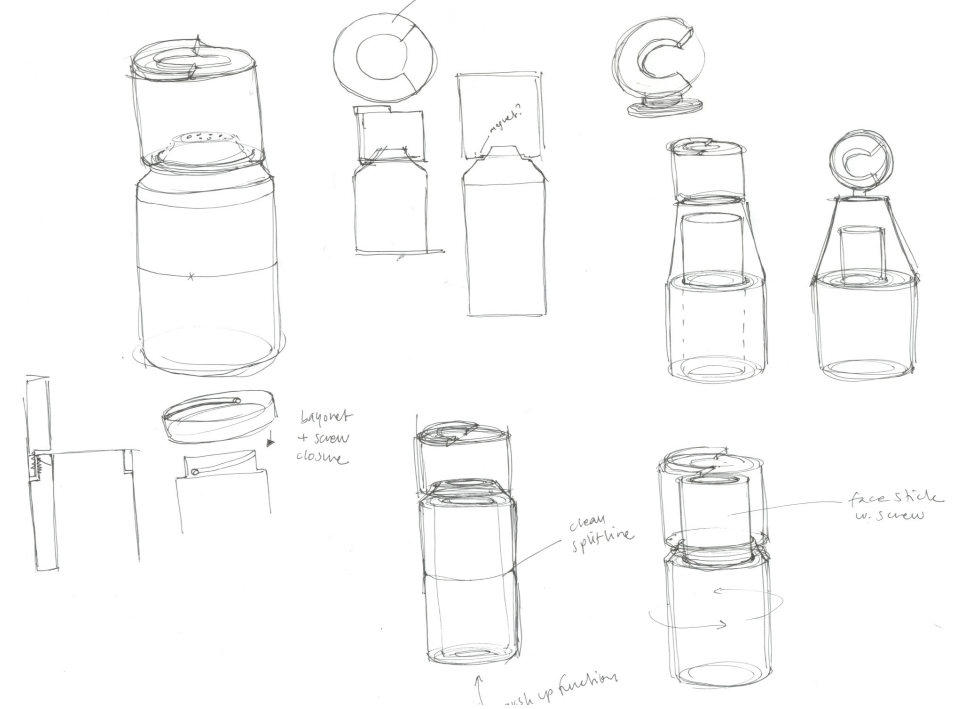
1. You WANT TO SEE THE PRODUCT  
 ↳ NARROW CONTAINER



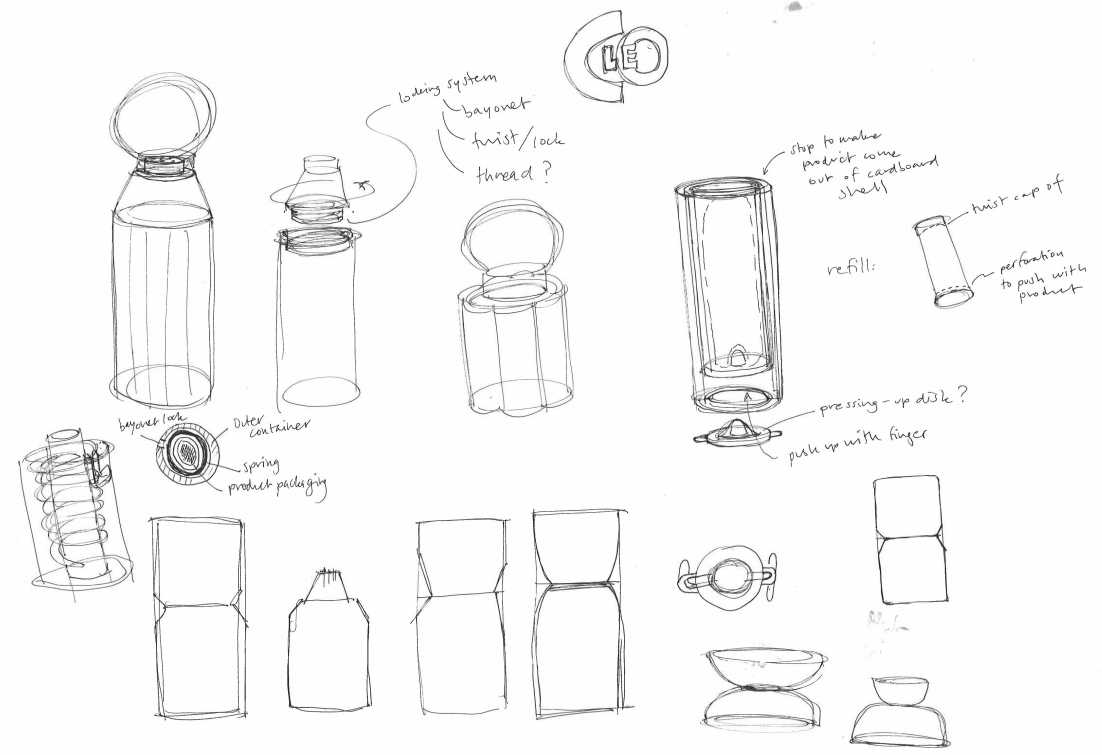
CLEO

embossed 'C'

ELECTRA → SWAGE



locking system  
 bayonet  
 twist/lock  
 thread?



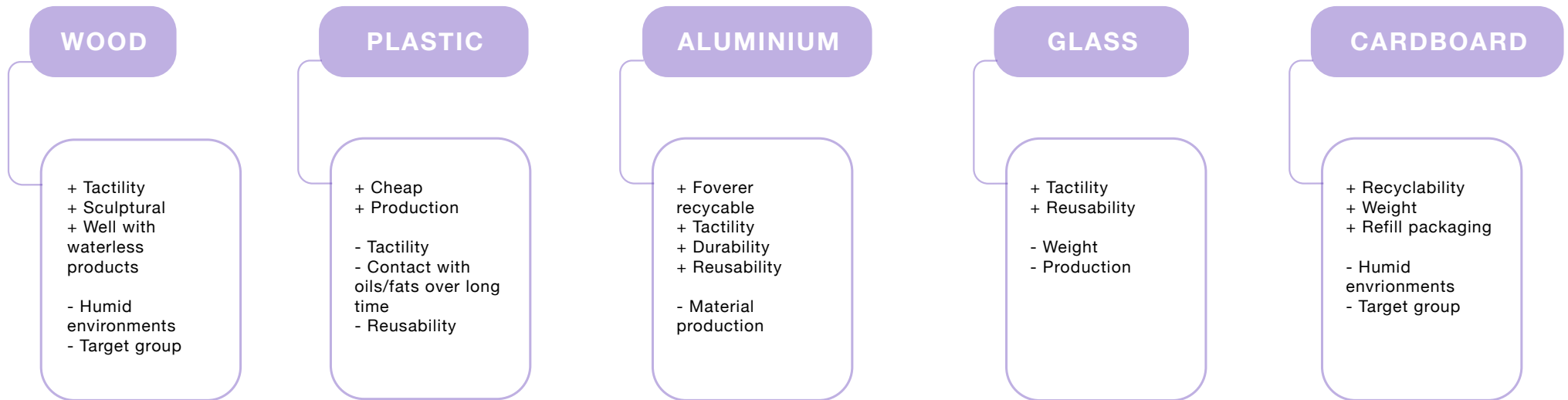


I drew a lot of inspiration from engraved and embossed logos. It is a simple and clean way of branding that is memorable and also enhances the tactility of the packaging. I also concluded from my exclusive vs. non exclusive questionnaire that engraved and embossed logos in a container resembled exclusivity. It is also a wise choice over printing, since this would tear over time. By implementing the logo in the material of the container either with embossing or engraving, it will be long lasting and durable.



Material pictures (top left to bottom right) (75-78)





## PLASTIC VS ALUMINIUM

As I concluded from my background/motivation and research, plastics are a material I want to stay away from. It is because plastics don't age as well as other materials, especially in contact with oil/fat-based products.

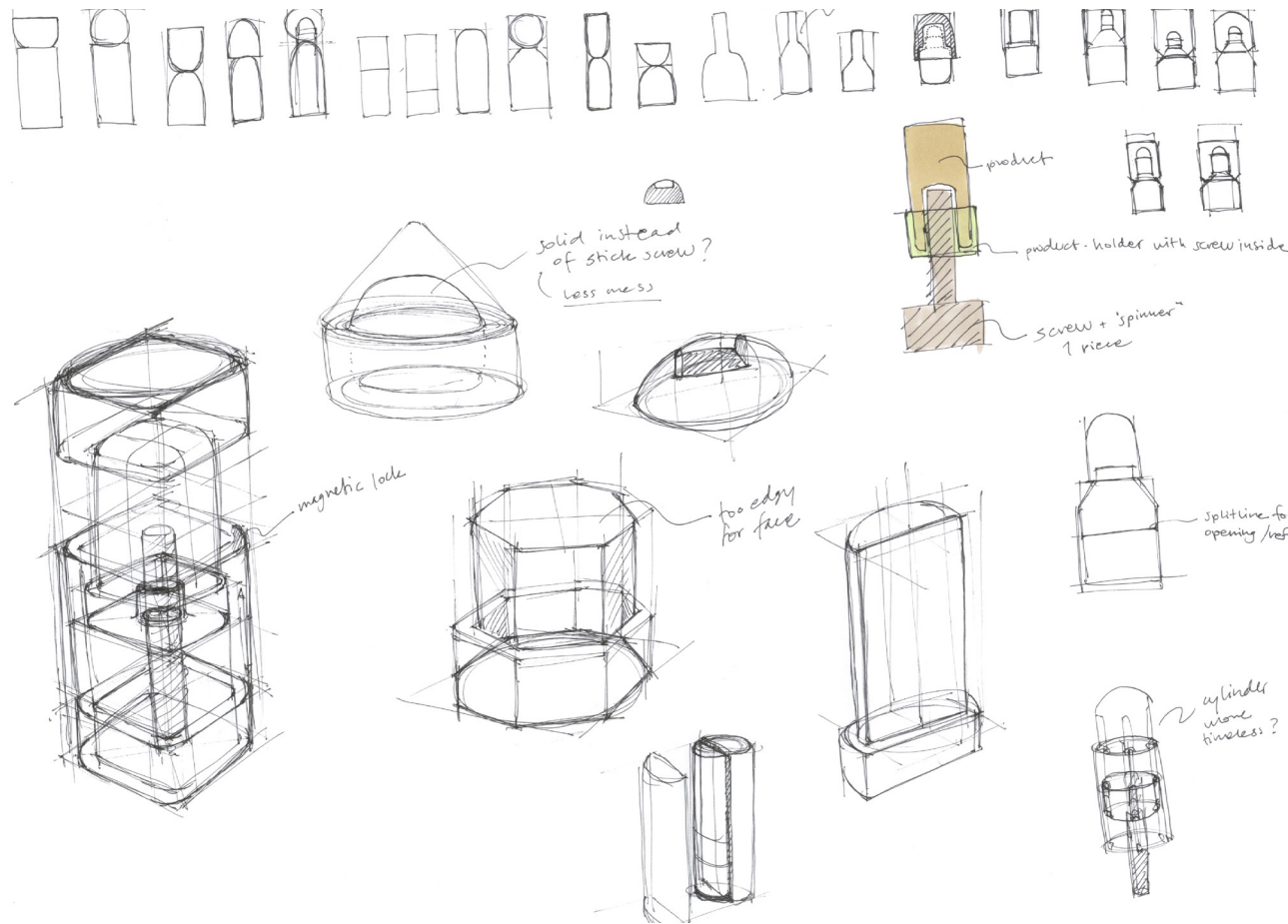
However, plastics have excellent properties and abilities when producing specific parts, and it's cheap. Since my containers will be reusable for an extended time, I could use some elements in plastics primarily for production and ability purposes. (ecoreplenishers., 2020)

The production of aluminium itself is not optimal. It requires fossil fuels and vast amounts of energy. It comes from bauxite that exists naturally in nature, which gets converted to an oxide, and from this step, it gets converted to pure aluminium. For about 1 tonne aluminium, there are about 10 000 kWh fossil fuels and 19 000 kWh electrical power required.

Despite the downside of the actual material production, it is infinitely recyclable, much more durable than plastic, and will not lose quality once it's recycled, which plastic does. Aluminium is much more likely to be reused as a container than plastic. In addition, it has strength and, at the same time, lightweightness, which makes it suitable for packaging and transport. (Återvinningscentralen., 2007)



# THE FACE MOISTURISER



I wanted to have the face moisturiser in a stick form, and I needed to decide if I wanted to have it as a push-up or screw-up function. Since this would be a packaging one would have for a long time and of high quality, I decided to go for a screwing part. In addition, it would add to the perception of higher value since it's a more thought-through mechanism and is easy to use.

While comparing products of the different mechanisms, I also concluded that the ones with a push-up function had a design language not focused on exclusiveness, but the screw-up function did.

Since I wanted to use as little plastic as possible, I wanted to see if I could do the part in aluminium. However, after talking to several engineering people in the IKDC-building, especially from the product development department, I decided that making the part in plastic would be most optimal, mainly because of the cost and efficiency of producing it. Also, since it would neither be seen nor thrown away after one use, I felt it made sense.

Now I only needed to figure out how this mechanism works to be able to draw it in rhino and fusion and print it, and this ended up being much harder than I thought.



Screw system reference pictures (top left to bottom right) (79-86)

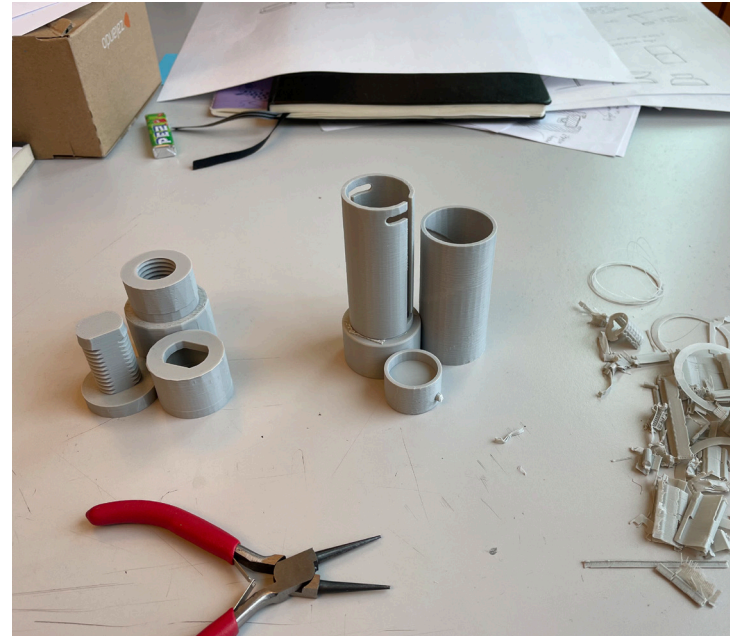
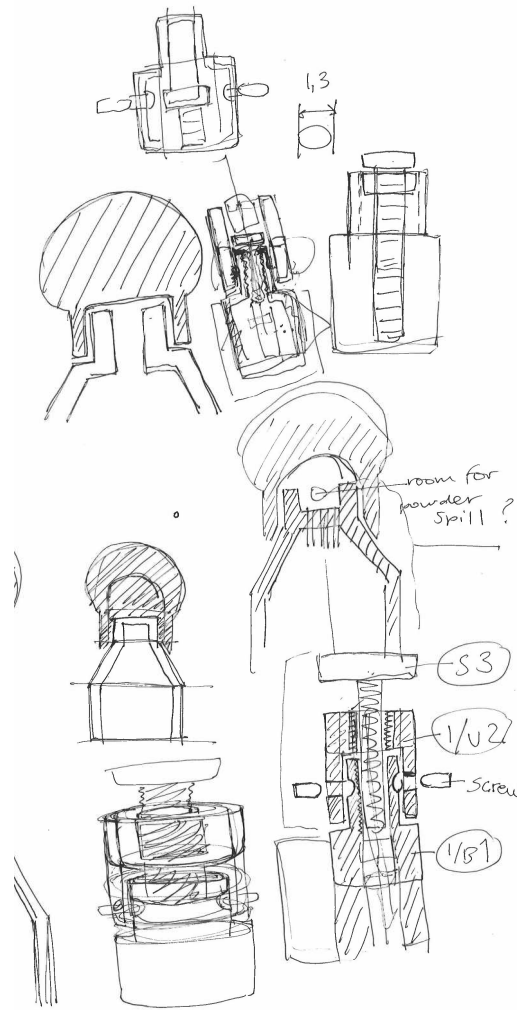
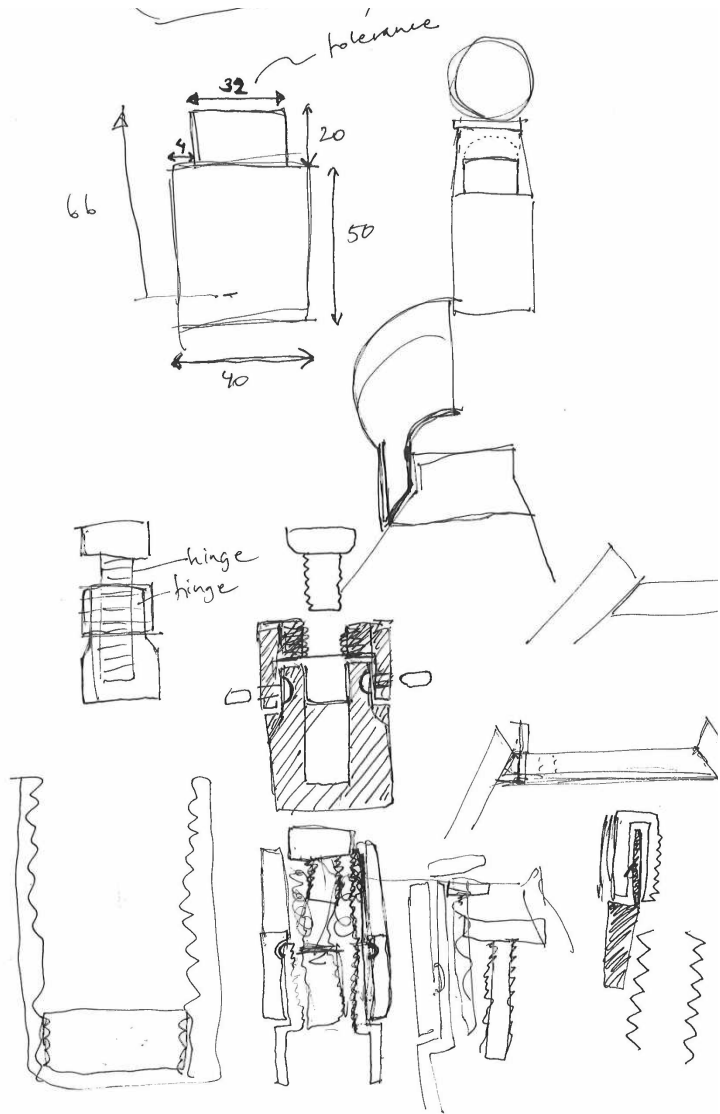


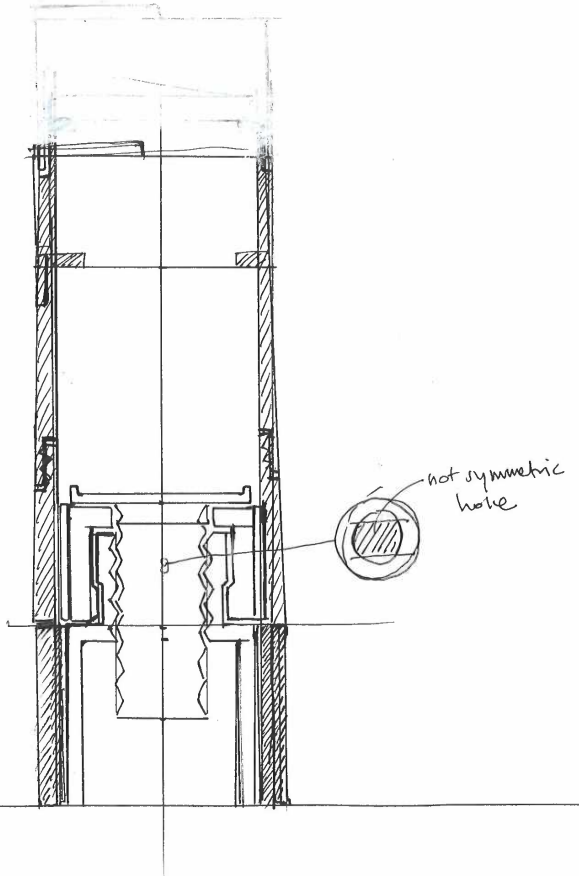
To understand the function and assembly of the different parts of this screw mechanism, I first had to get a hold of products that had this mechanism. So I bought two face moisturiser sticks and a glue stick and cut them open to see how the parts were assembled.

After talking to different people about the mechanism, I drew it up in rhino and fusion to print it and test it out in other dimensions.

I tried different kinds of screwing systems, such as the one used in a lipstick. I simply just had to choose one of them, so I went for the screw system in 3 parts. In this way, I could have this inside, glued to an outer shelling, in a simpler way.







As I drew out the full-scale version on paper, I felt the dimensions were too large. I needed to take the wall thickness together with the screwing system into consideration, which first made it a bit too wide and high.

Since it's a product for the face, I wanted to keep it as neat as possible and provide an easy application. Therefore I scaled down everything to a more appropriate size.

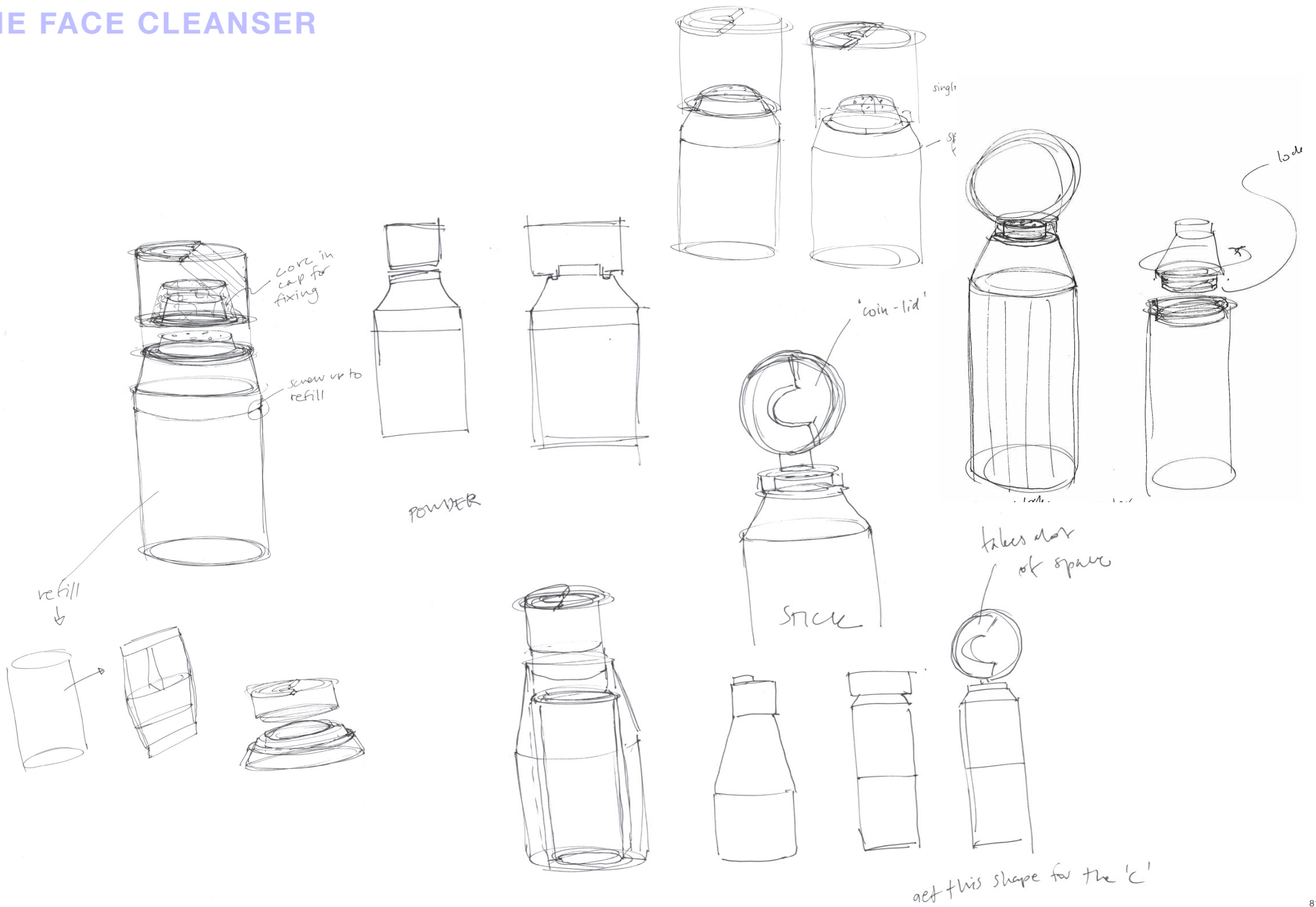
I also wanted to implement the chamfered edges and a slight angle to the container. These angles are something I tried to maintain through all three products. The crucial part is where the screwing function goes through and the wall thickness where the threaded parts would be.

I sent the parts to 3D-print was satisfied with the result.





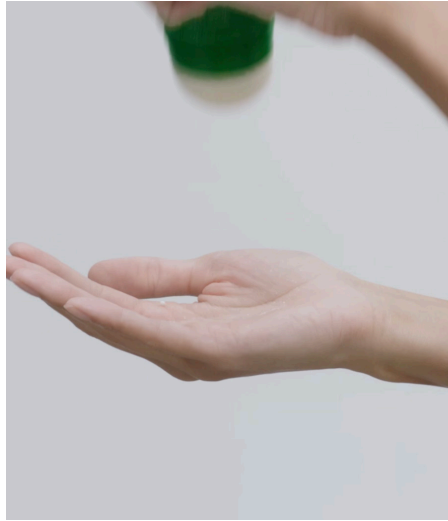
# THE FACE CLEANSER



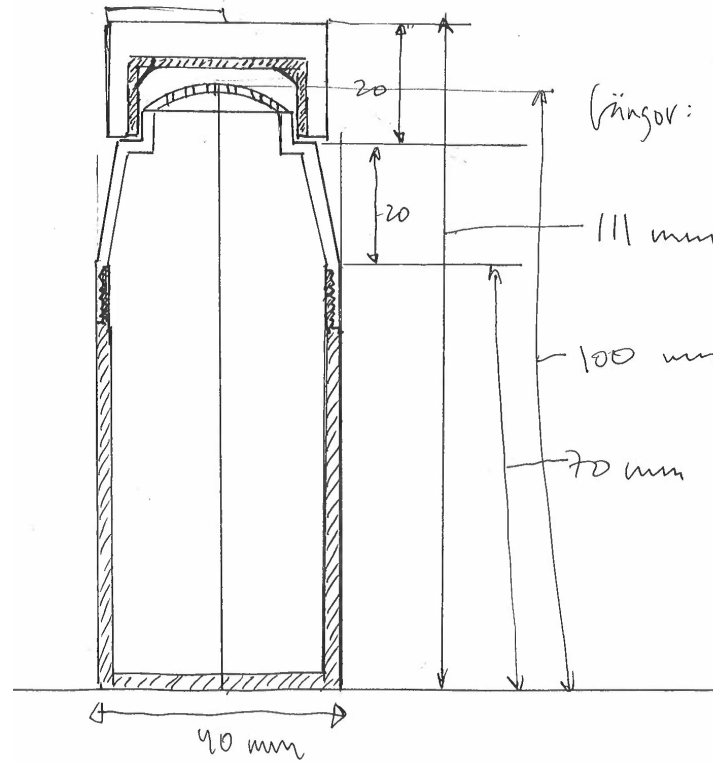
Essential for the face cleanser container is the dispensing, since this product will be in powder form. By comparing different products with similar dispensing-systems, I concluded that several holes would be best for this. Similar to baby-powders or salt and pepper shakers. The ones I got a hold of with only one hole weren't optimal since you needed to pour the product carefully into the palm to avoid getting too much; this, of course, also has a lot to do with the width. The brand Human-race uses only one hole, but it's narrow. The container of that one is also much smaller than the one I intended to have. It made me think about a volume powder that also used more holes and got a nice spread of the product, the same goes for baby powder. I decided to go for more holes because of the container's size and to get a wider spread of the powder in the palm.



Osis volume powder (87)



Humanrace cleansing powder images (88)



## THE MASCARA

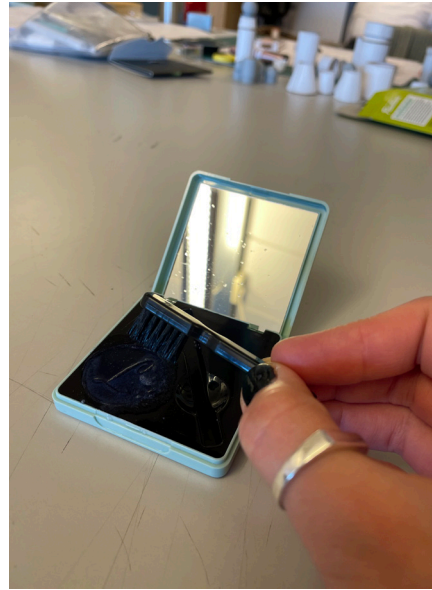


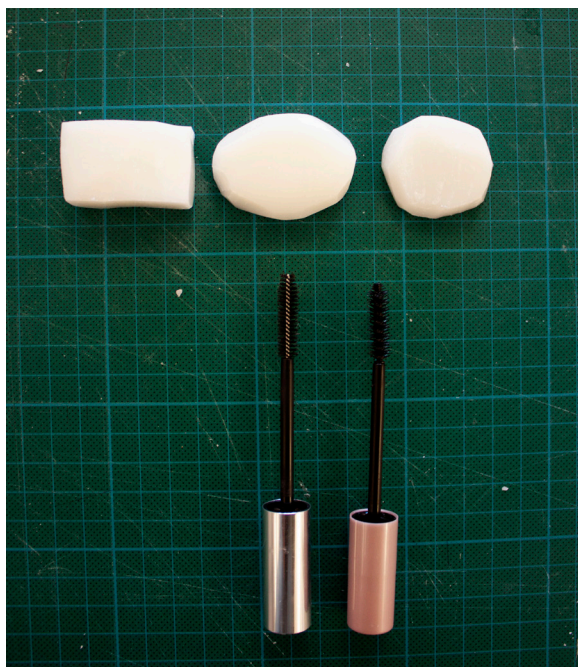
Solid mascara magazine ad (top) (89), Maybelline mascara cake (bottom) (90)

I had to work the most coming up with the mascara design. I wanted to do the mascara in a cake form, where the product itself would be like the product used in the 50s, but an upgraded, more convenient version. First, the cakes used back then were flat and came together with a toothbrush-like brush. After testing one of these, it got quickly messy, and the brush is not optimal for the eyes since it doesn't take up the product that well, and it's rough, which doesn't feel convenient around a sensitive area like the eyes. Another thing is that the brush is short, making it uncomfortable using and reach all the lashes.

I wanted to try out how I could use the modern, rounded brush on different "prototype cakes" I carved out of hard soap. So, first, I tried a flat version, similar to the old one, and then a version with tapered holes and straight cylindrical holes.

I realised that a cylinder-shaped hole that captured the round brush felt the best. Not just because it resembles the modern mascara people are using today, but it didn't create a mess using it, and during several uses, the swipes of the brush formed the carved soap in an even, clever way.



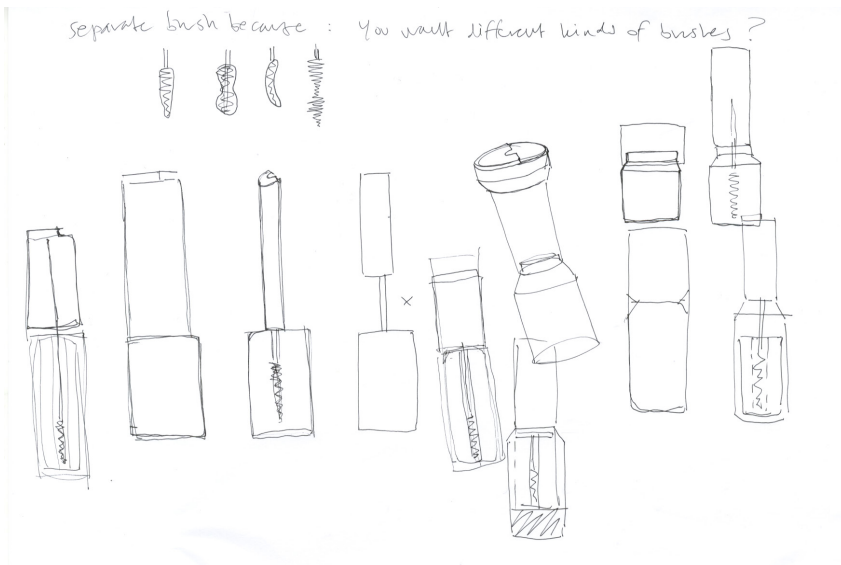
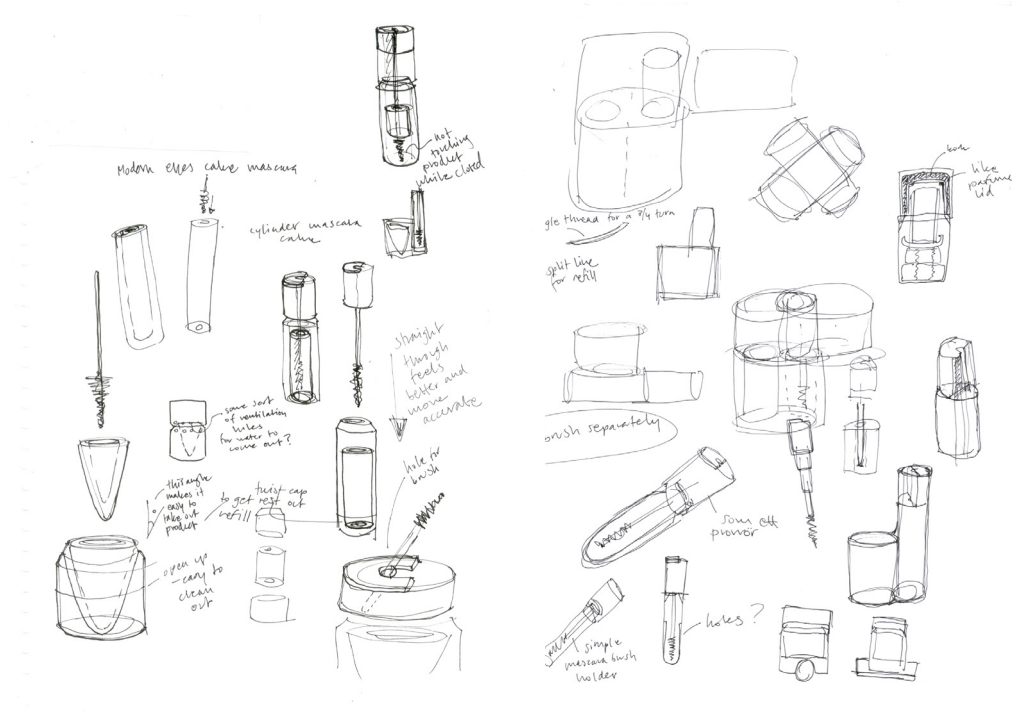
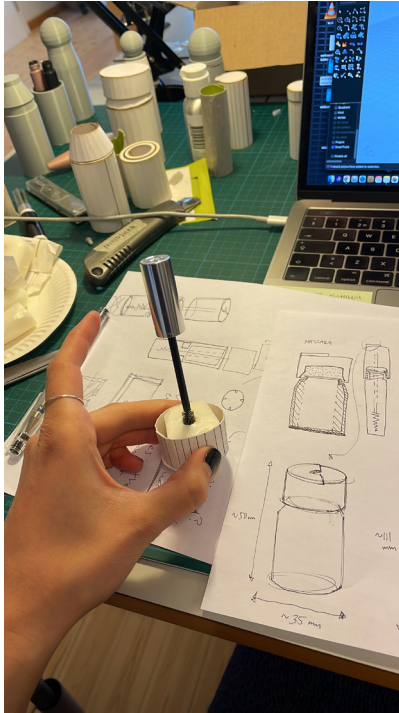


I carved three different flat shapes out of soap, and I intended to try out two different brushes, one in rubber and one in synthetic hair. I wanted to see how they both worked against a more rigid surface (unlike the mascara today) and how the carving turned out on the shapes. I quickly excluded the rubber one since it was too flexible in the “neck” between the brush and the stick holding it; the rougher surface also resulted in deeper carvings against the solid product, which I didn’t want.

From this, I also carved pieces with holes, tried out the brushes on those, and let other people try them to get the most optimal shape.



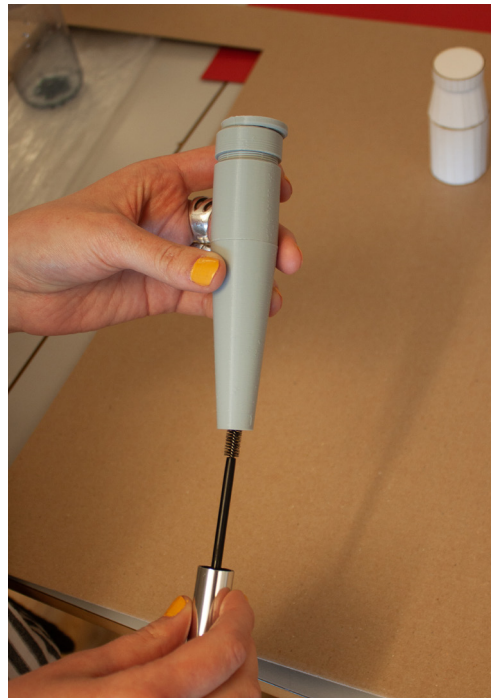




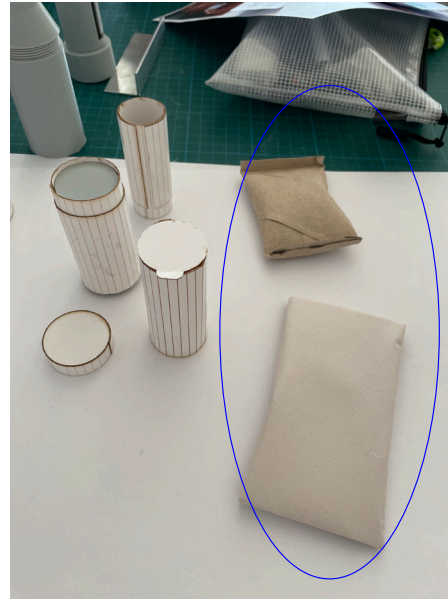
Here I came to a point where I struggled a lot with the design and function of the mascara. First, I thought about only having a container with the cylinder cake and the brush you could buy separately. Then, after some thinking, I realized that you would want a mascara product together with a brush. It would be much more convenient and comfortable for the user and resemble the modern mascara.

I had speculations about where the brush would dry off when it had been used and where would it be placed in order not to take up too much space in the container? I sketched ideas where the brush was placed in a cylindrical shape next to the container, which didn't feel optimal. I did some sketch models and decided to attach the brush to one end while the product holder was placed from the other. This composition would create a convenient use of the product while not taking up too much space in a potential bathroom cabinet, purse, or similar.





## THE REFILL



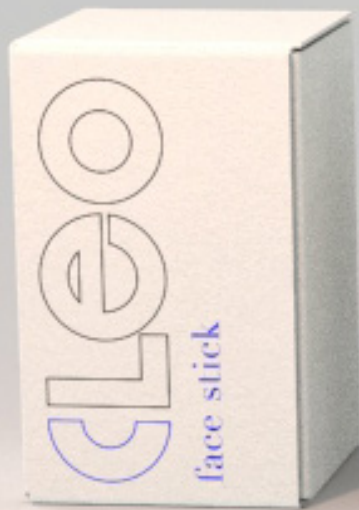
various cardboard boxes (91-93)

As I worked forward with the refill packaging, I had the conclusions from the interviews and observations in mind, where cardboard and paper packaging were in focus. For the solid formulas like the face moisturiser and mascara, I first tried out different cylindrical shapes but quickly concluded that this would make it unnecessarily complicated. First of all, it would risk turning into a parent packaging in the

aesthetics, but also, printing the brand onto it would be much more complicated due to the rounded surface. With inspiration drawn from brands such as Ethique and more exclusive brands like Melton and Ceremonia, I decided to go for a simple box shape for these products. This would not only simplify the printing and graphics onto the packaging, but it would also be more optimal for shipping together in a batch.

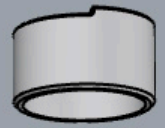
When thrown away, it could easily be folded flat to minimise the space. I first rolled a paper into a cylinder and flattened the edges for the powdered face cleanser product. This would be similar to the packaging for portioned sugar, iced tea, or small cosmetic test packaging. The dispensing of a powder would, in this way, also be simple in the way the user could tear the edge and then have a natural sharp edge to pour from

into the parent packaging. This packaging would also take up a small space during transportation.

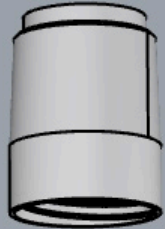


# FINALISATION

To make the refill part easy for the face moisturiser, I divided the outer shell of the screw system (that would hold the face stick) into three parts—first, one bottom container for the bottom screw part, which will have the walls glued together. Next, one middle part, working as a shell to the middle screw part, and also glued to this. So, by holding onto the bottom container and screwing the middle container part, the product will come out through the top container opening, which would be screwed together with the middle part. Finally, at the top is a lid that would have the embossed 'C' for 'Cleo.' This will also have grooves on the inside for rubber seals to create a tight and nice closure.



lid



upper container part with thread at bottom



face moisturiser with paper holder



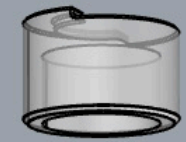
inside screw system in 3 parts to hold the product (fixed to middle and bottom container part)



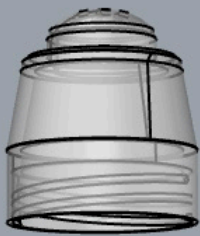
middle container part



bottom container part



lid



upper container part with thread at bottom



bottom container part

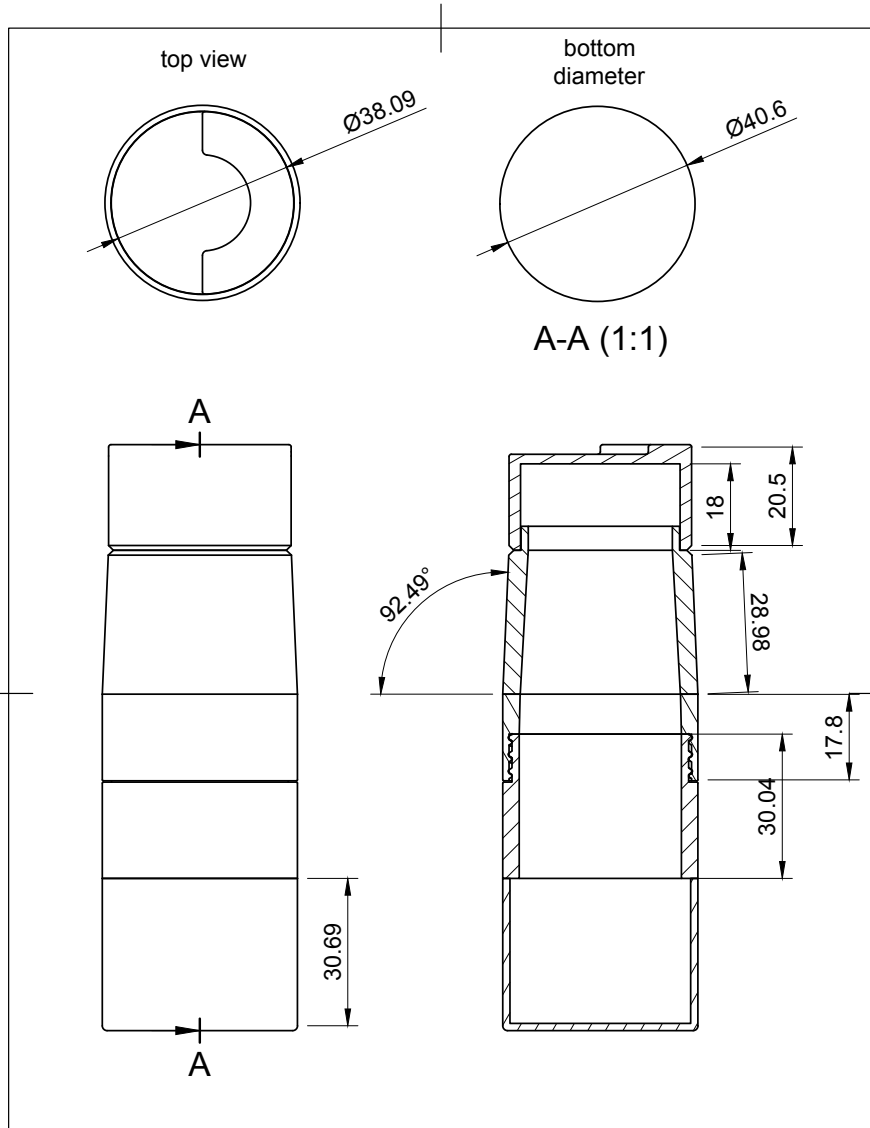


lid (top, and bottom with thread)

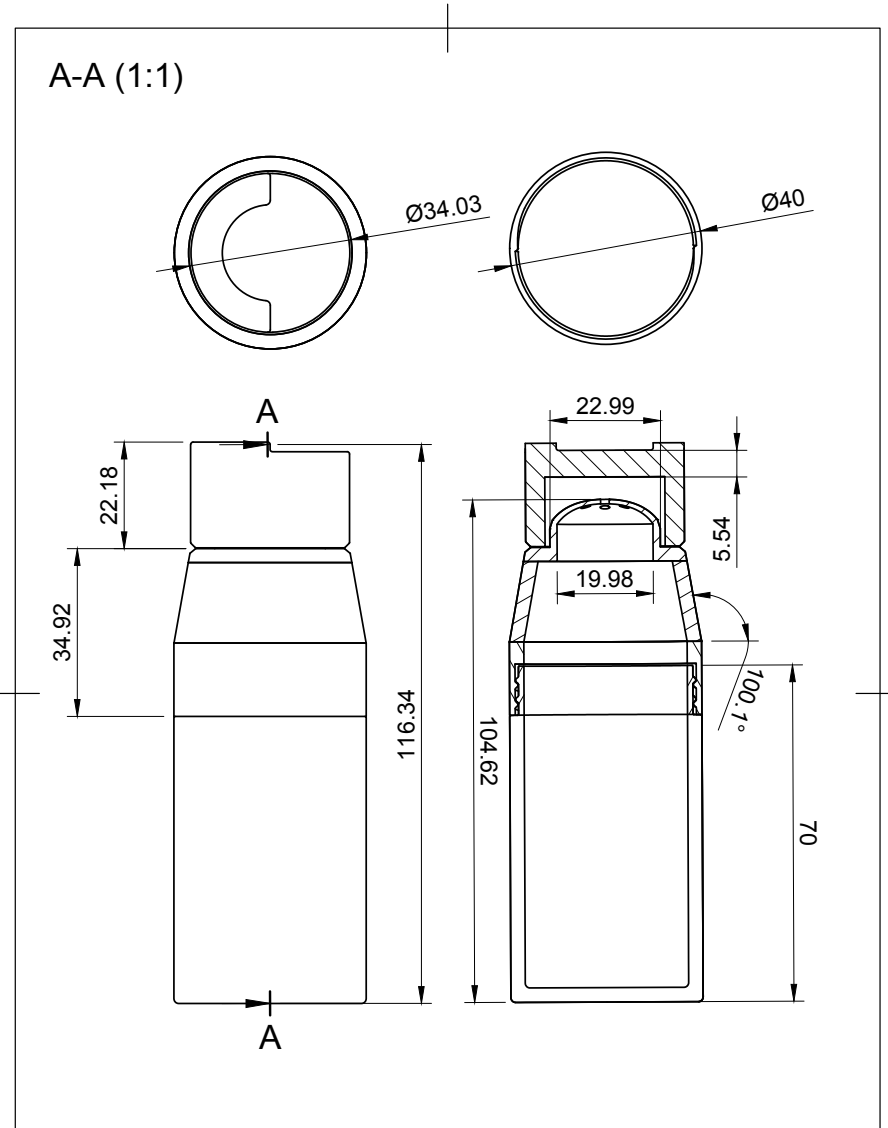
solid mascara product

container for mascara and brush, divided by inside wall

mascara brush



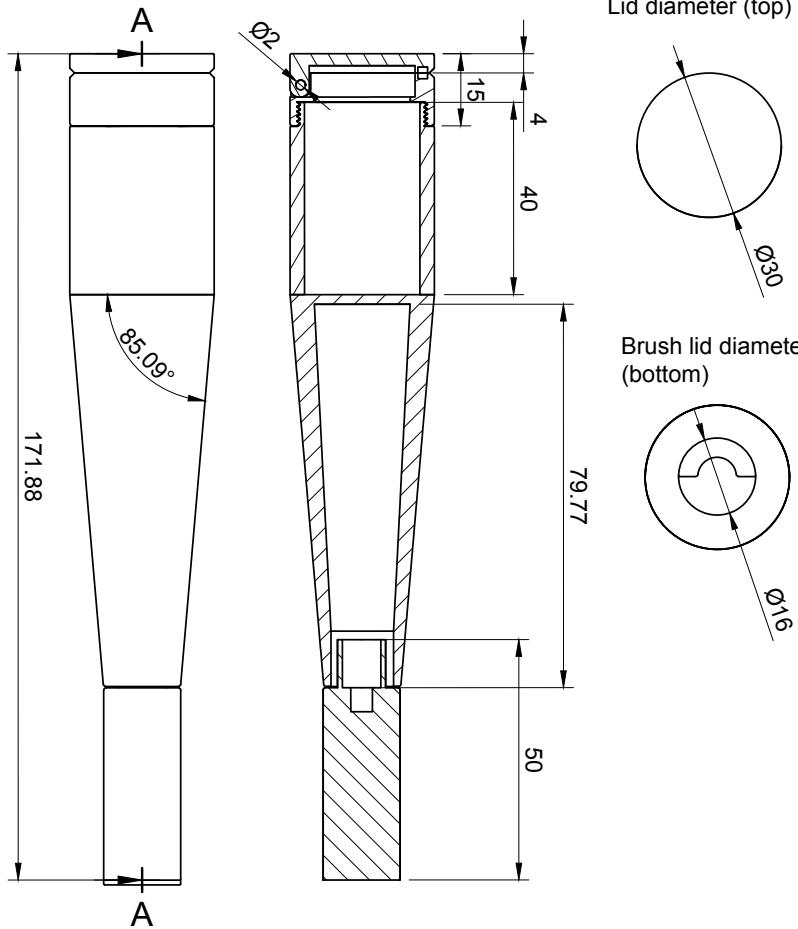
Dept.	Technical reference	Created by Nina Cherrug 2022-05-10	Approved by
		Document type	Document status
		Title Face moisturiser stick Packaging	DWG No.
		Rev.	Date of issue
			Sheet 1/1



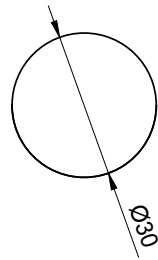
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		Document type	Document status
		Title Face cleansing powder Packaging	DWG No.
		Rev.	Date of issue
			Sheet 1/1



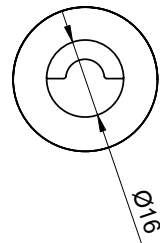
A-A (1:1)



Lid diameter (top)



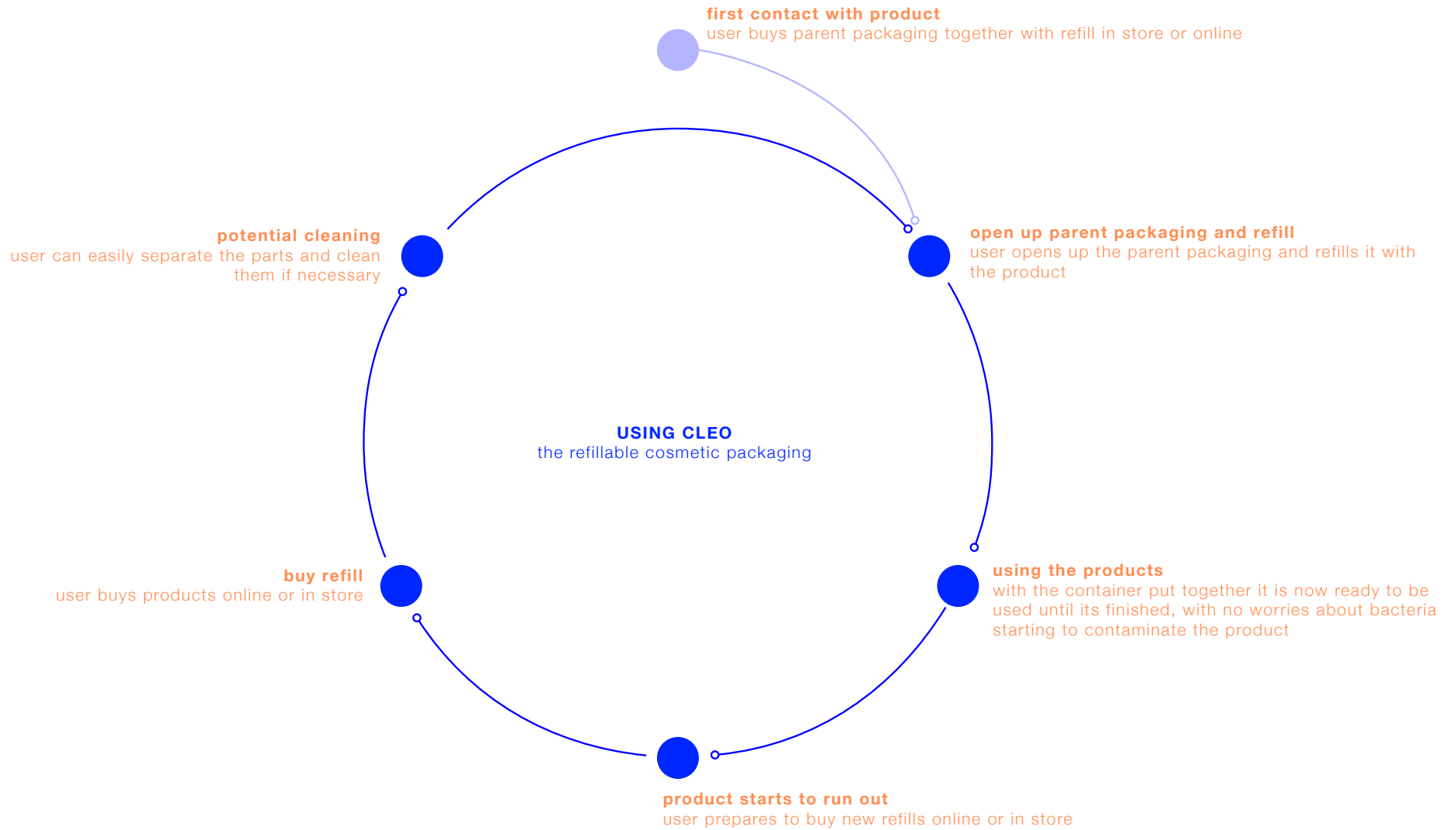
Brush lid diameter (bottom)

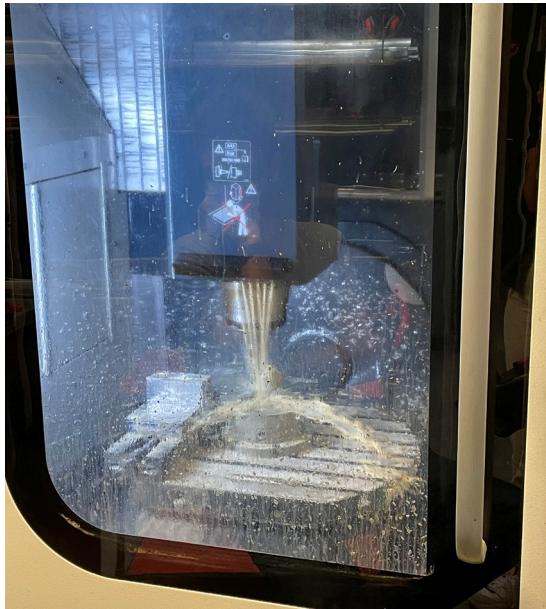
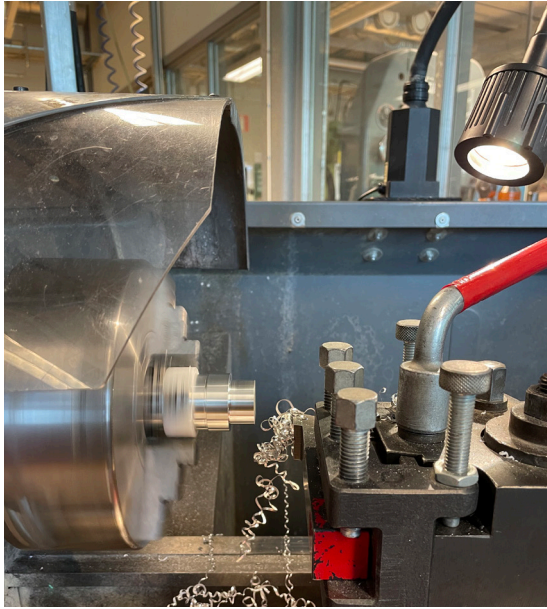


The brush used inside the mascara was glued inside the bottom lid and is a standard-sized brush, usually about 100 mm. I had to cut about 10 mm off since a bit of it was inserted in the bottom lid to make it fit in the brush container. Together with the lid and the brush, it would be like a regular-sized brush-wand.



Dept.	Technical reference	Created by <b>Nina Cherrug 2022-05-09</b>	Approved by
		Document type	Document status
		Title <b>Mascara packaging</b>	DWG No.
Rev.	Date of issue	Sheet <b>1/1</b>	





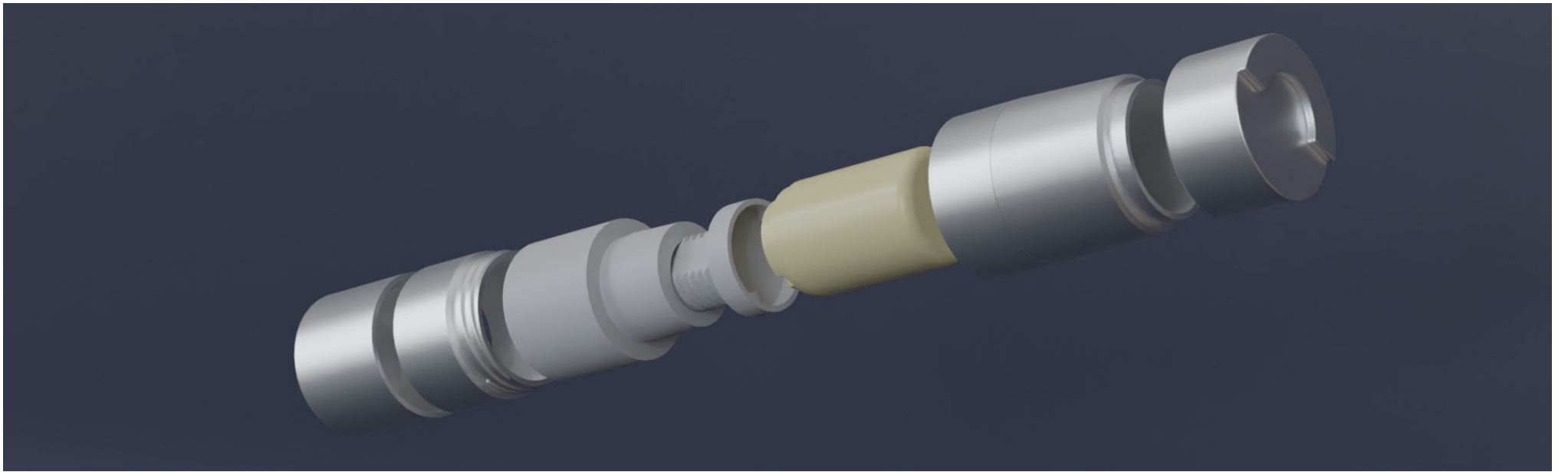
# RESULT





# FACE STICK / MOISTURISER



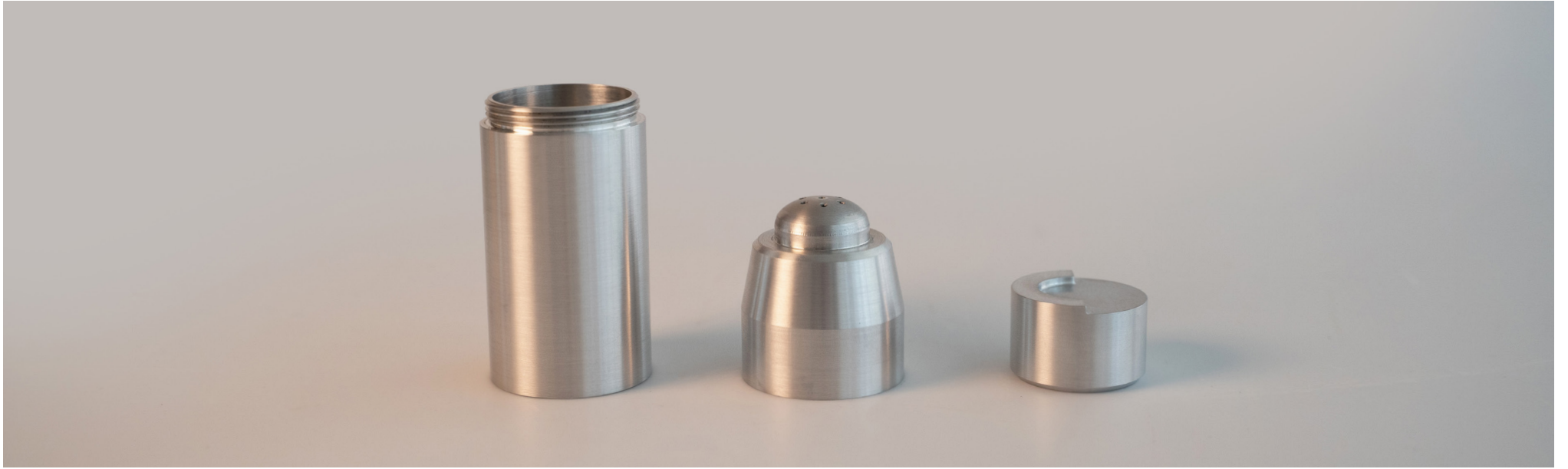


# FACE CLEANSING POWDER



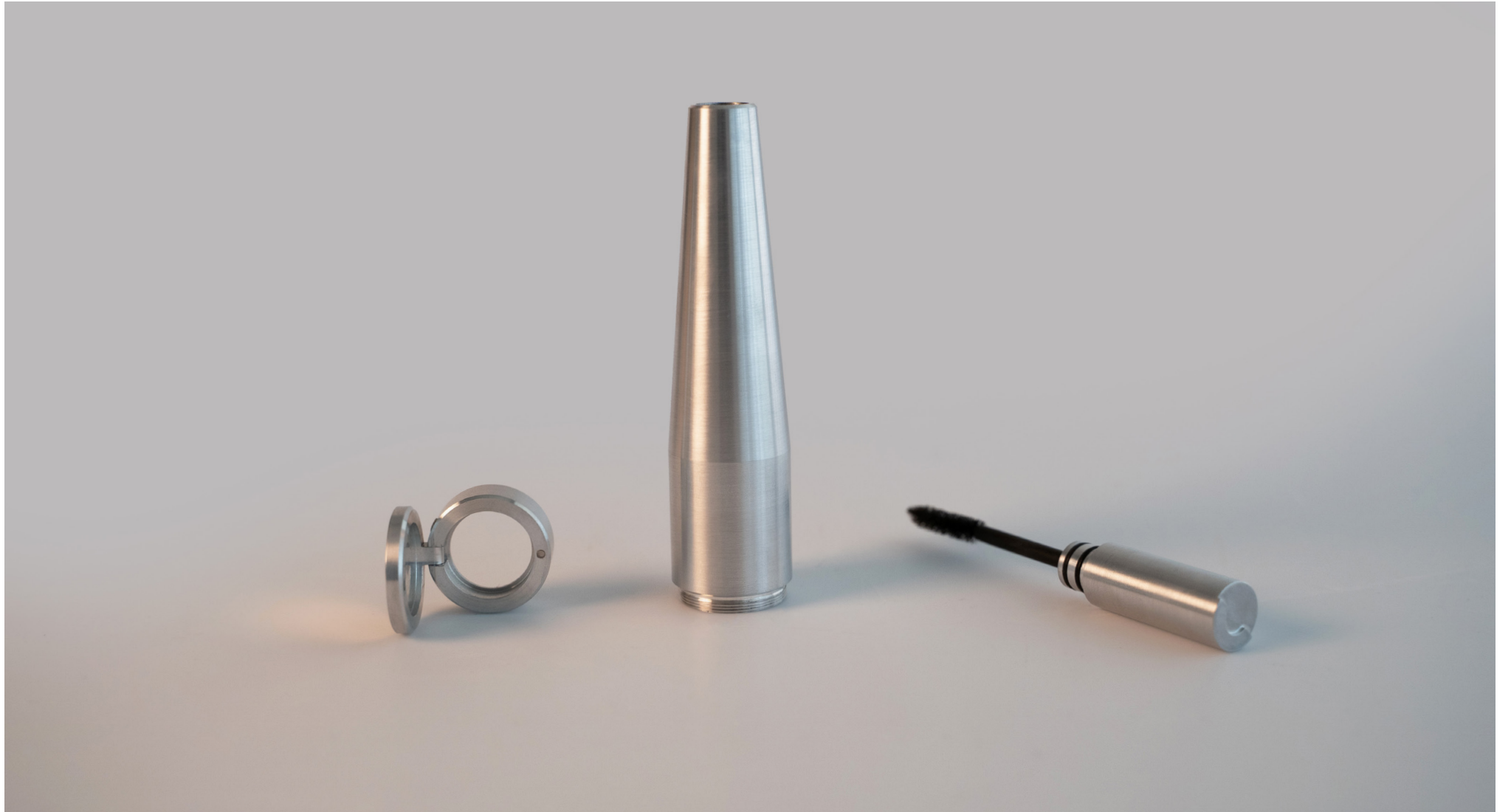
face cleansing powder  
LEO



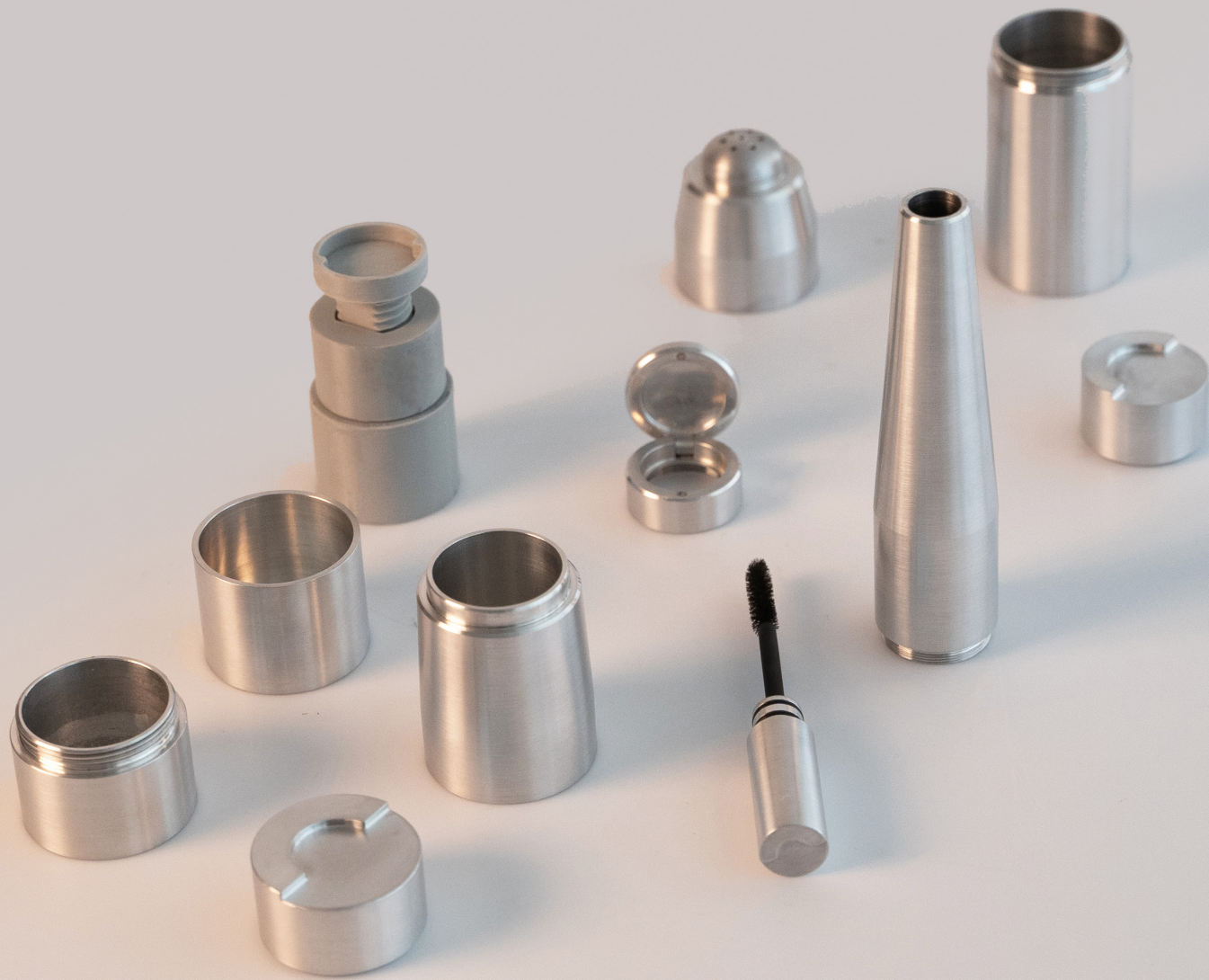


# SOLID MASCARA













high end bathroom scenery (95)

# NEXT STEPS / REFLECTION

The next step in developing the CLEO brand would be the marketing and the building of the whole brand identity; this would include online marketing, campaigns, and in-store aspects to enhance the trust and relation between the brand and the consumer. The online marketing would ideally be via a website with information about the products, the whole waterless and solid concept, and why it's better than liquid products. It would also include an online shop where consumers can purchase the products and refills and potentially put up a payment plan, like a subscription, so they could get the products they need without thinking about buying them immediately.

The online shop and website would stretch further to social media platforms and perhaps collaborations with influencers and other people who are using the products to give it a spotlight on the market.

For the physical aspects, it would be interesting to work with the store design and how a customer would interact with the brand from stepping their foot inside the store. It could work both as an individual store and as a part of a bigger store selling cosmetics, such as KICKS or Åhléns in Sweden.

I would also need to conduct user testing to see how the products

would work in real life and if they will target my exclusive Gucci ladies or a whole other group.

It's desirable to exclude plastics completely; however, it is not always the most efficient choice regarding the production and its extraordinary properties. Furthermore, these products will always be sensitive to changes within trends that primarily occurs through the rapid development and exposure through social media.

By designing these reusable systems, we will move a step further towards a future free from single-use packaging.





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“CLEO” By Nina Cherrug

